



ALLRED
MECHANICAL SERVICES INC.

COMMERCIAL, RESIDENTIAL & INDUSTRIAL HVAC CONTRACTORS

- 1-What is SDS?
- 2-Acetylene-C₂H₂
- 3-BOC Gases-Nitrogen
- 4-BOC Gases-Oxygen
- 5-Canopus-68
- 6-Covered Electrode-AWS-E6010
- 7-Covered Electrode-AWS-E-7018-H4R
- 8-Eco-duct seal (gray)
- 9-Elgen 440 Butyl Gasket
- 10-Solvent Based Duct Sealer
- 11-Elgen Shrink Wrap with PSA
- 12-Elgen 100% Silicon
- 13-Elgen Water Based Duct Liner Adhesive
- 14-Elgen-Fabrics
 - A-Hypalon Fabric
 - B-Neoprene Fabric
 - C-Silguard Fabric
 - D-Super Hi-Temp Fabric
 - E-Teflon r-Fabric
 - F-Vinlon Fabric



ALLRED
MECHANICAL SERVICES INC.

COMMERCIAL, RESIDENTIAL & INDUSTRIAL HVAC CONTRACTORS

14-Elgen-Steel

A-Aluminum Metal

B-Aluminized Steel

C-Galvanized Steel

D-Stainless Steel

15-3M Brand Fire Barrier

16-Foam Plus Foaming Coil Cleaner

17-Hilti G C 22

18-Insta-Tack

19-Masters Cutting Oil

20-Megaloc

21-Mobil Eal Artic 68

22-Nokorode Regular Plastic Flux

23-Oatey 95/5 Lead-Free Solder

24-Oatey Purple Primer

25-Penetrating Oil

26-Pro-Bite Foamy Concentrate Acid Coil Cleaner & Brightener

27-Pro 2000 Leak Detector

28-Pro Valve Cutting Oil

29-Rector-Seal Tru-Blu



30-Safety Boosters (Hilti)

31-Sealer's Inc. -extruded rubber sealer

32-Versa Grip 102

33-Xtrastop 550 filler

34-Natcolene 743L Inhibitor

35-Marvel Mystery Oil

36-Jasco Denatured Alcohol

37-Shockwave Disinfectant

		mixtures	case
Target Organ Systemic Toxicity	Cutoffs with CA options	All	
Aspiration Toxicity	Cutoffs	Dilution, Batching, Concentration of highly toxic mixtures, Interpolation within one toxicity category, Substantially similar mixtures	
Hazardous to the Aquatic Environment	Additivity Formula (Acute only); Summation Method (Acute or Chronic); Combination of Additivity Formula & Summation Method	Dilution, Batching, Concentration of highly toxic mixtures, Interpolation within one toxicity category, Substantially similar mixtures	Relevant components usually at ³ 1%, Mixture test data only case-by-case for chronic

4.0 Hazard Communication

Section 3, explained that classification is the starting point for the GHS. Once a chemical has been classified, the hazard(s) must be communicated to target audiences. As in existing systems, labels and Safety Data Sheets are the main tools for chemical hazard communication. They identify the hazardous properties of chemicals that may pose a health, physical or environmental hazard during normal handling or use. The goal of the GHS is to identify the intrinsic hazards found in chemical substances and mixtures, and to convey information about these hazards.

The international mandate for the GHS included the development of a harmonized hazard communication system, including labelling, Safety Data Sheets and easily understandable symbols, based on the classification criteria developed for the GHS.

4.1 What factors influenced development of the GHS communication tools?

Early in the process of developing the GHS communication tools, several significant issues were recognized. One of the most important was comprehensibility of the information provided. After all, the aim of the system is to present hazard information in a manner that the intended audience can easily understand and that will thus minimize the possibility of adverse effects resulting from exposure. The GHS identifies some guiding principles to assist in this process:

- Information should be conveyed in more than one way, e.g., text and symbols;
- The comprehensibility of the components of the system should take account of existing studies and literature as well as any evidence gained from testing;
- The phrases used to indicate degree (severity) of hazard should be consistent across the health, physical and environmental hazards.

Comprehensibility is challenging for a single culture and language. Global harmonization has numerous complexities. Some factors that affected the work include:

- Different philosophies in existing systems on how and what should be communicated;
- Language differences around the world;
- Ability to translate phrases meaningfully;
- Ability to understand and appropriately respond to symbols/pictograms.

These factors were considered in developing the GHS communication tools. The GHS Purple Book includes a comprehensibility-testing instrument in Annex 6.

4.2 Labels

4.2.1 What does a label look like?

Existing systems have labels that look different for the same product. We know that this leads to worker confusion, consumer uncertainty and the need for additional resources to maintain different systems. In the U.S. as well as in other countries, chemical products are regulated by sector/target audience. Different agencies regulate the workplace, consumers, agricultural chemicals and transport. Labels for these sectors/target audiences vary both in the U.S. and globally.

In order to understand the value of the GHS and its benefits to all stakeholders, it is instructive to look at the different labels for one fictional product. In the U.S. the product, ToxiFlam, which has a flash point of 120°F and has an oral LD50 of 275 mg/kg, has different labels for different sectors/target audiences. Label examples as seen in the U.S.A. are shown first, followed by international examples.

4.2.2 USA Examples:

Workplace and Workers

In the U.S., regulatory requirements for workplace labels are 'performance oriented'. This results at a minimum in a straightforward label that has a product identity, hazard statement and supplier identification (Figure 4.1). Some products can also have additional labelling requirements depending on their end use.

Figure 4.1

ToxiFlam
TOXIC
COMBUSTIBLE LIQUID AND
VAPOR

00000

Tel. 444 999 9999

However, many companies follow the voluntary ANSI Z129.1 Precautionary Labelling Standard for workplace labelling and often use it also for labelling consumer products. The American National Standards Institute (ANSI) standard includes several label elements that are core to the GHS as well as other helpful elements to assist users in safe handling (Figure 4.2).

Figure 4.2**ToxiFlam (Contains XYZ)****WARNING! HARMFUL IF SWALLOWED, FLAMMABLE LIQUID AND VAPOR**

Do not taste or swallow. Do not take internally. Wash thoroughly after handling. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation.

FIRST AID: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

In case of Fire, use water fog, dry chemical, CO₂, or alcohol foam. Water may be ineffective.

Flash Point = 120°F. Residue vapor may explode or ignite on ignition; do not cut, drill, grind, or weld on or near the container.

See Material Safety Data Sheet for further details regarding safe use of this product.

My Company, My Street, MyTown NJ 00000 Tel. 444 999 9999

Consumer Products and Consumers

Figure 4.3**ToxiFlam
(Contains XYZ)****WARNING! HARMFUL IF SWALLOWED, FLAMMABLE LIQUID AND VAPOR**

Do not taste or swallow. Do not take internally. Wash thoroughly after handling. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation.

FIRST AID

If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Keep out of reach of children

My Company, My Street, MyTown NJ 00000 Tel. 444 999 9999

In several countries consumer products are regulated separately from workplace chemicals. In the U.S. the CPSC regulates consumer products. Consumer products have required label elements, but only the signal words are specified. The ANSI labelling standard is often used in developing consumer labels.

Transport and Emergency Responders

For hazardous products being transported, outer containers have required label elements, product identifier and hazard symbols. Transportation requirements are in addition to workplace or end use label requirements.

Figure 4.4**Flammable liquids, toxic, n.o.s. (contains XYZ)
UN 1992**

MyCompany, MyStreet NJ 00000

Agricultural Chemicals and Pesticides

In many systems, agricultural chemicals often have special label requirements. In the U.S. the EPA is the agency covering these chemicals. A pesticide product with the same hazards as ToxiFlam would have a label developed using FIFRA requirements. FIFRA has requirements for product identity, chemical identity,

ToxiFlam
Active/ Inerts: Contains XYZ %
KEEP OUT OF THE REACH OF CHILDREN

PRECAUTIONARY STATEMENTS - HAZARDS TO HUMANS AND DOMESTIC ANIMALS:

WARNING: May be fatal if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco.

PHYSICAL AND CHEMICAL HAZARDS: Combustible. Do not use or store near heat or open flame.

FIRST AID:

If swallowed

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

My Company, My Street, MyTown AZ 00000, Tel: 444 999 9999

EPA Est . No. 5840-AZ-1

EPA Reg. No. 3120-280

4.2.3 International Examples

All the previous examples are specific to the U.S. Many companies do business globally. So in addition to the U.S. regulations, these companies would need to comply with the corresponding regulations in the countries to which they export products. Canada and the EU are two existing systems that were considered in the development of the GHS. To illustrate the differences in labelling, it is interesting to examine an EU and Canadian label for ToxiFlam.

European Union Label

Labels in the EU have chemical identity, symbols, and R/S (Risk and Safety) phrases which are hazard statements, precautionary measures and first aid.

Figure 4.6

ToxiFlam (contains XYZ)
KEEP OUT OF THE REACH OF CHILDREN



Harmful If Swallowed. (R22)
 Flammable. (R10)
 Keep away from food, drink and animal feeding stuffs. (S13)
 Wear suitable protective clothing. (S36)
 If swallowed, seek medical advice immediately and show this Container label. (S46)
 In case of fire, use water, fog, CO2, or alcohol foam. (S43)

My Company, My Street, MyTown XX 00000, Tel: 44 22 999 9999

Canadian Workplace Hazardous Materials Identification System (WHMIS) Label

The WHMIS label requires product identifier, hazard symbol, hazard statement, precautionary measures, first aid, MSDS statement and supplier identification. In addition to these common label elements, WHMIS requires a hatched border.

Figure 4.7



ToxiFlam
TOXIC
COMBUSTIBLE LIQUID AND VAPOR



Do not taste or swallow. Do not take internally. Wash thoroughly after handling. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation.

FIRST AID

If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

See Material Safety Data Sheet for further details regarding safe use of this product

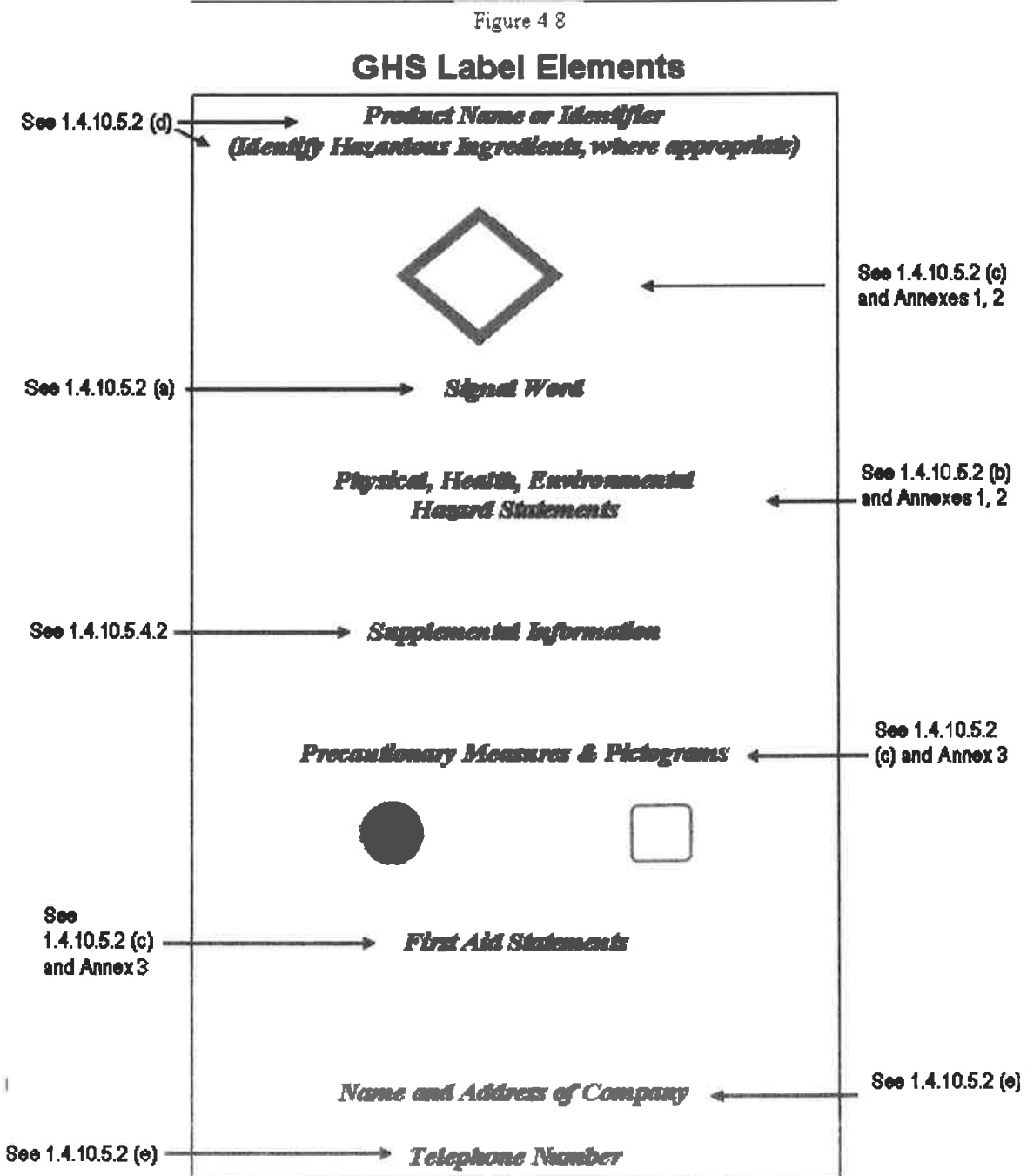
4.3 What are the GHS label elements?

Some GHS label elements have been standardized (identical with no variation) and are directly related to the endpoints and hazard level. Other label elements have been harmonized with common definitions and/or principles. See Figure 4.8 for an illustration of the GHS label elements.

The standardized label elements included in the GHS are:

- **Symbols (hazard pictograms):** Convey health, physical and environmental hazard information, assigned to a GHS hazard class and category.
- **Signal Words:** "Danger" or "Warning" are used to emphasize hazards and indicate the relative level of severity of the hazard, assigned to a GHS hazard class and category.
- **Hazard Statements:** Standard phrases assigned to a hazard class and category that describe the nature of the hazard.

The symbols, signal words, and hazard statements have all been standardized and assigned to specific hazard categories and classes, as appropriate. This approach makes it easier for countries to implement the system and should make it easier for companies to comply with regulations based on the GHS. The prescribed symbols, signal words, and hazard statements can be readily selected from Annex 1 of the GHS Purple Book. These standardized elements are not subject to variation, and should appear on the GHS label as indicated in the GHS for each hazard category/class in the system. The use of symbols, signal words or hazard statements other than those that have been assigned to each of the GHS hazards would be contrary to harmonization.



The Section numbers refer to the sections in the GHS Document or "Purple Book".

The GHS symbols have been incorporated into pictograms for use on the GHS label. Pictograms include the harmonized hazard symbols plus other graphic elements, such as borders, background patterns or colors which are intended to convey specific information. For transport, pictograms (Table 4.10) will have the background, symbol and colors currently used in the UN Recommendations on the Transport of Dangerous Goods, Model Regulations. For other sectors, pictograms (Table 4.9) will have a black symbol on a white background with a red diamond frame. A black frame may be used for shipments within one country. Where a transport pictogram appears, the GHS pictogram for the same hazard should not appear.

4.3.2 Signal Words

The signal word indicates the relative degree of severity a hazard. The signal words used in the GHS are

"Danger" for the more severe hazards, and

"Warning" for the less severe hazards.

Signal words are standardized and assigned to the hazard categories within endpoints. Some lower level hazard categories do not use signal words. Only one signal word corresponding to the class of the most severe hazard should be used on a label.

4.3.3 Hazard Statements

Hazard statements are standardized and assigned phrases that describe the hazard(s) as determined by hazard classification. An appropriate statement for each GHS hazard should be included on the label for products possessing more than one hazard. The assigned label elements are provided in each hazard chapter of the Purple Book as well as in Annexes 1 & 2. Figure 4-11 illustrates the assignment of standardized GHS label elements for the acute oral toxicity categories.

Figure 4.9

GHS Pictograms and Hazard Classes



Oxidizers

- Flammables
- Self Reactives
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Organic Peroxides

- Explosives
- Self Reactives
- Organic Peroxides



Acute toxicity (severe)

Corrosives

Gases Under Pressure



- Carcinogen
- Respiratory Sensitizer
- Reproductive Toxicity
- Target Organ Toxicity
- Mutagenicity
- Aspiration Toxicity

Environmental Toxicity

- Irritant
- Dermal Sensitizer
- Acute toxicity (harmful)
- Narcotic Effects
- Respiratory Tract
- Irritation

Transport "Pictograms"

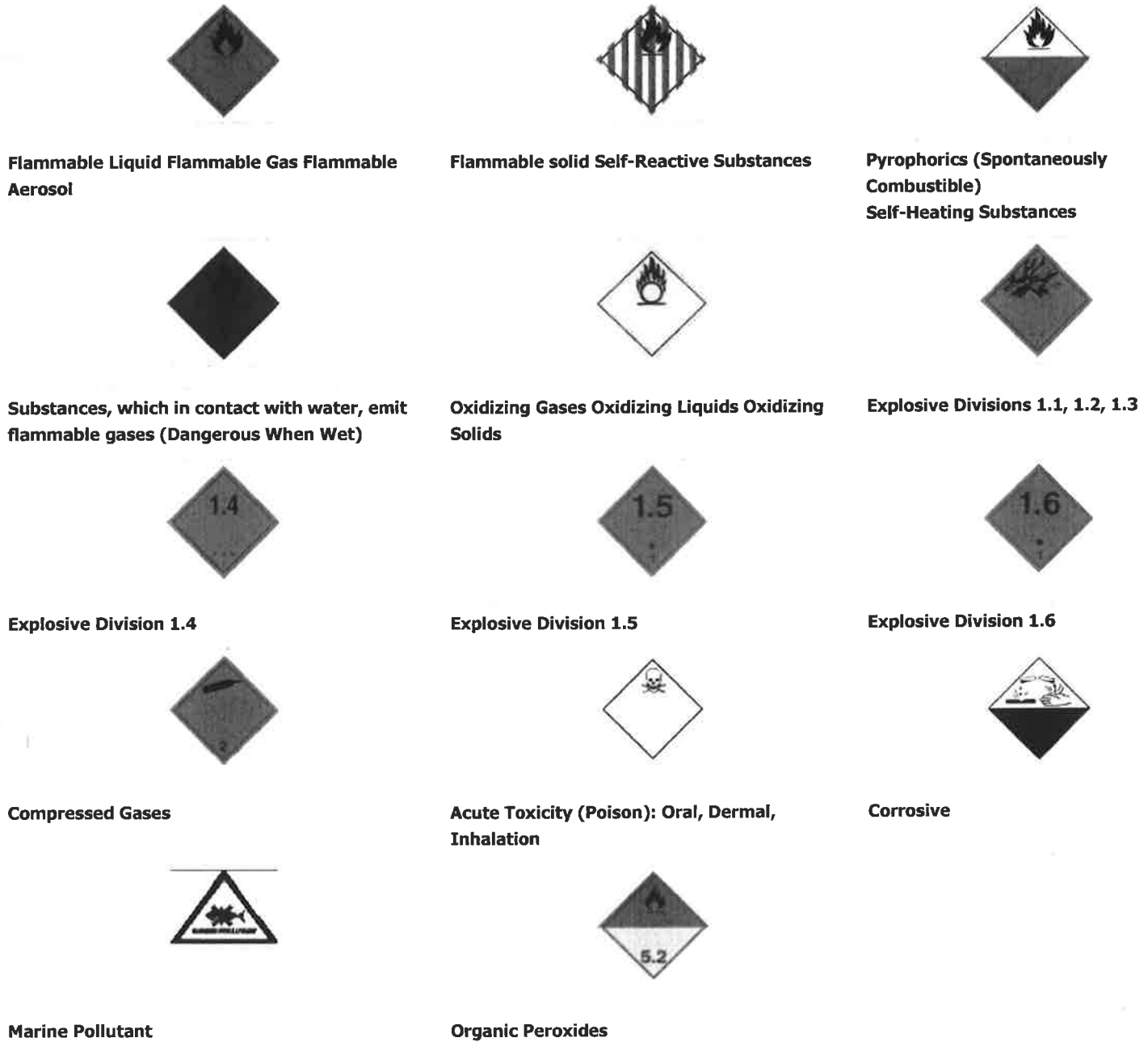






Figure 4.11

ACUTE ORAL TOXICITY - Annex 1

	Category 1	Category 2	Category 3	Category 4	Category 5
LD ₅₀	£ 5 mg/kg	> 5 < 50 mg/kg	³ 50 < 300 mg/kg	³ 300 < 2000 mg/kg	³ 2000 < 5000 mg/kg
Pictogram					No symbol
Signal word	Danger	Danger	Danger	Warning	Warning
Hazard statement	Fatal if swallowed	Fatal if swallowed	Toxic if swallowed	Harmful if swallowed	May be harmful if swallowed

- **Product Identifier (ingredient disclosure):** Name or number used for a hazardous product on a label or in the SDS.
- **Supplier identification:** The name, address and telephone number should be provided on the label.
- **Supplemental information:** non-harmonized information.

4.3.4 Precautionary Statements and Pictograms

Precautionary information supplements the hazard information by briefly providing measures to be taken to minimize or prevent adverse effects from physical, health or environmental hazards. First aid is included in precautionary information. The GHS label should include appropriate precautionary information. Annex 3 of the GHS Purple Book includes precautionary statements and pictograms that can be used on labels.

Annex 3 includes four types of precautionary statements covering: prevention, response in cases of accidental spillage or exposure, storage, and disposal. The precautionary statements have been linked to each GHS hazard statement and type of hazard. The goal is to promote consistent use of precautionary statements. Annex 3 is guidance and is expected to be further refined and developed over time.

4.3.5 Product Identifier (Ingredient Disclosure)

A product identifier should be used on a GHS label and it should match the product identifier used on the SDS. Where a substance or mixture is covered by the UN Model Regulations on the Transport of Dangerous Goods, the UN proper shipping name should also be used on the package.

The GHS label for a substance should include the chemical identity of the substance (name as determined by IUPAC, ISO, CAS or technical name). For mixtures/alloys, the label should include the chemical identities of all ingredients that contribute to acute toxicity, skin corrosion or serious eye damage, germ cell mutagenicity, carcinogenicity, reproductive toxicity, skin or respiratory sensitization, or Target Organ Systemic Toxicity (TOST), when these hazards appear on the label. Where a product is supplied exclusively for workplace use, the Competent Authority may give suppliers discretion to include chemical identities on the SDS, in lieu of including them on labels. The Competent Authority rules for confidential business information (CBI) take priority over the rules for product identification.

4.3.6 Supplier Identification

The name, address and telephone number of the manufacturer or supplier of the product should be provided on the label.

4.3.7 Supplemental Information

Supplemental label information is non-harmonized information on the container of a hazardous product that is not required or specified under the GHS. In some cases this information may be required by a Competent Authority or it may be additional information provided at the discretion of the manufacturer/distributor. The GHS provides guidance to ensure that supplemental information does not lead to wide variation in information or undermine the GHS information.

Supplemental information may be used to provide further detail that does not contradict or cast doubt on the validity of the standardized hazard information. It may be used to provide information about hazards not yet incorporated into the GHS. The labeler should have the option of providing supplementary information related to the hazard, such as physical state or route of exposure, with the hazard statement.

4.4 How are multiple hazards handled on labels?

Where a substance or mixture presents more than one GHS hazard, there is a GHS precedence scheme for pictograms and signal words. For substances and mixtures covered by the UN Recommendations on the Transport of Dangerous Goods, Model Regulations, the precedence of symbols for physical hazards should follow the rules of the UN Model Regulations. For health hazards the following principles of precedence apply for symbols:

- if the skull and crossbones applies, the exclamation mark should not appear;
- if the corrosive symbol applies, the exclamation mark should not appear where it is used for skin or eye irritation;
- if the health hazard symbol appears for respiratory sensitization, the exclamation mark should not appear where it is used for skin sensitization or for skin or eye irritation.

If the signal word 'Danger' applies, the signal word 'Warning' should not appear. All assigned hazard statements should appear on the label. The Competent Authority may choose to specify the order in which they appear.

4.5 Is there a specific GHS label format / layout?

The GHS hazard pictograms, signal word and hazard statements should be located together on the label. The actual label format or layout is not specified in the GHS. National authorities may choose to specify where information should appear on the label or allow supplier discretion.

Figure 4.12 shows an example of a GHS label for the fictional product 'ToxiFlam'. The core GHS label elements are expected to replace the need for the array of different labels shown earlier for ToxiFlam. (Figure 4.8 also illustrates the GHS label elements.)

Figure 4.12 Example GHS Inner Container Label (e.g., bottle inside a shipping box)



ToxiFlam (Contains: XYZ)

Danger! Toxic If Swallowed, Flammable Liquid and Vapor



heat/sparks/open flame. - No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO₂, or "alcohol" foam.

See Material Safety Data Sheet for further details regarding safe use of this product.

MyCompany, MyStreet, MyTown NJ 00000, Tel: 444 999 9999

There has been discussion about the size of GHS pictograms and that a GHS pictogram might be confused with a transport pictogram or "diamond". Transport pictograms (Table 4.10) are different in appearance than the GHS pictograms (Table 4.9). Annex 7 of the Purple Book explains how the GHS pictograms are expected to be proportional to the size of the label text. So that generally the GHS pictograms would be smaller than the transport pictograms.

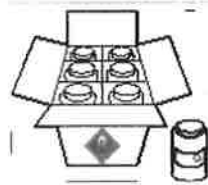


Figure 4.13 Combination Packaging (Outer box with inner bottles)

Several arrangements for GHS labels are also provided in Annex 7 of the Purple Book. Figure 4.13 shows an arrangement for a combination packaging with an outer shipping box and inner bottles. The shipping box has a transportation pictogram. The inner bottles have a GHS label with a GHS pictogram.

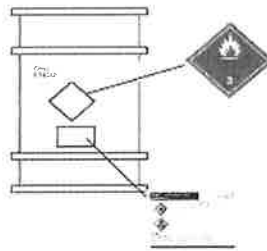


Figure 4.14 Combination Packaging (Outer box with inner bottles)

For a container such as a 55 gallon drum, the transport required markings and pictograms may be combined with the GHS label elements or presented separately. In Figure 4.14 a label arrangement for a single packaging such as a 55 gallon drum is shown. Pictograms and markings required by the transport regulations as well as GHS label and non-duplicative GHS pictogram are shown on the drum.

A label merging the transportation requirements and the GHS requirements into one label for the fictional product "ToxiFlam" is shown in Figure 4.15. This combined type label could also be used on a 55 gallon drum.

Figure 4.15 Example GHS Outer Container Label (55 gallon/200 liter drum)

ToxiFlam
Danger! Toxic If Swallowed
Flammable Liquid and Vapor

Flammable liquids, toxic, n.o.s.
(contains XYZ)
UN 1992



Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. - No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO₂, or "alcohol" foam.

See Material Safety Data Sheet for further details regarding safe use of this product.

MyCompany, MyStreet, MyTown NJ 00000, Tel: 444 999 9999

4.6 What about risk?

lifecycle (workplace, farm, retail store, etc.). Once a chemical is classified, the likelihood of adverse effects may be considered in deciding what informational or other steps should be taken for a given product or use setting. Annex 5 of the GHS Purple Book includes a discussion of an example of how risk-based labelling could be considered for chronic health effects of consumer products in the consumer use setting.

4.7 Are workplace containers covered in the GHS ?

Products falling within the scope of the GHS will carry the GHS label at the point where they are supplied to the workplace, and that label should be maintained on the supplied container in the workplace. The GHS label or label elements can also be used for workplace containers (e.g., storage tanks). However, the Competent Authority can allow employers to use alternative means of giving workers the same information in a different written or displayed format when such a format is more appropriate to the workplace and communicates the information as effectively as the GHS label. For example, label information could be displayed in the work area, rather than on the individual containers. Some examples of workplace situations where chemicals may be transferred from supplier containers include: containers for laboratory testing, storage vessels, piping or process reaction systems or temporary containers where the chemical will be used by one worker within a short timeframe.

4.8 What is the GHS Safety Data Sheet (SDS)?

The (Material) Safety Data Sheet (SDS) provides comprehensive information for use in workplace chemical management. Employers and workers use the SDS as sources of information about hazards and to obtain advice on safety precautions. The SDS is product related and, usually, is not able to provide information that is specific for any given workplace where the product may be used. However, the SDS information enables the employer to develop an active program of worker protection measures, including training, which is specific to the individual workplace and to consider any measures that may be necessary to protect the environment. Information in a SDS also provides a source of information for other target audiences such as those involved with the transport of dangerous goods, emergency responders, poison centers, those involved with the professional use of pesticides and consumers.

The SDS should contain 16 headings (Figure 4.14). The GHS MSDS headings, sequence and content are similar to the ISO, EU and ANSI MSDS/SDS requirements, except that the order of sections 2 and 3 have been reversed. The SDS should provide a clear description of the data used to identify the hazards. Figure 4.14 and the GHS Purple Book provide the minimum information that is required in each section of the SDS. Examples of draft GHS SDSs are provided in Appendix B of this guidance document.

The revised Purple Book contains guidance on developing a GHS SDS (Annex 4). Other resources for SDSs include:

- ILO Standard under the Recommendation 177 on Safety in the Use of Chemicals at Work,
- International Standard 11014-1 (1994) of the International Standard Organization (ISO) and ISO Safety Data Sheet for Chemical Products 11014-1: 2003 DRAFT,
- American National Standards Institute (ANSI) Standard Z400.1,
- European Union SDS Directive 91/155/-EEC.

Figure 4.14

Minimum information for an SDS

- | | |
|---|---|
| <p>1. Identification of the substance or mixture and of the supplier</p> | <ul style="list-style-type: none"> ▪ GHS product identifier. ▪ Other means of identification. ▪ Recommended use of the chemical and restrictions on use. ▪ Supplier's details (including name, address, phone number, etc.). ▪ Emergency phone number. |
| <p>2. Hazards identification</p> | <ul style="list-style-type: none"> ▪ GHS classification of the substance/mixture and any national or regional information. ▪ GHS label elements, including precautionary statements. (Hazard symbols may be provided as a graphical reproduction of the symbols in black and white or the name of the symbol, e.g., flame, skull and crossbones.) ▪ Other hazards which do not result in classification (e.g., dust explosion hazard) or are not covered by the GHS. |
| <p>3. Composition/information on ingredients</p> | <p>Substance</p> <ul style="list-style-type: none"> ▪ Chemical identity. ▪ Common name, synonyms, etc. ▪ CAS number, EC number, etc. ▪ Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance. <p>Mixture</p> <ul style="list-style-type: none"> ▪ The chemical identity and concentration or concentration ranges of all ingredients which are hazardous within the meaning of the GHS and are present above their cutoff levels. |

NOTE: For information on ingredients, the competent authority rules for CBI take priority over the rules for product identification.

Safety data sheet

From Wikipedia, the free encyclopedia

"MSDS" redirects here. For the video game, see MapleStory DS.

A **safety data sheet** (SDS),^[1] **material safety data sheet** (MSDS), or **product safety data sheet** (PSDS) is an important component of product stewardship and occupational safety and health. It is intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner, and includes information such as physical data (melting point, boiling point, flash point, etc.), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill-handling procedures. SDS formats can vary from source to source within a country depending on national requirements.

SDSs are a widely used system for cataloging information on chemicals, chemical compounds, and chemical mixtures. SDS information may include instructions for the safe use and potential hazards associated with a particular material or product. These data sheets can be found anywhere where chemicals are being used.

There is also a duty to properly label substances on the basis of physico-chemical, health and/or environmental risk. Labels can include hazard symbols such as the European Union standard black diagonal cross on an orange background, used to denote a harmful substance.

A SDS for a substance is not primarily intended for use by the general consumer, focusing instead on the hazards of working with the material in an occupational setting.

In some jurisdictions, the SDS is required to state the chemical's risks, safety, and effect on the environment.

It is important to use an SDS specific to both country and supplier, as the same product (e.g. paints sold under identical brand names by the same company) can have different formulations in different countries. The formulation and hazard of a product using a generic name (e.g. *sugar soap*) may vary between manufacturers in the same country.

Contents

- 1 National and international requirements
 - 1.1 Canada
 - 1.2 European Union
 - 1.3 Germany
 - 1.4 The Netherlands
 - 1.5 United Kingdom
 - 1.6 United Nations
 - 1.7 United States
- 2 SDS authoring
- 3 See also
- 4 References
- 5 External links

National and international requirements

Canada

In Canada, the program known as the Workplace Hazardous Materials Information System (WHMIS) establishes the requirements for SDS's in workplaces and is administered federally by Health Canada under the Hazardous Products Act, Part II, and the Controlled Products Regulations. WHMIS and SDS requirements are also enforced by provincial Ministries or Departments of Labour.

European Union

Safety data sheets have been made an integral part of the system of Regulation (EC) No 1907/2006 (REACH).^[2] The original requirements of REACH for SDSs have been further adapted to take into account the rules for safety data sheets of the Global Harmonised System (GHS)^[3] and the implementation of other elements of the GHS into EU legislation that were introduced by Regulation (EC) No 1272/2008 (CLP)^[4] via an update to Annex II of REACH.^[5]

MATERIAL SAFETY DATA	
SECTION 4 - FIRST AID	
<p> acc: Flush with large amounts of water for at least 15 minutes. Do not skin: Wash affected area gently with soap and water. Skin cream or eye: Do not induce vomiting; drink plenty of water. ingest: Remove affected person to clean fresh air. **If any of the symptoms persist, seek medical attention immediately. </p>	
SECTION 5 - FIRE FIGHTING MEASURES	
<p> haz: Non-combustible extinguish: Use extinguishing media appropriate to the surrounding fire. special: None equipment: Wear full bunker gear including positive pressure self-contained breathing apparatus. </p>	
SECTION 6 - ACCIDENTAL RELEASE MEASURES	
<p> prevent: Avoid creating airborne dust. Follow routine housekeeping procedures. Use HEPA filtered equipment. If sweeping is necessary, use a dust suppressant. Do not use compressed air for clean-up. Personnel must wear an approved respirator. Avoid clean-up procedures that could result in exposure. </p>	
SECTION 7 - HANDLING AND STORAGE	
<p> Limit use of power tools unless in conjunction with local exhaust ventilation. Frequently clean the work area with HEPA filtered vacuum or accumulation of debris. Do not use compressed air for clean-up. This product is stable under all conditions of storage. Store in a cool, dry place. </p>	

An example SDS in a US format provides guidance for handling a hazardous substance and information on its composition and properties.

The SDS follows a 16 section format which is internationally agreed and for substances especially, the SDS should be followed with an Annex which contains the exposure scenarios of this particular substance.^[6] The SDS must be supplied in an official language of the Member State(s) where the substance or mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise (Article 31(5) of REACH).

The 16 sections are:^[7]

- SECTION 1: Identification of the substance/mixture and of the company/undertaking
 - 1.1. Product identifier
 - 1.2. Relevant identified uses of the substance or mixture and uses advised against
 - 1.3. Details of the supplier of the safety data sheet
 - 1.4. Emergency telephone number
- SECTION 2: Hazards identification
 - 2.1. Classification of the substance or mixture
 - 2.2. Label elements
 - 2.3. Other hazards
- SECTION 3: Composition/information on ingredients
 - 3.1. Substances
 - 3.2. Mixtures
- SECTION 4: First aid measures
 - 4.1. Description of first aid measures
 - 4.2. Most important symptoms and effects, both acute and delayed
 - 4.3. Indication of any immediate medical attention and special treatment needed
- SECTION 5: Firefighting measures
 - 5.1. Extinguishing media
 - 5.2. Special hazards arising from the substance or mixture
 - 5.3. Advice for firefighters
- SECTION 6: Accidental release measures
 - 6.1. Personal precautions, protective equipment and emergency procedures
 - 6.2. Environmental precautions
 - 6.3. Methods and material for containment and cleaning up
 - 6.4. Reference to other sections
- SECTION 7: Handling and storage
 - 7.1. Precautions for safe handling
 - 7.2. Conditions for safe storage, including any incompatibilities
 - 7.3. Specific end use(s)
- SECTION 8: Exposure controls/personal protection
 - 8.1. Control parameters
 - 8.2. Exposure controls
- SECTION 9: Physical and chemical properties
 - 9.1. Information on basic physical and chemical properties
 - 9.2. Other information
- SECTION 10: Stability and reactivity
 - 10.1. Reactivity
 - 10.2. Chemical stability
 - 10.3. Possibility of hazardous reactions
 - 10.4. Conditions to avoid
 - 10.5. Incompatible materials
 - 10.6. Hazardous decomposition products
- SECTION 11: Toxicological information
 - 11.1. Information on toxicological effects
- SECTION 12: Ecological information
 - 12.1. Toxicity
 - 12.2. Persistence and degradability
 - 12.3. Bioaccumulative potential
 - 12.4. Mobility in soil
 - 12.5. Results of PBT and vPvB assessment
 - 12.6. Other adverse effects
- SECTION 13: Disposal considerations
 - 13.1. Waste treatment methods
- SECTION 14: Transport information
 - 14.1. UN number
 - 14.2. UN proper shipping name
 - 14.3. Transport hazard class(es)
 - 14.4. Packing group
 - 14.5. Environmental hazards
 - 14.6. Special precautions for user
 - 14.7. Transport in bulk according to Annex II of MARPOL.73/78 and the IBC Code

- SECTION 15: Regulatory information
 - 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
 - 15.2. Chemical safety assessment
- SECTION 16: Other information

The European Chemicals Agency (ECHA) has published a guidance document on the compilation of safety data sheets.

Germany

The German Federal Water Management Act requires that substances be evaluated for negative influence on the physical, chemical or biological characteristics of water. These are classified into numeric water hazard classes (WGK or WHC, depending on whether you use the German or English abbreviation).

- WGK nwg: Non-water polluting substance
- WGK 1: Slightly water polluting substance
- WGK 2: Water polluting substance
- WGK 3: Highly water polluting substance

The Netherlands

Dutch Safety Data Sheets are well known as veiligheidsinformatieblad nl:Veiligheidsinformatieblad or Chemiekaarten. This is a collection of Safety Data Sheets of the most widely used chemicals. The Chemiekaarten boek is commercially available, but also made available through educational institutes, such as the web site offered by the university of Groningen^[8]

United Kingdom

In the U.K., the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 - known as CHIP Regulations - impose duties upon suppliers, and importers into the EU, of hazardous materials.^[9]

NOTE: Safety data sheets (SDS) are no longer covered by the CHIP regulations. The laws that require a SDS to be provided have been transferred to the European REACH Regulations. <http://www.hse.gov.uk/chip/>

The Control of Substances Hazardous to Health (COSHH) Regulations govern the use of hazardous substances in the workplace in the UK and specifically require an assessment of the use of a substance.^[10] Regulation 12 requires that an employer provides employees with information, instruction and training for people exposed to hazardous substances. This duty would be very nearly impossible without the data sheet as a starting point. It is important for employers therefore to insist on receiving a data sheet from a supplier of a substance.

The duty to supply information is not confined to informing only business users of products. SDSs for retail products sold by large DIY shops are usually obtainable on those companies' web sites.

Web sites of manufacturers and large suppliers do not always include them even if the information is obtainable from retailers but written or telephone requests for paper copies will usually be responded to favourably.

United Nations

The United Nations (UN) defines certain details used in SDSs such as the UN numbers used to identify some hazardous materials in a standard form while in international transit.

United States

In the U.S., the Occupational Safety and Health Administration requires that SDSs be available to employees for potentially harmful substances handled in the workplace under the Hazard Communication regulation. The SDS is also required to be made available to local fire departments and local and state emergency planning officials under Section 311 of the Emergency Planning and Community Right-to-Know Act. The American Chemical Society defines Chemical Abstracts Service Registry Numbers (CAS numbers) which provide a unique number for each chemical and are also used internationally in SDSs.

Reviews of material safety data sheets by the U.S. Chemical Safety and Hazard Investigation Board have detected dangerous deficiencies.

The board's Combustible Dust Hazard Study analyzed 140 data sheets of substances capable of producing combustible dusts.^[11] None of the SDSs contained all the information the board said was needed to work with the material safely, and 41 percent failed to even mention that the substance was combustible.

As part of its study of an explosion and fire that destroyed the Barton Solvents facility in Valley Center, Kansas, in 2007, the safety board reviewed 62 material safety data sheets for commonly used nonconductive flammable liquids. As in the combustible dust study, the board found all the data sheets inadequate.^[12]

In 2012, the US adopted the 16 section Safety Data Sheet to replace Material Safety Data Sheets. This became effective on December 1, 2013.

SDS authoring

Many companies offer the service of collecting, or writing and revising, data sheets to ensure they are up to date and available for their subscribers or users.^[13] Some jurisdictions impose an explicit duty of care that each SDS be regularly updated, usually every three to five years. However, when new information becomes available, the SDS must be revised without delay.^[14]

See also

- Canadian Centre for Occupational Health and Safety
- European Agency for Safety and Health at Work
- Fact sheet
- Globally Harmonized System of Classification and Labelling of Chemicals
- International Chemical Safety Card
- Materials database
- Msdsonline (requires subscription)
- Risk and Safety Statements
- UK Health and Safety Executive

References

- United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) http://www.unece.org/trans/danger/publi/ghs/ghs_rev04/04files_e.html
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, corrected version in OJ L 136, 29.5.2007, p.3).
- http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p.1)
- Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (O.J. L133 31.05.2010, p1-43)
- http://guidance.echa.europa.eu/exposure_scenarios_en.htm
- <http://eur-lex.europa.eu/Notice.do?val=516832:cs&lang=pl&list=643062:cs,522140:cs,521353:cs,516832:cs,&pos=4&page=1&nbl=4&pgs=10&hwords=&checktexte=checkbox&visu=#texte>
- Dutch chemiekaarten (<http://www.rug.nl/fwm/informatieVoor/studenten/Reglementen/arboMilieu/bladerenAVMregels/veiligLaboratorium/chemicalien/achtergrondinformatie/chemiekaarten>)
- <http://www.opsi.gov.uk/si/si2002/20021689.htm>
- <http://www.hse.gov.uk/coshh>
- U.S Chemical Safety and Hazard Investigation Board, Investigation Report, Combustible Dust Hazard Study, Report No. 2006-H-1, November 2006 (http://www.csb.gov/assets/1/19/Dust_Final_Report_Website_11-17-06.pdf), pp. 38, 88-95
- http://www.chemsafety.gov/assets/document/CSB_Study_Barton_Final.pdf
- The National Chemical Emergency Centre safety data sheet (SDS) authoring (<http://the-ncec.com/safety-data-sheet-authoring/>)
- European Chemicals Agency (2013). *Guidance in a Nutshell - Compilation of safety data sheets (REACH Regulation)* (http://echa.europa.eu/documents/10162/13643/sds_nutshell_guidance_en.pdf). Version 1.0, p. 7.

External links

- MSDS Search Engine (<http://www.msdssearchengine.com>)

Retrieved from "https://en.wikipedia.org/w/index.php?title=Safety_data_sheet&oldid=672721118"

Categories: Chemical safety Materials Occupational safety and health Documents Industrial hygiene Safety engineering Environmental law Toxicology

- This page was last modified on 11 August 2015, at 07:13.

- Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. By using this site, you agree to the Terms of Use and Privacy Policy. Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization.

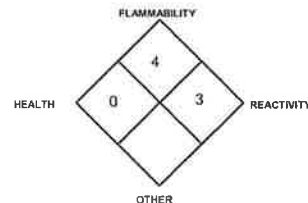


MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

**GAS DISSOLVED IN
ACETONE**

NFPA RATING



PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS:

ACETYLENE - C₂H₂

PRODUCT USE:

Document Number: 1001

SUPPLIER/MANUFACTURER'S NAME:

For general analytical/synthetic chemical uses.

ADDRESS:

WESTERN INTERNATIONAL GAS & CYL., INC.

7173 HWY 159E, P.O. BOX 668

BELLVILLE, TX 77418

BUSINESS PHONE:

1-979-413-2100

EMERGENCY PHONE:

CHEMTREC: 1-800-424-9300

International: 202-483-7616

DATE OF PREPARATION:

May 23, 2002

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					OTHER
			ACGIH		OSHA			
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	
Acetylene	74-86-2	>99	Simple Asphyxiant		NE	NE	NE	NIOSH REL: 2500 ppm, ceiling Matheson maximum recommended limit for exposure: 5000 ppm
Maximum Impurities		< 0.4	None of the trace impurities in this mixture contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					

NE = Not Established

C = Ceiling Limit

See Section 16 for Definitions of Terms Used.

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Acetylene is a colorless, flammable gas, with a garlic-like odor, that is dissolved in acetone. The main health hazard associated with a release of this gas is asphyxiation by displacement of oxygen. Acetylene gas poses an extreme fire hazard when accidentally released. The gas is lighter than air, and may spread long distances. Distant ignition and flashback are possible. Flame or high temperature impinging on a localized area of the cylinder of this product can cause the cylinder to explode without activating the cylinder's relief devices. Acetylene gas may decompose explosively at elevated temperatures and pressures. Acetylene can form very explosive metallic salts (such as with copper, mercury, and silver). Provide adequate fire protection during emergency response situations.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE:

The most significant route of overexposure for this gas is by inhalation. The following paragraphs describe symptoms of exposure by route of exposure.

INHALATION: At concentration below the LEL of 2.5% (25000 ppm) this gas is essentially non-toxic. At higher concentrations, Acetylene has anesthetic effects. Symptoms of overexposure to such high concentrations may include drowsiness, dizziness, and a general feeling of weakness. High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. The skin of a victim of overexposure may have a blue color. Under some circumstances of overexposure, death may occur. The following effects associated with various levels of oxygen are as follows:

<u>CONCENTRATION</u>	<u>SYMPTOMS OF EXPOSURE</u>
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea and vomiting, collapse or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

When administered with oxygen at concentrations of 10% or greater, Acetylene produces varying degrees of temporary narcosis.



OTHER POTENTIAL HEALTH EFFECTS: The gas is generally non-irritating to the skin and eyes. Acetylene is dissolved in acetone. Any skin or eye contact with the acetone component of this product may be slightly irritating to contaminated skin or eyes.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**. Overexposure to Acetylene may cause the following health effects:

ACUTE: The most significant hazard associated with Acetylene is inhalation of oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, and nausea. At high concentrations, unconsciousness or death may occur.

CHRONIC: There are currently no known adverse health effects associated with chronic exposure to the components of this compressed gas.

TARGET ORGANS: Respiratory system, central nervous system.

HAZARDOUS MATERIAL INFORMATION SYSTEM			
HEALTH		(BLUE)	1
FLAMMABILITY		(RED)	4
REACTIVITY		(YELLOW)	3
PROTECTIVE EQUIPMENT			B
EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8
For routine industrial applications			

See Section 16 for Definition of Ratings

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO ACETYLENE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus and Fire-Retardant Personal Protective equipment should be worn. Adequate fire protection must be provided during rescue situations.

Remove victim(s) to fresh air, as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Only trained personnel should administer supplemental oxygen.

SKIN EXPOSURE: If the liquid portion of this product (acetone) is spilled on skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention if redness or irritation develops.

EYE EXPOSURE: If the liquid portion of this product (acetone) splashes into eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

FLASH POINT (Closed Cup): 0°C (32°F)

AUTOIGNITION TEMPERATURE: 305°C (581°F)

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): 2.5%

Upper (UEL): 82%

100% with substantial energy source and under certain conditions of pressure, container size and shape.

FIRE EXTINGUISHING MATERIALS: Extinguish fires of this gas by shutting-off the source of the gas. Use water spray to cool fire-exposed structures and equipment.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material ignites to produce toxic gases including carbon monoxide and carbon dioxide. Acetylene gas is extremely flammable and can readily form explosive mixtures with air over a very wide range. An explosion hazard exists in confined spaces when the gas is released. Pure Acetylene can explode under certain conditions of elevated pressure, temperature and container size. Acetylene reacts with active metals to form explosive acetylides compounds.

DANGER! Fires impinging (direct flame) on the outside surface of unprotected pressure storage vessels of Acetylene can be very dangerous. Direct flame exposure on the cylinder wall can cause an explosion either by BLEVE (Boiling Liquid Expanding Vapor Explosion), or by exothermic decomposition. This could cause a catastrophic failure of the vessel releasing the contents into a massive fireball and explosion. The resulting fire and explosion can result in severe equipment damage and personnel injury or death over a large area around the vessel. For massive fires in large areas, use unmanned hose holder or monitor nozzles; if this is not possible, withdraw from area and allow fire to burn.

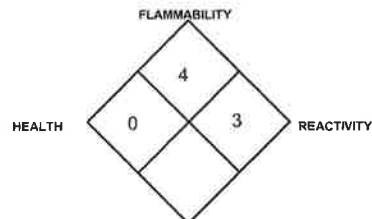
Explosion Sensitivity to Mechanical Impact: Not Sensitive.

Explosion Sensitivity to Static Discharge: Static discharge may cause this gas to ignite explosively, if released.

SPECIAL FIRE-FIGHTING PROCEDURES: The best fire-fighting technique may be simply to let the burning gas escape from the pressurized cylinder, tank car, or pipeline. Stop the leak before extinguishing fire. If the fire is extinguished before the leak is sealed, the still-leaking gas could explosively re-ignite without warning and cause extensive damage, injury, or fatality. In this case, increase ventilation (in enclosed areas) to prevent flammable or explosive mixture formation. Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Because of the potential for a BLEVE, evacuation of non-emergency personnel is essential. If water is not available for cooling or protection of vessel exposures, evacuate the area. Refer to the North American Emergency Response Guidebook (Guide #116).

GAS DISSOLVED IN ACETONE

NFPA RATING



See Section 16 for Definition of Ratings

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a release, clear the affected area and protect people. Adequate fire protection must be provided.

Minimum Personal Protective Equipment should be **Level B: fire-retardant protective clothing, mechanically-resistant gloves and Self-Contained Breathing Apparatus**. Use only non-sparking tools and equipment. Locate and seal the source of the leaking gas. Protect personnel attempting the shut-off with water-spray. Allow the gas to dissipate. Monitor the surrounding area for oxygen and combustible gas levels. Combustible gas concentration must be below 10% of the LEL (LEL = 2.5%) prior to entry of any response personnel. The atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus.

Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there.

THIS IS AN EXTREMELY FLAMMABLE GAS. Protection of all personnel and the area must be maintained.

PART III *How can I prevent hazardous situation from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting Acetylene IN YOU. Do not eat or drink while handling chemicals. Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of Acetylene could occur without any significant warning symptoms.

STORAGE AND HANDLING PRACTICES: Cylinders should be stored in dry, well-ventilated areas away from sources of heat. Compressed gases can present significant safety hazards. Store containers away from heavily trafficked areas and emergency exits. Post "No Smoking or Open Flames" signs in storage or use areas. Avoid storage for over six months and keep the smallest amount necessary on-site at any one-time. In the United States, cylinders of Acetylene stored inside buildings at the locations of use, must be limited to a total capacity of 2500 ft³ (70m³). In Canada, the limit is for a total capacity of 2160 ft³ (60 m³) in non-sprinklered buildings and 6130 ft³ (170 m³) in building with sprinkler systems. After these quantities are exceeded, a special room must be built for the storage of Acetylene. Consider installation of leak detection and alarm for storage area. Cylinders should be stored upright and be firmly secured to prevent falling or being knocked over. This will prevent acetone from being released from the cylinder. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting.

Use non-sparking ventilation systems, approved explosion-proof equipment, and appropriate electrical systems. Keep the quantity stored as small as possible. Store away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Keep storage area clear of materials which can burn. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers).

It is important to note that Acetylene, in its free state, under pressure, may decompose violently. The higher the pressure, the smaller the initial force necessary to cause a reaction. Therefore, **never use the free gas outside the cylinder at pressures in excess of 15 psig**. If pressures exceeding this limit are utilized, special explosion and fire safety precautions must be implemented.

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Protect cylinders against physical damage. Store in cool, dry, well-ventilated area, away from sources of heat, ignition and direct sunlight. Do not allow area where cylinders are stored to exceed 52°C (125°F). Isolate from halogens and oxidizers such as oxygen, chlorine, or fluorine. Use a check valve or trap in the discharge line to prevent hazardous backflow. Never tamper with pressure relief devices in valves and cylinders. Electrical equipment should be non-sparking or explosion proof. The following rules are applicable to work situations in which cylinders are being used:

Before Use: Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap (where provided) in-place until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

After Use: Close main cylinder valve. Valves should be closed tightly, to prevent evaporation of acetone. Replace valve protection cap. Mark empty cylinders "EMPTY".

7. HANDLING and STORAGE (Continued)

NOTE: Use only DOT or ASME code containers designed for acetylene storage. Earth-ground and bond all lines and equipment associated with this product. Close valve after each use and when empty. Cylinders must not be recharged except by or with the consent of owner. For additional information refer to the Compressed Gas Association Pamphlet P-1, *Safe Handling of Compressed Gases in Containers*. Additionally, refer to CGA Bulletin SB-2 "Oxygen Deficient Atmospheres" and NFPA Bulletin 58.

For welding and brazing operations, refer to ANSI Z-49.1 "Safety in Welding and Cutting" and OSHA safety regulations for welding, cutting, and brazing (29 CFR 1910.252).

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (e.g., nitrogen) before attempting repairs.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure oxygen levels are above 19.5% in the work area. Local exhaust ventilation is preferred, because it prevents Acetylene dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the level of oxygen and the presence of potentially explosive air-gas mixtures.

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen levels are below 19.5% or during emergency response to a release of Acetylene. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards.

EYE PROTECTION: Splash goggles or safety glasses, for protection from rapidly expanding gases and splashes of the acetone.

HAND PROTECTION: Wear mechanically-resistant gloves when handling cylinders of Acetylene. Wear Solvex or neoprene gloves if operations could lead to a potential exposure to acetone.

BODY PROTECTION: Use body protection appropriate for task. Transfer of large quantities under pressure may require protective equipment appropriate to protect employees from splashes of liquefied product, as well as fire retardant items.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY (@ 0°C): 1.1716 kg/m³ (0.073 lb/ft³)

SPECIFIC GRAVITY (air = 1): 0.906

SOLUBILITY IN WATER @0°C (32°F) 1 atm: 1.7 vol/vol

EVAPORATION RATE (nBuAc = 1): Not applicable.

ODOR THRESHOLD (Detection): 226 ppm

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

pH: Not applicable.

FREEZING POINT (@ 10 psig): -119°C (-182°F)

BOILING POINT: -84°C (-118°F) [sublimes]

EXPANSION RATIO: Not applicable.

VAPOR PRESSURE (psia): 649.6

SPECIFIC VOLUME (ft³/lb): 14.7

APPEARANCE AND COLOR: Colorless gas with a garlic-like, odor dissolved in acetone.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no distinct warning properties. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Acetylene is stable at standard temperatures and pressures. Gaseous acetylene may decompose violently at elevated temperatures and pressures. Acetylene must not be used above pressure greater than 15 psig. The higher the pressure, the more likely it is for a reaction to occur.

DECOMPOSITION PRODUCTS: Carbon and hydrogen. When ignited in the presence of oxygen, carbon monoxide and carbon dioxide are formed.

10. STABILITY and REACTIVITY (Continued)

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Acetylene is not compatible with the following materials. Strong oxidizers (e.g. chlorine, bromine pentafluoride, oxygen, oxygen difluoride, and nitrogen trifluoride), brass (with a copper content exceeding 65%), calcium hypochlorite, various heavy metals (copper, silver, mercury) and the salts of these metals, halogens (bromine, chlorine, iodine, fluorine), hydrides (e.g. sodium hydride, cesium hydride), ozone, perchloric acid; potassium.

HAZARDOUS POLYMERIZATION: Can occur when heated or under pressure.

CONDITIONS TO AVOID: Contact with incompatible materials and exposure to heat, sparks and other sources of ignition. Cylinders exposed to high temperatures or direct flame can rupture or burst. Liquid nitrogen should not be used as a trap, as it may cause acetylene to condense to its liquid or solid state, both of which are explosive.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following information is for Acetylene.

TCLo (inhalation, human) = 20 pph; central nervous system, respiratory system effects.

LCLo (inhalation, human) = 50 pph/5 minutes

LCLo (inhalation, human) = 500,000 ppm/5 minutes

Other data pertaining to the effects of Acetylene inhalation on humans are as follows:

<u>Concentration</u>	<u>Symptom</u>
100,000 ppm	Intoxication (drowsiness, dizziness, giddiness).
200,000 ppm	Severe intoxication.
300,000 ppm	Loss of coordination.
350,000 ppm	Unconsciousness after 5 minutes of exposure.

Effects on Short-Term Inhalation: Animals have shown tolerance to 10% Acetylene. In studies with dogs, cats, and rabbits, Acetylene acts as an anesthetic at 20% exposure. Recovery occurs if the oxygen level is maintained. In an oxygen-deficient environment, death may occur after 5-10 minutes. Rodents exposed to 25, 50, and 80 percent Acetylene in oxygen for 1-2 hours daily (93 hours total exposure), evidenced no weight change or cellular damage. Mixtures of 80% Acetylene/20% oxygen caused a rise in blood pressure in an exposed cat.

SUSPECTED CANCER AGENT: Acetylene is not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA, and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Acetylene is not irritating; however, contact with the acetone component of Acetylene can be slightly irritating to contaminated skin or eyes.

SENSITIZATION TO THE PRODUCT: Acetylene is not known to cause sensitization in humans.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects Acetylene on the human reproductive system.

Mutagenicity: No mutagenicity effects have been described for Acetylene.

Embryotoxicity: No embryotoxic effects have been described for Acetylene.

Teratogenicity: No teratogenicity effects have been described for Acetylene.

Reproductive Toxicity: No reproductive toxicity effects have been described for Acetylene.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions may be aggravated by overexposure to the components of Acetylene.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for this gas.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen, if necessary. Treat symptoms and eliminate exposure.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: This gas will be dissipated rapidly in well-ventilated areas. The following environmental data are available for this gas.

ACETYLENE: Water Solubility = 100 vol./100 vol. at 18 EC. Acetylene is not expected to be harmful to aquatic life. Only moderately toxic to fish. Volatility and low solubility suggest it would be rare for water to become critically polluted from accidental releases. Acetylene is biodegraded through various plant and bacterial systems by inactivating atmospheric acetylene through their nitrogen-fixing mechanisms.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on animals would be related to oxygen deficient environments and the anesthetic properties of Acetylene at high concentrations of exposure. The following data are available for effects on plant-life:

Sweet pea: declination in seedling: 250 ppm, 3 days
Tomato: Epinasty in petiole: 50 ppm, 2 days.

EFFECT OF CHEMICAL ON AQUATIC LIFE: The following aquatic toxicity data are available for Acetylene.

LC50 (river trout): 33 hours, 200 mg/L

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Do not dispose of locally.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

<u>PROPER SHIPPING NAME</u> :	Acetylene, dissolved
<u>HAZARD CLASS NUMBER and DESCRIPTION</u> :	2.1 (Flammable Gas)
<u>UN IDENTIFICATION NUMBER</u> :	UN 1001
<u>PACKING GROUP</u> :	Not Applicable
<u>DOT LABEL(S) REQUIRED</u> :	Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 116

MARINE POLLUTANT: Acetylene is not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Acetylene is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

CANADIAN DSL/NDL INVENTORY STATUS: Acetylene is on the DSL Inventory.

U.S. TSCA INVENTORY STATUS: Acetylene is on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Acetylene is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 lb. Depending on specific operations involving the use of Acetylene, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Under this regulation Acetylene is not listed in Appendix A, however, any process that involves a flammable gas on-site, in one location, in quantities of 10,000 lb (4,553 kg) or greater is covered under this regulation unless it is used as a fuel.

15. REGULATORY INFORMATION (Continued)

U.S. STATE REGULATORY INFORMATION: Acetylene is covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: Acetylene.

California - Permissible Exposure Limits for Chemical Contaminants: Acetylene.

Florida - Substance List: Acetylene.

Illinois - Toxic Substance List: Acetylene.

Kansas - Section 302/313 List: No.

Massachusetts - Substance List: Acetylene.

Michigan - Critical Materials Register: No.

Minnesota - List of Hazardous Substances: Acetylene.

Missouri - Employer Information/Toxic Substance List: Acetylene.

New Jersey - Right to Know Hazardous Substance List: Acetylene.

North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.

Pennsylvania - Hazardous Substance List: Acetylene.

Rhode Island - Hazardous Substance List: Acetylene.

Texas - Hazardous Substance List: No.

West Virginia - Hazardous Substance List: No.

Wisconsin - Toxic and Hazardous Substances: No.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Acetylene is not on the California Proposition 65 lists.

LABELING:

DANGER:

FLAMMABLE GAS UNDER PRESSURE.
CAN FORM EXPLOSIVE MIXTURES WITH AIR.
FUSIBLE PLUGS ON TOP, BOTTOM, OR VALVE MELT AT 208 °F (98-104 °C).
DO NOT DISCHARGE AT PRESSURES ABOVE 15 PSIG (103 kPa)

ODOR:

Garlic-like.

Keep away from heat, flames, and sparks.
Store and use with adequate ventilation.
Use equipment rated for cylinder pressure.
Close valve after each use and when empty.
Use in accordance with the Material Safety Data Sheet.

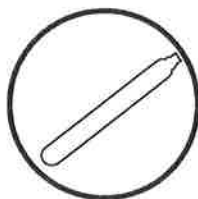
NOTE:

Cylinder contains acetone solvent, which may cause irritation.
DO NOT REMOVE THIS PRODUCT LABEL

CANADIAN WHMIS SYMBOLS:

Class A: Compressed Gases

Class B1: Flammable Gas



16. OTHER INFORMATION

PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.
9163 Chesapeake Drive, San Diego, CA 92123-1002
619/565-0302

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Western International Gas, Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Western International Gas, Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:

ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (**TWA**), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (**C**). Skin absorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration.

PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.

IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

The DFG - MAK is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called Recommended Exposure Levels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

HAZARD RATINGS:

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]). Reactivity Hazard: **0** (normally stable); **1** (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).

NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD₅₀** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC₅₀** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDL_o**, the lowest dose to cause a symptom and **TCL_o** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological information: EC is the effect concentration in water.

REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations.

PRODUCT NAME: NITROGEN**1. Product and Company Identification**

BOC Gases,
Division of,
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (908) 464-8100**TELEPHONE NUMBER: (905) 501-1700****24-HOUR EMERGENCY TELEPHONE NUMBER:****24-HOUR EMERGENCY TELEPHONE NUMBER:****CHEMTREC (800) 424-9300****(905) 501-0802****EMERGENCY RESPONSE PLAN NO: 2-0101****PRODUCT NAME: NITROGEN****CHEMICAL NAME: Nitrogen****COMMON NAMES/SYNONYMS: Nitrogen, compressed; Nitrogen gas****TDG (Canada) CLASSIFICATION: 2.2****WHMIS CLASSIFICATION: A****PREPARED BY: Loss Control (908)464-8100/(905)501-1700****PREPARATION DATE: 6/1/95****REVIEW DATES: 06/18/04****2. Composition, Information on Ingredients****EXPOSURE LIMITS¹:**

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Nitrogen FORMULA: N ₂ CAS: 7727-37-9 RTECS #: QW9700000	99.995 to 99.999	None Established	Simple Asphyxiant	Not Available

¹ Refer to individual state or provincial regulations, as applicable, for limits which may be more stringent than those listed here.² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)³ As stated in the ACGIH 2004 Threshold Limit Values for Chemical Substances and Physical Agents.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

3. Hazards Identification**EMERGENCY OVERVIEW**

Odorless, colorless, nonflammable gas. Simple Asphyxiant - This product does not contain oxygen and may cause asphyxia if released in a confined area. Maintain oxygen levels above 19.5%.

Contents under pressure. Use and store below 125 °F.

PRODUCT NAME: NITROGEN

ROUTE OF ENTRY:

Skin Contact No	Skin Absorption No	Eye Contact No	Inhalation Yes	Ingestion No
--------------------	-----------------------	-------------------	-------------------	-----------------

HEALTH EFFECTS:

Exposure Limits No	Irritant No	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen No
Synergistic Effects None reported		

Carcinogenicity: -- NTP: No IARC: No OSHA: No

EYE EFFECTS: Contact with rapidly expanding gas near the point of release may cause frostbite.

SKIN EFFECTS: Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.

INGESTION EFFECTS: No adverse effects anticipated.

INHALATION EFFECTS: Product is a simple asphyxiant. Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma, and death.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: Not toxic to fish and wildlife.

4. First Aid Measures

EYES: None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

SKIN: None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.

INGESTION: Ingestion is unlikely as product as a gas at room temperature.

INHALATION: PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, and if breathing has stopped, administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

5. Fire Fighting Measures

Conditions of Flammability: Nonflammable		
Flash point: None	Method: Not Applicable	Autoignition Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS:
Nonflammable. Cylinder may vent rapidly or rupture violently from pressure when involved in a fire situation.

EXTINGUISHING MEDIA:
None required. Use as appropriate for surrounding materials.

FIRE FIGHTING INSTRUCTIONS: Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. Continue to cool fire-exposed containers until well after flames are extinguished.

6. Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment (See Section 8). Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. Ventilate enclosed areas. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Electrical classification: Non-hazardous.

This gas mixture is noncorrosive and may be used with all common structural materials.

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve protection outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Protect cylinders from physical damage. Do not insert any object (i.e.: screwdriver) into valve cap openings as this can damage the valve causing leakage.

Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

For additional recommendations, consult Compressed Gas Association Pamphlets P-1, G-10.1, P-8.1, P-8.2, P-9, P-16, P-18, and Safety Bulletin SB-2.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

ENGINEERING CONTROLS:

Use local exhaust in combination with general ventilation as necessary to prevent accumulation of high concentrations and maintain air oxygen level at or above 19.5%.

EYE/FACE PROTECTION:

Safety goggles or glasses.

SKIN PROTECTION:

Protective gloves appropriate for the job.

RESPIRATORY PROTECTION:

For emergency release use a positive pressure NIOSH approved air-supplying respirator systems (SCBA or airline/escape bottle) using at a minimum Grade D air.

OTHER/GENERAL PROTECTION:

Safety shoes, emergency eyewash station

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Not Available	
Vapor density (Air = 1)	: 0.97	
Evaporation point	: Not Available	
Boiling point	: -320.4	°F
	: -195.8	°C
Freezing point	: -345.9	°F
	: -209.9	°C
pH	: Not Applicable	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: Very slightly soluble	
Odor threshold	: Not Applicable	
Odor and appearance	: Colorless, odorless gas	

10. Stability and Reactivity

STABILITY:

Stable.

INCOMPATIBLE MATERIALS/CONDITIONS:

None.

HAZARDOUS DECOMPOSITION PRODUCTS:

None.

HAZARDOUS POLYMERIZATION:

Does not occur.

PRODUCT NAME: NITROGEN

11. Toxicological Information

SKIN AND EYE: Not expected to cause irritation.

INHALATION: Product is a simple asphyxiant. Maintain atmospheric oxygen at or above 19.5%.

OTHER: Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

12. Ecological Information

Product does not contain Class I or Class II ozone depleting substances. Not toxic. Will not bioconcentrate.

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Nitrogen, compressed	Nitrogen, compressed
HAZARD CLASS:	2.2	2.2
IDENTIFICATION NUMBER:	UN 1066	UN 1066
SHIPPING LABEL:	NONFLAMMABLE GAS	NONFLAMMABLE GAS

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III - HAZARD CLASSES:

Sudden Release of Pressure Hazard

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product does not contain toxic chemicals subject to reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

U.S. TSCA/Canadian DSL: All ingredients are listed on the U.S. Toxic Substances Control Act (TSCA) inventory or exempt from listing and on the Canadian Domestic Substance List (DSL).

California Proposition 65: This product does not contain ingredient(s) known to the State of California to cause cancer or reproductive toxicity.

Canadian Controlled Products Regulations: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

16. Other Information

NFPA HAZARD CODES

Health: 0
 Flammability: 0
 Instability: 0

HMIS HAZARD CODES

Health: 0
 Flammability: 0
 Physical Hazard: 3

RATINGS SYSTEM

0 = No Hazard
 1 = Slight Hazard
 2 = Moderate Hazard
 3 = Serious Hazard
 4 = Severe Hazard

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2004, *CGA Recommended Hazard Ratings for Compressed Gases, 2nd Edition*.

ACGIH	American Conference of Governmental Industrial Hygienists
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
WHMIS	Workplace Hazardous Materials Information System

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

PRODUCT NAME: OXYGEN**1. Product and Company Identification**

BOC Gases,
Division of,
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (908) 464-8100
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

TELEPHONE NUMBER: (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802
EMERGENCY RESPONSE PLAN NO: 2-0101

PRODUCT NAME: OXYGEN
CHEMICAL NAME: Oxygen
COMMON NAMES/SYNONYMS: None
TDG (Canada) CLASSIFICATION: 2.2 (5.1)
WHMIS CLASSIFICATION: A, C

PREPARED BY: Loss Control (908)464-8100/(905)501-1700
PREPARATION DATE: 6/1/95
REVIEW DATES: 06/18/04

2. Composition, Information on Ingredients**EXPOSURE LIMITS¹:**

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	*LD ₅₀ or LC ₅₀ Route/Species
Oxygen FORMULA: O ₂ CAS: 7782-44-7 RTECS #: RS2060000	99.6 to 100.0	Not Applicable	Not Applicable	Not Available

¹ Refer to individual state or provincial regulations, as applicable, for limits which may be more stringent than those listed here.

² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

³ As stated in the ACGIH 2004 Threshold Limit Values for Chemical Substances and Physical Agents.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

3. Hazards Identification**EMERGENCY OVERVIEW**

Odorless, colorless, non-flammable gas. Oxidizer. Will accelerate combustion and increase the risk of fire and explosion in combustible or flammable materials. Non-toxic. Prolonged inhalation of high concentrations may cause coughing and lung effects. Contents under pressure. Use and store below 125 °F.

PRODUCT NAME: OXYGEN

ROUTE OF ENTRY:

Skin Contact No	Skin Absorption No	Eye Contact No	Inhalation Yes	Ingestion No
--------------------	-----------------------	-------------------	-------------------	-----------------

HEALTH EFFECTS:

Exposure Limits No	Irritant No	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen No
Synergistic Effects None known		

Carcinogenicity: – NTP: No IARC: No OSHA: No

EYE EFFECTS: Contact with rapidly expanding gas near the point of release may cause frostbite.

SKIN EFFECTS: Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.

INGESTION EFFECTS: Not applicable. Product is a gas.

INHALATION EFFECTS: Oxygen is not acutely toxic under normal pressure. Prolonged inhalation of high oxygen concentrations (> 75%) may affect coordination, attention, and cause tiredness or respiratory irritation. Inhalation for several hours may cause cough, sore throat, chest pain and difficulty breathing.

Oxygen is more toxic when inhaled at elevated pressures. Depending upon pressure and duration of exposure, pure oxygen at elevated pressures (i.e.: divers) may cause cramps, dizziness, difficulty breathing, convulsions, edema, and death.

Elevated oxygen concentrations in incubators has caused visual impairment and blindness in premature infants. High oxygen concentrations primarily affect eyes which are not fully developed (see Section 11).

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: May aggravate chronic obstructive pulmonary (lung) disease.

POTENTIAL ENVIRONMENTAL EFFECTS: Not expected to be toxic to fish and wildlife.

4. First Aid Measures

EYES: None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

SKIN: None required for gas. For frostbite, immerse skin in lukewarm water. **DO NOT USE HOT WATER.** Obtain medical attention.

INGESTION: None required.

PRODUCT NAME: OXYGEN

INHALATION: Overexposure to oxygen is not anticipated under normal working conditions. High oxygen concentrations in the air may present a fire and explosion hazard. **PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES WHEN OXYGEN IS INHALED UNDER PRESSURE** (i.e.: as in scuba diving). Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Further treatment should be symptomatic and supportive. Inform the treating physician that the patient could be experiencing hyperoxia.

5. Fire Fighting Measures

Conditions of Flammability: Not flammable, Oxidizer		
Flash point: None	Method: Not Applicable	Autoignition Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS: High oxygen concentrations vigorously accelerate combustion. Will support or initiate combustion/ explosion of organic matter and other oxidizable material. Cylinder may vent rapidly or rupture violently from pressure when involved in a fire situation.

EXTINGUISHING MEDIA: Water spray to keep cylinders cool. Extinguishing agent appropriate for the combustible material.

FIRE FIGHTING INSTRUCTIONS: If possible, stop the flow of oxygen which is supporting the fire. Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. Continue to cool fire-exposed containers until well after flames are extinguished.

6. Accidental Release Measures

Evacuate all personnel from affected area. A leak near combustible or flammable materials may represent a severe fire or explosion hazard. Eliminate all ignition sources. Ventilate enclosed areas. If it can be done without risk, stop the flow of gas or remove cylinder to outside. Use appropriate protective equipment (See Section 8). If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Electrical classification: Nonhazardous

Dry product is noncorrosive and may be used with all materials of construction. Moisture causes metal oxides which are formed with air to be hydrated so that they include volume and lose their protective role (rust formation). Concentrations of SO₂, Cl₂, salt, etc. in the moisture enhances the rusting of metals in air. Carbon steels and low alloy steels are acceptable for use at lower pressures.

For high pressure applications stainless steels are acceptable as are copper and its alloys, nickel and its alloys, brass bronze, silicon alloys, Monel®, Inconel® and beryllium. Lead and silver or lead tin alloys are good gasket materials. Teflon®, Teflon® composites, or Kel-F® are preferred non-metallic gasket materials.

Oxygen should not be used as a substitute for compressed air in pneumatic equipment since this type generally contains flammable lubricants. Equipment to contain oxygen must be "cleaned for oxygen service". Check with the supplier to verify oxygen compatibility for the service conditions.

Stationary customer site vessels should operate in accordance with the manufacturer's and BOC's instruction. Do not attempt to repair, adjust or in any other way modify the operation of these vessels. If there is a malfunction or other type of operations problem with the vessel, contact the closest BOC location immediately. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the system. Do not insert any object (i.e.: screwdriver) into valve cap openings as this can damage the valve causing leakage.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas, emergency exits, flammables and combustibles. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time. Post "NO SMOKING OR OPEN FLAMES" signs in the storage area or use area. There should be no sources of ignition in the storage or use area.

For additional storage recommendations, consult Compressed Gas Association's Pamphlets SB-7, G 4.3, G4.1, G-4.4, P-2.5, P-2.6, G-4.9, P-14, P-1, SB-2.

Do not release in a confined area. Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, or a toxic exposure.

8. Exposure Controls, Personal Protection

ENGINEERING CONTROLS:

Use general ventilation and/or local exhaust as necessary to keep oxygen concentrations below 23.5%.

EYE/FACE PROTECTION:

Safety goggles or glasses.

SKIN PROTECTION:

Protective gloves appropriate for the job. Gloves must be clean and free from oil and grease.

OTHER/GENERAL PROTECTION:

Safety shoes, eyewash station.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Above critical temp.	
Vapor density (Air = 1)	: 1.11	
Evaporation point	: Not Available	
Boiling point	: -297.3	°F
	: -182.9	°C
Freezing point	: -361.8	°F
	: -218.8	°C
pH	: Not Applicable	
Specific gravity at STP	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: Slight 0.0491	v/v @ 32 °F; 0 °C
Odor threshold	: Not Applicable	
Odor and appearance	: Colorless, odorless gas	

10. Stability and Reactivity

STABILITY: Stable.

INCOMPATIBLE MATERIALS/CONDITIONS: All flammable, organic, and combustible materials. Avoid heat, sparks, flames, and other ignition sources.

HAZARDOUS DECOMPOSITION PRODUCTS: None.

HAZARDOUS POLYMERIZATION: Will not occur.

11. Toxicological Information

SKIN AND EYE: The incompletely developed retinal circulation is more susceptible to toxic levels of oxygen. In premature infants, arterial oxygen tension above 150 mm Hg may cause retrolental fibroplasia. Permanent blindness may occur several months later. One case of severe retinal damage in an adult was reported. An individual suffering from myasthenia gravis developed irreversible retinal atrophy after breathing 80% oxygen for 150 days.

INHALATION: Human volunteers which inhaled 90-95% oxygen through a face mask for 6 hours showed signs of tracheal irritation and fatigue. Other symptoms (which might have been caused by placing a tube into the trachea during the experiment) included: sinusitis, conjunctivitis, fever, and symptoms of acute bronchitis.

Poisoning began in dogs 36 hours after inhalation of pure oxygen at atmospheric pressure. Distress was seen within 48 hours and death within 60 hours.

12. Ecological Information

Product does not contain Class I or Class II ozone depleting substances. Not toxic. Will not bioconcentrate.

PRODUCT NAME: OXYGEN

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Oxygen, compressed	Oxygen, compressed
HAZARD CLASS:	2.2 (5.1)	2.2 (5.1)
IDENTIFICATION NUMBER:	UN 1072	UN 1072
SHIPPING LABEL:	NONFLAMMABLE GAS, OXIDIZER	NONFLAMMABLE GAS, OXIDIZER

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA 313: This product does not contain ingredients subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 49 CFR Part 372.

SARA TITLE III - HAZARD CLASSES:

Fire Hazard
Sudden Release of Pressure Hazard

U.S. TSCA/Canadian DSL: All ingredients are listed on the U.S. Toxic Substances Control Act (TSCA) inventory or exempt from listing and on the Canadian Domestic Substance List (DSL):

California Proposition 65: This product does not contain ingredient(s) known to the State of California to cause cancer or reproductive toxicity.

Canadian Controlled Products Regulations (CPR): This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

16. Other Information

NFPA HAZARD CODES

Health: 0
Flammability: 0
Instability: 0

HMIS HAZARD CODES

Health: 0
Flammability: 0
Physical Hazard: 3

RATINGS SYSTEM

0 = No Hazard
1 = Slight Hazard
2 = Moderate Hazard
3 = Serious Hazard
4 = Severe Hazard

OXIDIZER

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2004, *CGA Recommended Hazard Ratings for Compressed Gases, 2nd Edition*.

PRODUCT NAME: OXYGEN

ACGIH	American Conference of Governmental Industrial Hygienists
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
WHMIS	Workplace Hazardous Materials Information System

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

MATERIAL SAFETY DATA SHEET
EQUILON MSDS: 00659ET 02/24/99

CANOPUS 68

TELEPHONE NUMBER:

24 HOUR EMERGENCY ASSISTANCE

EQUIVA SERVICES: 877-276-7283

CHEMTREC: 800-424-9300

GENERAL MSDS ASSISTANCE

877-276-7285

NAME AND ADDRESS:

EQUILON ENTERPRISES LLC

PRODUCT STEWARDSHIP

P.O. BOX 674414

HOUSTON, TX 77267-4414

LEGEND:

N.D. - NOT DETERMINED

N.A. - NOT APPLICABLE

N.T- NOT TESTED

< - LESS THAN

> - GREATER THAN

1. NAME

MATERIAL IDENTITY

Product Code and Name:

00659 CANOPUS 68

Chemical Name and/or Family or Description:

Paraffin Pale Oils

2. COMPOSITION/INFORMATION ON INGREDIENTS

THE CRITERIA FOR LISTING COMPONENTS IN THE COMPOSITION SECTION IS AS FOLLOWS: CARCINOGENS ARE LISTED WHEN PRESENT AT 0.1 % OR GREATER; COMPONENTS WHICH ARE OTHERWISE HAZARDOUS ACCORDING TO OSHA ARE LISTED WHEN PRESENT AT 1.0 % OR GREATER; NON-HAZARDOUS COMPONENTS ARE LISTED AT 3.0 % OR GREATER. THIS IS NOT INTENDED TO BE A COMPLETE COMPOSITIONAL DISCLOSURE. REFER TO SECTION 14 FOR APPLICABLE STATES' RIGHT TO KNOW AND OTHER REGULATORY INFORMATION.

Product and/or Component(s) Carcinogenic According to:

OSHA	IARC	NTP	OTHER	NONE
				X

Composition: (Sequence Number and Chemical Name)

Seq. Chemical Name	CAS Number	Range in %
01 # Hydrotreated heavy paraffinic petroleum distillates	64742-54-7	100.00

MINERAL OIL MIST HAS A PERMISSIBLE EXPOSURE LIMIT (PEL); THEREFORE, THIS PRODUCT, BY DEFINITION, IS CONSIDERED HAZARDOUS BY OSHA (1910.1200).

COMPONENT, BY DEFINITION, IS CONSIDERED HAZARDOUS ACCORDING TO OSHA BECAUSE IT CARRIES THE PERMISSIBLE EXPOSURE LIMIT (PEL) FOR MINERAL OIL MIST.

Exposure Limits referenced by Sequence Number in the Composition Section
Seq. Limit

01	5	mg/m3 TWA-OSHA (MINERAL OIL MIST)
01	5	mg/m3 TWA-ACGIH (MINERAL OIL MIST)
01	10	mg/m3 STEL ACGIH (MINERAL OIL MIST)

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Appearance:

Bright and clear liquid

Odor:

Petroleum oil odor

WARNING STATEMENT

CAUTION ! OIL MIST MAY CAUSE RESPIRATORY IRRITATION

HMIS		NFPA	
Health: 1	Reactivity: 0	Health: 1	Reactivity: 0
Flammability: 1	Special : -	Flammability: 1	Special : -

POTENTIAL HEALTH EFFECTS

	EYE	SKIN	INHALATION	INGESTION
Primary Route of Exposure:	X	X	X	

EFFECTS OF OVEREXPOSURE

Acute:

Eyes:

May cause minimal irritation, experienced as temporary discomfort.

Skin:

Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort, seen as local redness and swelling.

Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact; see other effects, below, and Section 11 for information regarding potential long term effects.

Inhalation:

Vapors or mist, in excess of permissible concentrations, or in unusually high concentrations generated from spraying, heating the material or as from exposure in poorly ventilated areas or confined spaces, may cause irritation of the nose and throat, headache, nausea, and drowsiness.

Ingestion:

If more than several mouthfuls are swallowed, abdominal discomfort, nausea, and diarrhea may occur.

Sensitization Properties:

Unknown.

Chronic:

No adverse effects have been documented in humans as a result of chronic exposure. Section 11 may contain applicable animal data.

Medical Conditions Aggravated by Exposure:

Because of its irritating properties, repeated skin contact may aggravate an existing dermatitis (skin condition).

Other Remarks:

None

4. FIRST AID MEASURES

Eyes:

Flush eyes with plenty of water for several minutes. Get medical attention if eye irritation persists.

Skin:

Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Ingestion:

If more than several mouthfuls of this material are swallowed, give two glasses of water (16 oz.). Get medical attention.

Inhalation:

If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medical attention if breathing becomes difficult or respiratory irritation persists.

Other Instructions:

Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.

5. FIRE-FIGHTING MEASURES

Ignition Temperature - AIT (degrees F):

Not determined.

Flash Point (degrees F):

425 (COC)

Flammable Limits (%):

Lower: Not determined.

Upper: Not determined.

Recommended Fire Extinguishing Agents And Special Procedures:

Use water spray, dry chemical, foam, or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers. Water or foam may cause frothing.

Unusual or Explosive Hazards:

None

Special Protective Equipment for Firefighters:

Wear full protective clothing and positive pressure breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES (Transportation Spills: CHEMTREC (800)424-9300)

Procedures in Case of Accidental Release, Breakage or Leakage:

Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

7. HANDLING AND STORAGE

Precautions to be Taken in

Handling:

Minimum feasible handling temperatures should be maintained.

Storage:

Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment (Type)

Eye/Face Protection:

Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.

Skin Protection:

Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.

Respiratory Protection:

Airborne concentrations should be kept to lowest levels possible. If

vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.

Ventilation:

Adequate to meet occupational exposure limits (see below).

Exposure Limit for Total Product:

Mineral oil mist: OSHA PEL-TWA 5 mg/m³; ACGIH TLV-TWA 5 mg/m³.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Bright and clear liquid

Odor:

Petroleum oil odor

Boiling Point (degrees F):

Not determined.

Melting/Freezing point (degrees F):

Not applicable.

Specific Gravity (water=1):

.8816

pH of undiluted product:

Not applicable.

Vapor Pressure:

Not determined.

Viscosity:

64 cSt at 40.0 C

VOC Content:

Not determined.

Vapor Density (air=1):

Not determined.

Solubility in Water (%):

Not determined.

Other: None

10. STABILITY AND REACTIVITY

This Material Reacts Violently With:

(If Others is checked below, see comments for details)

Air Water Heat Strong Oxidizers Others None of These

X

Comments:

None

Products Evolved When Subjected to Heat or Combustion:

Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones, and combustion products or compounds of nitrogen, sulfur.

Hazardous Polymerizations: DO NOT OCCUR

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION (ANIMAL TOXICITY DATA)

Median Lethal Dose

Oral:

LD50 Similar product > 5.00 g/kg (rat) practically non-toxic

Inhalation:

4 hr. LC50 Similar product > 2.08 mg/liter (dust, mist, fume) (rat)
practically non-toxic

Dermal:

LD50 Similar product > 2.00 g/kg (rabbit) practically non-toxic

Irritation Index, Estimation of Irritation (Species)

Skin:

(Draize) Similar product .79 /8.0 (rabbit) slightly irritating

Eyes:

(Draize) Similar product 5.70 /110 (rabbit) no appreciable effect

Sensitization:

(Buehler) Similar product Negative - skin (guinea pig)

Other:

None

12. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form.

Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

Remarks

None

13. TRANSPORT INFORMATION

Transportation

DOT:

Proper Shipping Name:
Not regulated

IMDG:

Proper Shipping Name:
Not regulated

ICAO:

Proper Shipping Name:
Not regulated

TDG:

Proper Shipping Name:
Not regulated

14. REGULATORY INFORMATION

Federal Regulations:

SARA Title III:

Section 302/304 Extremely Hazardous Substances

Seq. Chemical Name	CAS Number	Range in %
None		

None

Section 302/304 Extremely Hazardous Substances (CONT)

Seq. TPQ	RQ
None	

None

Section 311 Hazardous Categorization:

Acute Chronic Fire Pressure Reactive N/A
X

Section 313 Toxic Chemical

Chemical Name	CAS Number	Concentration
None		

None

CERCLA 102(a)/DOT Hazardous Substances: (+ indicates DOT Hazardous Substance)

Seq. Chemical Name	CAS Number	Range in %
None		

None

CERCLA/DOT Hazardous Substances (Sequence Numbers and RQ's):

Seq. RQ

None

TSCA Inventory Status:

This product, or its components, are listed on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Other:

None.

State Regulations:

California Proposition 65:

The following detectable components of this product are substances, or belong to classes of substances, known to the State of California to cause cancer and/or reproductive toxicity.

Chemical Name	CAS Number
None	

None

International Regulations:

WHMIS Classification:

Not controlled

Canada Inventory Status:

This product, or its components, are listed on or are exempt from the Canadian Domestic Substance List (DSL).

EINECS Inventory Status:

This product, or its components, are listed on or are exempt from the European Inventory of Existing Chemical Substances (EINECS) or the European List of Notified Chemical Substances (ELINCS).

Australia Inventory Status:

This product, or its components, are listed on or are exempt from the Australian Inventory of Chemical Substances (AICS).

Japan Inventory Status:

This product, or its components, are listed on or are exempt from the Japanese Ministry of International Trade and Industry (MITI) inventory.

15. ENVIRONMENTAL INFORMATION

Aquatic Toxicity:

Not determined.

Mobility:

Not determined.

Persistence and Biodegradability:

This product is reported to have a moderate ($\geq 30\%$) rate of biodegradation in a test for ready biodegradation.

Potential to Bioaccumulate:

This product is estimated to have a high potential to bioconcentrate.

Remarks:

None

16. OTHER INFORMATION

None

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO US AT THIS TIME, AND IS BELIEVED TO BE ACCURATE BASED UPON THAT DATA. IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT, FOR PURPOSE OF HAZARD COMMUNICATION. IT IS NOT INTENDED TO CONSTITUTE PRODUCT PERFORMANCE INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, UNDERLYING DATA OR THE INFORMATION CONTAINED HEREIN. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE, AND ARE ENCOURAGED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN.

TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN. THE UNDERLYING DATA, AND THE INFORMATION PROVIDED HEREIN AS A RESULT OF THAT DATA, IS THE PROPERTY OF EQUIVA SERVICES, LLC AND IS NOT TO BE THE SUBJECT OF SALE OR EXCHANGE WITHOUT THE EXPRESS WRITTEN CONSENT OF EQUIVA SERVICES, LLC.

Date: 1999-02-24 New X Revised, Supersedes: 1999-01-26

Inquiries regarding MSDS should be directed to:

Equiva Services LLC
Manager Product Stewardship
P.O. Box 674414
Houston, TX 77267-4414

17. PRODUCT LABEL

Label Date: 1999-02-24

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

00659 CANOPUS 68

WARNING STATEMENT

CAUTION ! OIL MIST MAY CAUSE RESPIRATORY IRRITATION
PRECAUTIONARY MEASURES

- Avoid prolonged breathing of vapor, mist, or gas.
- Workers should wash exposed skin several times daily with soap and water.

FIRST AID

Eye Contact:

Flush eyes with plenty of water for several minutes. Get medical attention if eye irritation persists.

Skin Contact:

Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Ingestion:

If more than several mouthfuls of this material are swallowed, give two glasses of water (16 oz.). Get medical attention.

Inhalation:

If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medical attention if breathing becomes difficult or respiratory irritation persists.

Note to Physician:

None

FIRE

In case of fire, use water spray, dry chemical, foam or carbon dioxide. Water may cause frothing. Use water spray to cool fire-exposed containers.

Chemical Name	CAS Number	Range in %
# Hydrotreated heavy paraffinic petroleum distillates	64742-54-7	100.00

MINERAL OIL MIST HAS A PERMISSIBLE EXPOSURE LIMIT (PEL); THEREFORE, THIS PRODUCT, BY DEFINITION, IS CONSIDERED HAZARDOUS BY OSHA (1910.1200).

COMPONENT, BY DEFINITION, IS CONSIDERED HAZARDOUS ACCORDING TO OSHA BECAUSE IT CARRIES THE PERMISSIBLE EXPOSURE LIMIT (PEL) FOR MINERAL OIL MIST.

Pennsylvania Special Hazardous Substance(s)	CAS Number	Range in %
None		

HMIS		NFPA	
Health: 1	Reactivity: 0	Health: 1	Reactivity: 0
Flammability: 1	Special : -	Flammability: 1	Special : -

Transportation

DOT:

Proper Shipping Name:
Not regulated

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flame or heat. Keep container closed and drum bungs in place.

Name and Address:

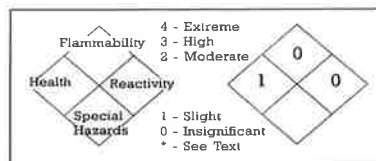
Equilon Enterprises LLC
P.O. Box 674414
Houston, TX 77267-4414

TRANSPORTATION EMERGENCY: (877)276-7283
CHEMTREC: (800)424-9300
HEALTH EMERGENCY: (877)276-7283

}

Product: Fleetweld 5P+

Date: 2/15/2014



SECTION IV - HEALTH HAZARD DATA

Threshold Limit Value: The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m³. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.

Effects of Overexposure: Electric arc welding may create one or more of the following health hazards:

Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.

Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function. Manganese overexposure can affect the central nervous system, resulting in impaired speech and movement. Bronchitis and some lung fibrosis have been reported. Titanium dioxide is listed on the IARC (International Agency for Research on Cancer) as a Group 2B carcinogen (possibly carcinogenic to humans based on animal studies). **WARNING:** This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

Arc Rays can injure eyes and burn skin. *Skin cancer has been reported.*

Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Emergency and First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

IF BREATHING IS DIFFICULT give oxygen. IF NOT BREATHING employ CPR (Cardiopulmonary Resuscitation) techniques.

IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician.

SECTION V - REACTIVITY DATA

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product would include: Primarily iron oxide; secondarily complex oxides of manganese, silicon, sodium and titanium.

Maximum fume exposure guideline for this product (based on manganese content) is 0.4 milligrams per cubic meter.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, 8669 Doral Blvd. Doral, FL 33166.

SECTION VI AND VII

CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instruction and the precautionary label on the product. Request Lincoln Safety Publication E205. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, 8669 Doral Blvd. Doral, FL 33166, FL, 33126 (both available for free download at <http://www.lincolnelectric.com/community/safety/>) and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Documents, 732 North Capitol Street, NW, Washington, DC 20401-0001 for more details on many of the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. *Keep exposure as low as possible.*

Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or ventilation does not keep exposure below TLV.

Eye Protection: Wear helmet or use face shield with filter lens shade number 12 or darker. Shield others by providing screens and flash goggles.

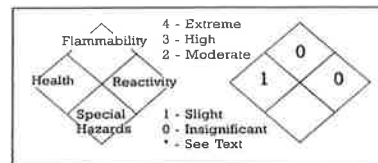
Protective Clothing: Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1.

At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin ... or clothing or gloves if they are wet. Insulate from work and ground.

Disposal Information: Discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal, State and Local Regulations unless otherwise noted. No applicable ecological information available.

Product: EasyArc 7018 MR

Date: 3/6/2014



SECTION IV - HEALTH HAZARD DATA

Threshold Limit Value: The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m³. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.

Effects of Overexposure: Electric arc welding may create one or more of the following health hazards:

Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.

Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function. Manganese overexposure can affect the central nervous system, resulting in impaired speech and movement. Bronchitis and some lung fibrosis have been reported. Repeated exposure to fluorides may cause excessive calcification of the bone and calcification of ligaments of the ribs, pelvis and spinal column. May cause skin rash. Titanium dioxide is listed on the IARC (International Agency for Research on Cancer) as a Group 2B carcinogen (possibly carcinogenic to humans based on animal studies). Respiratory exposure to the crystalline silica present in this welding electrode is not anticipated during normal use. Respiratory overexposure to airborne crystalline silica is known to cause silicosis, a form of disabling pulmonary fibrosis which can be progressive and may lead to death. Crystalline silica is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a cancer risk to humans. **WARNING:** This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.)

Arc Rays can injure eyes and burn skin. *Skin cancer has been reported.*

Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Emergency and First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

IF BREATHING IS DIFFICULT give oxygen. IF NOT BREATHING employ CPR (Cardiopulmonary Resuscitation) techniques.

IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician.

SECTION V - REACTIVITY DATA

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product would include: Primarily iron oxide and fluorides; secondarily complex oxides of manganese, potassium, silicon, and sodium.

Maximum fume exposure guideline for this product (based on manganese content) is 0.4 milligrams per cubic meter.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

SECTION VI AND VII

CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instruction and the precautionary label on the product. Request Lincoln Safety Publication E205. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL, 33126 (both available for free download at <http://www.lincolnelectric.com/community/safety/>) and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more details on many of the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. *Keep exposure as low as possible.*

Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or ventilation does not keep exposure below TLV.

Eye Protection: Wear helmet or use face shield with filter lens shade number 12 or darker. Shield others by providing screens and flash goggles.

Protective Clothing: Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1.

At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin . . . or clothing or gloves if they are wet. Insulate from work and ground.

Disposal Information: Discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal, State and Local Regulations unless otherwise noted. No applicable ecological information available.

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Eco-Duct Seal (Gray)
PRODUCT NUMBER: 44-52



MON-ECO INDUSTRIES, INCORPORATED

TRADE NAME: Eco-Duct Seal (Gray)
GENERAL USE: Adhesive Product
CHEMICAL FAMILY: Solvent Based Adhesive

PRODUCT DESCRIPTION:
 Soft Gray Paste with mild odor.

MANUFACTURER
Mon-Eco Industries, Inc.

EFFECTIVE DATE: 24 September 2010

TELEPHONE NUMBER (General Inquiries)
 732-257-7942

DATE OF EXPIRATION: 23 September 2013

SUPERSEDES DATE: 12 August 2010

ADDRESS (NUMBER, STREET, P.O. BOX)
 5 Joanna Ct

CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBERS

(CITY, STATE AND ZIP CODE)
 East Brunswick, NJ 08816

COUNTRY
 USA



1-800-255-3924
 North America
 (Toll Free)

813-248-0585
 International
 and Local Calls

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER! EXTREMELY FLAMMABLE!! Breathing vapors may cause drowsiness, dizziness and nausea; intentional misuse or abuse of product may be fatal. May cause respiratory tract, skin, and eye irritation. Harmful if aspirated. May cause liver, spleen and kidney damage. May cause central nervous system effects. Possible risks of irreversible effects from acute and chronic exposures. Target Organs: Liver, central nervous system, kidneys, bladder, reproductive system. **WARNING! This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.**

US / CANADA HAZARD SYMBOL(S)

EUROPEAN (GHS) HAZARD SYMBOLS



DANGER

HMIS HAZARD RATINGS

0 = INSIGNIFICANT, 1 = SLIGHT, 2 = MODERATE
3 = HIGH, 4 = EXTREME
 * - CHRONIC HEALTH HAZARD

HEALTH:	2
FLAMMABILITY:	4
PHYSICAL HAZARD:	1

REQUIRED PERSONAL PROTECTIVE EQUIPMENT:

HMIS PERSONAL PROTECTIVE EQUIPMENT LETTER:

H



Splash goggles, gloves, apron and a vapor respirator

RISK PHRASES

- R11 Highly flammable.**
- R38 Irritating to skin.**
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.**
- R62 Possible risk of impaired fertility.**
- R63 Possible risk of harm to the unborn child.**
- R65 Harmful: may cause lung damage if swallowed.**
- R67 Vapours may cause drowsiness and dizziness.**

SAFETY PHRASES

- S2 Keep out of the reach of children.**
- S9 Keep container in a well-ventilated place.**
- S16 Keep away from sources of ignition — No smoking.**
- S36/37 Wear suitable protective clothing and gloves.**
- S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.**
- S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.**

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Eco-Duct Seal (Gray)
PRODUCT NUMBER: 44-52

SECTION 2 - HAZARDS IDENTIFICATION (Continued)

POTENTIAL HEALTH EFFECTS

ACUTE EXPOSURE EFFECTS

INHALATION:

Respiratory tract irritation may occur from vapors. May cause liver, kidney, and bladder damage. Harmful if inhaled. May cause central nervous system effects. Symptoms of exposure include fatigue, irritability, headache, dizziness and/or drowsiness, gastric disturbances, and intolerance to alcohol. Aspiration of product or vomitus from ingestion and subsequent regurgitation may result in pulmonary edema and/or aspirant pneumonia

SKIN:

May cause moderate skin irritation. Causes redness and pain. May be harmful if absorbed through the skin.

EYES:

May cause moderate to severe mechanical and chemical irritation to eyes with redness and pain; chemical conjunctivitis may occur.

INGESTION:

Causes gastrointestinal distress if ingested. May cause liver, bladder and kidney damage; nervous system effects may be seen. Aspiration of vomitus from ingestion and subsequent regurgitation may result in pulmonary edema and/or aspirant pneumonia. Other symptoms are similar to inhalation exposures; see Section 2: Inhalation Exposure.

CHRONIC EXPOSURE EFFECTS

Prolonged or repeated skin contact may result in defatting of skin, and dermatitis. Multiple or prolonged exposures may cause liver, kidney, and bladder damage. Nervous system effects including peripheral neuropathy may be seen with multiple/prolonged exposures. Adverse reproductive effects have been reported in animals for components of this product; these adverse effects include possible damage to the fetus and to the reproductive system. A possible risk of irreversible effects exists for this product; this risk is greatly increase with prolonged and/or multiple exposures or with intentional misuse/abuse of product. Proper utilization of Personal Protective Equipment (see above and Section 8) is essential to mitigate risks associated with product.

CARCINOGENICITY:

Toluene and hexane are not listed as carcinogenic by the IARC (as Groups 1, 2A, or 2B), the NTP, ESIS, OSHA, or the state of California. Titanium Dioxide and Carbon Black are listed as IARC Class 2B. Carbon Black is listed under California Proposition 65.

SECTION 3 - HAZARDOUS INGREDIENTS

Hazardous Components	% (by Weight)	CAS #	EINECS #	Hazard Symbol	RISK PHRASES (Full Text Section 2)
Hexane	20-30	110-54-3	203-777-6	F	R11, 38, 48/20, 62, 65, 67
Toluene(a)	10-20	108-88-3	203-625-9	F, Xn	R11, 38, 48/20, 63, 65, 67
Titanium Dioxide	<1.0	13463-67-7	236-675-5	None	None
Carbon Black(a)	<1.0	1333-86-4	215-609-9	None	None

NOTES: This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS), and European Union Directive 1997/2006/EC (REACH). Hazard symbols and risk phrases are based on maximum listed concentration of each hazardous ingredient. Unlisted ingredients are not "hazardous" per the OSHA Hazard Communication Standard (29 CFR 1910.1200), the Canadian Workplace Hazardous Materials Information System (WHMIS) or the European (GHS) directive 91/155/EEC and are considered trade secrets under US Federal Law (29CFR and 40CFR), Canadian Law (Health Canada Legislation), and European Union Directive 67/548/EEC. **(a) - WARNING! This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.**

SECTION 4 - FIRST AID MEASURES

INHALATION:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get emergency medical aid for cases of breathing difficulty or cessation, or where victim is not conscious and alert to surroundings. Do NOT use mouth-to-mouth resuscitation.

EYES:

Remove contact lenses if present. Immediately flush eyes with plenty of potable water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get prompt medical assistance.

SKIN:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse; severely contaminated clothing may need to be discarded.

INGESTION:

DO NOT INDUCE VOMITING!!! If victim is conscious and alert to surroundings, rinse mouth thoroughly and drink 1-2 glasses of water. Seek emergency medical attention immediately. If vomiting spontaneously occurs, place victims head below chest level to minimize aspiration risk.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Eco-Duct Seal (Gray)
PRODUCT NUMBER: 44-52

SECTION 5 - FIRE FIGHTING MEASURES

DATA RELATED TO FIRE:
FLASH POINT: <0°F / < -18°C TCC **AUTO-IGNITION TEMPERATURE:** 234°C / 453°F *
FLAMMABLE/EXPLOSIVE LIMITS: **LOWER:** 1.2% **UPPER:** 6.9%
SENSITIVITY TO MECHANICAL IMPACT/ STATIC DISCHARGE: NONE *-REFERENCES TOLUENE

GENERAL HAZARDS:
WARNING! EXTREMELY FLAMMABLE!! Product will readily burn under fire conditions with the emission of toxic and/or irritating gases and fumes. Solvent portion of product may float on water and remain ignited.

SUITABLE EXTINGUISHING MEDIA:
 Water fog, Foam, CO2, Dry Chemical - Water fog or spray may be used to cool fire-exposed containers.

UNSUITABLE EXTINGUISHING MEDIA:
 Water Stream - solvent portion of product may separate and float on top of water, remaining ignited and spreading fire.

FIRE FIGHTING PROCEDURES:
 Firefighters must wear a self contained breathing apparatus and full chemical firefighting gear when fighting fires involving this product. Water fog or spray may be used to cool off fire-exposed containers to prevent rupture - **DO NOT USE WATER STREAMS!**

UNUSUAL FIRE AND EXPLOSION HAZARDS:
 Irritating and toxic gases and/or fumes may be generated from heated and/or ignited product; wear full chemical firefighting gear.

HAZARDOUS COMBUSTION PRODUCTS:
 Carbon monoxide, carbon dioxide, small amounts of metal oxides, nitrogen oxides, and sulfur oxides.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
REMOVE ALL IGNITION SOURCES!!! Evacuate all non-essential personnel and cordon off affected area. Cleanup personnel should wear Personal Protective Equipment. Wipe or shovel up spill; place material in container designed for flammable waste. For large spills, contact authorities; water spray may be judiciously used to reduce ignition hazard. Dispose of used absorbent in a licensed and permitted facility, preferably by incineration with exhaust scrubbers being used. Avoid contamination of waterways, sewers etc with this product.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
 Handle product while wearing Personal Protective Equipment and provide adequate ventilation to avoid prolonged or repeated breathing of vapors. Avoid prolonged or repeated contact with skin. Avoid contact with eyes. Store only in original container. avoid ignition sources and excess temperatures. Store in a cool dark place with adequate ventilation; protect product from light. Avoid moisture buildup around containers. Keep out of reach of children. Store in a tightly closed container away from incompatible materials. Do Not Freeze!

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	CAS #	ACGIH Exposure Limits (mg/m ³ unless otherwise noted)	OSHA Exposure Limits (mg/m ³ unless otherwise noted)
Hexane	110-54-3	50 ppm 167 mg/m ³ TWA	500 ppm / 1800 mg/m ³ TWA 20 ppm / 72 mg/m ³ OEL (Europe)
Toluene	108-88-3	50 ppm TWA (skin)	200 ppm TWA, 300 ppm Ceiling, 500 ppm 10 min peak 50 ppm / 192 mg/m ³ OEL / 100 ppm / 384 mg/m ³ STEL (skin)(Europe)
Titanium Dioxide	13463-67-7	10	15
Carbon Black	1333-86-4	3.5 mg/m ³ TWA	3.5 mg/m ³ TWA

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Eco-Duct Seal (Gray)	
PRODUCT NUMBER: 44-52	
SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)	
PERSONAL PROTECTION	
RESPIRATORY PROTECTION: Use approved respirator (e.g. CEN, NIOSH/OSHA, AS) as required to prevent over exposure. Use an air-supplied respirator where high concentrations are expected, or an air-purifying respirator for organic vapors (with combined particulate filter if particulate matter is present). If ventilation is insufficient, supplied-air masks may be necessary.	
PROTECTIVE GLOVES: Wear gloves made of chemically resistant material. Viton or polyvinyl alcohol are suggested materials; DO NOT USE LATEX.	
EYE PROTECTION: Wear safety glasses with splash protective side shields or goggles.	
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Wear protective clothing such as apron to prevent skin contact. See Protective Gloves section for suggested materials	
ENGINEERING CONTROLS: Provide general ventilation sufficient to control airborne concentration below the TLV/TWA's listed. Forced-air ventilation such as fans may be required.	
WORK / HYGIENIC PRACTICES: Wash hands before eating, drinking, smoking and using the toilet. Launder contaminated clothing before re-use. Dispose of contaminated leather footwear. Treat unwashed contaminated clothing as flammable.	
SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE AND ODOR Soft Gray Paste with mild odor.	VAPOR PRESSURE 180 mm Hg
ODOR THRESHOLD Not Established	SPECIFIC GRAVITY (WATER = 1) 1.04
FREEZING / MELTING POINT Not Established	BOILING POINT 150°F / 65°C
SOLUBILITY IN WATER Not soluble	COEFFICIENT OF WATER / OIL DISTRIBUTION Favors Oil
pH Not Determined	SOLUBILITY IN ORGANIC SOLVENTS Variable Solubility dependent upon solvent
FLASH POINT < 0°F / < -18°C	VISCOSITY Not Determined
FLAMMABLE LIMITS LEL: 1.2% UEL: 6.9%	VAPOR DENSITY (AIR = 1) 3
AUTOIGNITION TEMPERATURE 234°C / 453°F (References Toluene)	EVAPORATION RATE 12
VOLATILE ORGANIC COMPOUND (VOC) INFORMATION 3.45 lbs/ gallon or 414 g / L (40% volatile by weight)	
NOTES: None	
SECTION 10 - STABILITY AND REACTIVITY	
STABILITY Stable under normal conditions	CONDITIONS TO AVOID: excess heat, ignition sources, water, moisture, light, incompatible materials.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, strong reducing agents	
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Carbon monoxide, carbon dioxide, small amounts of metal oxides, nitrogen oxides, and sulfur oxides under fire conditions.	
HAZARDOUS POLYMERIZATION: Will not occur	CONDITIONS TO AVOID: None related to hazardous polymerization

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Eco-Duct Seal (Gray)
PRODUCT NUMBER: 44-52

SECTION 11 - TOXICOLOGICAL INFORMATION

Complete Product

Oral LD₅₀	Not known - product is harmful by ingestion.
Dermal LD₅₀	Not known - product expected to be moderately irritating by contact with skin.
Inhalation LC₅₀	Not known - product components are harmful by inhalation.
Irritation / Sensitization	Chemical and mechanical irritant to eyes, skin and respiratory tract.
Carcinogenicity	Not known on complete product. Titanium Dioxide, Carbon Black = Group 2B. Carbon Black - Proposition 65 as carcinogen in state of California (respirable only)
Mutagenicity	Not known.
Reproductive Toxicity	Known reproductive toxicants (toluene and hexane)
Teratogenicity	May possess teratogenic effects.

Product Components

Component	CAS #	LD50 of Ingredient (Oral, Rat - unless otherwise specified)	LC50 of Ingredient (Inhalation, Rat - unless otherwise specified)
Hexane	110-54-3	25 g/kg	48000 ppm / 4 Hours
Toluene	108-88-3	636 mg/kg	49 g/m ³ / 4 Hours
Titanium Dioxide	13463-67-7	Not established	Not Established
Carbon Black	1333-86-4	15.4 g/kg	Not Established

SECTION 12 - ECOLOGICAL INFORMATION


Product should be considered as harmful to aquatic environments; do not discard into bodies of water. Solid components of product may bioaccumulate; toluene and hexane are expected to volatilize fairly rapidly and undergo photolytic degradation.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

If this material becomes a waste, it would be a hazardous waste by RCRA criteria (40 CFR 261). Place in an appropriate disposal facility in compliance with all local, state, and federal regulations. User is responsible for compliance with all laws and regulations. US EPA Waste Numbers : D001, U220

SECTION 14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: Flammable Liquid, N.O.S. (contains Hexane, Toluene), UN 1993	
DOT HAZARD CLASS / Pack Group: Class 3 / PG III REFERENCE: 49CFR, IATA, IMDG UN / NA IDENTIFICATION NUMBER: UN 1993 LABEL: Flammable Liquid, 3 HAZARD SYMBOLS: <div style="text-align: center;">  </div>	IATA HAZARD CLASS / Pack Group: Class 3 / PG III IMDG HAZARD CLASS: Class 3 / PG III RID/ADR HAZARD CLASS: Class 3 / PG III ADR CLASSIFICATION: F1 ADR EMERGENCY ACTION CODE: 3Y Hazard Identification Number (HIN): 30 TDG Class / Pack Group: Class 3 / PG III Note: Packing Group assigned per 49CFR173.121(b).

Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, EU, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

SECTION 15 - REGULATORY INFORMATION

TSCA (USA - Toxic Substance Control Act): Components Listed on the TSCA inventory.	
SARA TITLE III (USA - Superfund Amendments and Reauthorization Act):	
Acute Health: YES	Chronic Health: YES
Fire: YES	Sudden Release of Pressure: NO
Reactive: NO	

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Eco-Duct Seal (Gray)
PRODUCT NUMBER: 44-52

SECTION 15 - REGULATORY INFORMATION (Continued)

SARA 313 REPORTABLE INGREDIENTS: Hexane, Toluene.
CERCLA (USA - Comprehensive Response Compensation and Liability Act): 4000 lb / 181 kg RQ for product.
State Right to Know Laws: Toluene and Hexane are on the right-to-know lists of CA, MA, MN, NJ, and PA.
California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986: **WARNING!** This product contains chemicals (toluene, carbon black) known to the State of California to cause cancer, birth defects or other reproductive harm.
CPR (Canadian Controlled Products Regulations): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations. **WHMIS Classifications:** B2, D2B
IDL (Canadian Ingredient Disclosure List): Hexane, Toluene, and Carbon black are listed on the CIDL.
DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List): Components are on the DSL.
EINECS (European Inventory of Existing Commercial Chemical Substances): Referenced.



WGK Water Quality Index: 2

EU RISK PHRASES

- R11 Highly flammable.**
- R38 Irritating to skin.**
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.**
- R62 Possible risk of impaired fertility.**
- R63 Possible risk of harm to the unborn child.**
- R65 Harmful: may cause lung damage if swallowed.**
- R67 Vapours may cause drowsiness and dizziness.**

EU SAFETY PHRASES

- S2 Keep out of the reach of children.**
- S9 Keep container in a well-ventilated place.**
- S16 Keep away from sources of ignition — No smoking.**
- S36/37 Wear suitable protective clothing and gloves.**
- S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.**
- S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.**

SECTION 16 - OTHER INFORMATION

Legend:

- ACGIH American Congress of Government Industrial Hygienists
- CAS Chemical Abstracts Service
- EINECS European Inventory of Existing Commercial Chemical Substances
- HMSIS Hazardous Materials Identification System
- IARC International Agency for Research on Cancer
- NA Not Available ND Not Determined
- NE Not Established NR Not Reported
- NIOSH National Institute for Occupational Safety and Health
- NTP National Toxicology Program
- OSHA Occupational Safety and Health Administration

REVISION SUMMARY: Revised 24 September 2010. LB

MSDS Prepared by:

ChemTel Inc.
 1305 North Florida Avenue
 Tampa, Florida USA 33602-2902
 Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
 Website: www.chemtelinc.com



The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave, Closter NJ 07624

(800)503-9805

ISSUE DATE: 07/01/2013

I. Product

PRODUCT NAME	ELGEN 440 Butyl Gasket
CLASS	Gasket
CHEMICAL NAME	ISOBUTYLENE/ISOPRENE/BUTENE/MINERAL FILLER BLEND

II. Physical Data

Boiling Point, °F	N/A
Specific Gravity	1.50 - 1.70
Vapor Pressure (mm HG)	N/A
Melting Point, °F	N/A.
Solubility in water	Negligible Vapor Density (AIR=1)
Evaporation Rate (N-Butyl) Acetate =1)	N/A
pH	Neutral
Appearance and Odor	beige solid, essentially odorless

III. Hazardous Ingredients

The composition of this mixture may be proprietary information. In the event of a medical emergency, compositional information will be provided to a physician or nurse. This product is not hazardous as defined in 29 CFR 1910.1200.

IV. Health Hazard Data

EYE CONTACT	Particulates may scratch eye surfaces/cause mechanical irritation.
SKIN CONTACT	No significant health hazards identified.
INHALATION	No significant health hazards identified.
INGESTION	No significant health hazards identified.

V. Fire and Explosion Hazard Data

FLASH POINT AND METHOD	N/A
FLAMMABLE LIMITS % VOLUME IN AIR	Lower - N/A Upper - N/A
EXTINGUISHING MEDIA	Use water fog, foam, dry chemical or CO

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

Caution. Do not enter confined space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH/MSHA approved self-contained breathing apparatus. Cool fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None identified.

VI. Spill or Leak Procedures

Recover spilled material and place in suitable containers for recycle or disposal.

VII. Special Protection

Avoid contact with eyes, skin, and clothing. Store away from sources of ignition. KEEP OUT OF REACH OF CHILDREN

VIII. Emergency and First Aid Procedures

EYE CONTACT	This product is an inert solid. If in eye, remove as one would any foreign object. Flush eyes with plenty of water.
INHALATION	Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.
SKIN CONTACT	Remove contaminated clothing/shoes. Wash the area with hot soapy water. Use of a waterless hand cleaner will help remove product. If irritation persists, get medical attention.
INGESTION	If large amounts are ingested, get medical attention.

IX. Carcinogenic Assessment

The components of the product are listed on the EPA/TSCA Inventory of Chemical Substances.

X. Special Precautions

Dispose in accordance with applicable Federal, State or local regulations.

XI. Reactivity Data

STABILITY	Stable
HAZARDOUS POLYMERIZATION	Will not occur
CONDITIONS AND MATERIALS TO AVOID	Avoid heat, flame, and strong acids.
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon monoxide and unidentified organic compounds may be formed during combustion.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave, Closter NJ 07624

(800)503-9805

ISSUE DATE: 08/14/2013

EMERGENCY PHONE NUMBER: INFOTRAC: (800) 535-5053

I. Product

PRODUCT NAME	ELGEN DUCT SEAL-IT
CLASS	Water Based Sealant

II. Physical Data

Boiling Point	212°F
Vapor Density	(AIR=1) <1
Specific Gravity	(H ₂ O=1) 1.49
Solubility in Water	soluble
Vapor Pressure (mm Hg)	760mm@100°C
Percent Volatile by Weight	30.7 %
Appearance	Grey
Volatile organic compounds (VOC)	0.0 g/L

III. Hazardous Ingredients

Hazardous Components	CAS#	%	TLV (units)
AMMONIUM HYDROXIDE	1336-21-6	<1	N/A

IV. Health Hazard Data

Routes of Entry: Eyes, Skin, Inhalation, Ingestion

SIGNS AND SYMPTOMS OF EXPOSURE:

EYES: may be irritating to eyes.

SKIN: may cause irritation upon prolonged or repeated contact.

INHALATION: n/a

INGESTION: no known cases - get medical attention..

V. Fire and Explosion Hazard Data

EXTINGUISHING MEDIA: USE WATER, DRY CHEMICALS OR CO₂

FLASH POINT: NONE

FLAMMABLE LIMITS: LEL - N/A UEL - N/A

SPECIAL FIRE FIGHTING PROCEDURES: WATER MAY BE USED TO COOL EXPOSED CONTAINERS.

UNUSUAL FIRE & EXPLOSION HAZARDS: CLOSED CONTAINERS EXPOSED TO EXTREME HEAT MAY RUPTURE DUE TO PRESSURE BUILD UP.

VI. Spill or Leak Procedures

SPILL OR LEAK PROCEDURES: Scrape or shovel material into suitable containers. Wipe up remaining material with damp rags. Prevent spilled material from entering sewers, storm drains or any authorized treatment, drainage system and/or natural waterways.

WASTE DISPOSAL: CARE MUST BE TAKEN WHEN DISPOSING OF CHEMICAL MATERIALS AND/OR THEIR CONTAINERS TO PREVENT ENVIRONMENTAL CONTAMINATION. IT IS YOUR DUTY TO DISPOSE OF THE CHEMICAL MATERIALS AND/OR THEIR CONTAINERS IN ACCORDANCE WITH THE CLEAN AIR ACT, THE CLEAN WATER ACT, THE RESOURCE CONSERVATION AND RECOVERY ACT AND ALL RELEVANT STATE, LOCAL AND FEDERAL LAWS/ REGULATIONS REGARDING WASTE DISPOSAL.

VII. Special Protection

RESPIRATORY PROTECTION: For emergency or when working in confined areas use self-contained breathing apparatus or supplied air respiratory protection. In other circumstances involving potential overexposure, use NIOSH/MSHA-approved organic vapor respirator. Respiratory protection must be in accordance with 29CFR 1910.134.

VENTILATION: General mechanical ventilation may be sufficient to keep product vapor concentrations within specified time-weight TLV ranges. If general ventilation proves inadequate to maintain vapor concentrations, supplemental local exhaust may be required. Other special precautions, such as respiratory protection may be required if vapor concentrations cannot be reduced to below the TLV by ventilation.

PROTECTIVE GLOVES: polyethylene, neoprene or polyvinyl alcohol

EYE PROTECTION: splash-proof goggles

VIII. Emergency and First Aid Procedures

EYES: Flush with a gentle stream of water for at least 15 minutes. If irritation occurs, consult a physician.

SKIN: Remove contaminated clothing and shoes. Wash thoroughly with of water and soap. If irritation occurs, consult a physician.

INHALATION: No first aid is normally needed, however, seek medical attention.

INGESTION: no known cases – seek medical attention.

CARCINOGENICITY: n/a

IX. Carcinogenic Assessment

This product is considered non-hazardous under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW (SARA TITLE III):

Section 311/312 Categorizations (40 CFR 370): Immediate (Acute) Health Hazard.

Section 313 Information (40 CFR 372) – Toxic Chemicals List: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372:

Toxic Substances Control Act (TSCA): All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

CALIFORNIA PROPOSITION 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): This product may contain trace amounts of chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

X. Special Precautions

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Protect material from freezing, both in handling and storing.

XI. Reactivity Data

Stability	Stable
Incompatibility (materials to avoid)	SALTS AND STRONG ACIDS MAY CAUSE REACTION.
Hazardous Decomposition Products or Byproducts:	
Hazardous Polymerization	may not occur
Conditions to Avoid	N/A

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC: (800) 535-5053

I. Product

PRODUCT NAME: Shrink Wrap with PSA

CHEMICAL FAMILY: Polyethylene

FORMULA: Film

II. Physical Data

APPEARANCE: Clear or colored, Odorless Film.

SPECIFIC GRAVITY: Approximately 0.9

MELTING POINT: N/A

III. Hazardous Ingredients

No hazardous components present. This product is principally composed of polyethylene and polypropylene.

IV. Health Hazard Data

FLASH POINT: N/A

EXTINGUISHING MEDIA: Water Spray, Water Fog, CO2, and Dry Chemicals.

SPECIAL PROCEDURES: Wear self-contained breathing apparatus.

EXPLOSION HAZARD: N/A

V. Fire and Explosion Hazard Data

Promptly clean up film trim and waste using normal good housekeeping practices.

Waste Disposal Method: By any method as a non-hazardous material in accordance with Federal, State, and Local requirements.

VI. Spill or Leak Procedures

VENTILATION: Local exhaust ventilation should be provided to keep worker exposures within allowable limits. Ventilation systems must be designed for explosive dusts.

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved organic vapor respirators when vapor concentrations exceed to TLV.

EYE PROTECTION: N/A

PROTECTIVE GLOVES: As needed

SKIN CONTACT: Wash area of contact thoroughly with soap and water. If irritation persists, seek medical attention.

VII. Special Protection

Seek medical assistance for further treatment, observation and support if necessary.

Eyes contact: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms persist.

Skin contact: If burned by contact with molten material, cool as quickly as possible. Do not peel material from skin. Get medical attention for a thermal burn.

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Ingestion: Material is not expected to be absorbed from the gastrointestinal tract so that induction of vomiting should not be necessary.

VIII. Emergency and First Aid Procedures

Protect from excessive heat.

Some irritating fumes may be evolved during heat fusion.

IX. Carcinogenic Assessment

STABILITY: Stable under normal conditions of handling and use.

INCOMPATIBILITY: None known.

HAZARDOUS DECOMPOSITION PRODUCT: Include but not limited to carbon dioxide, carbon monoxide and hydrocarbon oxidation products.

HAZARDOUS POLYMERIZATION: Will not occur.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC (800) 535-5053

I. Product

PRODUCT NAME	ELGEN 100% Silicon
CLASS	Sealant

II. Physical Data

APPEARANCE	Clear, colored, Solid (Paste)
SPECIFIC GRAVITY	0.95
MELTING POINT	Greater than 85°C (150°F)
DENSITY	7.92 lbs/gal

III. Hazardous Ingredients

<u>MATERIAL:</u>	<u>CAS NUMBER</u>	<u>Wt %</u>
Ethyltriacetoxysilane	17689-77-9	1-5
Methyltriacetoxysilane	4253-34-3	1-5
Dimethyl siloxane	70131-67-8	>50
Silica, amorphous	7631-86-9	7-13
Hydrotreated middle petroleum distillates	64742-46-7	>10

IV. Health Hazard Data

EYE: Direct contact irritates moderately with redness and swelling.

SKIN: A single short exposure (less than 24 hours) may irritate. Repeated prolonged contact (24 to 48 hours) may irritate moderately.

INHALATION: Irritates respiratory passages very slightly. Overexposure may cause drowsiness.

ORAL: May cause vomiting.

NFPA HAZARD CODES: Health: 2, Flammability: 1, Reactivity: 0

COMMENTS When heated to temperatures above 150°C in the presence of air, product can form formaldehyde vapors.

Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

V. Fire and Explosion Hazard Data

SUITABLE EXTINGUISHING MEDIA: Compatible with all usual extinguishing media

FIRE FIGHTING PROCEDURES: Wear full protective clothing, positive pressure or pressure demand breathing apparatus and protective covering for exposed areas of the head. If large amount is involved, evacuate area.

FLASH POINT (SETAFLASH): Greater than >212°F (100°C).

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition product: Carbon oxides and traces of incompletely burned carbon compounds Silicone-dioxide, Formaldehyde.

VI. Spill or Leak Procedures

PERSONAL PRECAUTIONS: Observe all personal protective equipment recommendations described in Sections 7.

ENVIRONMENTAL PRECAUTIONS: Disposal of collected product, residues, and cleanup materials may be governmentally regulated. Observe all applicable local, state and federal waste management regulations.

METHODS FOR CLEANING UP: Ventilate area. Contain spill. Evacuate unprotected personnel from hazard area. Wipe up or scrape up and contain for salvage or disposal. Cover with absorbent, place in approved drum;

Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Local, state, and federal reporting requirements may apply to spills or releases of this material into the environment. See applicable regulatory compliance information in Section 15.

VII. Special Protection

LOCAL EXHAUST: Recommended

GENERAL VENTILATION: Recommended

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Avoid eye contact. Use proper protection - safety glasses as a minimum.

SKIN AND BODY PROTECTION: Avoid skin contact. Protect hands with impervious rubber gloves and wear typical full cover clothing. Gloves must be checked before each use for signs of degradation and penetration and for proper functioning. Use nitrile or butyl rubber gloves.

RESPIRATORY PROTECTION: Avoid breathing of vapors. Wear appropriate, properly fitted NIOSH/MSHA approved respirator when the airborne contaminant levels exceed the exposure limits indicated on the MSDS. Follow respirator manufacturer's directions for respirator use.

HYGIENE MEASURES (INGESTION): Wash hands after handling and before eating.

PRECAUTIONARY MEASURES: Avoid eye contact. Avoid skin contact. Avoid breathing vapor. Keep container closed. Do not take internally.

Note: These precautions are for room temperature handling. Use at elevated temperatures or in aerosol spray applications may require added precautions

VIII. Emergency and First Aid Procedures

INHALATION	Remove to fresh air. If ill effects persist get medical attention.
SKIN CONTACT	Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.
EYE CONTACT	Immediately flush with water for 15 minutes. Get medical attention.
INGESTION	Get medical attention. Do not induce vomiting.
COMMENTS	Treat according to person's condition and specifics of exposure.

IX. Carcinogenic Assessment

US FEDERAL REGULATIONS:

CERCLA/SARA - Hazardous Substances and their Reportable Quantities

Acetic Acid 64-19-7 final RQ = 5000 pounds (2270 kg)

TOXIC SUBSTANCE CONTROL ACT (TSCA):

TSCA Status: All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

SARA 302 EXTREMELY HAZARDOUS SUBSTANCES: None

SARA 311/312 HAZARD CATEGORIES:

Immediate: Yes
Delayed: No
Fire: No
Pressure: No
Reactive: No

Section 313: This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act:

Chemical CAS No. Wt%
Acetic Acid 64-19-7 0.1 – 1.5

This product does comply with the California Air Resources Board maximum for VOC's in a sealant.

X. Special Precaution

HANDLING: Assure good ventilation. Product evolves acetic acid when exposed to water or humid air. Provide ventilation during use to control acetic acid within exposure guidelines or use respiratory protection. Avoid eye contact. Avoid skin contact. Do not take internally. Avoid breathing vapor.

STORAGE: Use reasonable care and store away from oxidizing materials. Keep container closed and store away from water or moisture.

XI. Reactivity Data

CHEMICAL STABILITY: Stable. No hazardous reactions when stored and handled according to prescribed instructions.

HAZARDOUS DECOMPOSITION: Thermal decomposition products as described in Section 5.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

I. Product

PRODUCT NAME	ELGEN WATER BASED DUCT LINER ADHESIVE
CLASS	Adhesive

II. Physical Data

PHYSICAL FORM:	Mobile Liquid
COLOR:	White or Black
ODOR:	Mild, sweet
pH:	8.0-9.5
SOLUBILITY IN WATER:	Miscible
SPECIFIC GRAVITY (H ₂ O=1):	1.1-1.2
BOILING POINT:	212°F
VOLATILES BY WEIGHT:	55-65
FREEZING POINT:	32°F (0°C)
VISCOSITY (cps):	approx. 2,000-3,500
COATING V.O.C.:	34 g/l

III. Hazardous Ingredients

None

IV. Health Hazard Data

EYE CONTACT	In direct contact, may cause irritation.
SKIN CONTACT	In direct contact, may cause irritation. Redness, drying of the skin, or other signs of irritation or contact dermatitis.
INHALATION	Adverse health effects from vapors or spray mists in poorly ventilated areas may include irritation of the mucous membranes of the nose, throat, and respiratory tract and symptoms of headache and nausea.
INGESTION	Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

V. Fire and Explosion Hazard Data

FLASH POINT AND METHOD	N/A
FLAMMABLE LIMITS % VOLUME IN AIR	Lower - N/A Upper - N/A
EXTINGUISHING MEDIA	The product will only burn after the water it contains is driven off. For dried film use water, foam, carbon dioxide or dry chemical

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

When dried film burns, carbon dioxide (CO₂), carbon monoxide (CO), and smoke are produced. Firefighters should wear self-contained breathing apparatus, especially in enclosed areas. Cool containers and minimize vapors with water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers exposed to high temperatures may explode or burst due to build-up of steam pressure oxidizers.

VI. Spill or Leak Procedures

Dike, contain, or absorb with inert absorbent material. Collect spilled material in a salvage container. Prevent spill from entering sewers, drains, streams, waterways, or other bodies of water.

VII. Special Protection

RESPIRATORY PROTECTION: Not required under normal conditions. Provide sufficient ventilation to maintain constant fresh air in workspace. If TLV is exceeded, use NIOSH/MSHA approved organic vapor and mist, supplied air, or self-contained breathing apparatus. Avoid breathing sanding dust.

VENTILATION: Use adequate mechanical (general and/or local) ventilation to maintain exposure below TLV.

SKIN PROTECTION (PROTECTIVE GLOVES): Wear resistant gloves such as polyethylene.

EYE PROTECTION: Use chemical splash goggles or OSHA permitted safety glasses.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Wear impervious clothing.

WORK / HYGENIC PRACTICES: Source of clean water should be available for flushing eyes and washing skin. Wash thoroughly after handling any chemicals, especially before eating, drinking, or smoking. Remove and launder contaminated clothing before reuse

VIII. Emergency and First Aid Procedures

EYE CONTACT	Immediately flush eyes with large amounts of water for at least 15 minutes while frequently lifting the upper and lower eyelids. If irritation persists, call a physician.
INHALATION	Remove to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, administer artificial respiration. Contact physician or emergency medical facility immediately.
SKIN CONTACT	Remove contaminated clothing and shoes. Wash exposed area thoroughly with soap and water for at least 15 minutes. Do not rub affected area. If irritation persists, get medical attention. Skin reaction may take 24 to 48 hours to develop. Wash contaminated clothing before reuse.
INGESTION	Do not induce vomiting. Contact physician or emergency medical facility immediately. Never give anything by mouth to an unconscious person.

IX. Carcinogenic Assessment

This product is considered non-hazardous under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW (SARA TITLE III): Section 311/312 Categorizations (40 CFR 370): Immediate (Acute) Health Hazard. Section 313 Information (40 CFR 372) – Toxic Chemicals List: No components of this product are present in quantities above “de minimus” levels. Toxic Substances Control Act (TSCA): All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

CERCLA INFORMATION (40cfr 302.4): Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

CALIFORNIA PROPOSITION 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): This product may contain trace amounts of chemicals known to the State of California to cause cancer and birth defects or other reproductive harm carcinogen by NTP, IARC, or OSHA. Nickel and Chromium have been identified as suspect carcinogens by NTP and IARC

X. Special Precautions

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: DO NOT ALLOW TO FREEZE. Store in a cool dry location away from heat. Keep containers tightly closed and store with adequate ventilation. **OTHER PRECAUTIONS: DO NOT TAKE INTERNALLY.** Avoid inhalation of excess vapors, ingestion, and unnecessary, prolonged, or repeated contact with this and any other chemical. Change soiled work clothes frequently. Clean hands after handling. **KEEP OUT OF REACH OF CHILDREN.**

XI. Reactivity Data

STABILITY	Stable at ambient temperatures.
CONDITIONS TO AVOID	Avoid heat, flame, and strong acids.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC: (800) 535-5053

I. Product

PRODUCT NAME	Hypalon Fabric
CLASS	Rubber Coated Fabric

II. Physical Data

APPEARANCE	White Hypalon Rubber Coating Over Fabric
BOILING POINT	N/A
SPECIFIC GRAVITY	1.08 - 1.27
VAPOR DENSITY	N/A
SOLUBILITY IN WATER	Negligible
VOLATILE BY WEIGHT	N/A
EVAPORATION RATE	None

III. Hazardous Ingredients

Component	CAS-No.	Concentration
Polyethylene chlorinated chlorosulfonated	68037-39-8	>96%
Talc (asbestos-free)	14807-96-6	<2 %
Bisphenol A-epichlorohydrin resin	25068-38-6	<1 %
Carbon Tetrachloride	56-23-5	<0.4 %

Flash point : no data available

Thermal decomposition : ca. 150 - 200 °C (302 - 392 °F)

Fire and Explosion Hazard : Burning produces obnoxious and toxic fumes.

Extinguishing Media : Carbon dioxide (CO2), Foam, Water, Dry chemical

Firefighting Instructions : Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Do not allow run-off from fire fighting to enter drains or water courses. The solid polymer can only be burned with difficulty.

IV. Fire and Explosion Hazard Data

V. Spill or Leak Procedures

Safeguards (Personnel) : Ventilate the area. Refer to protective measures listed in sections 7 and 8.

Spill Cleanup : Shovel into suitable container for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

Accidental Release Measures : Try to prevent the material from entering drains or water courses.

VI. Special Protection

Handling (Personnel) : Protect from contamination. Provide appropriate exhaust ventilation at dryers, machinery and at places where dust or volatiles can be generated. In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe fumes evolved from hot polymer. General precaution for all plastics and elastomers: Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing. When using do not eat, drink or smoke.

Handling (Physical Aspects) : General precaution for all plastics and elastomers: Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Avoid dust formation.

Storage : Keep in a dry, cool and well-ventilated place. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

VII. Emergency and First Aid Procedures

Skin contact : Wash off with soap and water. Cool skin rapidly with cold water after contact with hot polymer. Do not peel polymer from the skin. Consult a physician if necessary.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

Inhalation : Move to fresh air. Consult a physician.

Ingestion : If victim is conscious: Drink water as a precaution. Consult a physician.

General advice : If symptoms persist, call a physician.

VIII. Carcinogenic Assessment

Hypalon Fabric has NOT been identified as a suspect carcinogen by NTP, IARC, or OSHA. Nickel and Chromium have been identified as suspect carcinogens by NTP and IARC

IX. Special Precautions

Engineering controls : Use only in area provided with appropriate exhaust ventilation.

Personal protective equipment

Eye protection : Safety glasses with side-shields

Skin protection : If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection..

X. Reactivity Data

Conditions to avoid : Avoid heating for prolonged periods above the recommended upper processing limit.

Incompatibility : Strong acids and oxidizing agents Alkali metals Alkaline earth metals

Decomposition : Decomposition temperature : ca. 150 - 200 °C (302 - 392 °F)

Hazardous decomposition products Hydrogen chloride, Sulphur oxides, Organic acids, Alcohols, Aldehydes.

Polymerization : Polymerization will not occur.

During drying, cleaning and moulding, small amounts of hazardous gases and/or particulate matter may be released. These may irritate eyes, nose and throat..

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC: (800) 535-5053

I. Product

PRODUCT NAME	Neoprene Fabric
CHEMICAL FAMILY	Rubber Coated Fabric
FORMULA	Polychloroprene Rubber Coating over Fabric

II. Physical Data

Form	solid
Color	off-white, tan
Odor	slight, characteristic
Density	1.23 g/cm ³
Method	ASTM D 792
Water solubility	insoluble

Component	CAS-No.	Concentration
Poly(2-chloro-1,3-butadiene)	9010-98-4	>95%
Rosin	8050-09-7	<5 %
Talc (asbestos-free)	14807-96-6	<1 %

III. Health Hazard Data

Skin : May cause skin irritation in susceptible persons.

Eyes

Poly(2-chloro-1,3-butadiene): May irritate eyes.

Rosin : May irritate eyes.

Inhalation

Talc (asbestos-free) : May cause nose, throat, and lung irritation. Cough, Severe shortness of breath, Difficulty in breathing, Prolonged contact may cause:, Chronic lung disease with alterations in lung function or difficulty breathing.

IV. Fire and Explosion Hazard Data

Flash point	> 260 °C (> 500 °F) open cup
Fire and Explosion Hazard	Burning produces obnoxious and toxic fumes.
Extinguishing Media	Carbon dioxide (CO ₂), Foam, Water, Dry chemical
Firefighting Instructions	Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Do not allow run-off from fire fighting to enter drains or water courses.

V. Spill or Leak Procedures

Spill Cleanup : Shovel into suitable container for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

Accidental Release Measures : Try to prevent the material from entering drains or water courses.

VI. Special Protection

Engineering controls : Use only in area provided with appropriate exhaust ventilation.

Personal protective equipment

Eye protection : Safety glasses with side-shields

Skin protection : If there is a potential for contact with hot/molten material wear heat resistant clothing and footwear.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

VII. Emergency and First Aid Procedures

Skin contact : Wash off with soap and water. Cool skin rapidly with cold water after contact with hot polymer. Do not peel polymer from the skin. Consult a physician if necessary.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician if necessary.

Inhalation : If breathed in, move person into fresh air. Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Consult a physician if necessary.

Ingestion : If victim is conscious: Drink water as a precaution. Consult a physician.

General advice : If symptoms persist, call a physician.

VIII. Carcinogenic Assessment

Neoprene Fabric has NOT been identified as a suspect carcinogen by NTP, IARC, or OSHA.

IX. Special Precautions

Handling (Personnel) : Protect from contamination. Provide appropriate exhaust ventilation at dryers, machinery and at places where dust or volatiles can be generated. Do not breathe dust. Do not breathe fumes evolved from hot polymer. General precaution for all plastics and elastomers: Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing. When using do not eat, drink or smoke.

Handling (Physical Aspects) : General precaution for all plastics and elastomers: Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Avoid dust formation.

Storage : Keep in a dry, cool and well-ventilated place. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

X. Reactivity Data

Conditions to avoid : Processing temperature > 200 °C (32 °F) Avoid heating for prolonged periods above the recommended upper processing limit.

Incompatibility : None reasonably foreseeable.

Decomposition : Hazardous decomposition products Hydrogen chloride, Carbon monoxide, Organic acids, Aldehydes, Alcohols.

Polymerization : Polymerization will not occur.

During drying, cleaning and moulding, small amounts of hazardous gases and/or particulate matter may be released.

These may irritate eyes, nose and throat.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC: (800) 535-5053

I. Product

PRODUCT NAME	Silguard Fabric
CHEMICAL FAMILY	Rubber Coated Fabric

II. Physical Data

Boiling Point	Not applicable
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Specific Gravity	2.4
Melting Point	> 1,000
Evaporation Rate	Not applicable
Solubility in Water	Negligible
Appearance and Odor	Iron Oxide with no odor
EVAPORATION RATE	N/A.

III. Hazardous Ingredients

MATERIAL:

Fibrous Glass

CAS %

none

WEIGHT

TLV

10mg/ cubic m for fiber
diameters < 7 microns

IV. Health Hazard Data

Routes of entry: This material will not enter the body during normal use

Health Hazards: None known

Carcinogenicity: This material is not known to be a carcinogen

Signs and Symptoms of Exposure: None known

Medical Conditions: None known

V. Fire and Explosion Hazard Data

Flash Point (Method Used)	>250 C by TOC
Extinguishing Media	Water, carbon dioxide, dry chemical
Special Fire Fighting Procedures	None
Unusual Fire and Explosion	None

VI. Spill or Leak Procedures

Steps to be taken in case material is released or spilled: Material is a solid
Waste Disposal Method: Burial in a federal or state approved landfill

VII. Special Protection

Respiratory Protection	None
Ventilation	None
Protective Gloves	None
Eye Protection	None
Protective Clothing or Equipment	None
Hygienic Practices	Wash hands thoroughly with soap and water following handling.

VIII. Emergency and First Aid Procedures

Wash thoroughly with soap and water after handling materials.

IX. Carcinogenic Assessment

Silguard fabric has NOT been identified as a suspect carcinogen by NTP, IARC, or OSHA

X. Special Precautions

Precautions to be taken in Handling and Storing: None

XI. Reactivity Data

Stability	Stable
Conditions to Avoid	None
Incompatibility (Material to avoid)	Hydrofluoric acid, strong oxidizing agents
Hazardous Decomposition or Byproducts	Carbon monoxide, Carbon dioxide
Hazardous Polymerization	Will not occur

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC: (800) 535-5053

I. Product

PRODUCT NAME	Super-Hi Temp Fabric
CHEMICAL FAMILY	Silica Coated Fabric

II. Physical Data

Melting Point	Not applicable
Boiling Point	Not applicable
Percent Volatile by Volume	Not applicable
Specific Gravity (H₂O=1)	2.1
Vapor Pressure (mm Hg @ 20 C)	Not applicable
Vapor Density (Air=1)	Not applicable
Evaporation Rate (Ethyl Ether=1)	Not applicable
Solubility in Water	Not applicable
Appearance and Odor	Tan colored solid, no odor
pH	Not applicable

III. Hazardous Ingredients

Common Name	Chemical Name	CAS No.	ACGIH-TLV	OSHA-PEL
Amorphous Silica	Silicon Dioxide	7831-86-9	10 mg/m ³	N/A

There is not an established threshold limit value (TLV) that is directly applicable to this family of silica materials. Chemically, these products are composed of amorphous silica with trace elements of aluminum, uranium, and iron.

The individual filament sizes of the base cloth yarn are nominally 6.0 microns and are considered "non-respirable". It will partially transform to a cristalloic structure when subjected to steady state temperatures of above 1850 F. In the event that the materials are subject to continuous temperatures exceeding 1850 F, appropriate caution should be exercised

IV. Health Hazard Data

Primary Routes of Exposure: Inhalation and skin contact

Health Hazards (Including acute and chronic effects and symptoms of overexposure):

Acute: Inhalation: Irritation of dusts and fibers may result in inflammation of the upper respiratory tract (mouth, nose and throat)

Skin Contact: Skin contact with dusts and fibers may produce itching and temporary mechanical irritation.

Eye Contact: Eye contact with dusts and fibers may produce temporary mechanical irritation

Ingestion: Temporary mechanical irritation of the digestive tract. Observe individual if symptoms develop, consult a physician.

Chronic: There are no other known health effects associated with chronic exposure to this product. (See Section I for information regarding Quartz.)

V. Fire and Explosion Hazard Data

Flash Point (Method Used)	Not applicable
Auto Ignition Temperature	Not applicable
Flammability Limits (%)	NA
Special Fire Fighting Procedures	Not applicable
Unusual Fire and Explosion	None
Extinguishing Media	Water, foam, carbon dioxide, dry chemical

VI. Spill or Leak Procedures

Action to take for spills (Use appropriate safety equipment): For solid product, not applicable. For dust and fibers generated during fabrication vacuum up and containerize.

Waste Disposal Method: Dispose in accordance with federal, state, and local regulations as a solid non-hazardous waste.

VII. Special Protection

The following precautions are advisable during cutting and fabrication of the material, or operations that could generate dust of this material:

Ventilation: General dilution ventilation and/or local exhaust ventilation should be provided, as necessary to maintain exposures below PEL's or TLV's

Respiratory Protection: A properly fitted NIOSH/MHSA approved disposable dust respirator (TC-21C-132) should be used when: the level of dust in the air exceeds permissible exposure limits; or if irritation occurs. Use respiratory protection in accordance with your company's respiratory protection program and OSHA regulations under CFR.

Respiratory protection is also recommended if this product is subject to steady state temperatures that exceed the 1850 F. (Use an approved high efficiency air particulate filter)

Eye Protection: Safety glasses, goggles or face shields should be worn whenever materials are being handled.

Protective Clothing: Wear loose fitting, long sleeved shirt and long pants if irritation is experienced. Wear gloves when handling this product.

Work/Hygienic Practices: Handle in accordance with good industrial hygiene and safety practices:

Avoid unnecessary exposure to dusts and fibers

Remove dust and fibers from the skin after exposure.

Be careful not to rub or scratch irritated areas. Rubbing or scratching may force the fibers into the skin. The fibers should be washed off. Use of barrier creams can, in some instances, be helpful.

Use vacuum equipment to remove fibers and dusts from clothing. Compressed air should never be used. Always wash work clothes separately and wipe out the washer/sink in order to prevent loose dust from getting on other clothes.

Keep the work area clean of dusts and fibers generated during fabrication. Use vacuum equipment to clean up dusts and fibers. Avoid sweeping or using compressed air as these techniques resuspend dusts and fibers into the air.

Have access to safety showers and eye wash fountains.

VIII. Emergency and First Aid Procedures

Inhalation: Move individual to fresh air. Seek medical attention if irritation persists.

Skin Contact: Wash with mild soap and running water: use a washcloth to help remove dust and fibers. To avoid further irritation do not rub or scratch irritated areas. Rubbing or scratching may force fibers into the skin. Seek medical attention if irritation persists.

Eye Contact: Flush eyes with flowing water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: Not applicable.

IX. Carcinogenic Assessment

Super Hi-Temp fabric has NOT been identified as a suspect carcinogen by NTP, IARC, or OSHA

X. Special Precautions

Precautions to be taken in Handling and Storing: None

XI. Reactivity Data

Stability (Conditions to avoid): Product is stable

Incompatibility (Materials to avoid): Materials are not compatible with the basin phosphates, hydrofluoric acids, some oxides and hydroxides; especially at elevated temperatures.

Hazardous decomposition products: The base fabric will partially transform to a cristobalite structure when subjected to steady state temperatures above 1850 F. In the event it is subjected to Continuous temperatures exceeding 1850 F appropriate caution should be exercised. If the material is heated, residual proprietary organic ingredients contained in this product may produce smoke and irritating fumes including carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC: (800) 535-5053

I. Product

PRODUCT NAME	Teflon® Fabric
CHEMICAL FAMILY	Rubber Coated Fabric

II. Physical Data

APPEARANCE	Grey both Sides
MELTING POINT	>500 degrees F
SPECIFIC GRAVITY	1.6
VAPOR DENSITY	N/A
VOLATILE BY WEIGHT	N/A
EVAPORATION RATE	N/A.
Solubility	Negligible

III. Hazardous Ingredients

<u>MATERIAL:</u>	<u>CAS #</u>	<u>WEIGHT</u>	<u>TLV</u>
Fibrous Glass	14808-60-7		10mg/m3 for fiber diameters < 7 microns
Polytetrafluoroethylene	9002-84-0		

IV. Health Hazard Data

Route of Entry	This material may enter the body through inhalation of nuisance dust.
Target Organs	Respiratory System
Inhalation	Sore, raspy throat
Skin Contact	Redness and possible rash; itching
Eye Contact	Itching and redness
Ingestion	N/A

V. Fire and Explosion Hazard Data

Flash Point (Method Used)	>250 C by TOC Flammable Limits
LEL	N/A UEL N/A
Extinguishing Media	Water, carbon dioxide, or dry chemical
Special Fire Fighting Procedures	Thermal decomposition of fiber coating may produce an irritating mixture of smoke and fumes.
Unusual Fire and Explosion Hazards	None.

VI. Spill or Leak Procedures

Material is a solid in roll form. If accidentally released, rewind material back onto roll.

VII. Special Protection

Engineering Controls	Local exhaust; dust collection
Protective Equipment	Safety glasses; cotton gloves; long sleeve clothing
Exposure Guidelines/Other	Wash thoroughly with soap and water after handling

VIII. Emergency and First Aid Procedures

Inhalation	Remove person to fresh air. If condition persists, seek medical attention.
Skin Contact	Rinse with copious quantities of cool water. If rash or itching persists, seek medical attention.
Eye Contact	Rinse with water. Do not rub eyes. Seek medical attention.
Ingestion	Not applicable.

IX. Carcinogenic Assessment

Teflon® Fabric has NOT been identified as a suspect carcinogen by NTP, IARC, or OSHA.

X. Special Precautions

Direct contact with fiberglass materials or exposure to airborne fiberglass dust may irritate the skin, eyes, nose and throat. Fiberglass can cause itching due to mechanical irritation from the fibers. This is not an allergic reaction to the material. Breathing fibers may irritate the airways resulting in coughing and a scratchy throat. Some people are sensitive to the fibers, while others are not.

XI. Reactivity Data

Stability:	Material is stable.
Conditions to avoid	None known.
Materials to avoid (incompatibility)	Strong oxidizing agents.
Hazardous Decomposition products	Carbon monoxide; carbon dioxide; hydrogen fluoride
Hazardous Polymerization	Will Not Occur.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC: (800) 535-5053

I. Product

PRODUCT NAME	Vinlon Fabric
CHEMICAL FAMILY	PVC coated fabric

II. Physical Data

APPEARANCE	Grey both Sides
MELTING POINT	>250 degrees F
SPECIFIC GRAVITY	1.6
VAPOR DENSITY	N/A
VOLATILE BY WEIGHT	N/A
EVAPORATION RATE	N/A.
Solubility	Negligible

III. Hazardous Ingredients

<u>MATERIAL:</u>	<u>CAS #</u>	<u>WEIGHT</u>	<u>TLV</u>
Fibrous Glass	14808-60-7		10mg/m ³ for fiber diameters < 7 microns
Antimony oxide	1309-64-4		
Compounded Vinyl Coating			

IV. Health Hazard Data

Route of Entry	This material may enter the body through inhalation of nuisance dust.
Target Organs	Respiratory System
Inhalation	Sore, raspy throat
Skin Contact	Redness and possible rash; itching
Eye Contact	Itching and redness
Ingestion	N/A

V. Fire and Explosion Hazard Data

Flash Point (Method Used)	>250 C by TOC Flammable Limits
LEL	N/A UEL N/A
Extinguishing Media	Water, carbon dioxide, or dry chemical
Special Fire Fighting Procedures	Thermal decomposition of fiber coating may produce an irritating mixture of smoke and fumes.
Unusual Fire and Explosion Hazards	None.

VI. Spill or Leak Procedures

Material is a solid in roll form. If accidentally released, rewind material back onto roll

VII. Special Protection

Engineering Controls	Local exhaust; dust collection
Protective Equipment	Safety glasses; cotton gloves; long sleeve clothing
Exposure Guidelines/Other	Wash thoroughly with soap and water after handling

VIII. Emergency and First Aid Procedures

Inhalation	Remove person to fresh air. If condition persists, seek medical attention.
Skin Contact	Rinse with copious quantities of cool water. If rash or itching persists, seek medical attention.
Eye Contact	Rinse with water. Do not rub eyes. Seek medical attention.
Ingestion	Not applicable.

IX. Carcinogenic Assessment

Vinyl fabric has NOT been identified as a suspect carcinogen by NTP, IARC, or OSHA.

X. Special Precautions

Direct contact with fiberglass materials or exposure to airborne fiberglass dust may irritate the skin, eyes, nose and throat. Fiberglass can cause itching due to mechanical irritation from the fibers. This is not an allergic reaction to the material. Breathing fibers may irritate the airways resulting in coughing and a scratchy throat. Some people are sensitive to the fibers, while others are not.

XI. Reactivity Data

Stability:	Material is stable.
Conditions to avoid	None known.
Materials to avoid (incompatibility)	Strong oxidizing agents.
Hazardous Decomposition products	Carbon monoxide; carbon dioxide; hydrogen fluoride
Hazardous Polymerization	Will Not Occur.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-8805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC (800) 535-5053

I. Product

PRODUCT NAME	ELGEN Aluminum Products
CLASS	Metal

II. Physical Data

APPEARANCE	Silvery ductile metal
SPECIFIC GRAVITY	2.5+
MELTING POINT	480-649°C

III. Hazardous Ingredients

<u>Material</u>	<u>CAS-Numbe</u>	<u>OSHA TWA</u>	<u>%</u>
Aluminum	7429-90-5	15 mg. Total dust	100%

IV. Health Hazard Data

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant). Non-irritating to the eyes. Non-hazardous in case of ingestion.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance is toxic to lungs.

Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

V. Fire and Explosion Hazard Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Some metallic oxides.
Fire Hazards in Presence of Various Substances	Not available.
Explosion Hazards in Presence of Various Substances	
Risks of explosion of the product in presence of mechanical impact	Not available.
Risks of explosion of the product in presence of static discharge	Not available.
Fire Fighting Media and Instructions	
SMALL FIRE	Use DRY chemical powder.
LARGE FIRE	Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Not available.

VI. Spill or Leak Procedures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

VII. Special Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Gloves.

Personal Protection in Case of a Large Spill: Safety glasses. Lab coat. Gloves.

Exposure Limits: TWA: 5 (mg(AI)/m) from ACGIH (TLV) [United States] Inhalation (pyro powders, welding fumes)

TWA: 10 (mg(AI)/m) from ACGIH (TLV) [United States] Inhalation (metal dust)

Consult local authorities for acceptable exposure limits.

VIII. Emergency and First Aid Procedures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for atleast 15 minutes. Get medical attention if irritation occurs.
Skin Contact	Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
Serious Skin Contact	Not available.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Serious Ingestion	Not available.

IX. Carcinogenic Assessment

The listed ingredients have NOT been identified as a suspect carcinogen by NTP, IARC, or OSHA.

X. Special Precautions

Precautions: Do not ingest. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Moisture sensitive.

XI. Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials, exposure to moist air or water.
Incompatibility with various substances	Reactive with oxidizing agents, acids, alkalis.
Corrosivity	Not available.
Special Remarks on Reactivity	Moisture sensitive. Aluminum reacts vigorously with Sodium Hydroxide. Aluminum is also incompatible with strong oxidizers, acids, chromic anhydride, iodine, carbon disulfide, methyl chloride, and halogenated hydrocarbons, acid chlorides, ammonium nitrate, ammonium persulfate, antimony, arsenic oxides, barium bromate, barium chlorate, barium iodate, metal salts
Special Remarks on Corrosivity	In moist air, oxide film forms which protects metal from corrosion. Aluminum is strongly electropositive so that it corrodes rapidly in contact with other metals.
Polymerization	Will not occur.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC (800) 535-5053

I. Product

PRODUCT NAME	Aluminized Steel Products
CLASS	Steel

II. Physical Data

APPEARANCE	Odorless solid with metallic luster
SPECIFIC GRAVITY	8
MELTING POINT	480° - 1500°C

III. Hazardous Ingredients

Ingredient Name	CAS Number	Percentage by wt.	OSHA PEL 1	ACGIH TLV 2
Iron	7439-89-6	95 - 99.9	10 mg/m ³ - Iron oxide fume	5 mg/m ³ - Iron oxide dust and fume
Aluminum	7429-90-5	0.01 - 0.5	15 mg/m ³ - as total dust 5 mg/m ³ - as respirable fraction	10 mg/m ³ - Metal Dust 5 mg/m ³ - Welding fume
Carbon	7440-44-0	0.001 - 0.6	15 mg/m ³ - as total dust (PNOR) 3 5 mg/m ³ - as respirable fraction (PNOR)	10 mg/m ³ - Inhalable fraction ⁴ (PNOS) 5 3 mg/m ³ - as respirable fraction ⁶ (PNOS)
Chromium	7440-47-3	0 - 0.7	1 mg/m ³ - Chromium metal	0.5 mg/m ³ - Chromium metal & Cr III compounds
Copper	7440-50-8	0.005 - 0.4	0.1 mg/m ³ - Fume (as Cu) 1 mg/m ³ - Dusts & mists (as Cu)	0.1 mg/m ³ - Fume 1 mg/m ³ - Dusts & mists (as Cu)
Manganese	7439-96-5	0.05 - 2.0	5 mg/m ³ (C) - Fume & Mn compounds	0.2 mg/m ³
Nickel	7440-02-0	0.004 - 0.5	1 mg/m ³ - Metal & insoluble compounds (as Ni)	1.5 mg/m ³ - Elemental nickel (as Ni) 0.2 mg/m ³ - Insoluble compounds
Silicon	7440-21-3	0.001 - 1.05	15 mg/m ³ - as total dust 5 mg/m ³ - as respirable fraction	10 mg/m ³

IV. Health Hazard Data

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant). Non-irritating to the eyes. Non-hazardous in case of ingestion.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance is toxic to lungs.

Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

V. Fire and Explosion Hazard Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Some metallic oxides.
Fire Hazards in Presence of Various Substances	Not available.
Explosion Hazards in Presence of Various Substances	
Risks of explosion of the product in presence of mechanical impact	Not available.
Risks of explosion of the product in presence of static discharge	Not available.
Fire Fighting Media and Instructions	
SMALL FIRE	Use DRY chemical powder.
LARGE FIRE	Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Not available.

VI. Spill or Leak Procedures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

VII. Special Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Gloves.

Personal Protection in Case of a Large Spill: Safety glasses. Lab coat. Gloves.

Exposure Limits: TWA: 5 (mg(AI)/m) from ACGIH (TLV) [United States] Inhalation (pyro powders, welding fumes)

TWA: 10 (mg(AI)/m) from ACGIH (TLV) [United States] Inhalation (metal dust)

Consult local authorities for acceptable exposure limits.

VIII. Emergency and First Aid Procedures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for atleast 15 minutes. Get medical attention if irritation occurs.
Skin Contact	Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
Serious Skin Contact	Not available.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tightclothing such as a collar, tie, belt or waistband.
Serious Ingestion	Not available.

IX. Carcinogenic Assessment

The listed ingredients have NOT been identified as a suspect carcinogen by NTP, IARC, or OSHA.

X. Special Precautions

Precautions: Do not ingest. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Moisture sensitive.

XI. Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials, exposure to moist air or water.
Incompatibility with various substances	Reactive with oxidizing agents, acids, alkalis.
Corrosivity	Not available.
Special Remarks on Reactivity	Moisture sensitive. Aluminum reacts vigorously with Sodium Hydroxide. Aluminum is also incompatible with strong oxidizers, acids, chromic anhydride, iodine, carbon disulfide, methyl chloride, and halogenated hydrocarbons, acid chlorides, ammonium nitrate, ammonium persulfate, antimony, arsenic oxides, barium bromate, barium chlorate, barium iodate, metal salts
Special Remarks on Corrosivity	In moist air, oxide film forms which protects metal from corrosion. Aluminum is strongly electropositive so that it corrodes rapidly in contact with other metals.
Polymerization	Will not occur.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC (800) 535-5053

I. Product

PRODUCT NAME	ELGEN Galvaneal Products
CLASS	Steel

II. Physical Data

APPEARANCE	Metallic Gray
BOILING POINT	N/A
SPECIFIC GRAVITY	8 g/cm ³
SOLUBILITY IN WATER	Not Soluble
SOFTENING POINT OF Zinc Coating	850 F
MELTING POINT OF BASE METAL	2750°F

III. Hazardous Ingredients

<u>Material</u>	<u>CAS-Numbe</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
Iron	7439-89-6	10 mg/M3 (as Fe2O3 fume)	5 mg/M3 Iron oxide dust & fume
Zinc	7440-66-6	5mg/M3 (as ZnO fume)	5mg/M3 (as ZnO fume)

IV. Health Hazard Data

Carcinogenity: Certain chromium and nickel compounds as well as organic compounds found in various coating materials have been listed as carcinogens by the NTP, IARC, or OSHA.

Medical Conditions Aggravated by Long Term Exposure: Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure.

Chronic Effects: Chronic inhalation concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Chronic inhalation concentrations of aluminum fumes or dusts may lead to a fibrotic lung condition known as Shaver's disease; however, evidence for this is not conclusive since affected workers were exposed to other substances (silica) as well. The inhalation of high concentrations of dust from manganese, copper, lead and/or zinc in the respirable particle size range can cause an influenzalike illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills. Continuous exposures to high concentrations of manganese can cause central nervous system disorders and .manganese pneumonia.. Fibrosis of lung tissue from manganese exposure has also been reported for products containing manganese only.

Overexposure to aluminum dust can cause shortness of breath. Long term inhalation exposure to high concentrations (overexposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects. Prolonged or repeated contact with unprotected skin may result in skin irritation. Torching or burning operations on steel products with oil or organic coating may produce emissions which can be irritating to the eyes and respiratory tract

V. Fire and Explosion Hazard Data

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

VI. Spill or Leak Procedures

Not applicable to steel in solid state.

For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid using compressed air. Do not release into sewers or waterways. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations.

VII. Special Protection

Respiratory protection	NIOSH/MSHA approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.
Hand protection	Protective gloves should be worn as required for welding, burning or handling operations. If material is supplied with oil or other organic coating, wear protective gloves. However, do not continue to use gloves or work clothing that have become saturated with oil. Wash hands and any additional contact areas with soap and water or waterless hand cleaner.
Eye protection	Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.
Engineering measures	Local exhaust ventilation should be provided when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure.

Personal protection equipment: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dust.

VIII. Emergency and First Aid Procedures

Eye contact	Treat any foreign body in eye by flushing with large amounts of water. Seek medical attention immediately.
Skin contact	Skin hazards are not expected. However, should dermatitis develop, affected area should be washed with mild soap and water. If irritation or other symptoms develop, seek medical attention. Precautions should be taken to protect against sharp steel edges. If the skin is abraded by handling, seek medical attention.
Ingestion	Ingestion hazards are not expected.
Inhalation	For treatment of overexposure to fumes and/or particulates, remove exposed individual to fresh air and seek medical attention. Administer artificial respiration or oxygen if breathing is difficult or has stopped.

IX. Carcinogenic Assessment

Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing metal fumes and/or dust.

X. Reactivity Data

Chemical Stability: Stable under normal conditions of use, storage and transport.

Hazardous Conditions to Avoid: Will react with strong acid to liberate hydrogen. Finely divided material may react with water, strong oxidizers, alkaline, and hydrogenated compounds. At temperatures exceeding the melting point of the metallic coating, fumes may be liberated which contain oxides of the metallic coating constituents. At temperatures exceeding the melting point of the base metal, fumes may be liberated which contain oxides of iron and other steel alloying elements.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC (800) 535-5053

I. Product

PRODUCT NAME	ELGEN Galvanized Steel Products
CLASS	Steel

II. Physical Data

APPEARANCE	Metallic Gray
BOILING POINT	N/A
SPECIFIC GRAVITY	8 g/cm ³
SOLUBILITY IN WATER	Not Soluble
SOFTENING POINT OF Zinc Coating	850 F
MELTING POINT OF BASE METAL	2750°F

III. Hazardous Ingredients

<u>MATERIAL</u>	<u>CAS</u>	<u>% WEIGHT</u>	<u>OSHA PEL (mg/m³)</u>	<u>ACGIH TLV (mg/m³)</u>
Iron	7439-89-6	94.00 - 99.66	10 (oxide fume)	5 (oxide fume)
Zinc Arsenic	7440-86-6	1.00-4.50	15 (oxide dust)	15 (oxide dust)
Aluminum	7429-90-5	00-4	15 (dust)	10 (dust)
Antimony	7440-36-0	< 9	0.5	0.5
Arsenic	7440-38-2	< 09	0.01	0.01
Beryllium	7440-41-7	< 09	0.002	0.002
Boron	7440-42-8	< 9	15	10
Cadmium	7440-43-9	< 09	0.005	0.01
Calcium	1305-78-8	< 9	5	2
Carbon	7440-44-0	04-10	15	10
Chromium*	7440-47-3	0.01-1.5	0.5	0.06
Cobalt	7440-48-4	< 09	0.1	0.02
Manganese	7439-96-5	0.05-2.0	5 (dust) 5 (fume)	5 (dust) 1 (fume)
Phosphorus	8049-19-2	.001-0.020	15	10
Molybdenum	7439-98-7	0.00-0.10	15	10
Nickel	7440-02-0	0.01-30	1	1
Silicon	7440-21-3	0.15-2.20	15	10
Sulfur	7704-34-9	.001-0.020	15	10

IV. Health Hazard Data

Ld50 Lc50 Mixture	None Specified By Manufacturer.
Route Of Entry Inhalation	Yes
Route Of Entry Skin	Yes
Route Of Entry Ingestion	Yes
Health Haz Acute And Chronic	Steel Prods In Their Usual Physical Form Do Not
Carcinogenicity Ntp	Yes
Carcinogenicity Iarc	Yes
Carcinogenicity Osha	No

V. Fire and Explosion Hazard Data

Flash Point	N/K
Flash Point Method	N/P
Lower Explosive Limit	N/K
Upper Explosive Limit	N/K
Extinguishing Media	Media Suitable For Surrounding Fire (Fp N).
Special Fire Fighting Proc	Use Niosh Approved Scba & Full Protective Equipment

VI. Spill or Leak Procedures

PROCEDURE TO FOLLOW IF MATERIAL IS RELEASED OR SPILLED: N/A

WASTE DISPOSAL METHOD: Any excess product can be recycled for further use, disposed in a permitted hazardous waste landfill, or disposed by other methods which are in accordance with local, state, and federal regulations.

VII. Special Protection

Special protection information: **respiratory** - NIOSH/MSHA - approved dust and fume respirators should be used to avoid excessive inhalation of particulates.

Appropriate respirator selection depends on the magnitude of exposure.

PROTECTIVE GLOVES - recommended.

EYE PROTECTION - provided when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure.

OTHER PROTECTIVE EQUIPMENT - Additional protective equipment and/or clothing may be required.

VIII. Emergency and First Aid Procedures

Inhalation	Remove to fresh air; if condition continues, consult a physician.
Eye Contact	Flush thoroughly with running water to remove particulate; obtain medical attention.
Skin Contact	Remove particles by washing thoroughly with soap and water. Seek medical attention if condition persists.
Ingestion	If significant amounts of metal are ingested, consult physician. If condition is voluntary, psychotherapy is advised

IX. Carcinogenic Assessment

Minimize and control operations producing airborne dust and fume. Provide adequate local and general exhaust ventilation.
Maintain good housekeeping.

X. Reactivity Data

Stability: Stable under normal conditions of use, storage and transportation. INCOMPATIBILITY (Materials to avoid): Steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume and dust.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

Elgen Manufacturing Company INC.

10 Railroad Ave Closter, NJ 07624

(800)503-9805

ISSUE DATE: 6/10/2009

EMERGENCY PHONE NUMBER: INFOTRAC (800) 535-5053

I. Product

PRODUCT NAME	Stainless Steel, All Grades
CLASS	Steel

II. Physical Data

APPEARANCE	Metallic Solid
SPECIFIC GRAVITY	7.65 - 7.94
MELTING POINT	2550 - 2650°F

III. Hazardous Ingredients

MATERIAL:	% WEIGHT	OSHA PEL	ACGIH TLV
Iron	45 - 90	10 mg/M3 (TWA as Fume)	5 mg/M3 (TWA as Fume)
Manganese	0 - 15	1 mg/M3 (TWA as Fume)	1 mg/M3 (TWA as Fume)
Silicon	0 - 3	10 mg/M3 (TWA)	10 mg/M3 (TWA)
Chromium*	10.5 - 30	1 mg/M3 (TWA)	0.5 mg/M3 (TWA)
Nickel*	0 - 40	1 mg/M3 (TWA)	1 mg/M3 (TWA)
Molybdenum	0 - 5	5 mg/M3 (TWA as soluble)	5 mg/M3 (TWA as soluble)
Copper	0 - 5	0.1 mg/M3 (TWA as fume)	0.2 mg/M3 (TWA as fume)
Aluminum	0 - 1	5 mg/M3 (TWA as fume)	5 mg/M3 (TWA as fume)
Cobalt	0 - 1	0.05 mg/M3 (TWA)	0.05 mg/M3 (TWA)

*Suspect Carcinogen by NTP and IARC

IV. Health Hazard Data

HEALTH

Steel products in the natural state do not present an inhalation, ingestion, or contact health hazard. However, operations such as welding, burning, sawing, brazing, grinding, and possibly machining, which results in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulates may present hazards. The above operations should be performed in well ventilated areas. The major exposure hazard is inhalation.

Effects of overexposure are as follows:

Acute: Excessive inhalation of all metallic fumes and dusts may result in irritation of eyes, nose and throat. Also high concentrations of fumes and ducts of iron-oxide, manganese, copper & selenium may result in metal fume fever. Typical symptoms consist of a metallic taste in the mouth, dryness and irritation of the throat, chills and fever, and usually last from 12 to 48 hours.

Chronic: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the elements: *Iron (iron-oxide):* Pulmonary effects, siderosis *Manganese:* Bronchitis, pneumonitis, lack of coordination, central nervous system.

Chromium: Various forms of dermatitis, inflammation and/or ulceration of upper respiratory tract, and possibly cancer of nasal passages and lungs. Based on available information, there does not appear to be any evidence that exposure to welding fume induces human cancer.

Nickel: SAME AS CHROMIUM

Selenium: Nasal and bronchial irritation, gastro-intestinal disturbances, garlic odor of breath.

Copper: Pulmonary effects, nasal and paranasal sinus, skin and liver.

Vanadium: May affect lungs. May affect blood pressure as vanadium pentoxide.

Cobalt: Inhalation of cobalt dust may cause an asthma-like disease with cough and dyspnea.

Molybdenum: Pain in joints, hands, knees and feet.

Medical conditions generally aggravated by exposure would be dermatitis and pulmonary disease or disorders.

V. Fire and Explosion Hazard Data

<i>Flash Point</i>	NA
<i>Auto Ignition Temperature</i>	NA
<i>Extinguishing Method</i>	NA
<i>Extinguishing Method Not to be used</i>	NA
<i>Fire and Explosion Hazards</i>	Steel products in their natural state do not present a fire or explosion hazard.
<i>Flammable Units in Air</i>	Lower N/A Upper: N/A

VI. Spill or Leak Procedures

Minimal problems with spills of this product would occur because of its solid form. However, if there is a spill of dust, clean up using methods which avoid dust generation and the use of water, such as vacuum. If airborne dust is generated during the clean up, use an appropriate NIOSH-approved respirator.

Waste Disposal Method: Dispose of in accordance with appropriate federal, state and local regulations.

VII. Special Protection

<i>Respiratory Protection</i>	NIOSH approved dust/mist/fume respirator should be used during welding or burning if OSHA PEL or TLV is exceeded.
<i>Hands, Arms and Body</i>	Use appropriate clothing such as welders aprons & gloves when welding or burning. Check local codes.
<i>Eyes and Face</i>	Safety glasses should always be worn when grinding or cutting; face shields should be worn when welding or burning.
<i>Other Clothing and Equipment</i>	As required for protection depending on the operation and safety codes.

VIII. Emergency and First Aid Procedures

<i>Inhalation</i>	Remove to fresh air; if condition continues, consult physician.
<i>Eye Contact</i>	Immediately flush well with running water to remove particulate; get medical attention.
<i>Skin Contact</i>	If irritation develops, remove clothing and wash well with soap and water. If condition persists, seek medical attention.
<i>Ingestion</i>	If significant amounts of metal are ingested, seek medical attention.

IX. Carcinogenic Assessment

Keep Area Well Ventilated.

X. Reactivity Data

Stability: Stable

Incompatibility (Materials to Avoid): Stable under normal conditions to use, storage and transport. Reacts with strong acids to form hydrogen gas. At temperatures above melting point, metallic oxide fumes may be liberated.

Conditions to Avoid: Non-ventilated areas when cutting, welding, burning or brazing; avoid generation of airborne dust and fumes.

All the information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Elgen Manufacturing be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Elgen Manufacturing has been advised of the possibility of such damages.



Material Safety Data Sheet

Copyright, 2013, 3M Company All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M Brand Fire Barrier CP-25WB+
MANUFACTURER: 3M
DIVISION: Building & Commercial Services Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 08/18/13
Supersedes Date: 02/21/13

Document Group: 09-5451-1

Product Use:

Intended Use: Fire Protection
Specific Use: Used as Firestop in buildings.

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
Sodium Silicate	1344-09-8	10 - 30
Polymer	Trade Secret	10 - 30
Zinc Borate 2335	138265-88-0	10 - 30
Water	7732-18-5	10 - 30
Ethylhexyldiphenyl phosphate	1241-94-7	3 - 7
Iron oxide	1309-37-1	1 - 5
Polyethylene Glycol	25322-68-3	1 - 5
Oxide glass chemicals	65997-17-3	1 - 5
Triphenyl phosphate	115-86-6	< 1.0
Di-2-ethylhexylphenyl phosphate	16368-97-1	< 1.0
Polyoxyethylene monoethylphenyl ether	9036-19-5	< 1.0
3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	55965-84-9	< 0.001

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Paste

Odor, Color, Grade: Red with negligible odor

General Physical Form: Solid

Immediate health, physical, and environmental hazards:

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact:

Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

Prolonged or repeated exposure may cause:

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	<i>Not Applicable</i>
Flash Point	No flash point
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
OSHA Flammability Classification:	Not Applicable

5.2 EXTINGUISHING MEDIA

Non-combustible. Choose material suitable for surrounding fire.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode.

6.2. Environmental precautions

Collect the resulting residue containing solution. Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods

Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Collect as much of the spilled material as possible. Clean up residue with water.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. For industrial or professional use only. Avoid eye contact with dust or airborne particles.

7.2 STORAGE

Store away from areas where product may come into contact with food or pharmaceuticals. Store in a cool, dry place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use in a well-ventilated area.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Indirect Vented Goggles

8.2.2 Skin Protection

Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Butyl Rubber
Neoprene

8.2.3 Respiratory Protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Not applicable.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
Iron oxide	ACGIH	TWA, respirable fraction	5 mg/m3	
Iron oxide	OSHA	TWA, as fume	10 mg/m3	
Oxide glass chemicals	Manufacturer determined	TWA, as dust	10 mg/m3	
Polyethylene Glycol	AIHA	TWA, as particulate	10 mg/m3	
Triphenyl phosphate	ACGIH	TWA	3 mg/m3	
Triphenyl phosphate	OSHA	TWA	3 mg/m3	

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- CMRG: Chemical Manufacturer Recommended Guideline
- OSHA: Occupational Safety and Health Administration
- AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Paste
Odor, Color, Grade:	Red with negligible odor
General Physical Form:	Solid
Autoignition temperature	<i>Not Applicable</i>
Flash Point	No flash point
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>

Specific Gravity	1.35 [Ref Std: WATER=1]
Melting point	<i>No Data Available</i>

Solubility in Water	Complete
Volatile Organic Compounds	< 1 g/l
VOC Less H2O & Exempt Solvents	< 1 g/l

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

None known

10.2 Materials to avoid

None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified
Oxides of Phosphorus	Not Specified

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

CHEMICAL FATE INFORMATION

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of waste product in a facility permitted to accept chemical waste.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

42-0016-4710-8, 42-0016-4715-7, 42-0016-4716-5, 98-0400-5380-7, 98-0400-5381-5, 98-0400-5382-3, 98-0400-5383-1, 98-0400-

5406-0, 98-0400-5456-5, 98-0400-5562-0, 98-0400-5573-7, 98-0400-5610-7, 98-0400-5629-7

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

STATE REGULATIONS

CHEMICAL INVENTORIES

The components of this product are in compliance with the chemical notification requirements of TSCA.

INTERNATIONAL REGULATIONS

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 2 Flammability: 1 Reactivity: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 2 Flammability: 1 Reactivity: 0 Protection: X - See PPE section.

Hazardous Material Identification System (HMIS®) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA).

Reason for Reissue: Reissued to make corrections in tables.

Revision Changes:

Section 8: Prevention of swallowing information information was modified.

Section 2: Ingredient table information was modified.

Section 8: Exposure guidelines ingredient information information was modified.

Section 12: Chemical Fate phrase information was deleted.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely

within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M

3M USA MSDSs are available at www.3M.com

MSDS# 358-20
Date: 11/04/2013

Total Pages: 6

Foam Plus Foaming Coil Cleaner

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Catalog No. 358-20
Manufactured by: Specialty Chemical Manufacturing
 A DiversiTech Company
 1633-B High Bridge Road
 Quincy, FL 32351
D.O.T. EMERGENCY Phone: 1+800.255.3924 Chem-Tel
 +01.813.248.0584 International
Phone Number for Information: 770-422-2071 (Mon - Fri / 8am-5pm ET)
Date Revised: Nov. 4, 2013
Revision #: 2.0

SECTION 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS: See Section 15

DANGER: CORROSIVE MATERIAL. MAY CAUSE BURNS. IRRITATING TO EYES. MAY CAUSE SKIN IRRITATION. CONTENTS UNDER PRESSURE. CONTAINER MAY EXPLODE IF HEATED.

Potential Health Effects: See Section 11 for more information.

Likely Routes of Exposure: Skin contact, eye contact, inhalation, and ingestion.

Eye: Irritating to eyes.

Skin: May cause skin irritation.

Ingestion: Not a normal route of exposure. Harmful: may cause lung damage if swallowed.

Inhalation: May cause respiratory tract irritation. May cause a sphyxiation. This product may be aspirated into the lungs and cause chemical pneumonitis.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Signs and Symptoms: Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. Handling can cause dry skin. Vapours may cause drowsiness and dizziness.

Medical Conditions Aggravated By Exposure: Asthma. Allergies.

Target Organs: Skin, eyes, gastrointestinal tract, respiratory system.

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Environmental Effects: May cause long-term adverse effects in the aquatic environment. See Section 12 for more information.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS No.	% Weight
Propylene glycol mono-n-propyl ether	1569-01-3	3 -7
Isobutane	75-28-5	1 - 5
Sodium metasilicate	6834-92-0	0.5 - 1.5

SECTION 4. FIRST AID MEASURES

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before-reuse. Call a physician if irritation develops and persists.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or MSDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Foam Plus Foaming Coil Cleaner

SECTION 5. FIRE FIGHTING MEASURES

Flammability: Not flammable by OSHA criteria.

Means of Extinction:

Suitable Extinguishing Media: Powder, foam, carbon dioxide.

Unsuitable Extinguishing Media: Water.

Products of Combustion: Oxides of carbon.

Explosion Data:

Sensitivity to Mechanical Impact: Not available.

Sensitivity to Static Discharge: Not available.

Protection of Firefighters: Containers may explode when heated. Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate sources of ignition. Ruptured cylinders may rocket.

Environmental Precautions: Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). This material is a water pollutant. Keep out of drains, sewers, ditches, and waterways. Minimize use of water to prevent environmental contamination.

Methods for Containment: Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for Clean-Up: Vacuum or sweep material and place in a disposal container. Allow gas to dissipate harmlessly into the atmosphere.

Other Information: Not available.

SECTION 7. HANDLING AND STORAGE

Handling: Keep away from sources of ignition. No smoking. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas/fumes/vapor/spray. Use only in well-ventilated areas. Handle and open container with care. When using, do not eat or drink. Wash hands before eating, drinking, or smoking.

Storage: Keep out of the reach of children. Keep container in a well-ventilated place. Do not store at temperatures above 49°C / 120°F.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Ingredient
Propylene glycol mono-n-propyl ether
Isobutane
Sodium metasilicate

Exposure Limits

OSHA-PEL
Not available.
Not available.
Not available.

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Personal Protective Equipment:

Eye/Face Protection: Wear eye/face protection.

Hand Protection: Wear suitable gloves.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment.

HMIS: See Section 15

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.

Foam Plus Foaming Coil Cleaner

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Opaque.
Color:	White to light yellow.
Odour:	Citrus.
Odour Threshold:	Not available.
Physical State:	Gas/Pressurized Liquid.
pH:	> 12
Viscosity:	Not available.
Freezing Point:	Not available.
Boiling Point:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	> 1 (Air = 1)
Specific Gravity:	1.05 (Concentrate only)
Solubility in Water:	Complete.
Coefficient of Water/Oil Distribution:	Not available.
Auto-ignition Temperature:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	10.0% (US federal/CARB/OTC/LADCO)
VOC content, g/L:	Not available.

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under normal storage conditions. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn. Keep in a cool place.

Conditions of Reactivity: Heat. Incompatible materials.

Incompatible Materials: Oxidizers.

Hazardous Decomposition Products: Oxides of carbon.

Possibility of Hazardous Reactions: No dangerous reaction known under conditions of normal use.

SECTION 11. TOXICOLOGY INFORMATION

EFFECTS OF ACUTE EXPOSURE

Component Analysis

Ingredient	LD50(oral)	LC50
Propylene glycol mono-n-propyl ether	2504 mg/kg, rat	Not available.
Isobutane	Not available.	658 mg/L 4hr, rat
Sodium metasilicate	600 mg/kg, rat	Not available.

Eye: Irritating to eyes. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Skin: May cause skin irritation. Handling can cause dry skin.

Ingestion: Not a normal route of exposure. Harmful: may cause lung damage if swallowed.

Inhalation: May cause respiratory tract irritation. May cause asphyxiation. This product may be aspirated into the lungs and cause chemical pneumonitis. Vapours may cause drowsiness and dizziness.

Foam Plus Foaming Coil Cleaner

SECTION 11. TOXICOLOGY INFORMATION (cont.)

EFFECTS OF CHRONIC EXPOSURE

Target Organs: Not available.

Chronic Effects: (Effects due to excessive exposure to the raw materials of this mixture). May cause diarrhea, vomiting or gastrointestinal irritation.

Carcinogenicity: Not hazardous by OSHA criteria.

Ingredient

Propylene glycol mono-n-propyl ether
Isobutane
Sodium metasilicate

Chemical Listed as Carcinogen or Potential Carcinogen *

Not listed
Not listed
Not listed

* See Section 15 for more information.

Mutagenicity: Not hazardous by OSHA criteria.

Reproductive Effects: Not hazardous by OSHA criteria.

Developmental Effects:

Teratogenicity: Not hazardous by OSHA criteria.

Embryotoxicity: Not hazardous by OSHA criteria.

Respiratory Sensitization: Not hazardous by OSHA criteria.

Skin Sensitization: Not hazardous by OSHA criteria.

Toxicologically Synergistic Materials: Not available.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity: May cause long-term adverse effects in the aquatic environment

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Instructions: This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14. TRANSPORTATION INFORMATION

DOT Classification

ORM-D

SECTION 15. REGULATORY INFORMATION

Federal Regulations

US: MSDS prepared pursuant to the Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III

Ingredient

Ingredient	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313
Propylene glycol mono-n-propyl ether	Not listed	Not listed	Not listed	Not listed
Isobutane	Not listed	Not listed	Not listed	Not listed
Sodium metasilicate	Not listed	Not listed	Not listed	Not listed

Foam Plus Foaming Coil Cleaner

SECTION 15. REGULATORY INFORMATION (cont.)

State Regulations

California Proposition 65:

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Global Inventories

Ingredient	USA TSCA
Propylene glycol mono-n-propyl ether	Yes
Isobutane	Yes
Sodium metasilicate	Yes

HMS - Hazardous Materials Identification System

Health - 2 Flammability - 1 Physical Hazard - 0 PPE - B

NFPA - National Fire Protection Association:

Health - 2 Fire - 1 Reactivity - 0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

OSHA (O) Occupational Safety and Health Administration.

ACGIH (G) American Conference of Governmental Industrial Hygienists.

- A1 - Confirmed human carcinogen.
- A2 - Suspected human carcinogen.
- A3 - Animal carcinogen.
- A4 - Not classifiable as a human carcinogen.
- A5 - Not suspected as a human carcinogen.

IARC (I) International Agency for Research on Cancer.

- 1 - The agent (mixture) is carcinogenic to humans.
- 2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
- 2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
- 3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans
- 4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

NTP (N) National Toxicology Program.

- 1 - Known to be carcinogens.
- 2 - Reasonably anticipated to be carcinogens.

SECTION 16. OTHER INFORMATION

Disclaimer:

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

MATERIAL SAFETY DATA SHEET
COMPLIES WITH OSHA'S HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

SECTION I - PRODUCT IDENTIFICATION

Product Name: Foaming Coil Cleaner
Product Number: 358-20
Product Type: AEROSOL
Supplier's Name: Diversitech Corporation
Supplier's Address: 2530 Lantrac Court Decatur, GA. 30035
D.O.T. Hazard Class: CONSUMER COMMODITY - ORM-D

Formula: Proprietary
Date Prepared: 04/30/04
Emergency Phone: (800) 255-3924
Information Phone: (770) 593-0900

HMIS Rating (Based on Aerosol Conc.):
0-Minimal 1- Slight 2- Moderate
3- Serious 4- Extreme
HEALTH: 1 FIRE: 0 REACTIVITY: 0
Personal Protection: A

SECTION II - INGREDIENTS

CHEMICAL NAME	CAS #	%WT	313/Chem	Skin	Carcinogen	PEL	TW/TLV
Ethylene Glycol Monobutyl Ether	111-76-2	01-05	YES	NO	NO	50 ppm	50 ppm
Sodium Metasilicate	6834-92-0	01-05	YES	NO	NO	N/E	N/E
Liquefied Petroleum Gas	68476-85-7	05-10	NO	NO	NO	1000 ppm	1000 ppm

SECTION III - PHYSICAL DATA

Data Below Based On Aerosol Concentrate Only:

Boiling Point: ~212 °F

pH: 12.8

Solubility in Water: Complete

Appearance/Odor: Opaque / Lemon Odor

Data Below Based On Total Contents:

Vapor Pressure of can (psig @70°F): 55

Total VOC %: ~8%

Vapor Density(Air=1): >1

Specific Gravity (H₂O=1)@75°F: 1.027

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point (of Concentrate Only): None to Boiling (~212° F)

Flammability (as per USA Flame Projection Test): Non-Flammable Spray

Extinguishing Media: Foam, CO₂, Dry Media

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Cool fire exposed containers to prevent rupturing.

Unusual Fire and Explosion Hazards: Exposure to temperature above 120° F may cause bursting.

SECTION V - REACTIVITY DATA

Stability: Material Stable.

Hazardous Polymerization: Will not Occur.

Incompatibility: Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products: Carbon Dioxide, Carbon Monoxide

SECTION VI - STORAGE AND HANDLING

KEEP OUT OF REACH OF CHILDREN.

For Industrial and Institutional use only.

Store in a cool, dry area away from heat or open flame.

Do not store at temperatures above 120° F.

NFPA Code 30B Rating: Level 1 Aerosol.

SECTION VII - HEALTH AND FIRST AID

PRIMARY ROUTES OF ENTRY & EFFECTS OF OVER EXPOSURE:

Eyes: May cause slight irritation but does not injure eye tissue.

Skin: Frequent or prolonged contact may cause irritation.

Inhalation: Inhalation of mist can cause irritation of nasal and respiratory passages. Abusive or excessive inhalation may cause irritation to the upper respiratory tract, dizziness, nausea and other central nervous system effects.

Ingestion: Can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis. Minimal toxicity.

FIRST AID PROCEDURES:

Eyes: Flush with large amounts of cool running water for at least 15 minutes while holding upper and lower lids open. If irritation persists get medical attention immediately.

Skin: Wash with soap and water. If irritation persists seek medical attention.

Inhalation: Remove to fresh air. Seek medical attention immediately. If breathing stops give artificial respiration.

Ingestion: Do not induce vomiting. Seek medical attention immediately.

SECTION VIII - SPECIAL PROTECTION DATA

Respiratory Protection: None needed for proper use in accordance with label directions.

Ventilation: Provide local exhaust to keep TLV of Section II ingredients below acceptable limits.

Protective Gloves: None needed for proper use in accordance with label directions. Use chemical resistant gloves if hand contact will be made.

Eye Protection: None needed unless it is anticipated that a splash or spray back will occur, then wear safety glasses or chemical proof goggles.

SECTION IX - SPILL OR LEAK PROTECTION

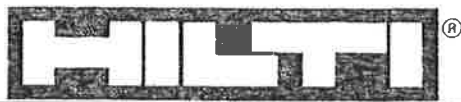
STEPS TO BE TAKEN IN CASE OF SPILL OR LEAK: Allow foam to dissipate and all propellant to evaporate. Maintain local exhaust and adequate ventilation. No smoking.

Keep sparks, heat sources and open flame far away from spill or leak. Cover with absorbent material and sweep up. Wash area to prevent slipping. Dispose of soaked absorbent material in accordance with Federal, State and local laws.

WASTE DISPOSAL METHOD: Aerosol cans, when emptied and depressurized through normal use, pose no disposal hazard and should be recycled. Consult Federal, State and local authorities for approved procedures.

N/A= NOT APPLICABLE · N/E=NOT ESTABLISHED · N/D=NOT DETERMINED · <=LESS THAN · >=MORE THAN

NOTICE: The information contained on this Material Safety Data Sheet is considered accurate as of the date of publication. It is not necessarily all-inclusive nor fully adequate in every circumstance. The suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements. No warranty, express or implied, of merchantability, fitness, accuracy of data, or the results to be obtained from the use thereof is made. The vendor assumes no responsibility for injury or damages resulting from the inappropriate use of this product.



MATERIAL SAFETY DATA SHEET

Product name: GC22
Description: Aerosol propellant for use with Hilti GX 120 fastening tool
Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121
Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 703 527 3887 (Other countries)

For: ALLRED MECHANICAL SERVICES INC
 P O Box 7663
 ROCKY MOUNT, NC 27804-0663

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	TLV:	PEL:	STEL:
Isobutane	75-28-5	NE	NE	NE
Propylene	115-07-1	500 ppm	NE	NE
Propane*	74-98-6	1000 ppm	1000 ppm	NE

* Propane remains in the can and is not released.

Abbreviations: PEL = OSHA Permissible Exposure Limit. TLV = ACGIH Threshold Limit Value. STEL = Short Term Exposure Limit. NE = None Established. ppm = Parts per million.

PHYSICAL DATA

Appearance:	Colorless aerosol.	Odor:	Sweet petroleum odor.
Vapor Density: (air = 1)	Not determined.	Vapor Pressure:	4793 mm Hg @ 68 F.
Boiling Point:	Not determined.	VOC Content:	Not determined.
Evaporation Rate:	Not determined.	Solubility in Water:	Negligible.
Density:	1.28 g/cm ³ @ 68 F.	pH:	Not applicable.

FIRE AND EXPLOSION HAZARD DATA

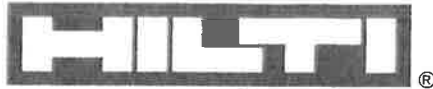
Flash Point:	Not applicable.	Flammable Limits:	LEL = 1.3% UEL = 11.1%
Extinguishing Media:	Carbon Dioxide, Dry Chemical, Foam, Water		
Special Fire Fighting Procedures:	Extremely flammable aerosols. Cool with water spray to prevent ignition.		
Unusual Fire and Explosion Hazards:	Extremely flammable. Contents under pressure. Containers exposed to fire can burst or be propelled through the air.		

REACTIVITY DATA

Stability:	Stable.	Hazardous Polymerization:	Will not occur.
Incompatibility:	Strong oxidizing agents.		
Decomposition Products:	Thermal decomposition can yield CO and NO _x .		
Conditions to Avoid:	Potential ignition sources such as extremely hot surfaces, flames, sparks, static discharges, etc.		

HEALTH HAZARD DATA

Known Hazards:	Irritation. Direct contact with contents can cause irritation or frostbite.		
Signs and Symptoms of Exposure:	Contact: No effects expected from normal use. Direct contact with liquefied gas (e.g. from a leaking can) can cause irritation and possibly burns (i.e. frostbite). Inhalation: No ill effects expected from normal use. Contains asphyxiant gases. Direct inhalation of gases can cause narcotic effects. Ingestion: Not a likely route of exposure.		
Routes of Exposure:	Dermal. Inhalation.		
Carcinogenicity:	No ingredients are classified as a carcinogen by IARC, NTP or OSHA.		



Hilti (Canada) Corporation

MSDS No.: 314C
 Revision No.: 004
 Prep. Date: 05/23/12
 Page: 1 of 2

MATERIAL SAFETY DATA SHEET

Product identifier: GC22
Product use: Aerosol propellant for use with Hilti GX 120 fastening tool
Supplier: Hilti (Canada) Corporation, 2360 Meadowpine Blvd., Mississauga, Ontario L5N 6S2
Originator: Hilti, Inc., P. O. Box 21148, Tulsa, Oklahoma, USA 74121
Emergency number: Chem-Trec: 1 800 424 9300

INGREDIENTS INFORMATION

Ingredient	CAS Number	% (wt.)	LC ₅₀ , (rat)	LD ₅₀ (rat)	TLV	STEL
Isobutane	75-28-5	40 – 70	N/Av	N/Av	N/E	N/E
Propylene	115-07-1	10 – 30	N/Av	N/Av	500ppm	N/E
Propane*	74-98-6	30 – 60	N/Av	N/Av	1000 ppm	N/E

* Propane remains in the can and is not released.

PHYSICAL PROPERTIES

Appearance / Physical state:	Colorless aerosol.	Odour:	Alcohol odor
Density:	1.28 gm/cm ³ @ 20° C.	Odour threshold:	Not determined.
Vapour pressure (at 20°C):	4793 mm Hg	Vapour density:	Not determined.
Evaporation rate:	Not determined.	Boiling point:	Not determined.
Freezing point:	Not determined.	pH:	Not determined.
Coefficient of H₂O / oil distrib:	Not determined.	Solubility in water:	Negligible.

FIRE AND EXPLOSION DATA

Flash point / Method:	Not applicable	Flammable limits:	LEL=1.3% UEL=11.1%
Conditions of flammability:	Not determined.	Auto-ignition temperature:	Not determined.
Means of extinction:	Water, CO ₂ , Dry Chemical, Foam.		
Special fire fighting procedures:	Extremely flammable aerosols. Cool with water spray to prevent ignition. Containers exposed to fire can burst or be propelled through the air.		
Hazardous combustion products:	Typical thermal decomposition products can be formed; e.g. CO and NO _x .		
Sensitivity to mechanical impact / static discharge:	Susceptible to a static discharge.		

REACTIVITY DATA

Stability:	Stable.	Conditions of reactivity:	None known.
Incompatible materials:	Strong oxidizing materials.		
Hazardous decomposition products:	Thermal decomposition products can be formed; e.g. CO and NO _x .		

TOXICOLOGICAL PROPERTIES

Likely routes of exposure:	<input type="checkbox"/> None known <input checked="" type="checkbox"/> Skin contact <input type="checkbox"/> Skin absorption <input checked="" type="checkbox"/> Eye contact <input checked="" type="checkbox"/> Inhalation		
Exposure limits:	See "Ingredients" section above.		
Acute effects of exposure:	Contact: No effects expected from normal use. Direct contact with liquefied gas (e.g. from a leaking can) can cause severe irritation and possibly burns (i.e. frostbite). Inhalation: No ill effects expected from normal use. Contains asphyxiant gases. Direct inhalation of gases can cause narcotic effects. Ingestion: Not a likely route of exposure.		
Chronic effects of exposure:	None known.		
Synergistic materials:	None known.		

FIRST AID MEASURES

Eyes: For contact with liquefied gas, flush immediately with plenty of water and contact a Physician

Skin:	immediately. If contact with liquefied (cold) gases occurs, rinse affected area thoroughly with warm running water. Do not use hot water. Do not rub the skin. Contact a Physician if symptoms occur.
Inhalation:	Move victim to fresh air. Call a physician if symptoms persist.
Ingestion:	Not a likely route of exposure.
Other:	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure

PREVENTIVE MEASURES

Engineering controls:	General (natural or mechanically induced fresh air movements).
Eye protection:	Safety glasses with side shields.
Skin protection:	Leather or heavy cloth gloves are recommended.
Respiratory protection:	None normally required. Where ventilation is inadequate to control vapors, use NIOSH-approved respirator with organic vapor cartridges.
Other:	No additional measures are normally required.
Handling procedures and equipment:	For industrial use only. Follow label / use instructions. Extremely flammable gas under pressure. Keep away from excessive heat, sparks, flames and any other potential ignition sources. Do not allow liquefied gases to come in contact with the skin. Use with adequate ventilation.
Storage requirements:	Keep out of reach of children. Store in a cool dry area between 5° and 25° C. Do not store in direct sunlight. Do not store with DX Cartridges (Boosters).
Spill, leak or release:	Immediately remove any ignition sources. Wear appropriate personal protective equipment. Provide adequate ventilation to disperse gases.
Waste disposal:	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, provincial, and federal safety, health and environmental regulations.
Special shipping instructions:	According to TDG shipping regulations. See below.

REGULATORY INFORMATION

WHMIS classification:	A, B1, D2B
HMS codes:	Health 1, Flammability 4, Reactivity 0, PPE b
TDG shipping name:	Consumer commodity
IATA (air) Shipping Name:	Devices, small hydrocarbon gas powered <i>with release devices</i> , Class 2.1, UN3150

PREPARATION INFORMATION / CONTACTS

Prepared by:	Hilti, Inc., Tulsa, OK USA	Date of Preparation:	May 23, 2012	Emergency phone number:	1 800 424 9300
Customer Service:	Hilti (Canada) Corporation, Mississauga, Ontario; 1 800 363 4458				
Health / Safety contacts:	Hilti, Inc., Tulsa, OK USA; 1 800 879 6000 Jerry Metcalf (x1003704)				
Abbreviations used:	N/E = None Established. N/Ap = Not Applicable. N/Av = Not Available. HMIS: Hazardous Materials Identification System				

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.



MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Insta-Tack
Synonyms: Solvent-Based Adhesive

Manufacturer/Supplier
Carlisle HVAC Products
900 Hensley Lane
Wylie, TX 75098
Internet Address: www.carlislehvac.com
Fax Number: (972) 442-0076

Phone Numbers
Medical Emergency:
CHEMTREC (USA): (800) 424-9300
CHEMTREC (International):
MSDS Assistance: (972) 442-6545
Fax On Demand: NA
Technical Assistance: (888) 229-2199
Customer Service: (888) 229-0199

2. COMPONENT INFORMATION

Table with 4 columns: Component, CAS No., Percent Range, Hazardous in Blend. Row 1: Heptane, 142-82-5, 650 - 70

This product is not hazardous according OSHA 29 CFR 1910.1200.

Hazards:
Flammable/Combustible Yes Acute No Chronic No Carcinogen No
Toxin Toxin
Pressure No Reactive No Exposure Limit Target Organ Other

2A. OTHER INGREDIENTS Greater than 3%

Table with 2 columns: Component, CAS No. Row 1: Styrene Butadiene Polymer, 9003-55-8. Row 2: Rosin Ester, 65997-05-9

3. HAZARDS IDENTIFICATION

Emergency and Hazards Overview:
May cause moderate irritation to eyes. May be harmful if swallowed. Read and understand all health and safety information on the product label and Material Safety Data Sheet before use.

Ratings
Health 1 Flammability 4 Reactivity 0

Primary Route of Exposure: Skin x Inhalation x Eye x Ingestion x

Primary Entry Routes: Skin contact, skin absorption, eye contact, inhalation, ingestion.
Target Organs:
Acute Effects
Inhalation: Nose and throat irritation on short term exposure to liquid or vapor.
Eye: Irritation on short term exposure to liquid or vapor.
Skin: Irritation on short term exposure to liquid or vapor. Solvents may be absorbed through the skin in toxic amounts.
Ingestion: Irritation of gastrointestinal tract.
Carcinogenicity: IARC, NTP, and OSHA do not list this product as a carcinogen.
Medical Conditions Aggravated by Long-Term Exposure: Respiratory symptoms associated with pre-existing lung disorders and pre-existing heart disorders may be aggravated by exposure to this material.

Chronic Effects: Overexposure may result in headache, dizziness, fatigue, nausea and loss of consciousness. Chronic exposure may cause reversible kidney and liver damage.

4. FIRST AID MEASURES

Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention immediately.

Eye Contact: Immediately flush eyes with running water for at least 15 minutes. Get medical attention.

Skin Contact: Immediately flush skin with running water and remove contaminated clothing. Wash exposed area with soap and water. Get medical attention.

Ingestion: Do not induce vomiting. Get medical attention immediately.

Note to Physicians: This product contains Heptane, an organic solvent.

Special Precautions/Procedures: Whenever possible, remove the worker from the source of contamination.

5. FIRES AND EXPLOSION INFORMATION

Flammable Properties

Flash Point: -13 deg C/ 8 deg F

Test Method: Closed cup

Flame extension: NA

Test Method: NA

Flammable Limits in Air

Upper Percent: 7% by vol

Lower Percent: 1.0 % by vol

Auto ignition Temperature: 433 deg F (223 deg C) **Test Method:** NA

NFPA Classification: H 1 F 4 R 0

Flammability Classification: Division 2. Ignition can occur when this product is exposed to heat, sparks, or flame.

Extinguishing Media: In case of fire, use dry chemical, carbon dioxide, or foam. Water may not be effective as an extinguishing agent. Water fog or spray may be used to provide a smothering effect on fire and to cool fire-exposed container and surrounding combustibles. Do not use a solid stream of water because it can scatter and spread the fire.

Unusual Fire or Explosion Hazards: Extremely flammable. Store and use away from all sources of heat, flame, or sparks. DO not smoke while applying. Vapors are heavier than air and may travel along ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electrical motors, static discharge, or other ignition sources at location distant from material handling point and flash back. All containers should be grounded when material is transferred.

Hazardous Combustion Products: Toxic gases or vapors, such as carbon monoxide, carbon dioxide, or oxides of nitrogen may be released in a fire.

Fire-Fighting Instructions: This product contains solvents that are dangerous fire and explosion hazards when exposed to heat or flame. Fire fighters should wear self-contained breathing apparatus and full protective clothing with a full face piece operated in the positive pressure demand mode.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Spill /Leak Procedures: Remove all sources of ignition. Avoid breathing vapors. Use self-contained breathing apparatus in enclosed area. Ventilate area. Contain and remove with inert absorbent materials and non-sparking tools.

Large Spills:

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

Cleanup: Clean-up spill as soon as possible. Collect any excess material with absorbent pads, sand or other inert non-combustible absorbent materials. Place into appropriate waste containers for later disposal. Comply with all laws and regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

7. HANDLING AND STORAGE INFORMATION

Handling Precautions: Use away from all sources of heat, flame, or sparks. Do not smoke while using. Handling equipment must be grounded to prevent sparking. Handle with non-sparking tools. Wash with soap and water before eating or drinking. Launder contaminated clothing. KEEP OUT OF REACH OF CHILDREN.

Storage Requirements: Keep containers cool, dry, and store away from all sources of heat, flame, and sparks. Keep containers tightly closed and store with adequate ventilation. Do not pressurize, cut, weld, or grind the containers or empty containers which may contain residual product and solvent vapors that may ignite explosively.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION INFORMATION

Exposure Limits and Guidelines

Component	CAS No.	Exposure Limit
Heptane	142-82-5	400 ppm OSHA PEL/TWA 500 ppm OSHA/ STEL 85 ppm NIOSH REL/TWA 440 ppm NIOSH REL/STEL 750 ppm NIOSH IDLH

Engineering Controls: Do not use in enclosed areas without proper explosion-proof ventilation. General and local exhaust ventilation must be sufficient to control vapor concentrations and keep the PEL below 400 ppm.

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls:

Respiratory Protection: Approved respirator must be used if PEL is 400 ppm or above.

Protective Clothing/Equipment: Hycron, Neoprene, or Nitrile glove recommended. Glasses or goggles recommended. Industrial shoes to protect feet from adhesive contact. Protective skin creams or emollients useful.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Red liquid	Vapor Pressure: 45 mm Hg @ 20°C
Odor: Strong hydrocarbon odor	Vapor Density (air=1): 3.45
Physical state: Liquid	Percent Volatile by Weight: 65 - 70
pH: NA	Volatile Organic Content: 543 gpl
Evaporation Rate: 3.7	Molecular Weight: NA
Boiling Point: 209°F (98.5 deg C)	Average Carbon Number: NA
Melting Point/Freezing Point: -90.5 C	Viscosity @ 77 F: 200 cps
Specific Gravity: 0.78	
Pour Point: NA	
Solubility in Water: Negligible	
Octanol / Water Coefficient: Log K _{ow} = NA	

10. STABILITY AND REACTIVITY INFORMATION

Stability: Stable

Polymerization: Will not occur.

Chemical Incompatibilities: Strong oxidizing agents, acids, bases.

Conditions to Avoid: Heat, sparks, and flames; ignition sources.

Hazardous Decomposition Products: Toxic gases or vapors such as carbon monoxide, carbon dioxide, or oxides of nitrogen may be released in a fire.

11. TOXICOLOGICAL INFORMATION (will only print available data)

Toxicity Data:

Eye Effects:

Irritating

Skin Effects:

Irritating

Acute Inhalation Effects: Product toxicity has not been determined. Following are the component data:
Heptane: Human, inhalation, TC_{LO}: 1000 ppm

Acute Oral Effects: Product toxicity has not been determined. Following are the component data:
Heptane: Rat, ivn, LD₅₀: 222 mg/kg

Chronic Effects: May cause skin sensitization in some people

Carcinogenicity: Not listed in IARC or NTP

Mutagenicity: No evidence

Teratogenicity: No evidence

12. ECOLOGICAL INFORMATION

Ecotoxicity: Not known

Environmental Fate: Not known

Environmental Degradation: Not known

Soil Absorption/Mobility: Not known

13. DISPOSAL INFORMATION

Regulatory Information: Consult all regulations (federal, state, provincial, local etc.) or a qualified waste disposal firm when characterizing waste for disposal.

Waste Disposal Methods: Recover free liquid. Absorb residue and dispose of according to local, state and Federal EPA regulation. Empty container: may contain explosive vapors. Do Not cut, puncture or weld on or nearby.

14. TRANSPORTATION INFORMATION

DOT Transportation Data (49 CFR 172.101):

Shipping Name:	Packaging Authorizations	Quantity Limitations
Adhesives, 3, UN1133, III	a) Exceptions: 173.150 b) Non-bulk Packaging: 173.173 c) Bulk Packaging: 173.242	a) Passenger, Aircraft, or Railcar: 5 1 b) Cargo Aircraft Only: 60 l
Shipping Symbols: Flammable		Vessel Stowage Requirements
Hazard Class: 3		a) Vessel Stowage: B
ID No.: UN1133		b) Other: ---
Packing Group: III		
Label: red caution label required		
Special Provisions (172.102): 149, B52, IB2, T4, TP1, TP8		

15. REGULATORY INFORMATION

EPA Regulations:

RCRA Hazardous Waste Number (40 CFR 261.33): Not listed

RCRA Hazardous Waste Classification (40 CFR 261): Not classified

TSCA (Toxic Substances Control Act) Status:

TSCA (United States) – The intentional ingredients of this product are listed.

CERCLA Hazardous Substance RQ – 40 CFR 302.4 (a): None listed

CERCLA RQ – 40 CFR 302.4 (b)

Materials with a “listed” RQ may be reportable as an “unlisted hazardous substance”. See 40 CFR 302.5 (b).

SARA 311/312 Codes:

Immediate (X) Delayed (X) Fire (X) Reactive () Sudden Release of
Pressure ()

SARA 313 Components (40 CFR 372.65): None listed

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning
Quantity (TPQ)

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

OSHA Specifically Regulated Substance (29 CFR 1910): None listed

EPA Accidental Release Prevention (40 CFR 68): None listed

State Regulations:**California Proposition 65:**

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the State of California to cause reproductive harm:

None listed

Delaware Air Quality Management List: None listed

Florida Toxic Substance: The following components are listed as a toxic substance by the state of Florida:

Heptane

Massachusetts Hazardous Substances List:

Chemical Name	CAS #	Codes
Heptane	142-82-5	2, 4, 5, 6

Michigan Critical Materials Registry: None listed

Minnesota Hazardous Substance:

Chemical Name	Codes	Hazards	Carcinogen?
Heptane	ANO	--	No

New Jersey RTK Label Information: None listed

New York List of Hazardous Substances: None listed

Pennsylvania RTK Label Information

Chemical Name	CAS #	Code
Heptane	142-82-5	--

Washington Air Contaminant:

TWA (ppm):	None listed
TWA (mg):	None listed
STEL (ppm):	None listed
STEL (mg):	None listed
Ceiling (ppm):	None listed
Ceiling (mg):	None listed
Skin:	None listed

16. OTHER INFORMATION**Health and Environmental Label Language**

All ingredients contained in this product are included on the US EPA Toxic Substances Control Act (TSCA) inventory or exempt from listing on the TSCA inventory. All ingredients contained in this product comply with the requirements of the Canadian Environmental Protection Act (CEPA) and are listed on the Domestic Substance List (DSL) or Non-Domestic Substance List (NDSL)

MSDS Revisions

Previous Version Date: 07/01/08

Section

Old Information:

New Information:

Prepared By: R&D Department

Date: 07/01/11

Disclaimer of Warranty: The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, CCWI Company must rely upon the hazard evaluation of such components submitted by that product's manufacturer or importer. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT IDENTIFICATION

Product name: MASTERS CUTTING OIL

Product use: Thread Cutting Lubricant

Supplier / Manufacturer name and address:

G.F. THOMPSON CO. LTD.
620 Steven Court
Newmarket, Ontario
L3Y 6Z2

Emergency Tel. #:

Mon – Fri, 7:30 am to 5:00 pm EST

905-898-2557

800-499-3673 (toll free)

24 hr Emergency Tel:

905-252-4793

WHMIS CLASS: Not Controlled

SECTION II - HAZARDOUS INGREDIENTS

Ingredients

CAS#

No Hazardous Ingredients found in this product

SECTION III - PHYSICAL DATA

Physical State:	Liquid
Odour and appearance:	Clear Golden to amber solution with petroleum odour.
Specific gravity:	0.89
Vapor pressure (mm Hg @ 20°C):	<0.1
Boiling point:	Not Determined
pH:	Not Applicable
Vapor density (Air = 1) :	>1.0
Evaporation rate (BuAc = 1):	Not Determined
Freezing Point:	Not Determined
Solubility in water:	Insoluble
VOC's:	NONE

*This product contains no ingredient meeting the US EPA definition of VOC.
(see miscellaneous information)

SECTION IV - FIRE AND EXPLOSION DATA

Conditions of flammability:	Will burn at temperatures above the Flash Point
Extinguishing Media:	Small fire – use dry powder Large fire – use water spray, fog or foam. Do not use water jet.
Flash point (Method) :	>180° C / 356° F COC
Upper flammable limit %:	Not determined

Lower flammable limit %: Not determined
Hazardous Combustion Products: Oxides of Carbon and sulfur in cases of incomplete combustion, smoke and fumes.
Unusual Fire and Explosion Hazard: None known

***** NFPA CLASSIFICATION ****

Health - 1
 Fire - 1
 Reactivity 0

=====

SECTION V - REACTIVITY DATA

=====

Stability: Stable.
Incompatible materials: Strong oxidizing agents: Peroxides, Chlorine, Strong Acids, etc.
Hazardous Polymerization: Material is not known to polymerize.
Hazardous Decomposition: Oxides of Carbon and Sulfides.

=====

SECTION VI – HEALTH HAZARD INFORMATION

=====

**** Routes of entry ****

Inhalation: No acute effects are expected.
Skin: Prolonged or repeated contact with skin may cause dryness or mild irritation
Eyes: This product can cause redness, irritation or a burning sensation.
Ingestion: Small amounts ingested incidental to normal handling are not likely to cause injury, large amounts ingested may cause injury

=====

SECTION VII - FIRST AID

=====

Inhalation: If breathing is difficult, remove victim to fresh air, give artificial respiration if not breathing.
Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water or waterless hand cleaner. If irritation occurs, get medical attention.
Eyes: In case of contact, check and remove any contact lenses, flush eyes with large amounts of water for at least 20 minutes. Get medical attention.
Ingestion: Do not induce vomiting unless instructed to do so by a doctor. Get medical attention.

=====

SECTION VIII - PREVENTIVE MEASURES

=====

Spill, leak or release: If material is spilled or released to the atmosphere, steps should be taken to prevent discharges to streams or sewer systems. Spills or releases should be reported, if required, to the appropriate local, provincial and federal regulatory agencies.
Waste disposal: Clean up action should be carefully planned and executed. Shipment, storage and / or disposal of waste materials are regulated and action to

Storage: handle or dispose of spilled or released materials must meet all local, provincial and federal rules.
Protect against physical damage. Separate from oxidizing materials.
Store in cool, well ventilated area of non-combustible construction away from possible sources of ignition.

***** PROTECTIVE EQUIPMENT *****

Respiratory protection: Not required under normal OSHA PEL. Use NIOSH approved respirators to prevent over-exposure.
Ventilation: Use explosive proof ventilation as required to control vapour concentration.
Protective gloves: Nitrile gloves provide best protection to hands and arms.
Eye protection: Safety glasses with side shields or goggles.
Personal Hygiene: Wear effective plant clothing. Contaminated clothing should be removed and washed in soap and water. Cleanse skin thoroughly with soap and water before meals. Shower and eyewash facilities should be accessible.

=====
Miscellaneous Information
=====

This product is formulated without the use of VOC's, and further there are no VOC's in this product.

The EPA definition of a VOC (1997) is:

“Volatile organic compounds (VOC) means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions”

In all metalwork fluids containing amines, there is a potential for forming nitrosamine, which are animal carcinogens. Therefore, no nitrates or related nitrosamine agents should be added to such composition.

=====
Additional Notes
=====

Prepared by: G. F. THOMPSON CO. LTD.
Telephone: 905-898-2557
Preparation date: December 1, 2012



Material Safety Data Sheet # 305

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055-7398
Information Telephone: 1-800 221-9330
Internet: www.herchem.com

NFPA	HMIS	PPE	Transport Symbol
	HEALTH 0 FLAMMABILITY 0 REACTIVITY 0		

Preparation 7/16/08

Revision Date 9/30/11

Revision Number 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identity: Megaloc®

Intended Use: Multi-purpose thread sealant.

Manufacturer: Hercules Chemical Company, Inc.
111 South Street
Passaic, New Jersey 07055-7398

Information Telephone: (800) 221-9330

Internet: <http://www.herchem.com>

Emergency Phone: CHEMTREC: (800) 424-9300

MSDS Date of Preparation: 07/16/08

2. HAZARDS IDENTIFICATION

This product is a blue paste with no odor.

EMERGENCY OVERVIEW

May cause mild eye irritation.

May cause mild skin irritation on prolonged contact.

Prolonged inhalation of dusts from dried product may cause lung damage.

Ingestion: Swallowing may cause nausea, vomiting and diarrhea.

Inhalation: Inhalation is not a normal route of exposure for this product. Inhalation of dusts from dried product may cause irritation of the nose throat and upper respiratory tract.

Eye: May cause mild irritation or discomfort.

Skin: Prolonged contact may cause mild irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	Amount
Petroleum-based Lubricating Oil	64741-88-4, 64742-54-7, 64742-70-7	30-60%
Talc	14807-96-6	10-30%
Kaolin	1332-58-7	10-30%
Titanium Dioxide	13463-67-7	1-5%
Silica, amorphous, fumed	112945-52-5	0.5-1.5%
Poly (P-phenylenediamine terephthalamide)	26125-61-1	1-5%
Non-Hazardous Ingredients	Mixture	10-30%

4. FIRST AID MEASURES

Eye: Flush victim's eyes with large quantities of water, holding the eyelids apart. Get medical attention if irritation persists.

Skin: No first aid is required. Wash with soap and water after use.

Ingestion: Do not induce vomiting. Get immediate medical attention.

Inhalation: No first aid is required. Inhalation is not a normal route of exposure for this product.

5. FIRE FIGHTING MEASURES

Flashpoint: Not applicable

Flammable Limits: Not applicable

Autoignition Temperature: Not applicable

Extinguishing Media: Use water fog or spray, carbon dioxide, dry chemical or foam.

Unusual Fire or Explosion Hazards: Not classified as flammable or combustible but will burn under fire conditions.

Special Fire-Fighting Instructions: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

Hazardous Combustion Products: Burning may produce carbon monoxide, carbon dioxide and unidentified hydrocarbons.

Explosion Data (sensitivity to mechanical impact or static discharge): None known.

6. ACCIDENTAL RELEASE MEASURES

Collect with inert absorbent and place in container for disposal. Report releases as required by local, provincial and federal authorities.

7. HANDLING AND STORAGE

Handling: Avoid contact with the eyes. Keep containers closed when not in use.

Storage: Store in a cool, dry area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines:**

Petroleum-based Lubricating Oil	5 mg/m3 ACGIH TLV (as oil mist)
Talc	2 mg/m3 ACGIH TLV (respirable dust)
Kaolin	2 mg/m3 ACGIH TLV (respirable dust)
Titanium Dioxide	10 mg/m3 ACGIH TLV
Silica, amorphous, fumed	2 mg/m3 ACGIH TLV
Poly (P-phenylenediamine terephthalamide)	5 mg/m3 Dupont AEL & AIHA WEEL (total dust)
Non-Hazardous Ingredients	None Established

Engineering Controls: None required for normal use.

Respiratory Protection: None normally needed.

Skin Protection: None normally required. Rubber gloves can be worn to prevent prolonged contact.

Eye Protection: Safety glasses recommended where contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance And Odor: Blue paste with no odor.

Physical State: Paste	Boiling Point: Not applicable
Vapor Density: Not applicable	Vapor Pressure: Not applicable
Solubility In Water: Insoluble	Evaporation Rate: Not applicable
Specific Gravity: 1.2	pH: Not determined
Melting Point: Not applicable	Octanol/Water Coefficient: Not determined
VOC Content: 4.0 gpl	

10. STABILITY AND REACTIVITY

Stability: Stable under normal storage and handling conditions.

Incompatibility: Avoid direct contact with open flames.

Hazardous Decomposition Products: Burning may produce carbon monoxide, carbon dioxide and unidentified hydrocarbons.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION**HEALTH HAZARDS:**

Ingestion: Swallowing may cause nausea, vomiting and diarrhea.

Inhalation: Inhalation is not a normal route of exposure for this product. Inhalation of dusts from dried product may cause irritation of the nose throat and upper respiratory tract.

Eye: May cause mild irritation or discomfort.

Skin: Prolonged contact may cause mild irritation.

Sensitization: None expected.

Chronic: Prolonged inhalation of dusts from dried product may cause lung damage.

Carcinogenicity: None of the components is listed as a carcinogen or suspected carcinogen by IARC, NTP or OSHA.

Mutagenicity: None known.

Medical Conditions Aggravated by Exposure: None known.

Acute Toxicity Values: Not determined.

12. ECOLOGICAL INFORMATION

No data available for product.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal environmental regulations.

14. TRANSPORT INFORMATION**Transportation of Dangerous Goods Description:**

Proper Shipping Name: Not regulated for transport

UN Number: None

Hazard Class/Packing Group: None

Labels Required: None

15. REGULATORY INFORMATION

Inventory Status.

TSCA: Complies

DSL: Complies

U.S. Federal Regulations

SARA 313.

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard Yes

Chronic Health Hazard Yes

Fire Hazard No

Sudden Release of Pressure Hazard No

Reactive Hazard No

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania
Amorphous Silica Hydroxide	X		X
Talc	x	x	x
Kaolin		x	x
Titanium Dioxide	x	x	x

California Proposition 65

This product contains no chemicals requiring reporting under Proposition 65.

This product has been classified under the CPR and this MSDS discloses information elements required by the CPR.

Canadian WHMIS Classification: Class D-2-B

Canadian CEPA: All the components of this product are listed on the Canadian DSL.

16. OTHER INFORMATION

NFPA Rating: Health = 0 Fire = 1 Reactivity = 0
HMIS Rating: Health = 0 Fire = 0 Reactivity = 0

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

Product Name: MOBIL EAL ARCTIC 68
Revision Date: 12Oct2007
Page 1 of 8

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL EAL ARCTIC 68
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560252030, 601088-00, 974450
Intended Use: Compressor oil

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA

24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300
ExxonMobil Transportation No. 281-834-3296
MSDS Requests 713-613-3661
Product Technical Information 800-662-4525, 800-947-9147
MSDS Internet Address <http://www.exxon.com>, <http://www.mobil.com>

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID: Health: 0 Flammability: 1 Reactivity: 0
HMIS Hazard ID: Health: 0 Flammability: 1 Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use

mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Oxides of carbon, Incomplete combustion products, Smoke, Fume

FLAMMABILITY PROPERTIES

Flash Point [Method]: >240C (464F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

Product Name: MOBIL EAL ARCTIC 68

Revision Date: 12Oct2007

Page 3 of 8

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL, 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a

Product Name: MOBIL EAL ARCTIC 68

Revision Date: 12Oct2007

Page 4 of 8

level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Work conditions can greatly affect glove durability; inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid

Color: Colorless

Odor: Characteristic

Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.968

Flash Point [Method]: >240C (464F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: N/D

Boiling Point / Range: N/D

Vapor Density (Air = 1): N/D

Vapor Pressure: [N/D at 20 °C]

Evaporation Rate (n-butyl acetate = 1): N/D

pH: N/A

Log Pow (n-Octanol/Water Partition Coefficient): N/A

Product Name: MOBIL EAL ARCTIC 68
 Revision Date: 12Oct2007
 Page 5 of 8

Solubility in Water: Negligible
Viscosity: 64.9 cSt (64.9 mm²/sec) at 40 C | 8.3 cSt (8.3 mm²/sec) at 100C
Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -36°C (-33°F)

SECTION 10	STABILITY AND REACTIVITY
-------------------	---------------------------------

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
-------------------	----------------------------------

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m ³	Minimally Toxic. Based on assessment of the components.
Irritation: Data available.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC 3 = IARC 1 5 = IARC 2B

Product Name: MOBIL EAL ARCTIC 68

Revision Date: 12Oct2007

Page 6 of 8

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Majority of components -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Majority of components -- Expected to be inherently biodegradable

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT) : Not Regulated for Land Transport

LAND (TDG) : Not Regulated for Land Transport

Product Name: MOBIL EAL ARCTIC 68
Revision Date: 12Oct2007
Page 7 of 8

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
-------------------	-------------------------------

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: ENCS, TSCA

Special Cases:

Inventory	Status
ELINCS	Restrictions Apply
IECSC	Restrictions Apply

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The Following Ingredients are Cited on the Lists Below: None.

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION
-------------------	--------------------------

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

No revision information is available.

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is

Product Name: MOBIL EAL ARCTIC 68

Revision Date: 12Oct2007

Page 8 of 8

included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, republication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 0, 0, 0, 0, 0, 0

PPEC: A

DGN: 2007362XUS (1013706)

Copyright 2002 Exxon Mobil Corporation, All rights reserved

MATERIAL SAFETY DATA SHEET

MSDS 0656

 =====
 Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	Health	1
Nokorode Regular Paste Flux	Flammability	1
	Reactivity	0
PRODUCT CODES	PPI	B
14000, 14003, 14010, 14020, 14030		
CHEMICAL FAMILY		
Organic/Inorganic		
USE		
Soldering Flux		
MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.	
The RectorSeal Corporation	Chemtrec 24 Hours	
2601 Spenwick Drive	(800)424-9300 USA	
Houston, Texas 77055 USA	(703)527-3887 International	
DATE OF VALIDATION	TECHNICAL SERVICE TELEPHONE NO.	
May 2, 2012	(800)231-3345 or (713)263-8001	
DATE OF PREPARATION		
May 2, 2012		

 =====
 Section 2 -- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

OSHA Hazards

Irritant

GHS CLASSIFICATION

PHYSICAL HAZARDS: None

HEALTH HAZARDS

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: Not Classified

Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Not Classified

Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

 ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment: Not Classified

Acute aquatic toxicity: Not Classified

Chronic aquatic toxicity: Not Classified

Bioaccumulation potential: Not Classified

Rapid degradability: Not Classified

 GHS Label elements, including precautionary statements

Pictogram: Irritant

Signal Word: Warning

Hazard Statements:

H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

Precautionary Statements:

P102 - Keep out of reach of children.

P262 - Do not get in eyes, on skin, or on clothing.

P264 - Wash hands thoroughly after handling.

P281 Use personal protective equipment as required.

SUMMARY OF ACUTE HAZARDS

Irritation to respiratory system from fumes evolved during soldering.
Eye contact may cause intense irritation and injury.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

Irritation to respiratory system from fumes evolved during soldering.

EYE CONTACT

Contact may cause intense irritation and injury.

SKIN CONTACT

May cause skin irritation.

INGESTION

Nausea, vomiting, irritation to digestive system.

SUMMARY OF CHRONIC HAZARDS

Short term effects to liver and kidneys can occur. Chemical irritation from continued skin contact can occur. Continuous industrial use in small unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of respiratory tract.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver, or kidneys may have increased susceptibility to excessive exposure.

Section 3 -- COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT: Zinc Chloride

PERCENTAGE BY WEIGHT: 10-25

CAS#: 7646-85-7

EC#: 231-592-0

INGREDIENT: Ammonium Chloride

PERCENTAGE BY WEIGHT: 10-25

CAS#: 12125-02-9

EC#: 235-186-4

INGREDIENT: Petrolatum

PERCENTAGE BY WEIGHT: 70-90

CAS#: 8009-03-8

EC#: 232-373-2

Section 4 -- FIRST AID MEASURES

If INHALED: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

If on SKIN: Immediately wash with soap and water. Remove and wash any contaminated clothing.

If in EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention if irritation persists.

If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Section 5 -- FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained full face piece breathing apparatus and other protective clothing. Hazardous decomposition products possible (see Section 10). May release ZnO and HCl fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Heat may build up pressure and rupture closed containers.

Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Store flux at ambient conditions. Wash thoroughly after handling to remove all residue.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.

Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT	UNITS
Zinc Chloride	
ACGIH TLV	1 mg/m3
OSHA PEL	1 mg/m3
Ammonium Chloride	
ACGIH TLV	10 mg/m3
OSHA PEL	10 mg/m3
Petrolatum	
ACGIH TLV	N/D
OSHA PEL	N/D

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined, poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air respirators during soldering operations until fumes have dissipated.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: N/A

MECHANICAL (GENERAL): Acceptable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Safety glasses (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed

areas thoroughly before eating, drinking, smoking, or leaving work area.
Launder contaminated clothing before reuse.

Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
 SPECIFIC GRAVITY (H2O = 1): 1.06
 VAPOR PRESSURE (mm Hg): < 0.01 @ 68 F (20 C)
 MELTING POINT: 120-150 F (52-66 C)
 VAPOR DENSITY (AIR = 1): N/A
 EVAPORATION RATE (ETHYL ACETATE = 1): N/A
 APPEARANCE/ODOR: Tan / Petroleum Odor
 SOLUBILITY IN WATER: Insoluble
 VOLATILE ORGANIC COMPOUNDS (VOC) Content
 (Theoretical Percentage By Weight): 0% or (0 g/L)
 Flash POINT >400 F (204 C) SETA CC
 LOWER EXPLOSION LIMIT N/D
 UPPER EXPLOSION LIMIT N/D

Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable
 CONDITIONS TO AVOID: None
 INCOMPATIBILITY (MATERIALS TO AVOID): None known
 HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes of zinc, chlorine, and HCL may be evolved during soldering.
 HAZARDOUS POLYMERIZATION: Will not occur.

Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

TOXICOLOGY DATA

Ingredient Name

Zinc Chloride

Oral-Rat LD50:350 mg/kg
 Inhalation-Rat LC50:1960 mg/m³/10M

Ammonium Chloride

Oral-Rat LD50:1650 mg/kg
 Inhalation-Rat LC50:N/D

Petrolatum

Oral-Rat LD50:N/D
 Inhalation-Rat LC50:N/D

Section 12 -- Ecological Information

ECOLOGICAL DATA

Ingredient Name

Zinc Chloride

Food Chain Concentration Potential	None
WATERFOWL TOXICITY	N/A
BOD	None
AQUATIC TOXICITY:	7.2 ppm/96 hr/medium bluegill/TLm

Ammonium Chloride

Food Chain Concentration Potential	None
WATERFOWL TOXICITY	N/A
BOD	N/A
AQUATIC TOXICITY:	6 ppm/96 hr/sunfish TLM

Petrolatum

Food Chain Concentration Potential	N/D
WATERFOWL TOXICITY	N/D
BOD	N/D
AQUATIC TOXICITY:	N/D

 Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

 Section 14 -- TRANSPORTATION INFORMATION

DOT:	Non-Regulated
OCEAN (IMDG):	Non-Regulated
AIR (IATA):	Non-Regulated
WHMIS (CANADA):	Non-Regulated

 Section 15 -- REGULATORY INFORMATION

REGULATORY DATA

Ingredient Name

Zinc Chloride

SARA 313	Yes
TSCA Inventory	Yes
CERCLA RQ	1000 lb.
RCRA Code	N/A

Ammonium Chloride

SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

Petrolatum

SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

 Section 16 -- OTHER INFORMATION

This document is prepared pursuant to 91/155/EEC ISO 11014-1. The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further information: (713) 263-8001



MATERIAL SAFETY DATA SHEET

MSDS Number: 1600E

Section 1 PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY 95/5 LEAD-FREE PLUMBING WIRE SOLDER
OATEY 95/5 LEAD-FREE ACID CORE WIRE SOLDER
OATEY 95/5 LEAD-FREE ROSIN CORE WIRE SOLDER

Product Nos.: 95/5 -22004, 22017, 22018, 22025, 53026, 53027, 53181, 53189 95/5 AC - 53170, 53172, 53174, 53176 95/5 RC - 53171, 53173, 53175, 53177, 53190, 29031

Product Use: Solder

Formula: see Section 3

Synonyms: Solder

Firm Name & Address: Oatey Company 4700 West 160th Street, Cleveland, Ohio 44135

Address: www.oatey.com

Firm Phone No: (216) 267-7100

Emergency Phone Nos.: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.

Prepared by: Technical Department

Preparation Date: 04/07/2013

Section 2 HAZARDS IDENTIFICATION

Emergency Overview:

Silver-gray wire metal. The fumes may be hazardous during soldering operations. Fumes can cause eye irritation and may cause headache and respiratory system irritation. Ingestion of metal alloys may be harmful.

OSHA Hazard Classification: Not hazardous as is. In use, irritant and organ effects.

Section 3 COMPOSITION/INFORMATION ON INGREDIENTS

For 95/5 solid wire

Table with 5 columns: INGREDIENTS, %wt/wt, CAS NUMBER, ACGIH TLV TWA, OSHA PEL TWA. Rows for Tin and Antimony.

For 95/5 acid core

Table with 5 columns: INGREDIENTS, %wt/wt, CAS NUMBER, ACGIH TLV TWA, OSHA PEL TWA. Rows for Tin, Antimony, and Acid Flux.

For 95/5 rosin core

Table with 5 columns: INGREDIENTS, %wt/wt, CAS NUMBER, ACGIH TLV TWA, OSHA PEL TWA. Rows for Tin, Antimony, and Rosin Flux.

Section 4 FIRST AID MEASURES

Skin: If irritation arises, wash thoroughly with soap and water. Seek medical attention if irritation persists.

Eyes: If material gets into eyes, immediately flush eyes with water while holding eyelids open until material is removed. If irritation persists, seek medical attention.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.

Ingestion: **DO NOT INDUCE VOMITING.** Ingestion is not a likely route of entry. Never give anything by mouth to a person who is unconscious or drowsy. Get medical attention by calling a Poison Control Center, or hospital emergency room.

Section 5 FIRE FIGHTING MEASURES

Flashpoint / Method: Not applicable

Flammability: LEL = Not applicable, UEL = Not applicable

Extinguishing: Use appropriate means of extinguishing surrounding fire.

Media:

Special Fire Fighting Procedure: Not applicable

Unusual Fire And Explosion Hazards: None known

Hazardous Decomposition Products: Material will not decompose under normal conditions. If overheated, oxides of tin and antimony may result.

Section 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Collect solid and place in properly labeled containers for recycle or disposal.

Section 7 HANDLING AND STORAGE

Handling: Avoid inhalation of fumes, vapors or dust. Keep away from children. Wash thoroughly after handling before eating, drinking, or smoking.

Storage: Store in a cool, dry place away from heat or open flame.

Other: None

Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Good general ventilation (equivalent to outdoors) should be adequate for normal use. For operations where the TLV may be exceeded, mechanical ventilation such as local exhaust may be needed to maintain exposure levels below applicable limits.

Respiratory Protection: For operations where the TLV may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice.

Skin Protection: Wear gloves and long sleeves to avoid direct contact with skin.

Eye Protection: Safety glasses with side shields or safety goggles.

Other: Eye wash and safety shower should be available.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not determined
Melting Point: 450 to 464 Degrees F (232 to 240 Degrees C)
Vapor Pressure: Not determined
Vapor Density: (Air = 1) Greater than 1
Volatile Components: None
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 9 to 11
Evaporation Rate: Not applicable
Appearance: Silver-gray wire metal
Odor: None
Will Dissolve In: Not applicable
Material Is: Solid

Section 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Do not heat over 480 degrees F (250 degrees C).
Avoid:
Hazardous If overheated, oxides of tin and antimony.
Decomposition
Products:
Incompatibility/ None.
Materials To
Avoid:
Hazardous Will not occur.
Polymerization:

Section 11 TOXICOLOGICAL INFORMATION

Inhalation: Fumes from soldering operations may be irritating to the respiratory system. Prolonged exposure to fumes may cause stannosis, a mild benign pneumoconiosis. Repeated inhalation of fumes may cause occupational asthma. Symptoms may be delayed.
Skin: Fumes may cause irritation.
Eye: Fumes may cause irritation.
Ingestion: Ingestion may cause abdominal pain, nausea, vomiting, diarrhea, gastrointestinitis, or internal cuts. Long term chronic ingestion may damage the liver, kidneys, nervous system and gastrointestinal system.
Toxicity Data: No data available.
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Mutagenicity: None of the components have been found to be mutagenic.
Reproductive None of the components are known to cause adverse reproductive effects.
Toxicity:
Medical Persons with pre-existing skin, lung, kidney or liver disorders may be at
Conditions increased risk from exposure to the fumes of this product.
Aggravated By
Exposure:

Section 12 ECOLOGICAL INFORMATION

No data available. Keep out of waterways.

Section 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of in accordance with federal, state, and local regulations. It is the responsibility of the end-user to determine at the time of disposal of the product.
RCRA Hazardous Waste Number: None
EPA Hazardous Waste ID Number: None
EPA Hazard Waste Number: None

Section 14 TRANSPORT INFORMATION

DOT
UN/NA Number: None
Proper Shipping Name: Not regulated
Hazard Class: None
Packing Group: None
Hazard Labels: None
IMDG
UN Number: None
Proper Shipping Name: Not regulated
Hazard Class: None
Packing Group: None
Label: None

2008 North American Emergency Response Guidebook Number: Not applicable

Section 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute and chronic health hazards.

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Chemical	CAS #	% wt
Antimony	7440-36-0	3 - 7%

CERCLA 103 Reportable Quantity: This product contains no chemicals subject to CERCLA reporting.

California Proposition 65: This product does not contain any chemicals subject to California Proposition 65 regulations.

TSCA Inventory Canadian WHIMS Classification: All of the components of this product are listed on the TSCA inventory. Class D, Division 2, Subdivision B. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Section 16 OTHER INFORMATION

NFPA and HMIS:
NFPA Hazard Signal: Health: 1 Flammability: 0 Reactivity: 0 Special: None
HMIS Hazard Signal: Health: 1 Flammability: 0 Reactivity: 0 PPE: B

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, we cannot give any guarantees regarding information from other sources, and expressly do not make warranties, nor assume any liability for its use.

qplate: tml-so-el

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY PURPLE PRIMER - NSF LISTED
Product Use: Primer for PVC and CPVC Plastic Pipe
Formula: See Section 2
Synonyms: Plastic Pipe Primer
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: May 20, 2005

SECTION 2

COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENTS:</u>	<u>%wt/wt:</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Methyl Ethyl Ketone	25 - 80%	78-93-3	200 ppm 300 ppm STEL	200 ppm	None
Acetone	0 - 40%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	None
Tetrahydrofuran	5 - 30%	109-99-9	50 ppm (skin) 100 ppm STEL	200 ppm	25 ppm (Mfg)
Cyclohexanone	10 - 20%	108-94-1	20 ppm (skin) 50 ppm STEL	50 ppm	None

OSHA Hazard Classification: Flammable, irritant, organ effects

SECTION 3

HAZARDS IDENTIFICATION

Emergency Overview:

Purple liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4

FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method: 0 - 5 Degrees F. (-18 - -15 Degrees C) / PMCC
Flammability: LEL = 1.8 % Volume, UEL = 11.5 % Volume
Extinguishing: Use dry chemical, CO₂, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.
Media:
Special Fire Fighting Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire and Explosion Hazards: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide and carbon dioxide.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

SECTION 7 HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

SECTION 8 (Continued)

Eye Protection: Safety glasses with side shields or safety goggles.
Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not applicable
Vapor Pressure: 70 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 99.96%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.84 +/- 0.02 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Purple Liquid
Odor: Ether-Like
Will Dissolve In: Organic solvents
Material Is: Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Combustion will produce toxic and irritating vapors
Decomposition including carbon monoxide and carbon dioxide.
Products:
Incompatibility/ Oxidizing agents, alkalis, amines, ammonia, acids, chlorine
Materials To Avoid: compounds, chlorinated inorganics (potassium, calcium and
sodium hypochlorite) and hydrogen peroxides. May attack
plastic, resins and rubber.
Hazardous Will not occur.
Polymerization:

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation: Vapors or mists may cause mucous membrane and respiratory
irritation, coughing, headache, dizziness, dullness, nausea,
shortness of breath and vomiting. High concentrations may cause
central nervous system depression, narcosis and unconsciousness.
May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Methyl
ethyl ketone and cyclohexanone may be absorbed through the skin
causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation
with redness, stinging and tearing of the eyes. May cause eye
damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and
diarrhea. Aspiration during swallowing or vomiting can cause
chemical pneumonia and lung damage. May cause kidney and liver
damage.
Chronic Prolonged or repeated overexposure cause dermatitis and damage
Toxicity: to the kidney, liver, lungs and central nervous system.
Toxicity Data: Cyclohexanone: Oral rat LD50: 1,620 mg/kg
Inhalation rat LC50: 8,000 ppm/4 hours
Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
Inhalation rat LC50: 21,000 ppm/3 hours
Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
Inhalation rat LC50: 23,500 mg/m³/8 hours
Skin rabbit LD50: 6,480 mg/kg
Acetone: Oral rat LD50: 5,800 mg/kg
Inhalation rat LC50: 50,100 mg/m³/8 hours

Section 11 (Continued)

Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.
Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.
Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Tetrahydrofuran and acetone have been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.
Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.
VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.
VOC Level: 750 g/l per SCAQMD Test Method 316A.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.
RCRA Hazardous Waste Number: U057, U159, U213
EPA Hazardous Waste ID Number: D001, D035, F003, F005
EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

SECTION 14 TRANSPORT INFORMATION

DOT Less than 1 Liter (0.3 gal) Greater than 1 Liter (0.3 gal)
Proper Shipping Name: Consumer Commodity Flammable Liquid NOS
Hazard Class/Packing Group: ORM-D 3, PGII
UN/NA Number: None UN1993
Hazard Labels: None Flammable Liquid (Methyl Ethyl Ketone, Cyclohexanone)

IMDG

Proper Shipping Name: Flammable Liquid, N.O.S. Limited Quantity
Hazard Class/Packing Group: 3, II
UN Number: UN1993
Label: None (Limited Quantities are excepted from labeling)

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health; Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

<u>Chemical</u>	<u>CAS #</u>	<u>% by wt.</u>
Methyl Ethyl Ketone	78-93-3	25-80%

CERCLA 103 Reportable Quantity:

Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Methyl Ethyl Ketone (80% maximum) of 5,000 lbs, is 6,250 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65:

This product does not contain any chemicals subject To California Proposition 65 regulation.

TSCA Inventory:

All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification:

Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2 Flammability: 3 Reactivity: 1 Special: None
HMIS Hazard Signal: Health: 2* Flammability: 3 Reactivity: 1 PPE: G

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 09/02/2008

Reviewed on 09/02/2008

1 Identification of substance

Trade name: PENETRATING OIL
Product code: PE00010000
Manufacturer/Supplier: PRODUCTION PRODUCTS, INC.
 30487 Potomac Way
 Charlotte Hall, MD 20622
 (301) 472-4200, www.ppiduct.com
Information department: Health & Safety Department
Emergency information: CHEMTEL 1-800-255-3924, 813-248-0585 *if located outside the U.S.*

2 Composition/Data on components

Chemical Description: This product is a mixture of the substances listed below with nonhazardous additions.

Dangerous components:

8008-20-6	Kerosine (petroleum)	34.13%
67-64-1	Acetone	29.9%
74-98-6	propane	6.3%
106-97-8	n-butane	3.7%
2807-30-9	Glycol Ether EP	3.28%

Additional information: For the wording of the listed risk phrases refer to section 3.

3 Hazards identification

Hazard description:   Irritant
Extremely flammable

Physical dangers: Extremely flammable.
Irritating to eyes.
Vapours may cause drowsiness and dizziness
Keep out of the reach of children.

Effects of chronic overexposure: May cause permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart, and blood. Intentional misuse by deliberately inhaling the contents may be harmful or fatal.

NFPA ratings (scale 0 - 4): Health = 1
Fire = 4
Reactivity = 3

HMIS-ratings (scale 0 - 4): Health= 1
Fire= 4
Physical Hazard= 3

4 First aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact: Remove contaminated clothing. Wash exposed area with soap and water.
After eye contact: Move to fresh air. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing: Contact physician or poison control center.

5 Fire fighting measures

Extinguishing agents: CO₂, sand, extinguishing powder, or water spray. Fight larger fires with water spray or alcohol resistant foam.
Protective equipment: No special measures required.

6 Accidental release measures

Personal safety precautions: Wear protective equipment. Keep unprotected persons away.
Environmental safety precautions: Do not allow product to reach sewage systems or ground water.
Measures for cleaning/collecting: Ensure adequate ventilation.

7 Handling and storage

Fire/explosion protection: Do not spray on a naked flame or any incandescent material. Do not smoke. Protect from electrostatic discharges.

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 09/02/2008

Reviewed on 09/02/2008

Trade name: PENETRATING OIL

(Contd. of page 1)

Storage requirements: Observe pressurized container storage regulations. Consult with your local authorities.**8 Exposure controls and personal protection:****Components with limit values that require monitoring at the workplace:****8008-20-6 Kerosine (petroleum)**

REL 100 mg/m³
 TLV 200 mg/m³
 as total hydrocarbon vapor; Skin; P

67-64-1 Acetone

REL 2400 mg/m³, 1000 ppm
 REL 590 mg/m³, 250 ppm
 TLV Short-term value: 1782 mg/m³, 750 ppm
 Long-term value: 1188 mg/m³, 500 ppm
 BEI

74-98-6 propane

REL 1800 mg/m³, 1000 ppm
 REL 1800 mg/m³, 1000 ppm
 TLV Varies mg/m³, 1000 ppm

106-97-8 n-butane

REL 1900 mg/m³, 800 ppm
 TLV Varies mg/m³, 1000 ppm

Protective hygienic measures:

Keep away from foodstuffs and animal feed. Wash hands after use.

Breathing equipment:

A respirator is generally not necessary when using this product outdoors or in large open areas. In cases where short and/or long term overexposure exists, a charcoal filter respirator should be worn. Please consult an authority on chemical hygiene monitoring if you suspect overexposure conditions exist and need a specific recommendation on proper ventilation techniques and personal protection.

Protection of hands:

Protective gloves. The glove material has to be impermeable and resistant to the substance. No glove recommendation can be given.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties:**General Information:**

Form:	Aerosol
Color:	According to trade name description in section 1.
Odor:	Aromatic
Boiling point/Boiling range:	-44°C
Flash point:	-19°C
Ignition temperature:	470°C
Auto igniting:	Product is not self-igniting.
Danger of explosion:	Stable at normal temperatures. Can may burst when exposed to temperatures exceeding 120 degrees fahrenheit. In use, may form flammable/explosive vapour-air mixture.
Lower Explosion Limit:	2.6 Vol %
Upper Explosion Limit:	13.0 Vol %
Vapor Pressure:	40 PSI, 2750 hPa
Density at 20°C:	0.78546 g/cm ³
Specific Gravity:	Between 0.77 and 0.85 (Water equals 1.00)
VOC content:	148.3 g/l / 1.24 lb/gal
VOC content (less exempt solvents):	13.3 %
MIR value:	13.3 %
MIR Value:	0.00
Solids content:	22.7 %

10 Stability and reactivity:**Conditions to be avoided:** Do not allow the can to exceed 120 degrees Fahrenheit. Stable at normal temperatures.(Contd. on page 3)
— USA

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 09/02/2008

Reviewed on 09/02/2008

Trade name: PENETRATING OIL

(Contd. of page 2)

Possibility of Hazardous Reactions: No dangerous reactions known.

11 Toxicological information:

Primary effect on the skin: No irritant effect.
Primary effect on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations:

12 Ecological information

Other information: This product does not contain any chloroflourocarbons (CFC's),chlorinated solvents, lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), or polybrominated diphenyl ether (PDBE). No specific ecological data is available for this product.
Acquatic toxicity: Hazardous for water, do not empty into drains.

13 Disposal considerations

DISPOSAL METHOD: Dispose of in accordance with local, state, and federal regulations. Do not puncture, incinerate, or compact. Partially empty cans must be disposed of responsibly. Do not heat or cut empty containers with electric or gas torches.
Recommendation: Completely empty cans should be recycled.

14 Transport information:

Hazard class: 2.1
Identification number: N/A
Label: 2.1
ADR/RID class: 2 5F Gases
UN-Number: 1950
IMDG Class: 2.1
Packaging group: II
EMS Number: F-D,S-U
Marine pollutant: No
ICAO/IATA Class: 2.1
Propper shipping name: Aerosols, Flammable
 Consumer Commodity ORM-D

15 Regulations**SARA Section 355 (extremely hazardous substances):**

None of the ingredients in this product are listed.

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

PROPOSITION 65 Chemicals known to cause cancer:

None of the ingredients in this product are listed.

EPA: A= Known human carcinogen B= Probable human carcinogen
 C= Possible human carcinogen
 D= Not classifiable as to human carcinogenicity: Inadequate human and animal evidence of carcinogenicity (or no data is available).

67-64-1 Acetone

I

IARC: Group 2B: The ingredient is possibly carcinogenic to humans. There is limited evidence of carcinogenicity.
 Group 3: The ingredient is unclassifiable as to its carcinogenicity to humans.

8008-20-6 Kerosine (petroleum)

2B

ACGIH TLVs: A1-designates a confirmed human carcinogen.
 A2-designates a suspected human carcinogen.
 A3-designates an animal carcinogen.
 A4-designates "not classifiable as a human carcinogen".

(Contd. on page 4)
USA

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 09/02/2008

Reviewed on 09/02/2008

Trade name: PENETRATING OIL

(Contd. of page 3)

8008-20-6	Kerosine (petroleum)	A3
67-64-1	Acetone	A4

NIOSH:

None of the ingredients is listed.

Hazard symbols:Irritant
Extremely flammable**Risk phrases:**Extremely flammable.
Irritating to eyes.
Vapours may cause drowsiness and dizziness**Safety phrases:**Keep out of the reach of children.
Do not breathe gas/fumes/vapour/spray.
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point
If swallowed, seek medical advice immediately and show this container or label.
Use only in well-ventilated areas.**Special labeling of certain preparations:**

Keep out of the reach of children.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Contact:

Regulatory Affairs

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IATA: International Air Transport Association
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 VOC: Volatile Organic Compounds (USA, EU)
 NFPA: National Fire Protection Association (USA)

USA

MATERIAL SAFETY DATA SHEET
DIVERSITECH
PRO-BRITE FOAMY CONCENTRATE ACID COIL CLEANER & BRIGHTENER

Catalog No's: 8-RS, 8-R

HMIS DATA
Health = 2
Fire = 0
Reactivity = 0
0 = None
1 = Slight
2 = Moderate
3 = High
4 = Extreme

Section I-IDENTIFICATION

Manufactured By: DIVERSITECH, Inc.

Address: 2530 Lantrac Court

Decatur, Georgia 30035

Emergency Phone No.: 800-255-3924 Chemtel (Chemical Emergencies Only)

Phone Number for Information: 770-593-9000 Fax: 770-593-8600

Date Revised: 4/8/2004

Name of Preparer: Anthony E. Jernigan

Section II-HAZARDOUS INGREDIENTS INFORMATION

Ingredient	CAS NO.	OSHA PEL	ACIGH TLV	OTHER STEL	% OR RNG
Phosphoric acid	7664-38-2	1 mg/m ³	1 mg/m ³	3 mg/m ³	<5
Hydrofluoric acid	7664-39-3	3 mg(F)/m ³	3 mg(F)/m ³	6 mg(F)/m ³	<10
Sulfuric acid	7664-93-9	1 mg/m ³	1 mg/m ³		<5

EPA Hazard Categories: Acute-Health; Chronic-Health

Section III-PHYSICAL/CHEMICAL PROPERTIES

Boiling Point: 214°F

Specific gravity (H₂O=1): 1.03

Vapor pressure (mm Hg): 17

Melting Point (Pour Point): 30°F

Vapor Density (Air =1): 2.45

Evaporation Rate (Water=1): 1

Solubility In Water: Water miscible

Viscosity: Same as water

Appearance and Odor: Clear red liquid with an penetrating acid odor

Section IV-FIRE AND EXPLOSION DATA

Flash Point (Method used): None (C (TCC) Flammable Limits: LEL: N/A; UEL: N/A

Extinguishing Media: Use media appropriate to surrounding fire.

Special fire-fighting Procedures: Mists and fumes are corrosive and harmful. Firefighters should wear self-contained breathing apparatus and full protective gear when fighting fires involving this product.

Unusual Fire and Explosion Hazards: This product reacts with metal, and may liberate hazardous quantities of hydrogen gas.

PRO-BRITE FOAMY CONCENTRATE ACID COIL CLEANER & BRIGHTENER - MSDS

Section V-REACTIVITY DATA

Stability: Stable

Compatibility: (Materials to avoid): Do not mix this product with alkalis or any other material. Do not allow contact with glass.

Hazardous Decomposition or Byproducts: HF, Hydrogen gas.

Hazardous Polymerization: Will not occur

Section VI-HEALTH HAZARD DATA

Route of entry: Inhalation: yes Skin: yes Eyes: yes Ingestion: yes

Health Hazards (acute and chronic): This material is corrosive to skin, eyes, and internal organs.

Signs and Symptoms of Exposure:

Eye Contact: Severe irritation and possible burns.

Skin Contact: Severe irritation and possible chemical burns. Symptoms may be delayed for up to 24 hours.

Inhalation: Mists may irritate respiratory system and cause difficulty breathing.

Ingestion: Solutions and mists are extremely corrosive and toxic. May cause gastric distress, diarrhea, and vomiting. May be fatal if swallowed.

Medical conditions generally aggravated by exposure: Contact may aggravate pre-existing medical conditions such as dermatitis or asthma.

Carcinogenicity:

NTP? No. IARC? No. OSHA? No.

Emergency and First Aid Measures:

Eye Contact: Contact a physician and start treatment immediately!

1. Immediately flush the eyes with large amounts of gently flowing water for 15 minutes. Hold the eyelids open and away from the eyes during irrigation. Do not put any treatment into eyes unless directed by a physician.

2. Take the victim to a doctor, preferably an eye specialist, as soon as possible after the 15-minute rinse. Ice water compresses should be applied to the eyes while transporting the victim.

3. If a physician is not immediately available, irrigate the eyes with 500-1000 ml irrigation of 1% calcium gluconate aqueous ophthalmic solution followed by an additional 15-minute irrigation. Do not apply any other medication unless instructed to do so by a physician. **AVOID RUBBING EYES.**

PRO-BRITE FOAMY CONCENTRATE ACID COIL CLEANER & BRIGHTENER - MSDS

Emergency and First Aid measures (cont'd)

Skin Contact: Contact a physician and start treatment immediately!

Note: For skin contact or suspected contact

Move victim immediately under a safety shower or other water source and flush the affected area with large amounts of tempered running water. Speed of washing off the acid is of primary importance. Remove all clothing and footwear while continuing to flush with flowing water. Continue washing for at least 15 minutes.

Get the victim to a physician as quickly as possible after the 15-minute flushing.

Inhalation: Contact a physician and start treatment immediately!

1. Remove victim to fresh air. Make sure mouth and throat are clear of obstructions. If necessary, support breathing with artificial respiration.
2. Keep victim warm, quiet, and lying down.
3. Do not give stimulants unless directed by physician.
4. Do not allow the victim to become active for 24 hours. During this time, the victim should be examined by a physician and held under observation.

Ingestion: Contact a physician and start treatment immediately!

1. Have the victim drink 3-4 glasses of water as quickly as possible to dilute the product. Do not induce vomiting. Do not give emetics or baking soda. Never give anything by mouth to an unconscious person.
2. Give several glasses of milk or several ounces of milk of magnesia for their soothing effect. The calcium or magnesium in these compounds also acts as an antidote.
3. Get medical attention immediately.

Notes To Physician: Treat as Hydrofluoric Acid Burn. Burns around fingernails or toenail are difficult to treat as the acid may penetrate the nails. Treatment may require removal of the nail.

For minor burns to the face and mucous membranes, an ointment containing 2.5% calcium gluconate may be used in lieu of HYAMINE or ZEPHIRAN solutions. The jelly may be massaged into the burn. A possible treatment is subcutaneous injection of sterile 2.5% calcium gluconate solution around and beneath the skin and in the burned areas. Initially use no more than 0.5cc per square centimeter of affected skin surface, and do not distort the appearance of the skin. If pain is not relieved, additional treatment may be indicated. Obtain additional information on treating hydrofluoric acid burns from a poison control center.

Special notes to treating physician:

Medical personnel treating any victim of hydrofluoric acid exposure should be aware of the following possible complications:

1. Shock
2. Inhalation of vapors can cause pulmonary edema for which effects may be delayed. In addition, vapors may burn oral tissue causing swelling which may restrict breathing.
3. Exposure to significant amounts of hydrofluoric acid by any route may also result in hypocalcemia. Hypocalcemia should be considered a risk in all instances of inhalation and ingestion, and whenever burns exceed 25 square inches (160 square centimeters of body surface).

PRO-BRITE FOAMY CONCENTRATE ACID COIL CLEANER & BRIGHTENER - MSDS

Section VII-PRECAUTIONS FOR HANDLING AND STORAGE

STEPS TO BE TAKEN IN MATERIAL IS SPILLED OR RELEASED:

Note: No cleanup should be attempted until cleanup personnel are equipped with personnel protective gear to prevent contact with product. (Applies to undiluted product.)

Spills: Neutralize with sodium bicarbonate, soda ash, or lime. Pick up neutralized solution with a plastic pump or vacuum truck and store the neutralized solution in a leak-proof polyethylene container until product can be disposed of in a hazardous waste facility. Flush area twice with water to remove any remaining residues. Store wash solution in polyethylene containers for disposal.

Waste Disposal: Dispose of wastes in accordance with federal, state, and local regulations, or consign to a licensed hazardous waste contractor.

HANDLING AND STORAGE:

Keep containers closed when not in use. Practice good housekeeping. Wash hands after handling. Avoid smoking when using this product. Wash clothing that has become contaminated. Keep out of reach of children. Read the disposal information before disposing of leaking or empty containers. Avoid breathing mists or spray. Avoid contact with eyes. Use only with adequate ventilation. Do not use metal measuring containers for handling this product. Make sure all safety equipment is available and protective clothing is in use before handling this product.

Section VIII- CONTROL MEASURES

Note: ALL personnel protective equipment should be approved with solutions of hydrofluoric acid. This product should only be used in areas where emergency eyewash and a source of running water is available for first aid procedures..

RESPIRATORY PROTECTION: For normal and approved outdoor use, a NIOSH/MSMA approved respirator is recommended. **DO NOT USE INDOORS OR IN ENCLOSED AREAS.**

VENTILATION: Not for use in enclosed areas.

EYE PROTECTION: Wear chemical goggles or safety glasses with side shields to minimize contact.

SKIN PROTECTION: Wear rubber or neoprene gloves as necessary to minimize skin contact.

OTHER PROTECTIVE EQUIPMENT: Wear other waterproof clothing and footwear as required to prevent contact.

PRO-BRITE FOAMY CONCENTRATE ACID COIL CLEANER & BRIGHTENER - MSDS

Section IX-ADDITIONAL INFORMATION

Environmental Biodegradability: Biodegradable

Waste Disposal Methods: Dispose of in an authorized waste facility, in accordance with federal, state, and local regulations.

Empty Container Handling: Warning! Emptied container retains product residue. Observe all precautions even after the container is emptied. Keep empty container closed tightly. Do not use empty container for storing food, drinking water or cosmetics.

Dot Classification: Corrosive Liquid, acidic, inorganic, NOS (Contains Phosphoric acid, Sulfuric acid and Hydrofluoric acid) 8, UN3264, PGII
DOT Hazard Label: Corrosive

TSCA: The ingredients in this product are listed on the TSCA Inventory.

SARA TITLE III Reporting Requirements: None

Section 302-Extremely-Hazardous Substances: Reporting not required.

Section 304-Hazardous Releases: Reporting not required.

Section 311- Community Right to Know (R-T-K): Reporting required for quantities above the TPQ (Threshold Planning Quantity)

Section 312-R-T-K Inventory Reporting Data: Required for inventory above the TPQ.

Section 311 and 312 Hazard Categories:

Immediate (Acute) Health Hazard: Yes

Delayed (Chronic) Health Hazard: Yes

Fire Hazard: No

Reactivity Hazard: No

Sudden Release Of Pressure: No

SARA 313 Notification: Reporting may be required for users of this product within the manufacturing sector (S.I.C. 20-30). This does not apply to service companies.

CERCLA: Same as Section 304

This information is, to the best of our knowledge and belief, accurate and reliable as of the date completed. However no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the completeness and suitability of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information, nor do we offer any warranty against patent infringement.

MATERIAL SAFETY DATA SHEET

PRO 2000 LEAK DETECTOR

CATALOG NO. CL-2016; CL-2032; CL-2128

SECTION I-IDENTIFICATION

HAZARD RATINGS

HMIS DATA

HEALTH 0 0=MINIMAL
FIRE 0 1=SLIGHT
REACTIVITY 0 2 =MODERATE
3=HIGH
4=EXTREME

MANUFACTURED BY: Diversitech Corp
ADDRESS: 2530 Lantrac Court
Decatur, GA 30035

EMERGENCY Phone No. 800-255-3924 Chem-Tel (Chemical Emergencies Only)

PHONE NUMBER FOR INFORMATION: 800-995-2222

DATE REVISED: 30 September 2003

NAME OF PREPARER: ANTHONY E. JERNIGAN

SECTION II HAZARDOUS INGREDIENTS INFORMATION

INGREDIENT	CAS NO	OSHA PEL	ACIGH TLV	OTHER STEL	% or RNG
------------	--------	-------------	--------------	---------------	-------------

Section II does not apply to any material in this product.

EPA HAZARD CATEGORIES: None

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: >212°F	Specific gravity (H ₂ O = 1): 1.014
Vapor pressure (mm Hg): Same as water	Melting Point (Pour Point): <32°F
Vapor Density (Air = 1): Same as water	Evaporation Rate (Water = 1): 1
Solubility in water: Water miscible	
Appearance and odor: Odorless, clear, fluorescent yellow liquid.	

SECTION IV- FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): None

Flammable Limits: None

Extinguishing media: Not applicable

Special Fire Fighting Procedures: Keep containers cooled with a water spray if involved in a fire.

Unusual Fire and Explosion Hazards: None

SECTION V – REACTIVITY DATA

Stability-Stable

Conditions to avoid: None

Incompatibility (Materials to avoid): Strong oxidizers, strong acids

Hazardous Decomposition or Byproducts: May evolve carbon monoxide, carbon dioxide, and other unidentified fragments if this product is involved in a fire.

Hazardous Polymerization: Will not occur.

PRO 2000 LEAK DETECTOR MSDS

SECTION VI- HEALTH HAZARD DATA

Routes of Entry: Inhalation: yes (mists) Skin: yes Ingestion: yes Eyes: yes

Health Hazards (acute and chronic): The toxicological properties of this compound have not been fully tested. Analogous compounds are essentially non-toxic.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Signs and symptoms of exposure:

Inhalation: If sprayed or misted may cause chemical pneumonia. This product is not toxic by inhalation.

Skin: Minimally irritating. Prolonged contact may cause dermatitis or drying of skin.

Ingestion: **Do not take internally.** Low toxicity on ingestion. May cause nausea or diarrhea.

Eyes: May cause temporary eye irritation.

Medical Conditions Aggravated by Exposure: Contact or breathing mists may exacerbate existing skin or respiratory disorders.

Emergency and First Aid Procedures:

Eyes: Flush with water for 15 minutes. Consult a physician if irritation persists

Skin: Remove contaminated clothing. Wash the affected area with soap and water. Launder or dry clean clothes before reuse.

Inhalation: Evacuate to a safe area with plenty of fresh air. Allow the affected individual to rest in a well-ventilated area. Seek medical aid if symptoms persist.

Ingestion: **DO NOT** induce vomiting. Force fluids. Administer activated charcoal tablets.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND STORAGE

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED:

Wear recommended protective clothing. Remove contaminated garments promptly. Remove unnecessary personnel from the area. Floors may be slippery; use care to avoid falling. Dike the spill immediately with appropriate materials to prevent the spread of liquid. Absorb the liquid with an inert absorbent such as sand, dirt, vermiculite or "oil-dri", or use commercial absorbent pads. Transfer liquids and solid diking material to suitable containers, and dispose of in accordance with local, state, and federal regulations.

WASTE DISPOSAL METHODS: Incinerate this material and all associated wastes, or bury in an approved landfill in accordance with governmental regulations.

HANDLING AND STORAGE:

Avoid contact with skin and eyes. Keep containers closed when not in use. Store in a dry, cool, well-ventilated area.

Empty containers may retain residue. All containers should be disposed of in an environmentally safe manner, and in accordance with all governmental regulations.

Keep this and all chemicals out of the reach of children.

PRO 2000 LEAK DETECTOR MSDS

SECTION VIII – CONTROL MEASURES

Respiratory Protection (Specify Type): Use in a well-ventilated area. If mist is being generated, and is irritating to breathing passages, wear a dust/mist filter.

Ventilation: Local exhaust is recommended when used in enclosed areas.

Protective Gloves: Neoprene or other materials may be used if there to limit exposure as necessary for individuals with sensitive skin.

Eye protection: Safety glasses (ANSI Z87.1) or approved equivalent as necessary to minimize eye contact hazards.

Other Protective Clothing: Neoprene aprons, overshoes, oversleeves or other impervious clothing as necessary to minimize exposure.

Work Hygienic Practices: Use proper industrial hygiene practices to minimize hazardous exposure. Wash hands after handling this material, and before eating or smoking.

SECTION IX – ADDITIONAL INFORMATION

Transportation Information:

DOT HAZARD LABEL: None

DOT Description: Cleaning Compound, Liquid, NOS (Non-hazardous)

TSCA: All ingredients are TSCA approved.

SARA TITLE III Reporting Requirements:

Section 302: EHS reporting not required

Section 304: Hazardous releases reporting not required

Section 311: Community Right To Know reporting is required if the inventory is above the Threshold Planning Quantity.

Section 312: R-T-K Inventory data reporting is not required.

Section 313: Emissions and release reporting may be required for users of this product within the manufacturing sector. This does not apply to service companies.

MSDS - Material Safety Data Sheet

Product Name: ProValue Cutting Oil

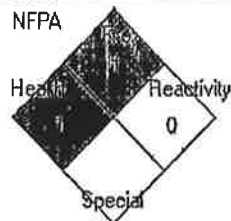
MSDS No.: 016264

Part Numbers Covered:

016334

I. Basic Information:

Manufacturer: WILLIAM H. HARVEY COMPANY
Address: 4334 SOUTH 67TH STREET
City, ST Zip: OMAHA, NE 68117-1019



Last Update: 5/6/2004

Chemical State: Liquid Gas Solid

Chemical Type: Pure Mixture

0	Reactivity
X	Pers. Protection

II. Ingredients:

CAS No.	Chemical Name	% Range	EHS	NTP	IARC	SUB	Z	SARA 313	OSHA PEL	ACGIH TLV	Other Limits
7782505	Dichlorine methyl ester										
64742-54-7	Petroleum Hydrocarbon									5	
68990-81-8	Sulfurized Fatty Oil										

III. Hazardous Identification:

Hazard Category:

Acute Chronic Fire Pressure Reactive

Hazardous Identification Information:

Hazardous by Ingestion.

IV. First Aid Measures:

Route(s) of Entry:

SKIN, EYES, INHALATION, INGESTION

Health Hazards (Acute and Chronic):

Acute: Ingestion may cause severe gastric disturbance. Chronic: Not known to have chronic toxic effects.

Signs and Symptoms:

MSDS - Material Safety Data Sheet**Product Name: ProValue Cutting Oil****MSDS No.: 016264**

EYES: MAY CAUSE MINOR IRRITATION, BUT DOES NOT DAMAGE EYE TISSUE.

SKIN: MAY CAUSE MINOR SKIN IRRITATION.

INHALATION: NOT EXPECTED TO BE TOXIC BY INHALATION. MAY CAUSE RESPIRATORY IRRITATION IF NOT USED WITH ADEQUATE VENTILATION.

INGESTION: MAY CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, OR DIARRHEA.

Medical Conditions Generally Aggravated by Exposure:

None known in normal usage concentrations.

Emergency and First Aid Procedures:

EMERGENCY FIRST AID CALL: 1-303-623-5716 COLLECT

EYES: FLUSH WITH WATER FOR 15 MINUTES. GET MEDICAL ATTENTION IF EFFECTS PERSIST.

SKIN: WASH THOROUGHLY WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

INHALATION: MOVE TO FRESH AIR AND PROVIDE OXYGEN IF DIFFICULTY IN BREATHING. GET MEDICAL ATTENTION.

INGESTION: DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION.

Other Health Warnings:

Avoid breathing of oil mists.

VI. Fire Fighting Measures:**Flash Point:** >350F**Lower Explosive Limit:** NI**Upper Explosive Limit:** NI**Fire Extinguishing Media:**

WATER FOG, FOAM, DRY CHEMICAL, CO2

Special Fire Fighting Procedures:

TREAT AS AN OIL FIRE. WEAR SELF-CONTAINED BREATHING APPARATUS WHEN IN ENCLOSED SPACES. DO NOT USE A DIRECT STREAM OF WATER AS PRODUCT MAY FLOAT.

Unusual Fire and Explosion:

EXPOSING DRUMS TO HIGH HEAT COULD CAUSE DRUMS TO RUPTURE.

VII. Accidental Release Measures:**Steps to be Taken in Case Material Is Released or Spilled:**

LARGE SPILLS: EVACUATE AREA AND REMOVE IGNITION SOURCES. DIKE AND CONTAIN. TAKE UP SPILLS WITH SAND, DIRT, OR OTHER ABSORBENT. CLEAN SURFACES SO THEY DO NOT REMAIN SLIPPERY. TREAT AS AN OIL SPILL. PUMP EXCESS TO STORAGE TANKS. USE ABSORBENT FOR REMAINING LIQUID AND PLACE IN CLOSED CONTAINER FOR DISPOSAL ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS. SMALL SPILLS: FOLLOW DIRECTIONS ABOVE BUT DO NOT EVACUATE AREA UNLESS THE POTENTIAL TO SLIP AND FALL DUE TO THE SPILL IS POSSIBLE.

VIII. Handling and Storage:**Precautions to be Taken:**

STORE IN A COOL DRY PLACE. STORE AWAY FROM FLAMES, HEAT, OXIDIZING AGENTS, AND STRONG ALKALIES. KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE. KEEP OUT OF REACH OF CHILDREN.

Other Precautions:

OILY METAL CUTTINGS SHOULD BE HANDLED WITH THE SAME PRECAUTIONS AS FOR THE CUTTING OIL. KEEP AWAY FROM IGNITION SOURCES.

DO NOT TAKE INTERNALLY. AVOID SKIN CONTACT. AVOID EYE CONTACT. AVOID BREATHING VAPORS. WASH THOROUGHLY AFTER SKIN CONTACT.

VIII. Exposure Controls/Personal Protection:**Ventilation Requirements:**

USE WITH ADEQUATE VENTILATION. MECHANICAL EXHAUST IS RECOMMENDED FOR AREAS OF CONCENTRATED MISTS, FUMES OR VAPORS.

MSDS - Material Safety Data Sheet**Product Name: ProValue Cutting Oil****MSDS No.: 016264****Personal Protective Equipment:**

EYES: WEAR SPLASH PROOF GOGGLES SKIN: WEAR OIL RESISTANT GLOVES. WASH HANDS AND ARMS AFTER USE.
REMOVE CONTAMINATED CLOTHING PROMPTLY AND WASH BEFORE REUSE. TREAT CONTAMINATED CLOTHING AS A
FIRE HAZARD .

INHALATION: (IF NO MECHANICAL EXHAUST IS AVAILABLE OR IN SMALL ENCLOSED AREAS) WEAR MIST AND/OR ORGANIC
VAPR RESPIRATOR WHEN MISTS OR FUMES ARE PRESENT. A WELL VENTILATED WORK AREA IS THE BEST ENGINEERING
PPE.

INGESTION: AVOID SWALLOWING.

X. Physical and Chemical Properties

Boiling Point:	<500F	Melting Point:	NI	Evaporation Rate:	NI
Vapor Pressure (mm Hg.):	NI	Vapor Density (AIR = 1):	NI		
Solubility In Water:	NEGLIGIBLE				
Appearance and Odor:	CLEAR TO DARK OIL/SULFER				
Other Information:	Specific Gravity is: .865				

XI. Stability and Reactivity**Stability:**

STABLE

Incompatibility (Materials to Avoid):

HIGH HEAT, OPEN FLAME, STRONG OXIDIZERS

Decomposition/By Products:

MAY FORM CARBON MONOXIDE OTHER UNIDENTIFIED ORGANIC COMPOUNDS UPON COMBUSTION.

Hazardous Polymerization:

DOES NOT OCCUR

XII. Toxicological Information

NOT LISTED IN NTA, IARC, OSHA

XIII. Ecological Information

MAY HAVE TOXIC EFFECTS TO AQUATIC LIFE

XIV. Disposal Considerations

IN ACCORDNACE WITH FEDERAL, STATE, AND LOCAL REGULATIONS FOR OIL WASTES.

XV. Transport Information

DOT PROPER SHIPPING NAME: N/A
DOT LABEL: N/A
DOT NUMBER: N/A
UN NUMBER: N/A
IMCO CLASS: N/A
DOT HAZARD CLASSIFICATION: N/A

MSDS - Material Safety Data Sheet**Product Name: ProValue Cutting Oil****MSDS No.: 016264****XV. Regulatory Information:**

NI

XVI. Other Information:

ABBREVIATIONS:

N/A = NOT APPLICABLE NI = NONE INDICATED NDA = NO DATA AVAILABLE
N/E = NOT ESTABLISHED C = CELSIUS DEGREES F = FAHRENHEIT DEGREES

DISCLAIMER:

THE INFORMATION HEREIN HAS BEEN COMPILED FROM SOURCES BELIEVED TO BE RELIABLE, UP-TO-DATE, AND IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, WILLIAM H. HARVEY COMPANY CANNOT GIVE ANY GUARANTEES REGARDING INFORMATION FROM OTHER SOURCES, AND EXPRESSLY DOES NOT MAKE WARRANTIES, NOR ASSUMES ANY LIABILITY FOR ITS USES.

MATERIAL SAFETY DATA SHEET

MSDS 0094

 =====
 Section 1 -- PRODUCT AND COMPANY IDENTIFICATION
 =====

	HMIS CODES	
PRODUCT NAME	Health	1
RectorSeal Tru-Blu	Flammability	2
	Reactivity	0
PRODUCT CODES	PPI	B
31300, 31431, 31551, 31552, 31631, 31780, 31782, 31785		
CHEMICAL FAMILY:		
Organic		
USE		
Pipe Thread Sealant		
MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.	
The RectorSeal Corporation	Chemtrec 24 Hours	
2601 Spenwick Drive	(800)424-9300 USA	
Houston, Texas 77055 USA	(703)527-3887 International	
DATE OF VALIDATION	TECHNICAL SERVICE TELEPHONE NO.	
July 9, 2012	(800)231-3345 or (713)263-8001	
DATE OF PREPARATION		
July 9, 2012		

 =====
 Section 2 -- HAZARDS IDENTIFICATION
 =====

EMERGENCY OVERVIEW

OSHA Hazards

Combustable

TARGET ORGANS

Not Classified

GHS CLASSIFICATION

PHYSICAL HAZARDS

Combustable liquid (Category 4)

HEALTH HAZARDS

Acute Toxicity:

Oral: Not Classified

Dermal: Not Classified

Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/Eye Irritation: Not Classified

Skin Sensitization: Not Classified

Respiratory Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Carcinogenicity: See Section 11

Reproductive Toxicology: Not Classified

Target Organ Systemic Toxicity - Single Exposure: Not Classified

Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

 =====
 GHS Label elements, including precautionary statements

Pictogram: Harmful / Irritant

Signal Word: Warning

Hazard Statements

H303 - May be harmful if swallowed.

H313 - May be harmful in contact with skin.

H335 + H336 - May cause respiratory irritation, and drowsiness or dizziness.

Precautionary Statements

P102 - Keep out of reach of children.

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P240 - Ground/Bond container and receiving equipment

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P262 - Do not get in eyes, on skin, or on clothing.

P264 - Wash hands thoroughly after handling.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P362 - Take off contaminated clothing and wash before reuse.

EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements - EU No. 1272/2008

SUMMARY OF ACUTE HAZARDS

Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.

EYE CONTACT

Watering, blurred vision, inflammation and irritation which can result in corneal injury.

SKIN CONTACT

Irritation, dermatitis.

INGESTION

Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

SUMMARY OF CHRONIC HAZARDS

Skin irritation and dermatitis. Possible liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

Section 3 -- COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT: Diacetone Alcohol

PERCENTAGE BY WEIGHT: 20-30

CAS NUMBER: 123-42-2

EC# : 204-626-7

Section 4 -- FIRST AID MEASURES

If INHALED: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

If on SKIN: Wash with soap and water. If irritation occurs, seek medical attention.

If in EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

=====
 Section 5 -- FIRE FIGHTING MEASURES
 =====

FLASH POINT	LEL	UEL
150 F (65 C) SETA CC	N/D	N/D

EXTINGUISHING MEDIA

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible - moderate flash point. Vapors heavier than air and may travel along the ground or to low spots at considerable distances to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture containers.

=====
 Section 6 -- ACCIDENTAL RELEASE MEASURES
 =====

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

=====
 Section 7 -- HANDLING AND STORAGE
 =====

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames. OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

=====
 Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION
 =====

INGREDIENT	UNITS
Diacetone Alcohol	
ACGIH TLV	50 ppm
OSHA PEL	50 ppm

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: Explosion-proof equipment.

MECHANICAL (GENERAL): Preferable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 322 F (161 C) @ 760mm Hg
 SPECIFIC GRAVITY (H2O = 1): 1.38
 VAPOR PRESSURE (mm Hg): 0.3 @ 68 F (20 C)
 MELTING POINT: N/A
 VAPOR DENSITY (AIR = 1): 1.1
 EVAPORATION RATE (ETHYL ACETATE = 1): 0.14
 APPEARANCE/ODOR: Blue Paste/Mild Odor
 SOLUBILITY IN WATER: 23%
 VOLATILE ORGANIC COMPOUNDS (VOC) Content
 (Theoretical Percentage By Weight): 23% or (230 g/L)

=====

Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable
 CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing.
 Temperatures above 500 F (260 C).
 INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen, strong oxidizing
 materials, molten alkali metals.
 HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.
 HAZARDOUS POLYMERIZATION: Will not occur.

=====

Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS

No ingredients in this product is an IARC, NTP or OSHA Lister carcinogen.

TOXICOLOGY DATA

Ingredient Name

Diacetone Alcohol

Oral-Rat LD50:4000 mg/kg
 Inhalation-Human TCLo: 100 ppm

=====

Section 12 -- Ecological Information

ECOLOGICAL DATA

Ingredient Name

Diacetone Alcohol

Food Chain Concentration Potential N/A
 WATERFOWL TOXICITY N/A
 BOD N/A
 AQUATIC TOXICITY N/A

=====

Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the
 Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in
 accordance with Federal, State, and Local regulation regarding pollution.

=====

Section 14 -- TRANSPORTATION INFORMATION

DOT: Non-Regulated

OCEAN (IMDG): Non-Regulated
AIR (IATA): Non-Regulated
WHMIS (CANADA): Non-Regulated

=====
Section 15 -- REGULATORY INFORMATION

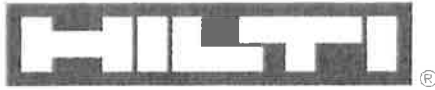
REGULATORY DATA
Ingredient Name

Diacetone Alcohol

SARA 313	N/A
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

=====
Section 16 -- OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further information: (713) 263-8001



MSDS No.: 101
Revision No.: 020
Revision Date: 5/16/12
Page: 1 of 2

MATERIAL SAFETY DATA SHEET

Product name: Safety Boosters
Description: 22, 25, and 27 caliber blank cartridges for powder actuated fastening tools
Supplier: Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121; phone 1800 879 8000
Emergency # (Chem-Trec.): 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	TLV:	PEL:	STEL:
Nitroglycerin	00055-63-0	0.46 mg/m ³ (S)	NE	2 mg/m ³ (S)
Nitrocellulose	09004-70-0	NE	NE	NE
Lead styphnate	15245-44-0	0.05 mg/m ³ *	0.05 mg/m ³ *	NE
Barium nitrate	10022-31-8	0.5 mg/m ³	0.5 mg/m ³	NE
Tetracene	00109-27-3	NE	NE	NE

Abbreviations / Symbols: * exposure limit for metallic lead. NE = None Established. NA = Not Applicable. (S) indicates exposure should be controlled for the cutaneous routes including the mucous membranes, eyes, and skin. Airborne exposures as well as direct contact must be considered.

PHYSICAL DATA

Appearance:	Blank brass cartridges.	Odor:	None.
Vapor Density: (air = 1)	Not applicable.	Vapor Pressure:	Not applicable.
Boiling Point:	Not applicable.	VOC Content:	Not applicable.
Evaporation Rate:	Not applicable.	Solubility in Water:	Not applicable.
Specific Gravity:	Not applicable.	pH:	Not applicable.

FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not applicable.	Flammable Limits:	Not applicable.
Extinguishing Media:	Water.		
Special Fire Fighting Procedures:	Flood area with water or keep cartridges cool with water spray.		
Unusual Fire and Explosion Hazards:	Cartridges can blast if exposed to temperatures > 160°C. Mass detonation will not occur.		

REACTIVITY DATA

Hazardous Polymerization:	Will not occur.	Stability:	Stable.
Incompatibility:	Strong acids and oxidizing agents.		
Decomposition Products:	Oxides of nitrogen, oxides of carbon, acrid fumes and lead oxide.		
Conditions to Avoid:	Acids, excessive heat, crushing, and electrical currents.		

HEALTH HAZARD DATA

Known Hazards:	OSHA has established an action level of 0.03 mg/m ³ for lead. Exposures that exceed recommended limits for lead may be possible under certain conditions such as excessive firing with little air movement and/or firing in small enclosed work areas. Chronic (long-term) overexposure to lead can result in damage to blood-forming, nervous, urinary and reproductive systems.
Signs and Symptoms of Exposure:	Excessive exposure to gases might cause irritation to the eyes, skin, and respiratory system. Adverse health effects are not expected from acute exposure to fumes and gases; however, adequate ventilation, personal protective equipment, and/or good personal hygiene practices are essential to keep exposure to a minimum.
Routes of Exposure:	Dermal. Inhalation.
Carcinogenicity:	Organic lead compounds are not classified by IARC or NTP as carcinogens. Lead styphnate is converted to metallic lead and lead oxide during combustion. Metallic lead and lead oxide have not been tested adequately.
Medical Conditions Aggravated by Exposure:	None anticipated.

EMERGENCY AND FIRST AID PROCEDURES

Eyes:	If irritation occurs, flush with plenty of water. Consult a physician if symptoms persist.
Skin:	Practice good hygiene; i.e. wash with soap and water after using and before smoking/eating.
Inhalation:	Move victim to fresh air. Get medical attention if symptoms persist.
Ingestion:	Get immediate medical attention.
Other:	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure.

CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

Ventilation:	General (i.e., natural or mechanically induced fresh air movements that maintain vapor concentrations below recommended exposure limits).
Eye Protection:	Suitable safety glasses with side-shields, or safety goggles.
Skin Protection:	Cleaning powder actuated tools can result in some exposure to lead compounds. Impermeable gloves are recommended. Wash hands thoroughly when finished and before eating or smoking.
Respiratory Protection:	Not normally required. Where air movement is inadequate to maintain exposure below recommended levels, wear a high efficiency particulate respirator.
Other:	Hearing protection should be worn when firing powder actuated tools

PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storing Precautions:	Store in a cool dry place. Do not crush or drop. Keep away from excessive heat, electrical current, strong acids and oxidizers. NFPA 495 requires 15 feet separation (or 1-hour firewall) from flammable liquids, flammable solids, and oxidizers. For industrial use only. Keep out of reach of children. Use with adequate ventilation. Practice good hygiene; i.e. wash after using and before eating or smoking.
Other Precautions::	Use only in powder actuated tools designed to handle these boosters. Construction industry employees must be properly trained as prescribed by OSHA regulations 29 CFR 1926.302 (e). All employees should be familiar with the safe operating procedures and requirements for powder operated tools as described in ANSI A10.3 and OSHA 29 CFR 1910.243 (d).

REGULATORY INFORMATION

Hazard Communication:	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
HMIS Codes:	Health 1, Flammability 1, Reactivity 3, PPE B (Glasses, Gloves)
DOT Shipping Name:	Limited Quantity - LQ
ICAO / IATA Shipping Name:	Cartridges. Power device, Class 1.4S, UN 0323
TSCA Inventory Status:	Chemical components listed on TSCA inventory.
SARA Title III, Section 313:	This product contains < 1% lead styphnate (CAS No. 15245-44-0), < 0.1% barium nitrate (CAS No. 10022-31-8), and 5 - 11% nitroglycerin (CAS No. 55-63-0) which are subject to the reporting according to Section 313 of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.
Waste Disposal Methods:	Misfires should be stored in a closed container until disposal or as otherwise required by local, state, and federal safety, health and environmental regulations. The recommended disposal method is an explosives incinerator.
EPA Waste Code(s):	D008

CONTACTS

Customer Service:	1 800 879 8000
Technical Service:	1 800 879 8000
Health / Safety:	1 800 879 6000 Jerry Metcalf (x1003704)
Emergency # (Chem-Trec):	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.

MATERIAL SAFETY DATA SHEET

May be used to comply with OSHA's Hazard Communication Standards 29 CRP 1910.1200. Standards must be consulted for specific requirements.

Section I

Manufacturer's Name & Address:
 Sealers, Inc.
 5017 S. 38th St.
 St. Louis, MO 63116

Emergency Telephone Number:
 (314) 752-4667

Chemical Family:
 Butyl Rubber Composite

Date Prepared:
 01/01/2014

Product Use:
 Extruded Rubber Sealer

Product Name:
 #1104

Section II - HAZARDOUS INGREDIENTS

Hazardous Components	CAS #	OSHA PEL	ACGIH TLV	%
Quartz Silica	14808-60-7	1 mg/m	1 mg/m	<1%
Calcium Carbonate	1317-65-3	10mg/m		30 - 40%
Hydrous Magnesium Silicates	14807-96-6	2 mg/m		10 - 20%

Section III - PHYSICAL DATA

Physical State: Extruded mastic	Odor and Appearance: Soft, sticky mastic
Vapor Pressure: n/a	Vapor Density: n/a
pH: n/a	Evaporation Rate: n/a
Specific Gravity: 1.60 g/cc	Coeff. Water/Oil Dist. n/a
VOC (Grams/Liter): 0	Percent Solids: 100%
Solubility in Water: Insoluble	Odor Threshold (ppm): n/a
Freezing Point (C): n/a	Volatiles by Wt. (%): n/a

Section IV - FIRE & EXPLOSION HAZARD DATA

Flammability:	n/a
Flash pointing:	425°F COC
Auto ignition:	n/a
Lower/Upper Flammable Limit:	n/a
Hazardous combustion Products:	Incomplete combustion can yield CO and Hydrocarbons
Explosion Data:	n/a
Sensitivity to Impact:	n/a
Sensitivity to Static Discharge:	n/a
Extinguishing Media:	Foam, CO ₂ , or Dry Chemical
Special Fighting Procedures:	Firefighters should wear a self-contained breathing apparatus with a full face-piece operated in pressure demand.

Unusual Fire & Explosion Hazards: n/a

Section V - REACTIVITY DATA

Chemical Stability: Unstable () Stable (x)
Hazardous Polymerization: May Occur () Will not Occur (x)
Conditions to Avoid: Excessive heat
Incompatibility: Do not store with strong oxidizers. Store as OSHA Class
 (Materials to Avoid) 1B Flammable liquid.
Hazardous Decomposition Products: Toxic gases or vapors, such as Carbon Monoxide and Carbon Dioxide, and Nitrogen Oxides.

Section VI - TOXICOLOGICAL PROPERTIES

Route of Entry: Skin Contact () Skin Absorption () Eye Contact () Inhalation () Ingestion ()
Effects of Acute Exposure to Product: n/a
Effects of chronic Exposure to Product: n/a
Exposure Limits: n/a
Irritability of Product: n/a
Sensitization to Product: n/a
Carcinogenicity: Non-Carcinogen
Teratogenicity: None known
Reproductive Toxicity: None known
Mutagenicity: None known
Synergistic Products: None known

Section VII - PREVENTATIVE MEASURES

Personal Protective Equipment:
Gloves (specify): Use plastic gloves
Respirator (specify): Use OSHA approved vapor respirator
Eye (specify): Safety glasses, chemical goggles or face shield
Footwear (specify): Industrial shoes to protect skin from product contact.
Clothing (specify): Solvent resistant clothing to protect skin.
Other (specify): None known
Engineering Controls (specify): n/a
 (EG, Ventilation Enclosed Process)
Leak or Spill Procedure: n/a
Waste Disposal: Dispose of accordance with all local, state and federal regulations.
Storage Requirements: Store in a cool, dry place. Keep away from oxidizers.
Special Shipping Information: U.S. DOT Hazard Class Non-regulated

Section VII - PREVENTATIVE MEASURES (cont.)

Handling Procedures & Equipment: Remove clothing. Wash hands with soap and water.
Storage Requirements: Store in a cool, dry place. Keep away from oxidizers.
Special Shipping Information: U.S. DOT Hazard Class Non-regulated
Clothing (specify): Long sleeves, long trousers to protect skin from contact.
Other (specify): None known

Section VIII - FIRST AID MEASURES

Specific Measures:
Eye Contact: Immediately flush eyes with water for 15 minutes. Get medical help promptly.
Skin contact: Wash skin with soap and water. If clothing is soaked, launder before wearing.
Inhalation: Move exposed person to fresh air. Get medical help immediately.
Ingestion: n/a

Section IX - SARA SECTION 131 SUPPLIER NOTIFICATION

Cas Number: 14808-60-7
Chemical Name: Crystalline Silica Quartz
Percent by Weight: <1%

Section X - PREPARATION INFORMATION

Prepared By (Group, Department, etc.): Vasu Patel, Research & Development
Phone Number: (314) 752-4667
Date: 01/01/2014

Supersedes All Previous Publications

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: VersaGrip 102
Synonyms: Water-Based Mastic

Manufacturer/Supplier
 Carlisle HVAC Products
 900 Hensley Lane
 Wylie, TX 75098
Internet Address:
<http://www.carlisleHVAC.com/>

Phone Numbers
Medical Emergency:
CHEMTREC (USA): (800) 424-9300
CHEMTREC (International):
MSDS Assistance: (972) 442-6545
Fax On Demand: NA
Technical Assistance: (888) 229-2199
Customer Service: (888) 229-0199

2. COMPONENT INFORMATION

Component	CAS No.	Percent Range	Hazardous in Blend
Ethylene Glycol	107-21-1	0.5 - 2	
Methanol	67-56-1	0.2 - 2	

This product is not hazardous according OSHA 29 CFR 1910.1200.

Hazards:

Flammable/Combustible No **Acute** No **Chronic** No **Carcinogen** No
Toxin No **Target Organ** No
Pressure No **Reactive** No **Exposure Limit** No **Other** No

2A. OTHER INGREDIENTS Greater than 3%

Component	CAS No.
Latex Co-polymer	24937-78-8
Calcium Carbonate	1317-65-3
Hydrated Alumina	21645-51-2
Chlorinated Paraffin	63449-39-8

3. HAZARDS IDENTIFICATION

Emergency and Hazards Overview:

May cause moderate irritation to eyes. May be harmful if swallowed. Read and understand all health and safety information on the product label and Material Safety Data Sheet before use.

Ratings

Health 1 **Flammability** 0 **Reactivity** 0

Primary Route of Exposure: Skin x Inhalation x Eye x Ingestion x

Health Effect Information

Eye Contact: May cause eye irritation if wiped or rubbed into eyes.

Skin Contact: May cause mild skin irritation on prolonged or repeated contact.

Inhalation: Breathing high concentrations of vapors may cause nausea & irritation of nose, throat, & respiratory tract. Respiratory symptoms associated with pre-existing lung disorders may be aggravated by exposure to this material.

Ingestion: Ingestion of large quantity may cause initial central nervous system stimulation, followed by depression.

Issued: 1 February 2014
 Supersedes: 1 March 2011
 Page 1 of 7

Medical Conditions Aggravated by Exposure: Prolonged exposure to vapors could aggravate pre-existing disorders in lungs, kidney and liver.

4. FIRST AID INFORMATION

Eye Contact: Flush with water for 15 minutes. Get medical attention immediately.

Skin Contact: Wipe off and wash skin with soap and water. Promptly remove contaminated clothing and wash before reuse.

Inhalation: Remove to fresh air. If breathing has stopped, start artificial respiration. Oxygen may be administered. Consult physician immediately

Ingestion: Do not induce vomiting unless directed to do so by a physician. Consult a physician immediately.

Notes to Physician: This product contains ethylene glycol, Hexahydro-1, 3,5-triethyl-s-triazine (not in a reportable amount).

5. FIRES AND EXPLOSION INFORMATION

Flammable Properties

Flash Point: No flash to boiling

Test Method: Closed cup

Flame extension: NA

Test Method: NA

Flammable Limits in Air

Upper Percent: NA

Lower Percent: NA

Auto ignition Temperature: NA

Test Method: NA

NFPA Classification: H 1 F 0 R 0

Extinguishing Media: CO₂, foam, dry chemical or water spray.

Fire Fighting Measures

Special Fire Fighting Procedures and Equipment: Firemen must wear full-face air-supplied masks and full protective clothing.

Unusual Fire and Explosion Conditions: This product is not sensitive to physical shock or static discharge. Exposure of closed container to temperatures above the boiling point could cause pressure buildup and container rupture.

Hazardous Combustion By-Products: CO, CO₂, unburned hydrocarbons, or nitrous oxides.

6. ACCIDENTAL RELEASE MEASURES

Personnel Safeguards: Evacuate non-essential personnel to safe areas. Clean-up responders should wear proper protective clothing and gloves before entering the affected area.

Regulatory Notifications: Certain component of this product is defined as hazardous according to U.S. EPA. Spill reporting requirements and reportable quantities vary by region. Consult all applicable state and local regulations. For Canada, observe all precautions noted above.

Containment and Clean up: Prevent product from entering drinking water supplies or streams. Observe above precautions, collect liquid with inert, noncombustible material and remove for disposal.

7. HANDLING AND STORAGE INFORMATION

Handling: Normal use condition doesn't produce respirable Silica. However, sanding, grinding, and burning might release respirable Silica. Keep out of reach of children. Launder contaminated clothing. Wash hands with soap and water after use, especially before eating or drinking.

Storage: Store in a dry, well ventilated environment away from heat, above 35 deg F and below 110 deg F. Keep containers closed when not in use. Do not pressurize, cut weld or grind containers.

Empty Container Warnings

Drums: Drums may be reused after wash.

Plastic: Plastic containers may be reused after wash.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION INFORMATION

Exposure Limits and Guidelines

Component	CAS No.	Exposure Limit
Methanol	67-56-1	200 ppm OSHA PEL 200 ppm ACGIH TWA, 250 ppm STEL
Ethylene Glycol	107-21-1	50 ppm OSHA PEL/Ceiling

Personal Protective Equipment

Eye/Face Protection: Wear safety goggles or face shield. Contact lenses should not be worn.

Skin Protection: Use protective rubber gloves (Hycron, neoprene, or nitrile).

Respiratory Protection: Provide adequate ventilation to maintain vapors below PEL/TWA. If vapor levels are exceeded, use NIOSH approved respirator, both during and immediately after application, until vapor levels are below limits.

Personal Hygiene: Avoid rubbing eyes during handling. Use good personal hygiene practices to avoid incidental ingestion.

Engineering Controls / Work Practices

Ventilation: Provide local exhaust or area ventilation to maintain concentration of vapors below PEL/TWA.

Other: Source of clean water should be available in the work area for flushing eyes and skin. Wash thoroughly with soap and water after use and before eating.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White/Gray Mastic	Vapor Pressure: 17 mm Hg @ 20°C
Odor: Typical latex with slight ammonia odor	Vapor Density (air=1): <air
Physical state: Mastic	Percent Volatile by Weight: 24 – 28
pH: 8.0 – 9.0	Volatile Organic Content: 38 g/l (according to SCAQMD calculation method)
DOT Corrosivity: NA	Molecular Weight: NA
Boiling Point: 212°F	Average Carbon Number: NA
Melting Point: NA	Viscosity @ 77 F: Thixotropic
Specific Gravity: 1.39	
Pour Point: NA	
Solubility in Water: Miscible with water	
Octanol / Water Coefficient: Log K _{ow} = NA	

10. STABILITY AND REACTIVITY INFORMATION

Chemical Stability: Stable

Conditions to Avoid: Avoid extreme heat, fire and temperature.

Incompatible Materials to Avoid: Avoid strong acids, strong oxidizers.

11. TOXICOLOGICAL INFORMATION (will only print available data)**Ethylene Glycol**

Primary Eye Irritation: Irritating

Primary Skin Irritation: NA

Acute Dermal Toxicity: Product toxicity has not been determined.

Subacute Dermal Toxicity: NA

Dermal Sensitization: NA

Inhalation Toxicity: Product toxicity has not been determined.

Inhalation Sensitization: NA

Oral Toxicity: Product toxicity has not been determined. Following are component data:

LD₅₀, Ethylene Glycol: Rat 4,000 mg/kg

Mutagenicity: NA

Carcinogenicity: NA

Reproductive Toxicity: Product toxicity has not been determined. Following are component data:

Ethylene Glycol: Pregnant Rat 1.25g/kg and above: increased malformed fetus

Pregnant Mice 750 mg/kg and above: increased malformed fetus

Teratogenicity: NA

Immunotoxicity: NA

Neurotoxicity: NA

No other toxicological information available

12. ECOLOGICAL INFORMATION**Ethylene Glycol**

Aquatic Toxicity: Not known

Terrestrial Toxicity: Not known

Chemical Fate and Transport: Not known

No other ecological information available

13. DISPOSAL INFORMATION

Regulatory Information: Consult all regulations (federal, state, provincial, local etc.) or a qualified waste disposal firm when characterizing waste for disposal.

Waste Disposal Methods: Recover free liquid. Absorb residue and dispose of according to local, state and Federal EPA regulation. Empty container: may contain explosive vapors. Do Not cut, puncture or weld on or nearby.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation (DOT)

Highway / Rail: Not regulated by DOT

International Highway (Transportation of Dangerous Goods-TDG): Not regulated

International Ocean (International Maritime Dangerous Goods – IMDG): Not regulated

International Air (International Air Transportation Authority – IATA): Not regulated

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for all shipping descriptions.

Other: No other information available

15. REGULATORY INFORMATION

Regulatory Lists

U.S. TSCA Inventory: All components of this material are on the US TSCA Inventory or exempt from listing on the TSCA Inventory.

Sara Section 313: This product contains the following Sara, Title III, Section 313 Chemicals:

Chemical	CAS Number	Percent in Product
Methanol	67-56-1	0.2 - 2
Ethylene Glycol	107-21-1	0.5 - 2

IARC Group: NA

Regulatory Lists Searched

This product contains a mixture of one or more components found on the following State List at or above OSHA de minimis quantities

Health & Safety: NA

Environmental: NA

International: NA

State: FL, MA, MN, PA, NJ, WA

National Inventories: NA

SARA 311 / 312 Categories (For the chemicals above)

Acute: Yes **Chronic:** Yes **Fire:** Yes **Pressure:** No **Reactive:** No

Regulated: No

California Proposition 65 Information: Warning! None in the list

Canadian WHMIS Classification**Methanol****Class:** Class B2 and D2B

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations (CPR). This MSDS contains all the information required by the CPR.

Canadian Environmental Protection Act (CEPA)

All reportable chemical substance is listed on the Domestic Substances List (DSL) or otherwise complies with CEPA new substance notification requirements.

National Pollution Release Inventory (NPRI)

This product contains the following chemical subject to the reporting requirements of the CEPA subsection 16(1), NPRI.

Chemical	CAS Number	Percent in Product
Methanol	67-56-1	0.2 – 2
Ethylene Glycol	107-21-1	0.5 – 2

Other Regulations: No other information available.

16. OTHER INFORMATION**Health and Environmental Label Language**

All ingredients contained in this product are included on the US EPA Toxic Substances Control Act (TSCA) inventory or exempt from listing on the TSCA inventory. All ingredients contained in this product comply with the requirements of the Canadian Environmental Protection Act (CEPA) and are listed on the Domestic Substance List (DSL) or Non-Domestic Substance List (NDSL).

MSDS Revisions**Previous Version Date:** 1 March 2011**Section****Old Information:****New Information:****Prepared By:** R&D Department**Date:** 1 February 2014

Disclaimer of Warranty: The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, CCWI Company must rely upon the hazard evaluation of such components submitted by that product's manufacturer or importer. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

MATERIAL SAFETY DATA SHEET



PREMIER BUILDING SOLUTIONS, INC.

Page 1 of 7
Version: 1.2
Revision Date: 12/10/13

XTRASTOP 550 INSULATING NON-COMBUSTIBLE FILLER COMPOUND

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Brand Name: XtraStop 550 Insulating Non-Combustible Filler Compound
Product Use: Sealant & Adhesive
Proper DOT Shipping: Caulking & Glaziers, NOI
DOT Hazard Classification: NONE
Molecular Formula: Mixture

NFPA Profile: Health 1 Flammability 0 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

Company Contact Information

Premier Building Solutions, Inc.
480 Nova Drive
Massillon, OH. 44646

Emergency Telephone Number

CHEMTREC: 800-424-9300 (24 hours)
Telephone: 866-512-4583

2. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Acute Effects

Eye: May cause abrasion and irritation.
Skin: Prolonged exposure may cause dryness and irritation.
Inhalation: Sanding dust may cause irritation of breathing passages.
Oral: None Reported.

Prolonged/Repeated Exposure Effects

None Reported.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

None Reported.

MATERIAL SAFETY DATA SHEET



PREMIER BUILDING SOLUTIONS, INC.

Page 2 of 7

Version: 1.2

Revision Date: 12/10/13

XTRASTOP 550 INSULATING NON-COMBUSTIBLE FILLER COMPOUND

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

3. FIRST AID MEASURES

- Eye: Flush eyes with clean water for 15 minutes or until no evidence of material remains. If discomfort persists, see a physician.
- Skin: Wash thoroughly with clean water and mild soap. Avoid vigorous scrubbing which could cause abrasions and irritations. If discomfort persists, see a physician.
- Inhalation: Remove from exposure area to fresh air. If discomfort persists, see a physician.
- Oral: Drink plenty of water. If discomfort persists, see a physician.

Note to Physician: Treat according to person's condition and specifics of exposure.

4. FIRE FIGHTING MEASURES

- Flash Point: N/A
- Autoignition Temperature: N/A
- Flammability Limits in Air: N/A
- Extinguishing Media: N/A
- Fire Fighting Measures: None
- Unusual Fire Hazards: None

5. ACCIDENTAL RELEASE MEASURES

- Containment/Clean up: Not a hazardous waste. Observe all personal protection equipment recommendations described in Sections 5 and 8. Wipe up or scrape up and contain for salvage or disposal.

MATERIAL SAFETY DATA SHEET



PREMIER BUILDING SOLUTIONS, INC.

Page 3 of 7

Version: 1.2

Revision Date: 12/10/13

XTRASTOP 550 INSULATING NON-COMBUSTIBLE FILLER COMPOUND

Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See Section 8 for Personal Protective Equipment for Spills.

6. HANDLING AND STORAGE

Use with adequate ventilation. Avoid eye contact. Avoid skin contact. Keep container closed. Do not take internally.

Use reasonable care and store away from acidic and oxidizing materials. Keep container closed and store away from water or moisture.

7. EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure limits are provided for information only. These chemicals are not in a respirable form in this product.

Engineering Controls

Local Ventilation: None

General Ventilation: None

Personal Protective Equipment for Routine Handling

Eyes: Wear safety glasses or goggles when sanding.

Inhalation: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator: When sanding in a confined area, follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.

Personal Protective Equipment for Spills

Handling: No special precautions are required.

MATERIAL SAFETY DATA SHEET



PREMIER BUILDING SOLUTIONS, INC.

Page 4 of 7
Version: 1.2
Revision Date: 12/10/13

XTRASTOP 550 INSULATING NON-COMBUSTIBLE FILLER COMPOUND

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

8. PHYSICAL & CHEMICAL PROPERTIES

Physical Form: Paste
Color: Reddish Thixotropic Paste
Odor: No distinguishable odor
Specific Gravity @ 25°C: ~1.31
Viscosity: Not determined.
Freezing/Melting Point: Not determined.
Boiling Point: 212° F (100° C) @ 760 mmHg
Vapor Pressure @ 20°C: 17 @ 68° F (20° C)
Vapor Density: Not determined.
Solubility in Water: Soluble
pH: 9
Volatile Content: None
Flash Point: N/A
Autoignition Temperature: N/A
Flammability Limits in Air: N/A

Note: The above information is not intended for use in preparing product specifications.

9. STABILITY AND REACTIVITY

Chemical Stability: Stable
Hazardous Polymerization: Hazardous polymerization will not occur.
Conditions to Avoid: None
Materials to Avoid: None

Hazardous Decomposition Products

None

MATERIAL SAFETY DATA SHEET



PREMIER BUILDING SOLUTIONS, INC.

Page 5 of 7
Version: 1.2
Revision Date: 12/10/13

XTRASTOP 550 INSULATING NON-COMBUSTIBLE FILLER COMPOUND

10. TOXICOLOGICAL INFORMATION

Component Toxicology Information

For Product

This product is considered non-toxic.

Special Hazard Information on Components

None

11. ECOLOGICAL CONSIDERATIONS

Aquatic Toxicity

None

Waterfowl Toxicity

None

Biochemical Oxygen Demand

None

Food Chain Concentration Potential

None

Ecotoxicity Classification Criteria

Hazard Parameters (LC50 or EC50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100
Acute Terrestrial Toxicity	<=100	>100 and <=2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

12. DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

MATERIAL SAFETY DATA SHEET



PREMIER BUILDING SOLUTIONS, INC.

Page 6 of 7
Version: 1.2
Revision Date: 12/10/13

XTRASTOP 550 INSULATING NON-COMBUSTIBLE FILLER COMPOUND

State or local laws may impose additional regulatory requirements regarding disposal.

13. TRANSPORT INFORMATION

DOT Road Shipment Information (49 CFR 172.101)

Not subject to DOT.

Ocean Shipment (IMDG)

Not subject to IMDG code.

Air Shipment (IATA)

Not subject to IATA regulations.

14. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

This material is considered Non-Hazardous.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings

Section 302 Extremely Hazardous Substances (40 CFR 355):

None.

Section 304 CERCLA Hazardous Substances (40 CFR 302):

None.

Section 311/312 Hazard Class (40 CFR 370):

Acute: No
Chronic: No
Fire: No
Pressure: No
Reactive: No

Section 313 Toxic Chemicals (40 CFR 372):

MATERIAL SAFETY DATA SHEET



PREMIER BUILDING SOLUTIONS, INC.

Page 7 of 7
Version: 1.2
Revision Date: 12/10/13

XTRASTOP 550 INSULATING NON-COMBUSTIBLE FILLER COMPOUND

None present or none present in regulated quantities.

Note: Chemicals are listed under the 313 Toxic Chemicals section only if they meet or exceed a reporting threshold.

Work Place Hazardous Material Information Sysytems (CRP Section 33)

This product has been classified according to the hazard criteria of the Controlled Products Regulation and the MSDS contains all required information.

Supplemental State Compliance Information

California

To the best of our knowledge, this product contains no levels of chemicals listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

15. OTHER INFORMATION

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

<http://www.xtrabond.com>

THE NATIONAL COLLOID CO.

MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

EFFECTIVE DATE: MARCH 6, 1997

SUPERCEDES: MAY 11, 1994

PRODUCT NAME: 743

FOR ADDITIONAL PRODUCT INFORMATION:

CHEMICAL FAMILY MIXTURE

(614) 282-1171

MANUFACTURER: THE NATIONAL COLLOID COMPANY
906 ADAMS STREET

IN EMERGENCY: 1-800-424-9300 CHEMTREC

SECTION 2: COMPOSITION/ INFORMATION ON INGREDIENTS

STEUBENVILLE, OH 43952

CAS #	COMPONENT NAME	%	EXPOSURE LIMITS	SEC. 12 INFO
7632-00-0	SODIUM NITRITE	13	NO	YES
12179-04-3	SODIUM TETRABORATE PENTAHYDRATE	8	YES	YES
6834-92-0	SODIUM METASILICATE	5	NO	YES

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! MAY CAUSE SEVERE EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED OR IF MIST INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. NITRITES MAY REACT WITH ORGANIC AMINES IN THE BODY TO FORM CARCINOGENIC NITROSAMINES.

FOR EXPOSURE LIMITS SEE SECTION 8

FOR OTHER TOXICOLOGICAL INFORMATION SEE SECTION 12

EYE: THIS PRODUCT MAY CAUSE SEVERE IRRITATION AND DAMAGE UPON CONTACT WITH THE EYE.

SKIN CONTACT: THIS PRODUCT MAY PRODUCE IRRITATION UPON CONTACT WITH THE SKIN. SODIUM NITRITE AND SODIUM TETRABORATE PENTAHYDRATE MAY BE ABSORBED THROUGH DAMAGED SKIN IN AMOUNTS THAT MAY PRODUCE SYSTEMIC TOXICITY SIMILAR TO THAT PRODUCED BY INGESTION IF THE AREA OF EXPOSURE AND AMOUNTS ABSORBED ARE LARGE. NO SKIN SENSITIZATION (INDUCTION OF ALLERGY) IS EXPECTED, HOWEVER, BORATE ABSORPTION MAY CAUSE A CHARACTERISTIC RED INFLAMED RASH FOLLOWED BY PEELING TYPICALLY ON THE PALMS, SOLES OR BUTTOCKS.

INGESTION: INGESTION OF THIS PRODUCT MAY CAUSE SEVERE IRRITATION OR BURNS OF THE MUCOUS MEMBRANES OF THE MOUTH, THROAT, ESOPHAGUS AND STOMACH. THIS PRODUCT WOULD BE CONSIDERED TO BE MODERATELY TOXIC BY INGESTION BECAUSE AS LITTLE AS ONE GRAM OF SODIUM NITRITE MAY BE FATAL TO HUMANS. INGESTION OF LARGE AMOUNTS MAY CAUSE NAUSEA, VOMITING, HEADACHES, CYANOSIS (BLUISH SKIN RESULTING FROM REDUCED OXYGEN-CARRYING CAPACITY OF THE BLOOD DUE TO METHEMOGLOBIN PRODUCTION), WEAKNESS, SHORTNESS OF BREATH, A MARKED FALL IN BLOOD PRESSURE, COLLAPSE, CONVULSIONS, AND COMA. NITRITES HAVE BEEN SHOWN TO CONVERT IN THE STOMACHS OF LAB ANIMALS TO POTENTIALLY CARCINOGENIC NITROSAMINES. SWALLOWING A LARGE AMOUNT OF SODIUM TETRABORATE CAN RESULT IN SEVERE TROINTESTINAL IRRITATION, KIDNEY INJURY, AND CENTRAL NERVOUS SYSTEM DEPRESSION.

IRRITATION: PRODUCT MISTS MAY IRRITATE THE RESPIRATORY TRACT, IF INHALED. LARGE AMOUNTS MAY CAUSE SYSTEMIC EFFECTS, ASS NITRITES AND BORATES ARE READILY ABSORBED BY LUNG TISSUE.

POTENTIAL EFFECTS OF CHRONIC OR SUBCHRONIC EXPOSURE: NO APPLICABLE INFORMATION WAS FOUND CONCERNING ANY POTENTIAL HEALTH EFFECTS RESULTING FROM SUBCHRONIC OR CHRONIC EXPOSURE TO THE PRODUCT.

THE NATIONAL COLLOID CO.

MATERIAL SAFETY DATA SHEET

~~SECTION 4: FIRST AID MEASURES~~
~~SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION~~

PAGE 2

EYES: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL AID IMMEDIATELY.

SKIN: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL AID IMMEDIATELY. WASH CLOTHING BEFORE REUSE.

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK MEDICAL AID.

SECTION 5: FIRE FIGHTING MEASURES

INGESTION: IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER. SEEK MEDICAL AID IMMEDIATELY. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

FLASHPOINT: NONE TO BOILING

(THIS PRODUCT IS NOT BY DEFINITION A "FLAMMABLE LIQUID" OR A "COMBUSTIBLE LIQUID". IF ALL WATER IN THE PRODUCT IS ALLOWED TO EVAPORATE, HOWEVER, IT SHOULD BE NOTED THAT SODIUM NITRITE IS A STRONG OXIDIZER.)

FLAMMABILITY LIMITS: LEL - N/A UEL - N/A

AUTOIGNITION TEMPERATURE: N/A

EXTINGUISHING MEDIA: FLOODING AMOUNTS OF WATER IN EARLY STAGES. CARBON DIOXIDE MAY ALSO BE USED. AVOID USING AMMONIUM PHOSPHATE DRY CHEMICAL.

FIRE FIGHTING INSTRUCTION: EXERCISE CAUTION WHEN FIGHTING ANY CHEMICAL FIRE. A SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING ARE ESSENTIAL.

SECTION 6: ACCIDENTAL SPILL/RELEASE MEASURES

FIRE & EXPLOSION HAZARDS: PRODUCT EMITS TOXIC GASES UNDER FIRE CONDITIONS.

DECOMPOSITION PRODUCTS: THERMAL DECOMPOSITION OR COMBUSTION MAY PRODUCE NITROGEN OXIDES AND DISODIUM OXIDE.

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: WEARING APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT, CONTAIN SPILL, COLLECT ONTO NON-COMBUSTIBLE ABSORBENT LIKE SAND OR EARTH AND PLACE INTO SUITABLE CONTAINER. KEEP COMBUSTIBLES (WOOD, PAPER, OIL, ETC.) AWAY FROM SPILLED MATERIAL. PREVENT ENTRY INTO SEWERS AND WATERWAYS.

WASTE DISPOSAL: DISPOSE OF WASTE MATERIAL ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 7: HANDLING & STORAGE

RCRA STATUS: DISCARD PRODUCT, AS SOLD, WOULD NOT BE CONSIDERED A RCRA HAZARDOUS WASTE.

GENERAL HANDLING PRECAUTIONS: DO NOT GET IN EYES, ON SKIN, OR CLOTHING. AVOID BREATHING DUST. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. KEEP CONTAINER CLOSED WHEN NOT IN USE.

STORAGE REQUIREMENTS: DO NOT STORE NEAR COMBUSTIBLE MATERIALS. KEEP FROM FREEZING. PRODUCT RUINED BY FREEZING.

THE NATIONAL COLLOID CO.

MATERIAL SAFETY DATA SHEET

PAGE 3

VENTILATION: GENERAL MECHANICAL AND LOCAL EXHAUST ARE ACCEPTABLE

COMPONENT:

BORATES, PENTAHYDRATE

ACGIH TWA: 1 mg/m³ OSHA TWA: 10 mg/m³

PERSONAL PROTECTIVE EQUIPMENT:

EYES: CHEMICAL SPLASH GOGGLES AND FACE SHIELD

SKIN: CHEMICAL RESISTANT GLOVES AND PROTECTIVE CLOTHING

RESPIRATORY: IF AIRBORNE CONCENTRATIONS EXCEED PUBLISHED EXPOSURE LIMITS, USE A NIOSH APPROVED RESPIRATOR IN ACCORDANCE WITH OSHA RESPIRATORY PROTECTION REQUIREMENTS (29 CFR 1910.134).

ENGINEERING CONTROLS: USE LOCAL EXHAUST VENTILATION WHERE MIST OR SPRAY MAY BE GENERATED.

WORK PRACTICES: EYE WASH STATION AND SAFETY SHOWER SHOULD BE ACCESSIBLE IN THE IMMEDIATE AREA OF USE.

PHYSICAL STATE: LIQUID

SOFTENING POINT: N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND APPEARANCE: CLEAR, DARK PINK LIQUID pH 11.5 - 12.0 @ 25 DEG. C

SPECIFIC GRAVITY: 1.21 - 1.24 @ 25 DEG. C

BOILING POINT: 220 DEG. F

VAPOR PRESSURE: N/A

PERCENT VOLATILE: ~70

VAPOR DENSITY: N/A

SOLUBILITY (IN WATER): COMPLETE

FREEZING POINT: N/A

EVAPORATION RATE: N/A

VISCOSITY: N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY: THIS MATERIAL IS STABLE

CONDITIONS TO AVOID: KEEP FROM CONTACT WITH CLOTHING AND OTHER COMBUSTIBLE MATERIALS. PROTECT FROM LOW TEMPERATURES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

INCOMPATIBILITY: SODIUM NITRITE CAN CAUSE A HAZARDOUS REACTION WITH ACIDS, AMMONIUM SALTS, AMINES, ACTIVATED CARBON, CYANIDES, THIOSYANATES, THIOSULFATES, REDUCING AGENTS, AND CERTAIN COMBUSTIBLES. WHEN SODIUM NITRITE REACTS WITH ACID, HIGHLY TOXIC NITROGEN OXIDES ARE RELEASED.

THE NATIONAL COLLOID CO.

MATERIAL SAFETY DATA SHEET

SECTION 11: TRANSPORT INFORMATION

PAGE 4

US. SHIPPING INFORMATION :

CLASS/DIVISION: NOT RESTRICTED UNLESS SHIPPED IN A SINGLE CONTAINER HOLDING >769 LBS., THEN: 9

SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS SODIUM NITRITE)

HAZARD CLASS: 9

I.D. NUMBER UN 3082

SECTION 12: TOXICOLOGICAL INFORMATION

PACKING GROUP: III

ON PRODUCT:

NO INFORMATION AVAILABLE ON THE FORMULATED PRODUCT.

ON INGREDIENTS:

CHEMICAL NAME ORAL LD₅₀ DERMAL LD₅₀ INHALATION LC₅₀

<u>(RAT)</u>	<u>(RABBIT)</u>	<u>(RAT)</u>	
SODIUM NITRITE	85 mg/kg	Not Available	5500 ug/m ³ /4H

SECTION 13: REGULATORY INFORMATION

SODIUM TETRABORATE PENTAHYDRATE 3.2 - 3.4 g/kg >2 g/kg Not Available

SODIUM METASILICATE 800 mg/kg Not Available Not Available

TSCA STATUS: THE INGREDIENTS OF THIS PRODUCT ARE LISTED ON THE TOXIC SUBSTANCES CONTROL ACT (TSCA) CHEMICAL SUBSTANCES INVENTORY. (SODIUM TETRABORATE PENTAHYDRATE IS NOT ON THE TSCA INVENTORY, BUT IT'S ANHYDROUS FORM IS LISTED UNDER CAS #1330-43-4)

CERCLA REPORTABLE QUANTITY OF EPA HAZARDOUS SUBSTANCES IN PRODUCT:

CHEMICAL NAME QTY

SODIUM NITRITE 100 LB.

PRODUCT RQ: 769 LB. (Notify EPA of product spills exceeding this amount.)

SARA TITLE III:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES:

*THERE ARE NO SARA 302 EXTREMELY HAZARDOUS SUBSTANCES IN THIS PRODUCT.

SECTION 311 AND 312 HEALTH AND PHYSICAL HAZARDS:

IMMEDIATE DELAYED FIRE PRESSURE REACTIVITY

YES YES NO NO NO

SECTION 313 TOXIC CHEMICALS:

SECTION 14: OTHER INFORMATION

CHEMICAL NAME CAS # % BY WEIGHT

SODIUM NITRITE 7632-00-0 13

THE NATIONAL COLLOID COMPANY

PRODUCT BULLETIN

NATCOLENE 743L

COOLING WATER PRODUCT

DESCRIPTION

743 IS A CORROSION AND DEPOSIT INHIBITING FORMULATION DESIGNED FOR USE IN CLOSED RECIRCULATING WATER SYSTEMS. THIS PRODUCT IS DESIGNED TO CONTROL CORROSION DEPOSITS IN SYSTEMS THAT HAVE MULTI METAL COMPOSITION. 743 IS EFFECTIVE ON FERROUS AND NONFERROUS METALS AND IS PARTICULARLY EFFECTIVE ON ALUMINUM COMPONENTS.

CORROSION CONTROL IS ACHIEVED BY CONVERTING THE SURFACE OF WATER WETTED METALLIC SYSTEM COMPONENTS TO A PASSIVE STATE. THIS CORROSION CONTROL MECHANISM IS EFFECTIVE IN EITHER VENTED OR NON VENTED SYSTEMS.

A UNIQUE COLOR INDICATOR MAKES THE PRESENCE OF 743 TREATMENT EASY TO DETECT. THIS INDICATOR ALSO HELPS TO LOCATE LEAKS IF A FAILURE SHOULD OCCUR. THE INDICATOR IS pH SENSITIVE AND CAN BE RENDERED COLORLESS WITH MILD ACIDIC SOLUTIONS SUCH AS HOUSEHOLD VINEGAR.

THESE FEATURES MAKE 743 AN EFFECTIVE AND EASY TO USE TREATMENT FOR CHILLED WATER SYSTEMS AND HOT WATER BOILERS.

FEATURES

BENEFITS

*INHIBITS CORROSION IN MULTI METAL SYSTEMS.

*PROVIDES PROTECTION OF METALLIC SYSTEM COMPONENTS EXTENDING THE LIFE OF THE SYSTEM.

*CONTROLS DEPOSITS AND AIDS IN REMOVING EXISTING DEPOSITS AND SCALES.

*MAINTAINS AND IMPROVES HEAT TRANSFER TO MINIMIZE ENERGY CONSUMPTION.

*pH SENSITIVE COLOR INDICATION

*MAKES DETECTION OF TREATMENT EASY AND ASSIST IN LOCATING LEAKS.

*COMPATIBLE WITH ALL COMMON VALVE AND PUMP SEALS.

*PREVENTS PREMATURE FAILURE OF VALVE AND PUMP SEAL AND IMPROVES CONTAINMENT OF SYSTEM WATERS.

*EFFECTIVE AT BOTH LOW AND HIGH TEMPERATURES. HOT AND CHILLED WATER SYSTEMS.

*ONE ECONOMICAL TREATMENT CAN BE USED IN BOTH

TYPICAL PROPERTIES

*PLEASE REFER TO MATERIAL SAFETY DATA SHEET.

METHODS OF FEEDING

FOR BEST RESULTS WE RECOMMEND FEEDING 743 DURING FILLING OR TO OPEN SUMPS IF POSSIBLE. IN SYSTEMS THAT ARE SEALED THE USE OF A SIMPLE BY-PASS FEEDER WILL EFFECTIVELY DELIVER 743 TO THE SYSTEM.

DOSING

CHILLED WATER (<100 DEG. F) 1 GALLON PER 100 GALLONS OF SYSTEM WATER.
HOT WATER BOILERS (>100 DEG. F) 1 GALLON PER 50 GALLONS OF SYSTEM WATER.

CONTROL RANGE

CHILLED WATER SYSTEM	3,800 TO 7,700 ppm (12 TO 25 DROPS C.A.N. SOLUTION)
HOT WATER BOILERS	7,700 TO 11,500 ppm (25 TO 37 DROPS C.A.N. SOLUTION)

*WHILE THIS INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE DATA HEREOF, THE NATIONAL COLLOID COMPANY MAKES NO WARRANTY WITH RESPECT HERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.



MARVEL OIL CO., INC.
2250 W. Pinehurst Blvd., STE 150
Addison, IL 60101

SAFETY DATA SHEET

1. Product and Company Identification

1.1 Product Identifier

Product Name: Marvel Mystery Oil
Product Code (SKU): MM12R (50094), MM13R (50095), MM13RC (50096)
MM14R (50097), MM018 (50092) - See section 15 for discontinued SKU's

1.2 Relevant Identified Uses Of The Substance

Product Use: Engine Oil Additive – Fuel additive (EPA Registered)

1.3 Details of the Supplier of the SDS

Company Name: Marvel Oil Company, Inc.
Street Address: 2250 W. Pinehurst Blvd., Suite 150
City, State, Zip Code: Addison, IL 60101

1.4 Emergency Telephone Numbers

Phone Number: 1(630)455-3700
Fax Number: 1(630)455-3868
Transportation: 1(800)424-9300 (CHEMTREC)
Medical Assistance: Call your local Poison Control Center

2. Hazard Identification:

2.1 Classification of the Substance or Mixture

Hazard Classification: Flammable liquid 3
Skin irritation 2
Reproductive Toxicity 2
Aspiration toxicity 1

2.2 Label Elements



Pictogram:

Signal Word: Danger

Hazard Statement: Flammable liquid and vapor. Causes skin irritation.
Suspected of damaging fertility of the un-born child. May be fatal if swallowed and enters airways.

Precautionary Statement: Keep away from heat, sparks, open flames or hot surfaces.
Do not smoke. Keep containers tightly closed. Ground all containers and receiving equipment. Use explosion proof electrical, ventilation, and lighting equipment. Use only non-

sparking tools. Take precautionary measures against static discharge. Wear protective gloves, clothing, eye glasses and face shield. Do not handle until all safety precautions have been read and understood. Wash hands thoroughly after handling. If exposed, get medical attention. If on skin or hair, remove immediately all contaminated clothing and launder before re-use. Wash skin with soap and water. If skin irritation occurs, get medical attention. If swallowed, immediately call a poison control center or doctor. Do NOT induce vomiting. Store in a well ventilated place. Dispose of contents and container in accordance with all local, state, national and international regulations.

2.3 Other Hazards

Description of additional HNOC: None

3. Information on Ingredients:

3.1 Substance not applicable

3.2 Mixture

<u>Component</u>	<u>CAS Number</u>	<u>Concentration (wt%)</u>
Petroleum Distillates (Hydrotreated Heavy Naphthenic)	64742-52-5	60-100%
Petroleum Distillates (Stoddard Solvent)	8052-41-3	10-30%
Tricresyl Phosphate	1330-78-5	0.1-1.0%
Ortho Dichlorobenzene	95-50-1	0.1-1.0%
Para Dichlorobenzene	106-46-7	<0.1%

4. First Aid Measures:

4.1 Description of First Aid Measures

Inhalation: Remove to fresh air and promote deep breathing. Get medical attention if effects persist or you feel un-well.

Skin: In case of skin contact, wash thoroughly with soap and water. Remove contaminated clothing and footwear. Launder clothing before re-use. Call a physician if irritation develops or persists.

Eyes: In case of eye contact, immediately flush eyes with plenty of water. Remove contact lenses if worn. If irritation persists, get medical attention

Ingestion: If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. Immediately call a poison control center or physician.

4.2 Most important symptoms and effects – acute and chronic

Inhalation: May cause respiratory tract irritation. Vapors may cause drowsiness or dizziness.

Skin: Cause skin irritation. Symptoms may include redness, edema, drying, defatting, and cracking of skin.

Eyes: May cause temporary eye irritation. Symptoms may include discomfort or pain, excess blinking and tearing, with redness and swelling.

Ingestion: May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea, and vomiting.

4.3 Indication of any immediate medical attention and special treatment

Symptoms may not appear immediately. Seek medical attention if effects develop or persist and you feel un-well.

5. Fire Fighting Measures:

5.1 Extinguishing media

Carbon dioxide, dry chemical, and alcohol foam

5.2 Special hazards arising from the substance or mixture

CO₂, CO, and hydrocarbons

5.3 Advice for Fire Fighters

Keep up wind of fire. Wear full firefighting turn out gear (full bunker gear) and respiratory protection (SCBA). Cool closed containers exposed to fire with water. See Section 8 for personal protection.

6. Accidental Release Measures:

6.1 Personal precautions, protective equipment, and emergency procedures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Eliminate all source of ignition.

6.2 Methods and materials for containment and clean up

For containment: Contain and absorb spill with inert material. Place in suitable container for disposal. Do not flush to sewer or allow to enter waterways. See section 8 for PPE.

For clean up: Take up material and place in a suitable container. Vapors may be heavier than air and may travel along the ground to a distant source of ignition. Provide adequate ventilation.

7. Handling and Storage

7.1 Precautions for safe handling

Keep away from source of ignition. Do not smoke. Take precaution to eliminate static discharge. Avoid contact with skin and eyes. Avoid breathing vapor or mist. Do not swallow. Do not eat or drink while handling. Wash hands with soap and water after handling. Use only non-sparking tools.

7.2 Conditions for safe storage including incompatibilities

Keep out of reach of children. Store in a well ventilated place. Do not store above 49°C (120°F).

7.3 Specific end uses

Shelf Life: Shelf life is considered to be 7 – 10 years when properly stored.

8. Exposure Control/Personal Protection:

8.1 Control parameters

<u>Exposure Limits</u>	<u>8 hr TWA:</u>	<u>(OSHA PEL)</u>	<u>(ACGIH TWA)</u>
Petroleum Distillates (Hydrotreated Heavy Naphthenic)		not applicable	not applicable
Petroleum Distillates (Stoddard Solvent)		500 ppm	100 ppm
Tricresyl Phosphate		not applicable	not applicable
Ortho Dichlorobenzene		50 ppm	25 ppm
Para Dichlorobenzene		75 ppm	10 ppm

8.2 Exposure controls

Use adequate ventilation to keep exposure below recommended limits. Ensure that eye wash station and safety shower are close to work station.

Hand Protection Equipment: Wear chemical resistant gloves to prevent skin contact.

Eye Protection Equipment: Wear safety glasses or splash goggles to prevent eye contact.

Skin and Body Protection: Wear suitable protective clothing.

Respiration/Ventilation Protection Requirements: Provide good ventilation.

Ingestion Protection Requirements: Do not eat, drink or smoke while handling. Wash hands with soap and water after handling. Launder all clothing and foot wear before re-use.

9. Physical And Chemical Properties:

9.1 Information of basic chemical and physical properties

Physical Form:	thin liquid
Color:	clear red
Odor:	oil of wintergreen - minty
Odor Threshold:	not available
pH:	not applicable – oil based product
Melting Point/Freeze Point:	-51°C (-60°F)
Initial Boiling Point:	not available
Flash Point (Seta Closed Cup):	53°C (128°F)
Flammability Limits:	Explosive Limits: Upper: not available Lower: not available
Evaporation Rate:	not available
Flammability Solid/Gas:	not applicable
Vapor Pressure:	not available
Vapor Density:	not available
Specific Gravity:	0.876
Solubility in Water:	insoluble
Auto Ignition Temperature:	not available
Partition coefficient (n/octanol/water):	not available
Viscosity (Kinematic @ 100°C):	2.0 – 3.0 cSt

9.2 Other information

% NVM by Weight:	75.0%
% VOC Content (California):	24.31%

10. Stability and Reactivity:

10.1 Reactivity

Does not react under normal conditions

10.2 Chemical stability

Stable

10.3 Possibility of hazardous reactions

Does not react under normal conditions

10.4 Conditions to avoid

Heat and incompatible materials

10.5 Incompatible materials

Strong oxidizers such as bleach and peroxides

10.6 Hazardous decomposition products

CO₂, CO and hydrocarbons

11. Toxicological Information:

11.1 Information on Toxicological effects

Marvel Mystery Oil

LD50 – Oral Rat	>2000 mg/Kg
LD50 – Dermal Rabbit	>2000 mg/Kg
LC50 – Inhalation Rat	>20 mg/L (4 hr)

Petroleum Distillates Hydrotreated Heavy Naphthenic (64742-52-5)

LD50 – Oral Rat	>5000 mg/Kg
LD50 – Dermal Rabbit	>5000 mg/Kg
LC50 – Inhalation Rat	>5 mg/L (4 hr)

Tricresyl Phosphate (1330-78-5)

LD50 – Oral Rat	3000 mg/Kg
-----------------	------------

o-Dichlorobenzene (95-50-1)

LD50 – Oral Rat	500 mg/Kg
LD50 – Dermal Rabbit	>10000 mg/Kg
LC50 – Inhalation Rat	8.15 mg/L (4 hr)

p-Dichlorobenzene (106-46-7)

LD50 – Oral Rat	>2000 mg/Kg
LD50 – Dermal Rabbit	>2000 mg/Kg

Skin corrosion/irritation

Cause skin irritation

Serious eye damage/irritation

Based on available data, classification data are not met

Respiratory or skin sensitization

Based on available data, classification data are not met

Germ cell mutagenicity

Based on available data, classification data are not met

Carcinogenicity

Based on available data, classification data are not met

o-Dichlorobenzene (95-50-1)

IARC Group 3 – Not Classified

p-dichlorobenzene (106-46-7)

IARC Group 2B – Possible carcinogen to humans.

NTP 1-Evidence of Carcinogenicity 3, Reasonably anticipated to be a human Carcinogen

Reproductive toxicity	Suspected of damaging fertility of un-born child
Specific target organs – single exposure	Based on available data, classification data are not met
Specific target organs – repeated exposure	Based on available data, classification data are not met
Aspiration hazard	May be fatal if swallowed and enters air ways.
Symptoms/injuries after inhalation	May cause respiratory tract irritation. Vapors may cause drowsiness and dizziness.
Symptoms/injuries after skin contact	Cause skin irritation. Symptoms may include redness, edema, drying, defatting, and cracking of skin.
Symptoms/injuries after eye contact	May cause temporary eye irritation. Symptoms may include discomfort or pain, excess blinking and tearing, with redness and swelling.
Symptoms/injuries after ingestion	May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea, and vomiting.

12. Ecological Information:

12.1 Toxicity

Not recommended for release into aquatic systems without treatment

12.2 Persistence and degradability

Not established

12.3 Bioaccumulative potential

Not established

12.4 Mobility in soil

Not established

12.5 Other adverse effects

None known

13. Disposal Considerations:

13.1 Waste treatment methods

RCRA Hazardous Waste:

Waste Disposal Method:

Waste Disposal Vessel:

Regulated as a hazardous waste (D-001 Ignitable).

Dispose of in accordance with local, state and federal regulations

Metal drums are recommended.

14. Transportation Information:

14.1 UN number

1268

14.2 UN Proper shipping name

Petroleum Distillate n.o.s.

14.3 Transport Hazard class

3

14.4 Packaging group

III

14.5 Marine Pollutant

No

14.6 Transportation in Bulk

Not applicable

14.7 Special precautions

Use limited quantities

15. Regulatory Information:

15.1 US Federal Regulations

TSCA Status: All ingredients are commercially available and listed by the manufacturer under TSCA.

15.2 Foreign Regulations

Canadian Status: All materials contained in this product are listed on the Canadian Domestic Substance List (DSL). Consult Turtle Wax, Inc. regarding status of ingredients.

European Union: All materials contained in this product are listed on EINECS.


AICS: All materials are registered for AICS (Australia)

15.3 State Regulations

State Regulatory Information:

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements, contact the appropriate agency in your state.

California Prop 65:*

 **WARNING:** This product can expose you to chemicals including p-Dichlorobenzene (106-46-7), which is known to the state of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

<u>CAS Number</u>	<u>Concentration</u>	<u>State Code</u>
p-Dichlorobenzene (106-46-7)	<0.1%	Cancer

***Note:** These chemicals are considered impurities and may or may not exist in the product. They are not intentionally added to the product as ingredients.

15.4 HMIS & NFPA Classifications

HMIS Classification:	Health	2
	Flammability	2
	Reactivity	0

NFPA Classification:	Health	2
	Flammability	2
	Reactivity	0

15.5 Discontinued SKU's These all utilized the same formula:

MM003, MM007, MM08, MM010, MM011, MM012R, MM013R, MM014R, MM015, MM016, MM017, MM613, MM005

16. Other Information:

Reason For Issue	Update Section 15
Prepared By	Joseph Whitman
Preparer's Title	Senior Chemist/Regulatory Specialist
SDS Administrator	Jean Mayszak - Regulatory Compliance Manager
Approval Date	August 29, 2018
Supersedes Date	January 29, 2018
Revision Number	A-14

This information is, to the best of Turtle Wax, Inc.'s knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy oneself as to the suitability and completeness of such information for their own particular use.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Jasco Denatured Alcohol	
Company Name:	W. M. Barr 2105 Channel Avenue Memphis, TN 38113	Phone Number: (901)775-0100
Web site address:	www.wmbarr.com	
Emergency Contact:	3E 24 Hour Emergency Contact	(800)451-8346
Information:	W.M. Barr Customer Service	(800)398-3892
Intended Use:	Cleans glass and is used as a fuel for marine stoves	
Synonyms:	GJDA300, QJDA304	
Additional Information	This product is regulated by the United States Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS). The product label also includes other important information, including directions for use, and should always be read in its entirety prior to using the product.	

2. HAZARDS IDENTIFICATION

Flammable Liquids, Category 2
Acute Toxicity: Oral, Category 3
Acute Toxicity: Skin, Category 3
Acute Toxicity: Inhalation, Category 3
Specific Target Organ Toxicity (single exposure), Category 1



GHS Signal Word:	Danger
GHS Hazard Phrases:	H225: Highly flammable liquid and vapor. H301: Toxic if swallowed. H311: Toxic in contact with skin. H331: Toxic if inhaled. H370: Causes damage to organs.
GHS Precaution Phrases:	P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical/ventilating/lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe gas/mist/vapors/spray. P264: Wash hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/protective clothing/eye protection/face protection. P235: Keep cool.
GHS Response Phrases:	P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302+352: IF ON SKIN: Wash with plenty of soap and water. P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Jasco Denatured Alcohol

Printed: 04/20/2015
Revision: 04/20/2015
Supersedes Revision: 09/10/2014

P307+311: IF exposed: Call a POISON CENTER or doctor/physician.
P311: Call a POISON CENTER or doctor/physician.
P330: Rinse mouth.
P361: Remove/Take off immediately all contaminated clothing.
P363: Wash contaminated clothing before reuse.
P370+378: In case of fire, use dry chemical powder to extinguish.
P403+233: Store container tightly closed in well-ventilated place.
P405: Store locked up.
P501: Dispose of contents/container to local, state and federal regulations.

GHS Storage and Disposal Phrases:

Hazard Rating System:

HEALTH	*	2
FLAMMABILITY		3
PHYSICAL		0
PPE		X



HMIS:

OSHA Regulatory Status:

This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic):

Inhalation Acute Exposure Effects:

Vapor harmful. May cause dizziness, headache, watering of eyes, irritation of respiratory tract, irritation to the eyes, drowsiness, nausea, other central nervous system effects, spotted or blurry vision, dilation of pupils, and convulsions.

Skin Contact Acute Exposure Effects:

May cause irritation, drying of skin, redness, and dermatitis. May cause symptoms listed under inhalation. May be absorbed through damaged skin.

Eye Contact Acute Exposure Effects:

May cause irritation.

Ingestion Acute Exposure Effects:

Poison. Cannot be made non-poisonous. May be fatal or cause blindness. May produce fluid in the lungs and pulmonary edema. May cause dizziness, headache, nausea, drowsiness, loss of coordination, stupor, reddening of face and or neck, liver, kidney and heart damage, coma, and death. May produce symptoms listed under inhalation.

Chronic Exposure Effects:

May cause symptoms listed under inhalation, dizziness, fatigue, tremors, permanent central nervous system changes, blindness, pancreatic damage, and death.

Target Organs:

Liver, kidneys, pancreas, heart, lungs, brain, central nervous system, eyes

Medical Conditions Generally Aggravated By Exposure:

Diseases of the liver, skin, lung, kidney, central nervous system, pancreas, and heart; asthma; inflammatory or fibrotic pulmonary disease; any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease, or anemias

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration	RTECS #
64-17-5	Ethyl alcohol {Ethanol}	30.0 -50.0 %	KQ6300000
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	40.0 -60.0 %	PC1400000

Additional Chemical Information Specific percentage of composition is being withheld as a trade secret.

4. FIRST AID MEASURES

Emergency and First Aid Procedures: **Skin:**
 Immediately begin washing the skin thoroughly with large amounts of water and mild soap, if available, while removing contaminated clothing. Seek medical attention if irritation persists.

Eyes:
 Immediately begin to flush eyes with water, remove any contact lens. Continue to flush the eyes for at least 15 minutes, then seek immediate medical attention.

Inhalation:
 Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Ingestion:
 If swallowed, do NOT induce vomiting. Seek immediate medical attention. Call a physician, hospital emergency room, or poison control center immediately. Never give anything by mouth to an unconscious person.

Signs and Symptoms Of Exposure: See Potential Health Affects

Note to Physician: **Poison.** This product contains methanol. Methanol is metabolized to formaldehyde and formic acid. These metabolites may cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used as an antidote. Methanol is effectively removed by hemodialysis. Call your local poison control center for further instructions.

5. FIRE FIGHTING MEASURES

Flash Pt: OSHA Class IB
 45.00 F Method Used: Setaflash Closed Cup (Rapid Setaflash)

Explosive Limits: LEL: No data. UEL: No data.

Autoignition Pt: No data.

Suitable Extinguishing Media: Use carbon dioxide, dry powder, or alcohol resistant foam.

Unsuitable Extinguishing Media: Water may be ineffective. Solid streams of water will likely spread the fire.

Fire Fighting Instructions: Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined area. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Flammable Properties and Hazards: Vapors are heavier than air. Vapor may travel considerable distance to source of ignition and flash back.

Flammability Classification:

6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:

Vapors are heavier than air. Vapors may cause flash fire or ignite explosively.

Clean up: Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources; keep flares, smoking or flames out of hazard area. Use non-sparking tools. Use proper bonding and grounding methods for all equipment and processes. Keep out of waterways and bodies of water. Be cautious of vapors collecting in small enclosed spaces, sewers, low lying areas, confined spaces, etc.

Small spills: Take up with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills: Dike far ahead of spill for later disposal.

Waste Disposal: Dispose in accordance with applicable local, state and federal regulations.

7. HANDLING AND STORAGE

Precautions To Be Taken in Handling:

Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Do not use this product near any source of heat or open flame, furnace areas, pilot lights, stoves, etc.

Do not use in small enclosed spaces, such as basements and bathrooms where vapors can accumulate. Vapors can accumulate and explode if ignited.

Do not use this product if the work area is not well ventilated. Use only with adequate ventilation to prevent build up of vapors.

Do not spread this product over large surface areas because fire and health safety risks will increase dramatically.

Use proper bonding and grounding when transferring material. Be aware of static electricity generation when handling material.

Precautions To Be Taken in Storing:

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near any source of heat or open flame, furnace areas, pilot lights, stoves, etc.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Jasco Denatured Alcohol

Printed: 04/20/2015
Revision: 04/20/2015
Supersedes Revision: 09/10/2014

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
64-17-5	Ethyl alcohol {Ethanol}	PEL: 1000 ppm	TLV: 1000 ppm	No data.
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	PEL: 200 ppm	TLV: 200 ppm STEL: 250 ppm	No data.

Respiratory Equipment (Specify Type): For use in areas with inadequate ventilation or fresh air, wear a properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors.

For OSHA controlled work places and other regular users - Use only with adequate ventilation under engineered air control systems designed to prevent exceeding the appropriate TLV.

A dust mask does not provide protection against vapors.

Eye Protection:

Chemical splash goggles should be worn to prevent eye contact.

Protective Gloves:

Wear gloves with as much resistance to the chemical ingredients as possible. Glove materials such as nitrile, natural rubber, and neoprene will provide protection. Glove selection should be based on chemicals being used and conditions of use. Consult your glove supplier for additional information. Gloves contaminated with product should be discarded and not reused.

Other Protective Clothing:

Various application methods can dictate the use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure.

Engineering Controls (Ventilation etc.):

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Use only with adequate ventilation to prevent buildup of vapors. Do not use in areas where vapors can accumulate and concentrate, such as basements, bathrooms or small enclosed areas. Whenever possible, use outdoors in an open air area. If using indoors open all windows and doors and maintain a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea or eye-watering -- STOP -- ventilation is inadequate. Leave area immediately and move to fresh air.

Work/Hygienic/Maintenance Practices:

Wash hands thoroughly after use and before eating, drinking, smoking, or using the restroom.

Do not eat, drink, or smoke in the work area.

Discard any clothing or other protective equipment that cannot be decontaminated.

Facilities storing or handling this material should be equipped with an emergency eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[] Gas [X] Liquid [] Solid	
Appearance and Odor:	Water white, alcohol odor	
Melting Point:	No data.	
Boiling Point:	147.00 F	
Autoignition Pt:	No data.	
Flash Pt:	45.00 F Method Used: Setaflash Closed Cup (Rapid Setaflash)	
Explosive Limits:	LEL: No data.	UEL: No data.
Specific Gravity (Water = 1):	0.7934 - 0.8108	
Density:	6.646 LB/GL	
Vapor Pressure (vs. Air or mm Hg):	76 MM HG at 68.0 F	
Vapor Density (vs. Air = 1):	> 1	
Evaporation Rate:	> 1	
Solubility in Water:	No data.	
Percent Volatile:	100.0 % by weight.	
VOC / Volume:	793.0000 G/L	

10. STABILITY AND REACTIVITY

Stability:	Unstable [] Stable [X]
Conditions To Avoid - Instability:	No data available.
Incompatibility - Materials To Avoid:	Incompatible with strong oxidizing agents, strong acids, reactive metals, halogens, strong inorganic acids, and aldehydes.
Hazardous Decomposition Or Byproducts:	Decomposition may produce carbon monoxide and carbon dioxide.
Possibility of Hazardous Reactions:	Will occur [] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.

11. TOXICOLOGICAL INFORMATION

Toxicological Information: This product has not been tested as a whole. Refer to section 2 for acute and chronic effects.

Carcinogenicity/Other Information: IARC 1 - Carcinogenic to Humans
 IARC 2B - Possibly Carcinogenic to Humans
 ACGIH A4 - Not Classifiable as a Human Carcinogen.

IARC has determined that the consumption of alcoholic beverages is casually related to the occurrence of malignant tumors of the oral cavity, pharynx, larynx, esophagus, and liver in humans. The carcinogenic response attributed to drinking alcoholic beverages has not been verified in studies with laboratory animals. Established uses of denatured ethanol and non-beverage use of pure ethanol are not considered to pose any significant cancer hazard.

Jasco Denatured Alcohol

Printed: 04/20/2015
 Revision: 04/20/2015
 Supersedes Revision: 09/10/2014

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
64-17-5	Ethyl alcohol {Ethanol}	n.a.	1	A4	n.a.
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	n.a.	n.a.	n.a.	n.a.

12. ECOLOGICAL INFORMATION

General Ecological Information: This product has not been tested as a whole.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose in accordance with applicable local, state, and federal regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Alcohols, n.o.s. (Ethyl Alcohol, Methanol)
DOT Hazard Class: 3 FLAMMABLE LIQUID
UN/NA Number: UN1987 **Packing Group:** II



Additional Transport Information: The shipper / supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
64-17-5	Ethyl alcohol {Ethanol}	No	No	No
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	No	Yes 5000 LB	Yes

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Acute (immediate) Health Hazard
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Chronic (delayed) Health Hazard
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Fire Hazard
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Sudden Release of Pressure Hazard
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Reactive Hazard

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
64-17-5	Ethyl alcohol {Ethanol}	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
67-56-1	Methanol {Methyl alcohol; Carbinol; Wood alcohol}	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: Yes

**Regulatory Information
Statement:**

All components of this material are listed on the TSCA Inventory or are exempt.

16. OTHER INFORMATION

Revision Date:

04/20/2015

Preparer Name:

W.M. Barr EHS Dept (901)775-0100

Additional Information About

No data available.

This Product:

Company Policy or

Disclaimer:

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

Safety Data Sheet

Per GHS Standard Format

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: ShockWave No. 8310 (Use Solution)

Product Description: Disinfectant, Virucide, Fungicide – Use Solution

Chemical Family: See Concentrate Information

EPA Registration Number: 61178-2-73884

Information on the Supplier of the Safety Data Sheet

Manufactured For:
Fiberlock Technologies, Inc.
150 Dascomb Road
Andover, MA 01810

Emergency Telephone Numbers:
CHEM TEL: (U.S.): 1-800-255-3924
(Outside the U.S.): 813-248-0585

P: 800-342-3755 F: 978-475-6205

SECTION 2: HAZARDS IDENTIFICATION

Signal Word: **WARNING**



GHS Label Statements

Hazard Statements:

Causes serious eye irritation.

Causes mild skin irritation.

May be harmful if swallowed.

GHS Classifications

Health:

Skin Irritation, Category 3

Eye Irritation, Category 2A

PRECAUTIONARY STATEMENTS

Prevention: Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Keep out of reach of children. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Gently wash with plenty of soap and water. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

Storage: Store in a closed container.

Disposal: Dispose of contents/container in accordance with all local, state, and federal regulations.

EMERGENCY OVERVIEW

Physical appearance: Light color version of concentrate.

Immediate concerns: Eye & Skin irritant

POTENTIAL HEALTH EFFECTS

Eyes: Contact causes eye irritation.

Skin: Skin irritant with prolonged or repeated contact.

Skin absorption: None Expected.

Ingestion: Although of moderate to low toxicity, ingestion of large amounts can cause gastrointestinal irritation, nausea, vomiting, diarrhea.

Inhalation: Mist is irritating to nose, throat and lungs.

REPRODUCTIVE TOXICITY

Reproductive effects: No known significant effects or critical hazards.

Teratogenic effects: No known significant effects or critical hazards.

Carcinogenicity: No listed substance.

Mutagenicity: No known significant effects or critical hazards.

Medical conditions aggravated: Previous skin conditions such as dermatitis may be aggravated.

Routes of entry: Eye, skin, ingestion.

Warning caution labels: Irritant.

Physical hazards: None expected.

SECTION 3: COMPOSITION INFORMATION ON INGREDIENTS

Chemical Name

Refer to concentrate Product Safety Data Sheet for ingredient information

Weight, %

<10

SECTION 4: FIRST AID MEASURES

Eyes

Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Seek medical attention immediately.

Skin

Wash with soap and water. Get medical attention if irritation develops or persists.

Inhalation

Remove victim to fresh air and monitor. Seek medical advice if irritation persists.

Ingestion

Get immediate medical attention. Do not induce vomiting unless instructed to do so by poison center or physician.

Signs and Symptoms of Overexposure

Eyes: Burning sensation with tearing, redness.

Skin: Prolonged contact will cause irritation marked by redness, burning sensation.

Skin absorption: Not established.

Ingestion: Irritation of mouth, throat, along with stomach upset, vomiting.

Inhalation: Irritation of nose, throat and lungs with coughing, sneezing, possible difficulty breathing.

Acute toxicity: Not established.

SECTION 5: FIRE-FIGHTING MEASURES

Flammable class: NA = Not Applicable

General hazard: NA = Not Applicable

Extinguishing media: Not required. Water based material.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Small spill: Avoid walking in product. Wipe up or otherwise flush small spills to sanitary sewer.

Large spill: Avoid walking in material. Prevent product from entering into stream, soil, storm sewer or other bodies of water.

Environmental Precautions

Water spill: Avoid discharges into open waterways.

Land spill: Avoid discharge to soil.

General procedures: Isolate spill or leak area immediately. Keep unauthorized personnel away. Do not touch or walk through spilled material. Prevent entry into waterways, sewers, or confined areas. Absorb with dry earth, sand or other noncombustible material and transfer to containers.

Special protective equipment: Eye protection, rubber gloves, rubber boots to protect feet.

SECTION 7: HANDLING AND STORAGE

General Procedures

Close container after use.

Handling

Wear chemical resistant rubber or neoprene gloves and eye safety goggles/full face shield when handling.

Storage

Store in area inaccessible to children.

Storage Temperature

Store at ambient temperatures.

Storage Pressure

Store at ambient atmospheric pressure.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: No special requirements.

Personal Protective Equipment

Eyes and face: Safety glasses with side shields.

Skin: Rubber or other chemical resistant gloves.

Respiratory: A respirator is not needed under normal and intended conditions of product use.

Protective clothing: No special requirements.

Work hygienic practices: Wash with soap and water after handling. Do not eat, drink or smoke while using product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid

Odor: Characteristic

Odor threshold: Not Established

Color: Lighter color od concentrate

pH: 9.5-10.0

Percent volatile: >90

Flash point and method: None

Flammable limits: N/A

Autoignition temperature: NA = Not Applicable

Vapor pressure: ≤ 20 mm Hg at (68°F)

Vapor density: ≥ 1 Air = 1

Boiling point: 212°F; 100°C

Freezing point: 32°F; 0°C

Melting point: NA = Not Applicable

Thermal decomposition: Not Available

Solubility in water: Complete

Evaporation rate: (Water =1) 1.0

Density: 8.34 at (68°F)

Notes: Estimated

Specific gravity: 1.01 grams/ml

Notes: Estimated

Viscosity: Water thin.

(VOC): Not Established

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Stable

Hazardous Polymerization

No

Conditions to Avoid

Not Established

Possibility of Hazardous Reactions

None Expected

Hazardous Decomposition Products

None known

Incompatible Materials

Not Established

SECTION 11: TOXICOLOGICAL INFORMATION

Acute

Eyes: Not Established

Dermal LD₅₀: Not Established

Skin absorption: None Expected.

Oral LD₅₀: Not Established

Inhalation LC₅₀: **Not Established**

Eye effects: Moderate to severe eye irritant.

Skin effects: May irritate skin with prolonged or repeated contact.

Carcinogenicity

IARC: None known.

Irritation: Irritant

Sensitization: No known significant effects or critical hazards.

Neurotoxicity: No known significant effects or critical hazards.

Genetic effects: No known significant effects or critical hazards.

Reproductive effects: No known significant effects or critical hazards.

Target organs: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

SECTION 12: ECOLOGICAL INFORMATION

Environmental data: Not Established.

Ecotoxicological information: Not Established.

Aquatic toxicity (acute): Not Established.

Chemical fate information: Not Established.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal method: Small amounts (less than 5 gallons) may be disposed of in sanitary sewer. Consult local authorities for additional disposal information.

For large spills: Consult with local and state authorities for large volume disposal.

Product disposal: See above.

Empty container: Rinse container with clear water. Offer container for recycling, or dispose of in trash.

RCRA/EPA Waste Information: NA = Not Applicable

SECTION 14: TRANSPORT INFORMATION

DOT

Proper Shipping Name Not intended to be shipped away from end-user site.

IATA/ICAO

Shipping Name Not intended to be shipped away from end-user site.

IMDG/IMO

Shipping Name Not intended to be shipped away from end-user site.

SECTION 15: REGULATORY INFORMATION

United States

Sara Title III (Superfund Amendments and Reauthorization Act)

311/312 Hazard Categories: Health - Acute

Fire: No Pressure Generating: No Reactivity: No Acute: Yes Chronic: No

313 Reportable Ingredients: NA = Not Applicable

302/304 Emergency Planning

Emergency Plan: NA = Not Applicable

CERCLA (Comprehensive Response, Compensation and Liability Act)

CERCLA Regulatory: NA = Not Applicable

TSCA (Toxic Substance Control Act)

TSCA Regulatory: All ingredients are listed on the TSCA Chemical Inventory.

California Proposition 65: No listed substance

Carcinogen: No listed substance

SECTION 16: OTHER INFORMATION

NFPA Health Hazards 2 Flammability 0 Instability 0 Special Hazard

HMIS Health Hazards 2 Flammability 0 Physical Hazard 0 Personal Protection B

WARNING! If you scrape, sand or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD (5323) or log on to: www.epa.gov/lead

Manufacturer Disclaimer: This company cannot anticipate all conditions of handling and use of this product. Therefore, this company accepts no responsibility for results obtained by the application of this information, or the safety and suitability of the product either alone or in combination with other products. It is the responsibility of the employer and/or user to provide a safe workplace, using health and safety information contained herein as a guide. This company will accept no liability for damages or losses incurred from the improper handling and use of this product.