

# MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards and European EC Directives. This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard (29 CFR 1910.1200). Other government regulations must be reviewed for applicability to this product.

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

### 1. PRODUCT IDENTIFICATION

**TRADE NAME (AS LABELED):** STAR BRITE AEROSOL MARINE GREASE GUN  
**PRODUCT #:** 26005  
**CHEMICAL NAME/CLASS:** Inert Gas Aerosol with Grease  
**SYNONYMS:** Not Applicable  
**PRODUCT USE:** Lubrication  
**SUPPLIER/MANUFACTURER'S NAME:** STAR BRITE DISTRIBUTING  
**ADDRESS:** 4041 S. W. 47 Avenue  
Ft. Lauderdale, FL 33314  
**EMERGENCY PHONE:** North America: 1-800-424-9300 (Chemtrec)  
International: 1-703-527-3887 (Chemtrec)  
**BUSINESS PHONE:** 954-587-6280  
**DATE OF PREPARATION:** June 18, 2005

### 2. HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:** This product consists of a grease mixture packaged in an aerosol gun with Nitrogen as the propellant. The grease mixture is a dark, green semi-solid with a petroleum odor. The Nitrogen propellant gas is a colorless, odorless gas. **Health Hazards:** The health hazards associated with overexposure are minimal, due to the small size of the container and small volume of the contents. The Nitrogen propellant gas is inert and does not present a health hazard. If a release of many containers of this product occurs at the same time, an oxygen-deficient environment can occur, resulting in a hazard of asphyxiation. If the container is heated or punctured, rupture of the container may occur, and may cause injury. **Flammability Hazards:** The grease mixture of this product can ignite if highly heated. Persons responding to an emergency such as a fire that involves this product must take precautions to avoid potential injury from containers that rupture. **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** Release of the grease mixture may cause adverse effects to the environment, plants and animals. **Emergency Recommendations:** Emergency responders must have personal protective equipment and fire protection appropriate for the situation to which they are responding.

**SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE:** Contact with this product is not expected to cause significant adverse health effects, due to the small size of container and limited amount of gas within the container.

**INHALATION:** Inhalation of this product is unlikely, as the grease product is not volatile and does not produce vapors. In event that rupture occurs of a large quantity of containers, especially in a confined space, an oxygen-deficient environment may be created due to the release of the Nitrogen propellant gas. 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. Under some circumstances of overexposure, death may occur. The effects associated with various levels of oxygen are as follows:

#### **CONCENTRATION OF OXYGEN OBSERVED EFFECT**

12-16% Oxygen: Breathing and pulse rate increase, muscular coordination slightly disturbed.  
10-14% Oxygen: Emotional upset, abnormal fatigue, disturbed respiration.  
6-10% Oxygen: Nausea, vomiting, collapse, or loss of consciousness.  
Below 6%: Convulsive movements, possible respiratory collapse, and death.

**CONTACT WITH SKIN OR EYES:** Contact of the grease mixture with the skin is not expected to cause adverse effect if contact is brief and the product is washed-off.



#### HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

<b>HEALTH HAZARD</b>	(BLUE)	1
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<b>FLAMMABILITY HAZARD</b>	(RED)	1
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<b>PHYSICAL HAZARD</b>	(YELLOW)	0
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#### PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8

For Routine Industrial Use and Handling Applications

**See Section 16 for Definition of Ratings**

### 3. HAZARD IDENTIFICATION (Continued)

**CONTACT WITH SKIN OR EYES (continued):** Prolonged or repeated contact may cause defatting of the skin and result in dermatitis with symptoms of dry, itchy, red skin. Serious injury can arise if oil-based products under high pressure, such as this product, are accidentally discharged or injected into the flesh beneath the skin or into the eyes. Serious tissue destruction can result, requiring immediate medical attention. Emergency surgery may be required to decompress the injured area and to remove dead tissue and/or free-lying lubricant.

**INGESTION:** Not a likely route of exposure. If ingested, irritation of the gastric system and a laxative effect may occur with symptoms of nausea, vomiting and diarrhea.

**HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.** Over-exposure to this gas mixture may cause the following health effects.

**ACUTE:** Acute exposure to the product is not expected to cause significant adverse health effects, unless rapid release of the product results in injection of the grease mixture under the skin.

**CHRONIC:** Chronic skin contact may result in dermatitis.

**TARGET ORGANS:** ACUTE: Eyes, respiratory system, central nervous system. CHRONIC: Skin.

**EC CLASSIFICATION:** Xi: Irritating

**RISK PHRASES:** R 38: Irritating to skin.

**SAFETY PHRASES:** S 2: Keep out of reach of children. S 15: Keep away from heat. S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 45: In case of accident, or if you feel unwell, seek medical advice immediately (show label where possible).

### 3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	% w/w
Grease Mixture See below for composition	Mixture		100
Lithium Hydroxide	1310-65-2	215-183-4	1-3
Methyl 12-Hydroxystearate	Mixture		3-9
Hydrotreated Naphthenic Distillate	64741-95-3	265-096-0	20-45
Hydrotreated Heavy Paraffinic Distillate	64742-54-7	265-157-1	45-80
Nitrogen (propellant gas)	7727-37-9	231-783-9	0-> 99

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

### 4. FIRST-AID MEASURES

Victims of chemical exposure must be taken for medical attention, if adverse health effects occur. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with victim.

**SKIN EXPOSURE:** If skin contact results in irritation or other adverse effect, seek the advice of a doctor.

**EYE EXPOSURE:** If this product enters the 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 must seek medical attention if adverse health effects occur.

**INHALATION:** Not a likely route of exposure.

**INGESTION:** In the event that large quantities of this product are swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING, unless directed by medical personnel. If conscious, have victim rinse mouth with water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Pre-existing skin conditions may be aggravated by exposure to this product.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and eliminate overexposure. If injection of the grease mixture has occurred, emergency surgery may be required to decompress the injured area and to remove dead tissue and/or free-lying lubricant.

### 5. FIRE-FIGHTING MEASURES

**FLASH POINT (Cleveland Open Cup):** 251.67°C (485°F)

**AUTOIGNITION TEMPERATURE:** Not determined.

**FLAMMABLE LIMITS (in air by volume, %):**

Lower (LEL): Not applicable.

Upper (UEL): Not applicable.

## 5. FIRE-FIGHTING MEASURES (Continued)

**FIRE EXTINGUISHING MATERIALS:** Water fog, dry chemical, alcohol foam or carbon dioxide can be used on fire involving this product. Do not use a direct stream of water, which can spread burning material and spread fire.

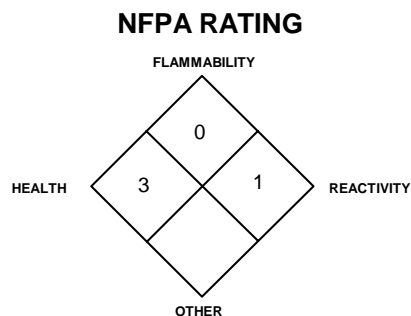
**SPECIFIC HAZARDS ARISING FROM THIS PRODUCT IN A FIRE SITUATION:** Containers of this product may explode in heat of fire.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

**SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS:** Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment.

**SPECIAL FIRE-FIGHTING PROCEDURES:** Move containers from fire area if it can be done without risk to personnel. Use water spray to keep fire-exposed containers cool. If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.



See Section 16 for  
Definition of Ratings

## 6. ACCIDENTAL RELEASE MEASURES

**SPILL/LEAK RESPONSE:** A release of a single container or several containers presents a minimal hazard. Allow containers to vent and remove container for appropriate disposal. If a large quantity of containers of this product is involved, evacuate immediate area. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. If a large quantity of product is involved, the minimum Personal Protective Equipment should be **Level B: Self-Contained Breathing Apparatus**. Allow the gas to dissipate. Monitor the surrounding area for the level of Oxygen. The atmosphere must have at least 19.5 percent Oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Clean-up spilled grease mixture, using appropriate absorbent material and dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces and those of EC Member States (see Section 13, Disposal Considerations).

## PART III *How can I prevent hazardous situations from occurring*

### 7. HANDLING and STORAGE

**WORK PRACTICES AND HYGIENE PRACTICES:** Do not eat, smoke or drink while handling this material. Use ventilation and other engineering controls to minimize potential exposure to the aerosol of this product.

**STORAGE AND HANDLING PRACTICES:** Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Do not incinerate empty or partially filled containers.

**PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:** Not applicable.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

### EXPOSURE LIMITS/GUIDELINES:

CHEMICAL NAME	CAS #	EINECS #	% w/w	EXPOSURE LIMITS IN AIR					
				ACGIH-TLV		OSHA-PEL		NIOSH IDLH ppm	OTHER ppm
				TWA ppm	STEL ppm	TWA ppm	STEL ppm		
Grease Mixture See below for composition	Mixture		100	NE	NE	NE	NE	NE	NE
Lithium Hydroxide	1310-65-2	215-183-9	1-3	NE	NE	NE	NE	NE	NE
Methyl 12-Hydroxystearate	Mixture		3-9	NE	NE	NE	NE	NE	NE
Hydrotreated Naphthenic Distillate	64741-95-3	265-096-0	20-45	NE	NE	NE	NE	NE	NE
Hydrotreated Heavy Paraffinic Distillate	64742-54-7	265-157-1	45-80	NE	NE	NE	NE	NE	NE
Nitrogen	7727-37-9	231-783-9	0-> 99	There are no specific exposure limits for Nitrogen. Nitrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					

NE = Not Established.

See Section 16 for Definitions of Terms Used.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

**VENTILATION AND ENGINEERING CONTROLS:** Not necessary under normal conditions of use.

**RESPIRATORY PROTECTION:** No respiratory protection is normally required when using this product. Maintain airborne contaminant concentrations below guidelines listed in Section 2 (Composition and Information on Ingredients), if applicable. If respiratory protection is needed, U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces. Respiratory Protection is recommended to be worn during welding operations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

**EYE PROTECTION:** None needed under normal use. If a hazard of flying debris may occur, wear safety glasses or goggles. If necessary, refer to U.S. OSHA 29 CFR 1910.133, or appropriate Canadian Standards. If necessary, refer to U.S. OSHA 29 CFR 1910.138, or appropriate Standards of Canada.

**HAND PROTECTION:** None needed under normal conditions of use. If necessary, refer to U.S. OSHA 29 CFR 1910.138, or appropriate Standards of Canada.

**BODY PROTECTION:** None needed for normal circumstances of use. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

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## 9. PHYSICAL and CHEMICAL PROPERTIES

The following physical property values are for the grease mixture.

**VAPOR DENSITY:** Not applicable.

**SPECIFIC GRAVITY (air = 1):** Not available.

**SOLUBILITY IN WATER:** Insoluble.

**EXPANSION RATIO:** Not applicable

**ODOR THRESHOLD:** Not available.

**COEFFICIENT WATER/OIL DISTRIBUTION:** Not available.

**APPEARANCE, ODOR and COLOR:** This grease mixture is a dark, green semi-solid, with a mild petroleum odor.

**HOW TO DETECT THIS SUBSTANCE (warning properties):** The color and semi-solid state can be a warning property in event of accidental release.

The following physical property values are for the propellant gas, Nitrogen

**GAS DENSITY @ 0°C (32°F) and 1 atm:** 0.072 lb./cu ft (1.153 kg/m<sup>3</sup>)

**BOILING POINT:** -195.8°C (-320.4°F)

**FREEZING/MELTING POINT (@ 10 psig)** -210°C (-345.8°F)

**SPECIFIC GRAVITY (air = 1) @ 21.1°C (70°F):** 0.906

**SOLUBILITY IN WATER vol/vol at 0°C (32°F) and 1 atm:** 0.023

**EVAPORATION RATE (nBuAc = 1):** Not applicable.

**COEFFICIENT WATER/OIL DISTRIBUTION:** Not applicable.

**EVAPORATION RATE (nBuAc = 1):** Not applicable.

**MELTING POINT:** 185°C (365°F)

**BOILING POINT:** -Not available.

**pH:** Not applicable.

**VAPOR PRESSURE @ 20°C:** Not available.

**FLASH POINT:** 251.67°C (485°F)

**SPECIFIC VOLUME (ft<sup>3</sup>/lb):** 13.8

**VAPOR PRESSURE:** Not applicable.

**ODOR THRESHOLD:** Odorless.

**pH:** Not applicable.

**MOLECULAR WEIGHT:** 28.01

**EXPANSION RATIO:** Not applicable.

**FLASH POINT:** Not applicable.

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## 10. STABILITY and REACTIVITY

**STABILITY:** Stable.

**DECOMPOSITION PRODUCTS:** If involved in a fire, this product will decompose to form carbon oxides, aldehydes, ketones, lithium and other hydrocarbons.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** The Nitrogen propellant gas is inert and does not react with any compound. Avoid contact of the grease mixture with strong oxidizers.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Will not occur.

**CONDITIONS TO AVOID:** Extreme temperatures, incompatible materials.

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

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### 11. TOXICOLOGICAL INFORMATION

**TOXICITY DATA:** There are no toxicity data for the Nitrogen propellant gas. The following are toxicological data for the components of the grease mixture.

**HYDROTREATED HEAVY PARAFFINIC DISTILLATE:**

LD<sub>50</sub> (Oral-Rat) > 15 gm/kg

LD<sub>50</sub> (Skin-Rabbit) > 5 gm/kg

**HYDROTREATED HEAVY PARAFFINIC DISTILLATE:**

Currently, there are no data for this compound.

**LITHIUM HYDROXIDE:**

LD<sub>50</sub> (Oral-Rat) 210 mg/kg: Behavioral:

somnolence (general depressed activity),

convulsions or effect on seizure threshold;

Nutritional and Gross Metabolic: weight loss or decreased weight gain

**LITHIUM HYDROXIDE (continued):**

LC<sub>50</sub> (Inhalation-Rat) 960 mg/m<sup>3</sup>/4 hours:

Lungs, Thorax, or Respiration: other

changes

LD<sub>50</sub> (Intratracheal-Rat) 8200 µg/kg: Lungs,

Thorax, or Respiration: other changes;

Blood: hemorrhage

## 11. TOXICOLOGICAL INFORMATION (Continued)

### TOXICITY DATA (continued):

#### LITHIUM HYDROXIDE (continued):

LD<sub>50</sub> (Oral-Mouse) 363 mg/kg: Behavioral: somnolence (general depressed activity), convulsions or effect on seizure threshold; Nutritional and Gross Metabolic: weight loss or decreased weight gain

#### LITHIUM HYDROXIDE (continued):

TDL<sub>0</sub> (Oral-Mammal-species unspecified) 9100 µg/kg/26 weeks-intermittent: Liver: liver function tests impaired; Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain

#### LITHIUM HYDROXIDE (continued):

LDLo (Subcutaneous-Mouse) 300 mg/kg  
TCLo (Inhalation-Mammal-species unspecified) 8 mg/m<sup>3</sup>/4 hours/30 days-intermittent: Lungs, Thorax, or Respiration: other changes

**SUSPECTED CANCER AGENT:** The components of this product are listed as follows:

Hydrotreated Heavy Naphthenic Distillate: IARC-3 (Unclassifiable as to Carcinogenicity in Humans)

The remaining components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA, and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

**SENSITIZATION TO THE PRODUCT:** No component of this product is known to be a skin or respiratory sensitizer.

**TARGET ORGANS:** Acute Exposure: Eyes, respiratory system, central nervous system. Chronic Exposure: Skin.

**IRRITANCY OF PRODUCT:** This product is not expected to be irritating to contaminated tissue. Prolonged skin exposure to the grease mixture may cause dermatitis.

**REPRODUCTIVE TOXICITY INFORMATION:** Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: The components of this product are not reported to cause mutagenic effects in humans. No firm conclusions regarding the potential mutagenicity of related heavy paraffinic distillate materials can be drawn based on the available animal evidence. Mineral oils that were previously not mutagenic to bacteria can become mutagenic, if exposed to high temperatures during use. In one study, the polycyclic aromatic hydrocarbon (PAH) content of a used oil doubled.

Embryotoxicity: The components of this product are not reported to cause embryotoxic effects in human

Teratogenicity: The components of this product are not reported to cause teratogenic effects in humans.

Reproductive Toxicity: The components of this product are not reported to cause adverse reproductive effects in humans.

*A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational 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.*

**BIOLOGICAL EXPOSURE INDICES:** Currently, there are no Biological Exposure Indices (BEIs) determined for the components of this product.

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## 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

**PERSISTENCE/DEGRADABILITY:** The Nitrogen propellant gas will dissipate. The grease mixture will not readily degrade.

**BIOACCUMULATION/ACCUMULATION:** There are no data on the product; the grease mixture is not expected to bioaccumulate.

**MOBILITY IN SOIL:** As an oil mixture, the grease mixture may be mobile in the soil.

**ECOTOXICITY:** No data are available for this product.

**OTHER ADVERSE EFFECTS:** None known.

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## 13. DISPOSAL CONSIDERATIONS

**PREPARING WASTES FOR DISPOSAL:** Product removed from the cylinder must be disposed of in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada and its Provinces and the EC and EC Member States.

**U.S. EPA WASTE NUMBER:** Not applicable to wastes consisting only of this product.

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## 14. TRANSPORTATION INFORMATION

Call for information

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## 15. REGULATORY INFORMATION

### ADDITIONAL U.S. REGULATIONS:

**U.S. SARA REPORTING REQUIREMENTS:** The components of this product are 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:** There are no specific Threshold Planning Quantities for the components of this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

**U.S. TSCA INVENTORY STATUS:** The components of this product are listed on the TSCA Inventory.

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

**OTHER FEDERAL REGULATIONS:** The grease mixture is considered an oil under 49 CFR, Part 130. Requirements under this regulation may apply to quantities of 3500 gallons of the grease mixture.

**U.S. STATE REGULATORY INFORMATION:** The components of this product are covered under specific State regulations, as denoted below:

**Alaska - Designated Toxic and Hazardous Substances:** None.

**California - Permissible Exposure Limits for Chemical Contaminants:** Nitrogen.

**Florida - Substance List:** Nitrogen.

**Illinois - Toxic Substance List:** None.

**Kansas - Section 302/313 List:** None.

**Massachusetts - Substance List:** Nitrogen.

**Michigan - Critical Materials Register:** None.

**Minnesota - List of Hazardous Substances:** None.

**Missouri - Employer Information/Toxic Substance List:** Nitrogen.

**New Jersey - Right to Know Hazardous Substance List:** Nitrogen.

**North Dakota - List of Hazardous Chemicals, Reportable Quantities:** None.

**Pennsylvania - Hazardous Substance List:** Nitrogen.

**Rhode Island - Hazardous Substance List:** Nitrogen.

**Texas - Hazardous Substance List:** None.

**West Virginia - Hazardous Substance List:** None.

**Wisconsin - Toxic and Hazardous Substances:** None.

**CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):** The components of this product are not on the California Proposition 65 Lists.

**ANSI LABELING (Z129.1) [Precautionary Statements]:** **CAUTION!** KEEP AWAY FROM CHILDREN. SEMI-SOLID AND GAS UNDER PRESSURE. IF RELEASED IN LARGE QUANTITY, REDUCES OXYGEN AVAILABLE FOR BREATHING. Avoid breathing gas, vapor, or mists. Avoid contact with skin, clothing, and eyes. Use only with adequate ventilation. Wash thoroughly in case of contact. Wear gloves, goggles, and appropriate body protection when handling. Do not puncture or incinerate container. Dispose of in accordance with federal, state, and local requirements. **FIRST-AID:** In case of contact, immediately flush skin or eyes for at least 15 minutes with water. Remove contaminated clothing and shoes. If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. **IN CASE OF FIRE:** Use fog, foam, dry chemical or carbon dioxide. Refer to Material Safety Data Sheet for additional information on this product.

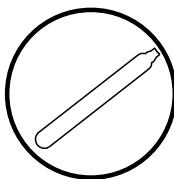
### ADDITIONAL CANADIAN REGULATIONS:

**CANADIAN DSL/NDSL INVENTORY STATUS:** The components of this product are on the DSL Inventory.

**OTHER CANADIAN REGULATIONS:** Not applicable.

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:** No component of this product is on the CEPA First Priorities Substance Lists.

**CANADIAN WHMIS SYMBOLS:** **Class A:** Compressed Gas



### EUROPEAN COMMUNITY REGULATIONS:

**EC LABELING AND CLASSIFICATION:** The following is a self-classification, as defined by the European Community Council Directives 67/548/EEC and 93/112/EEC.

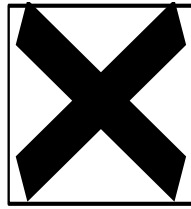
**EC CLASSIFICATION:** [Xi]: IRRITANT

**EC RISK PHRASES:** [R: 38]: Irritating to skin.

**EC SAFETY PHRASES:** [S: 2]: Keep out of reach of children. (*This safety phrase can be omitted from the label when the substance or preparation is sold for industrial use only.*) S 15: Keep away from heat. S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 45: In case of accident, or if you feel unwell, seek medical advice immediately (show label where possible).

## 15. REGULATORY INFORMATION (Continued)

### EUROPEAN COMMUNITY ANNEX II HAZARD SYMBOLS:



## 16. OTHER INFORMATION

### DATE OF PRINTING:

October 7, 2003

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. Star brite Distributing 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, Star brite Distributing, 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 that uniquely identifies each constituent.

### EXPOSURE LIMITS IN AIR:

**CEILING LEVEL:** The concentration that shall not be exceeded during any part of the working exposure.

**LOQ:** Limit of Quantitation.

**MAK:** Federal Republic of Germany Maximum Concentration Values in the workplace.

**NE:** Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

**NIC:** Notice of Intended Change.

**NIOSH CEILING:** The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

**NIOSH RELs:** NIOSH's Recommended Exposure Limits.

**PEL-Permissible Exposure Limit:** OSHA's Permissible Exposure Limits. 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 that was vacated by Court Order.

**SKIN:** Used when there is a danger of cutaneous absorption.

**STEL-Short Term Exposure Limit:** Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

**TLV-Threshold Limit Value:** An airborne concentration of a substance that 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.

**TWA-Time Weighted Average:** Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

**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.

### HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD

**RATINGS:** This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

### HEALTH HAZARD:

**0 (Minimal Hazard):** No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g. mechanical irritation]. Draize = "0". *Oral Toxicity LD<sub>50</sub> Rat:* < 5000 mg/kg. *Dermal Toxicity LD<sub>50</sub>Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC<sub>50</sub> Rat:* < 20 mg/L.; **1 (Slight Hazard: Minor reversible injury may occur; slightly or mildly irritating. Skin Irritation:** Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD<sub>50</sub> Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD<sub>50</sub>Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC<sub>50</sub> 4-hrs Rat:* > 2-20 mg/L); **2 (Moderate Hazard: Temporary or transitory injury may occur. Skin Irritation:** Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD<sub>50</sub> Rat:* > 50-500 mg/kg. *Dermal Toxicity LD<sub>50</sub>Rat or Rabbit:* > 200-1000 mg/kg. *Inhalation Toxicity LC<sub>50</sub> 4-hrs Rat:* > 0.5-2 mg/L.); **3 (Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. Skin Irritation:** Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD<sub>50</sub> Rat:* > 1-50 mg/kg. *Dermal Toxicity LD<sub>50</sub>Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC<sub>50</sub> 4-hrs Rat:* > 0.05-0.5 mg/L.); **4 (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. Skin Irritation:** Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD<sub>50</sub> Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD<sub>50</sub>Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC<sub>50</sub> 4-hrs Rat:* ≤ 0.05 mg/L).

## DEFINITIONS OF TERMS (Continued)

### HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

#### FLAMMABILITY HAZARD:

**0** (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); **1** (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, Including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]; **2** (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, Including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of coarse dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); **3** (Serious Hazard-Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); **4** (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

#### PHYSICAL HAZARD:

**0** (*Water Reactivity*: Materials that do not react with water. *Organic Peroxides*: Materials that are normally stable, even under fire conditions and will not react with water. *Explosives*: Substances that are Non-Explosive. *Unstable Compressed Gases*: No Rating. *Pyrophorics*: No Rating. *Oxidizers*: No "0" rating allowed. *Unstable Reactives*: Substances that will not polymerize, decompose, condense or self-react.); **1** (*Water Reactivity*: Materials that change or decompose upon exposure to moisture. *Organic Peroxides*: Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives*: Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases*: Pressure below OSHA definition. *Pyrophorics*: No Rating. *Oxidizers*: Packaging Group III; *Solids*: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. *Liquids*: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives*: Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); **2** (*Water Reactivity*: Materials that may react violently with water. *Organic Peroxides*: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water.

### HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

#### PHYSICAL HAZARD (continued):

**2 (continued)**: *Explosives*: Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases*: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group II *Solids*: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. *Liquids*: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature); **3** (*Water Reactivity*: Materials that may form explosive reactions with water. *Organic Peroxides*: Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives*: Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases*: Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group I *Solids*: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3.:2 potassium bromate/cellulose mixture. *Liquids*: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives*: Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); **4** (*Water Reactivity*: Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides*: Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives*: Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases*: No Rating. *Pyrophorics*: Add to the definition of Flammability "4". *Oxidizers*: No "4" rating. *Unstable Reactives*: Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

### NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

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: **0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air.

## DEFINITIONS OF TERMS (Continued)

### NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

**FLAMMABILITY HAZARD (continued):** **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily.

**INSTABILITY HAZARD:** **0** Materials that in themselves are normally stable, even under fire conditions. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures.

**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:

**Human and Animal Toxicology:** 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: **LD<sub>50</sub>** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC<sub>50</sub>** - 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/m<sup>3</sup>** 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. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** 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. **Cancer Information:** 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 Information:** **BEI** - ACGIH 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. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. **TL<sub>m</sub>** = median threshold limit; Coefficient of Oil/Water Distribution is represented by **log K<sub>ow</sub>** or **log K<sub>oc</sub>** and is used to assess a substance's behavior in the environment.

### REGULATORY INFORMATION:

#### U.S. and CANADA:

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

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **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**). **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. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration. **EC**, European Economic Community).

#### EUROPE:

**EINECS:** This the European Inventory of Now-Existing Chemical Substances. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail.