

# MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, Australian Worksfe and European EC Directive Standards

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

### 1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):

#### ANTI-FREEZE CHARGE

SYNONYMS:

Loaded Steam Charge; Amerex Model 506 Charge

ADDRESS:

P.O. BOX 81  
Trussville, AL 35173-0081  
1-800-424-9300 (CHEMTREC)  
(205) 655-3271

EMERGENCY PHONE:

None

BUSINESS PHONE:

None

U.N. NUMBER:

U.N. DANGEROUS GOODS CLASS/SUBSIDIARY RISK:

Not Applicable

HAZCHEM CODE (AUSTRALIA):

POISONS SCHEDULE NUMBER (AUSTRALIA):

Not Applicable

DATE OF PREPARATION:

January 11, 1996

DATE OF REVISION:

September 16, 2002

### 2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	% w/w	EXPOSURE LIMITS IN AIR					
				ACGIH-TLV		OSHA-PEL		NIOSH IDLH mg/m <sup>3</sup>	OTHER mg/m <sup>3</sup>
				TWA mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>	PEL mg/m <sup>3</sup>	STEL mg/m <sup>3</sup>		
Yellow Dye	6359-82-6	Unlisted	< 1	NE	NE	NE	NE	NE	NE
Mixture of: Potassium Acetate Potassium Carbonate Exposure limits given are for Particulates Not Otherwise Specified (PNOS)	127-08-2 584-08-7	204-822-2 209-529-3	> 99	10 (inhalable fraction); 3 (respirable fraction) NIC = Inorganic compounds only - Withdraw TLV	NE	5 or 15 mppcf (respirable fraction) 15 or 50 mppcf (total dust)	NE	NE	DFG MAKs: TWA = 4 (inhalable fraction), 1.5 (respirable fraction)

NE = Not Established.

NIC= Notice of Intended Change

See Section 16 for Definitions of Terms Used.

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. 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, EC Directives and Workplace Australia.

### 3. HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:** This product is a crystalline solid with a yellowish color.. **Health Hazards:** Inhalation of dusts from this product may be mildly to moderately irritating to the respiratory system. Contact with the eyes can cause mechanical irritation. Prolonged eye contact may cause damage to eye tissue due to the presence of Potassium Carbonate. Due to the presence of Potassium Carbonate skin contact may be mildly to moderately irritating. **Flammability Hazard:** Although this product is not flammable, an accumulation of dusts can present a serious hazard of air/dust explosion. In the event of a fire, this compound may decompose to release smoke, irritating vapors and toxic gases (e.g., acetic acid, oxides of carbon and oxides of potassium). **Reactivity Hazard:** This product is not reactive. **Environmental Hazard:** Release of large quantities of this product to an aquatic or terrestrial environment may cause harm to plants and animals. **Emergency Response Considerations:** Emergency responders must wear personal protective equipment appropriate for the situation to which they are responding.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational overexposure to this product via inhalation of dusts and eye contact. The symptoms of overexposure to this product, via route of entry, are as follows:

INHALATION: Inhalation of dusts from this product may cause mild to moderate irritation of respiratory system, including lungs, nasal passages and throat. Symptoms may include coughing, sneezing and scratchy throat. Long-term inhalation exposure to high levels of dust may cause increased mucosal flow in nasal passages and airways. All symptoms of inhalation exposure should be relieved upon removal to fresh air and after exposure has ended.

### 3. HAZARD IDENTIFICATION (Continued)

**CONTACT WITH SKIN or EYES:** Due to the presence of Potassium Carbonate, skin contact may be mildly to moderately irritating. Prolonged skin contact may cause slight irritation. Contact of dust from this product with the eyes may cause moderate irritation, reddening of the affected eye, watering, and discomfort. Symptoms of both acute eye and skin contact should be relieved upon rinsing of affected area. Prolonged eye contact may cause damage to eye tissue due to the presence of Potassium Carbonate. Prolonged skin contact may result in dermatitis (dry, red, cracked skin).

**SKIN ABSORPTION:** The components of this product are not known to absorb through the skin.

**INGESTION:** Ingestion is not anticipated to be a likely route of occupational exposure to this product. Ingestion of small quantities is not expected to cause adverse effects. Ingestion of large quantities may cause nausea, upset stomach, vomiting and diarrhea.



**INJECTION:** While injection of this product is unlikely, it may occur as a result of a puncture or cut with a sharp object contaminated with potassium acetate. Mild symptoms, similar to those of skin irritation may occur.

**HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.** This product poses low, acute health risks.

**ACUTE:** Inhalation of dusts from this product may cause mild to moderate irritation to the respiratory system. Symptoms should be relieved upon end of exposure. Skin contact may be mildly to moderately irritating. Eye contact may cause mechanical irritation. Ingestion of small quantities should cause no ill effects. Ingestion of large quantities may cause gastric upset.

**CHRONIC:** Chronic inhalation may cause increased mucosal secretion in respiratory system, which should cease when exposure ends. Prolonged skin contact may cause dermatitis.

**TARGET ORGANS:** ACUTE: Skin, eyes, respiratory system.  
CHRONIC: Skin.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM			
HEALTH HAZARD		(BLUE)	1
FLAMMABILITY HAZARD		(RED)	1
PHYSICAL HAZARD		(YELLOW)	0
PROTECTIVE EQUIPMENT			B
EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8
For Routine Industrial Use and Handling Applications			

**See Section 16 for Definition of Ratings**

## 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. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to health professional with victim.

**SKIN EXPOSURE:** If this product contaminates the skin, brush or rinse from skin. If adverse effect occurs 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 adverse effect occurs.

**INHALATION:** If dusts from this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers. Seek medical attention if adverse effect occurs or continues.

**EYE EXPOSURE:** If this product enters the eyes, let eye(s) water naturally for a few minutes. Do not allow victim to rub eye(s). Have victim look right and left and then up and down. If particle or dust does not dislodge, flush with lukewarm, gently flowing water for 5 minutes or until the particle or dust is removed, while holding the eyelid(s) open. If irritation persists, obtain medical attention. DO NOT attempt to manually remove anything lodged in the eye.

**INGESTION:** If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING unless directed by medical personnel. 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. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Acute or chronic respiratory or skin conditions or disorders involving the "Target Organs" (see Section 3, "Hazard Identification") may be aggravated by overexposure to this product. Persons sensitive to pulmonary irritation upon exposure to high concentrations of dusts should use appropriate engineering controls or respiratory protection when recharging fire extinguishers.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and eliminate overexposure. Provide oxygen, if necessary. Pulmonary function tests, chest X-rays may prove useful.

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## 5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not flammable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.

Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS: None. This product is a fire extinguishing agent. Use agent appropriate for surrounding area and materials involved.

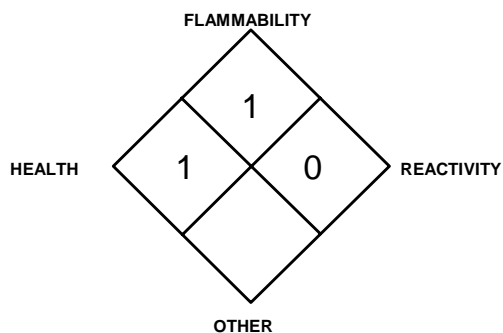
UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose and produce irritating fumes and toxic gases including acetic acid, oxides of carbon and oxides of potassium. An accumulation of large amounts of dust or large dust clouds from this material in air can cause a severe risk of an air/dust explosion.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Although this product is not sensitive to static discharge, dusts of this material can be ignited by static discharge, especially if large amounts of dusts are allowed to accumulate. All equipment in used in the handling of this material should be electrically grounded.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Chemical resistant clothing may be necessary. Responders must ensure all persons in areas downwind of spill are protected from inhalation of acidic mist or vapors. Move containers from fire area if it can be done without risk to personnel. Water fog or spray can also be used by trained fire-fighters to disperse this product's vapors and to protect personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

### NFPA RATING



**See Section 16 for  
Definition of Ratings**

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## 6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Small releases can be swept-up or cleaned-up using a damp sponge or polypads. Responders should wear gloves, goggles, and suitable body protection during the clean-up of small spills. Larger, uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a large spill (e.g. > 100 kg), clear the affected area, protect people, and respond with trained personnel. Minimum Personal Protective Equipment should be Level C: triple-gloves (rubber gloves and nitrile gloves, over latex gloves), chemically resistant suit and boots, hard-hat, and Air-Purifying respirator with high efficiency particulate filter). Self-Contained Breathing Apparatus must be selected if releases occur in confined or poorly-ventilated areas, or in situations in which the level of oxygen is below 19.5%. Sweep-up or vacuum spilled solid (an explosion-proof vacuum should be used). Rinse area with soap and water solution, followed by a water rinse. Close-off sewers and take other measures to protect human health and the environment, as necessary. Decontaminate the area thoroughly. Place all spill residue in an appropriate container and seal. Dispose of in accordance with applicable U.S. Federal, State, or local procedures, or appropriate standards of Canada, Australian Standards, or EC Member States (see Section 13, Disposal Considerations).

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

### 7. HANDLING and STORAGE

WORK AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dusts generated of this product. Use in a well-ventilated location. Wipe-down area routinely to avoid the accumulation of dusts.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, or sources of intense heat. Store away from incompatible materials (see Section 10, Stability and Reactivity). Keep container tightly closed when not in use. Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged. Care should be taken to avoid the accumulation of dusts, which can create a serious dust-explosion hazard. All equipment used in the handling of this material should be electrically grounded.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

**VENTILATION AND ENGINEERING CONTROLS:** Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients), if applicable. Ensure eyewash/safety shower stations are available near areas where this product is used.

**INTERNATIONAL OCCUPATIONAL EXPOSURE LIMITS:** Currently, there are no international exposure limits for the components of this product.

**RESPIRATORY PROTECTION:** None needed under normal circumstances of use. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, and EC member states, or the Australian Standard 1716-Respiratory Protective Devices and Australian Standard 1715-Selection, Use, and Maintenance of Respiratory Protective Devices. 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 U.S. Federal OSHA's Respiratory Protection Standard (1910.134-1998) or the regulations of various U.S. States, Canada, Australia, or EC Member States.

**HAND PROTECTION:** Use lightweight neoprene or butyl gloves. Use triple gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this MSDS. Check gloves for leaks. If necessary, refer to U.S. OSHA 29 CFR 1910.138, Australian Standard 2161-Industrial Safety Gloves and Mittens and appropriate Standards of the EC and Canada for further information.

**EYE PROTECTION:** Splash goggles or safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, the European Standard EN166, or the Australian Standard 1337-Eye Protection for Industrial Applications and Australian Standard 1336-Recommended Practices for Eye Protection in the Industrial Environment for further information.

**BODY PROTECTION:** Use body protection appropriate for task. If necessary, refer to Australian Standard 3765-Clothing for Protection Against Hazardous Chemicals for further information. 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

**VAPOR DENSITY:** Not applicable.

**EVAPORATION RATE (n-BuAc=1):** Not applicable.

**SPECIFIC GRAVITY:** Approximately 2.0.

**MELTING POINT or RANGE:** Decomposes.

**SOLUBILITY IN WATER:** Soluble.

**BOILING POINT:** Not applicable.

**VAPOR PRESSURE, mm Hg @ 20 °C:** Not applicable.

**pH (10% solution):** Approximately 11

**APPEARANCE AND COLOR:** This material is a crystalline solid with a yellowish color.

**HOW TO DETECT THIS SUBSTANCE (warning properties):** The color and form of this product may be a warning property in event of a release.

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## 10. STABILITY and REACTIVITY

**STABILITY:** Stable under conditions of normal temperature and pressure.

**DECOMPOSITION PRODUCTS:** Acetic acid, oxides of carbon and oxides of potassium.

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** The Potassium Acetate component is incompatible with strong acids. The Potassium Carbonate component is incompatible with strong oxidizers, strong acids, chlorine trifluoride; magnesium. Potassium Carbonate is corrosive to aluminum at room temperature and lead at temperatures above 38°C (100.4°F) and concentrations greater than 60%. Potassium Carbonate attacks gray cast iron and steel at high temperatures (93°C [199.4°F] and greater), and is mildly corrosive to copper, bronze and brass.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**CONDITIONS TO AVOID:** Wet storage conditions, incompatible materials, accumulation of large quantities of dust.

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

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## 11. TOXICOLOGICAL INFORMATION

**TOXICITY DATA:** The following data are available for components of this product greater than 1 percent by weight in concentration.

**POTASSIUM ACETATE:**

LD<sub>50</sub> (Oral-Rat) 3250 mg/kg

**POTASSIUM CARBONATE:**

LD<sub>50</sub> (Oral-Rat) 1870 mg/kg

LD<sub>50</sub> (Oral-Mouse) 2570 mg/kg

LD<sub>50</sub> (Oral-Bird-wild bird species) 100 mg/kg

**POTASSIUM CARBONATE (continued):**

LC (Inhalation-Rat) > 500 mg/m<sup>3</sup>

TCLo (Inhalation-Rat) 43 mg/m<sup>3</sup>/17 weeks: Cardiac: EKG changes not diagnostic of specified effects; Kidney, Ureter, Bladder: other changes in urine composition; Nutritional and Gross Metabolic: changes in potassium

Unscheduled DNA Synthesis (Oral-Rat) 504 gm/kg/4 weeks-continuous

**SUSPECTED CANCER AGENT:** The components of this product are not found on the following lists: U.S. FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

An increase in DNA synthesis and morphological alterations in the bladder epithelium was observed after feeding rats 3% Potassium Carbonate in the diet for 4 or 8 weeks. This study was conducted to investigate the mechanism by which carbonate salts promote bladder cancer in animals exposed to known carcinogens.

## 11. TOXICOLOGICAL INFORMATION (Continued)

IRRITANCY OF PRODUCT: This product may cause mild to moderate irritation via inhalation, skin or eye contact due to the presence of Potassium Carbonate.

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

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 known to cause mutagenic effects.

Embryotoxicity: The components of this product are not known to cause embryotoxic effects.

Teratogenicity: The components of this product are not known to cause teratogenic effects.

Reproductive Toxicity: The components of this product are not known to cause reproductive toxicity effects.

A *mutagen* is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through 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 (BEIs): Currently, Biological Exposure Indices (BEIs) have not been determined for the components of this product.

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## 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: This product will be rapidly destroyed by normal ecological actions and will not accumulate.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Currently, there are no data on the possible effects of the components of this product on plants and animals. Release of large quantity to the environment may have detrimental effect.

EFFECT OF CHEMICAL ON AQUATIC LIFE: Currently, there are no data on the possible effects of the components of this product on an aquatic environment. Release of large quantity to the environment may have detrimental effect.

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## 13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This chemical, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

EPA WASTE NUMBER: Not applicable.

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## 14. TRANSPORTATION INFORMATION

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not Regulated

HAZARD CLASS NUMBER and DESCRIPTION: Not Applicable

UN IDENTIFICATION NUMBER: Not Applicable

PACKING GROUP: Not Applicable

DOT LABEL(S) REQUIRED: Not Applicable

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): Not Applicable

MARINE POLLUTANT: The components of this product are 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 product is NOT considered as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product NOT is considered as dangerous goods, per the International Air Transport Association.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product NOT is considered as dangerous goods, per the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is NOT considered by the Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: This product is NOT considered as Dangerous Goods, per regulations of the Australian Federal Office of Road Safety.

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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 lb (4,540 kg) may apply, per 40 CFR 370.20.

## 15. REGULATORY INFORMATION (Continued)

### ADDITIONAL U.S. REGULATIONS (continued):

U.S. TSCA INVENTORY STATUS: Components of this product are listed on the TSCA Inventory.

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

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

U.S. STATE REGULATORY INFORMATION: Chemicals in 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:** None.

**Florida - Substance List:** None.

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

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

**Massachusetts - Substance List:** None.

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

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

**Missouri - Employer Information/Toxic Substance List:** None.

**New Jersey - Right to Know Hazardous Substance List:** None.

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

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

**Rhode Island - Hazardous Substance List:** None.

**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): No component of this product is on the California Proposition 65 lists.

ANSI LABELING [Z129.1] (Precautionary Statements): **CAUTION!** MAY CAUSE RESPIRATORY, SKIN AND EYE IRRITATION. INGESTION MAY BE HARMFUL. DUST ACCUMULATION MAY FORM EXPLOSIVE AIR/DUST HAZARD. FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. Use with adequate ventilation. Keep away from heat, sparks, or open flame. Avoid inhalation of dusts. Avoid contact of dusts with skin, eyes, and clothing. Wash thoroughly after handling. Wear appropriate hand and eye protection. **FIRST-AID:** In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. If inhaled, remove to fresh air. If swallowed, do not induce vomiting. Get medical attention if irritation develops or persists or if any other adverse effect occurs. **IN CASE OF FIRE:** This product will not contribute to the intensity of a fire. Use fire-extinguishing material appropriate for surrounding materials. **IN CASE OF SPILL:** Absorb spill with inert materials (e.g., polypads, dry sand). Rinse area with soapy water. Consult Material Safety Data Sheet for additional information.

### ADDITIONAL CANADIAN REGULATIONS:

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

OTHER CANADIAN REGULATIONS: Not applicable.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITY SUBSTANCES LISTS: The components of this product are not on the CEPA Priority Substances Lists.

CANADIAN WHMIS SYMBOLS: Not applicable.

### ADDITIONAL EUROPEAN ECONOMIC COMMUNITY REGULATIONS:

EC LABELING AND CLASSIFICATION: This product does not meet the definition of any hazard class as defined by the European Community Council Directive 67/548/EEC.

### ADDITIONAL AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: Components of this product are listed on the AICS.

LIST OF DESIGNATED SUBSTANCES: Not applicable.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

LABELING AND CLASSIFICATION: This product does not meet the definition of any hazard class as defined under NOHSC [NOHSC: 10005 (1994-current)].

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## 16. OTHER INFORMATION

### PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.  
PO Box 3519, La Mesa, CA 91944-3519  
619/670-0609

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. AMEREX Corporation 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, AMEREX Corporation 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:* (continued in next column)

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

### HEALTH HAZARD (continued):

**3 (continued):** 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).

### 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 course 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. (continued on next page)

## DEFINITIONS OF TERMS (Continued)

### HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

#### HAZARD RATINGS (continued):

##### PHYSICAL HAZARD (continued):

**1 (continued):** 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. 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  $\geq$  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.). PPE Rating B: Hand and eye protection is required for routine chemical use. PPE Rating C: Hand, eye, and body protection may be required for routine chemical use.

**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 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:

**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:**  
This section explains the impact of various laws and regulations on the material. **ACGIH:** American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **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.

**EUROPEAN:** **EC** is the European Community (formerly known as the **EEC**, European Economic Community). **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. **AUSTRALIAN:** **AICS** is the Australian Inventory of Chemical Substances. **NOHSC:** National Occupational Health & Safety Code.

**FIRE EXTINGUISHER**  
**Cautions and Warnings**

Fire extinguishers are designed and produced for the specific purpose of providing a safe and efficient safety tool to be used only in the fighting of fires. Improper or careless use may cause severe bodily injury and/or property damage.

Contents are under pressure which is necessary to deliver the contained extinguishing agent to the fire source. Please take note of the following safety information:

- Contents are under pressure. Do not puncture, incinerate, or discharge into another person's face.
- Do not store at high temperatures above 120°F or 49°C.
- Keep away from small children.
- Do not use if the extinguisher appears to be damaged or corroded.
- Avoid inhaling the extinguishing agent. Avoid inhaling smoke and fumes - all fires release toxic substances that are harmful. DO NOT remain in a closed area after use; evacuate the area immediately and ventilate thoroughly before re-entering.
- Although extinguishing agents are non-toxic when used properly, contact with them may cause irritation to eyes, nose, throat, and other allergic symptoms.

Refer to specific extinguishing agent Material Safety Data Sheet for additional information.

**AVOID INHALING SMOKE AND FUMES; ALL FIRES RELEASE TOXIC  
SUBSTANCES THAT ARE HARMFUL. DO NOT REMAIN IN CLOSED  
AREA AFTER USE. VENTILATE CLOSED AREAS BEFORE RETURNING.**