MISCELLANEOUS CHEMICALS
(FIRE EXTINGUISHER CHEMICAL, BATTERY, ANTIFREEZE, SOLVENT, SPRAY PAINT)
Knife Lake Project – Spring 2004 Drill Programme

STEEL FIRE EQUIPMENT LTD.

ALL GREG

150 Superior Blvd.
Mississauga, Ontario L5T 2L2

MATERIAL SAFETY DATA SHEET

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

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

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):	ABC DRY CHEMICAL
SYNONYMS:	Multi-Purpose Dry Chemical
MANUFACTURER'S NAME:	STEEL FIRE EQUIPMENT LTD.
ADDRESS:	150 Superior Blvd. Mississauga, Ontario L5T 2L2
BUSINESS PHONE:	(905) 564-1500
DATE OF PREPARATION:	October 1,2001

2. COMPOSITION AND INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% W/W	EXPOSURE LIMITS IN AIR						
			ACGIH		OSHA			IDLH	OTHER
			TLV mg/m3	STEL mg/m3	PEL mg/m3	STEL mg/m3		mg/m3	
Mono Ammonium Phosphate Fluospar Ammonium Sulphate	7722-76-1 7783-20-2	85	ACGIH TLV for particulates, Not Otherwise Classified = 10; OSHA PEL for Particulates Not Otherwise Regulated, Total Dust = 15, Respirable Fraction 5.						
Mica	12001-26-2	< 3	3 (Respirable Fraction)	NE	3 (Respirable Fraction)	NE		NE	NE
Attaclay	8031-18-3	< 3	NE	NE	NE	NE		NE	NE
Silicone Oil	63148-57-2	< 1	NE	NE	NE	NE		NE	NE
Calcium Carbonate	471-34-1	< 1	ACGIH TLV for particulates, Not Otherwise Classified = 10; OSHA PEL for Particulates Not Otherwise Regulated, Total Dust = 15, Respirable Fraction 5.						
Silica	112926-00-8	< 1	2	NE	6	NE		NE	NE
Yellow Pigment	5468-75-7	< 1	NE	NE	NE	NE		NE	NE

NE = Not Established C= Ceiling Level See Section 16 for Definitions of Terms Used.

Note: All WHMIS required information is included. It is located in appropriate sections on the ANSI Z400.1-1996 format.

3. HAZARD IDENTIFICATION

EMERGENGY OVERVIEW: This mixture of dry chemicals poses little hazard. Mechanical irritation of the eyes is possible during the use and maintenance of the extinguishing units. Chronic inhalation of any particulate may damage the lungs.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: Over-exposure to this product may cause mild skin irritation moderate eye irritation, and possible gastric distress. The product is not known to cause chronic illness

INHALATION Inhalation of this product should be avoided, but if it occurs, may cause mild irritation of the nose, throat, and other tissues of the respiratory system.

CONTACT WITH SKIN OR EYES: Contact of dust from this product with the eyes may cause moderate irritation, reddening of the affected eye, and discomfort.

SKIN ABSORPTION: No component of this product is known to absorb through the skin.

INGESTION: Ingestion of this product may cause mild gastric distress.

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 the extinguishing agent. Mild symptoms, similar to those of skin irritation may occur.

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	1
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATION	HANDS	BODY
	See Section 8		See Section 8

For routine industrial applications.

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

ACUTE: This extinguishing material presents only a slight risk of causing acute health effects. If such effects occur, they will be in form of mild irritation of the skin, nose, or throat and moderate irritation of the eyes.. If ingested, this product may cause an upset stomacl

CHRONIC: This product is not known to cause chronic illnesses or diseases.

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

4. FIRST AID MEASURES

SKIN EXPOSURE: If spilled on skin, immediately begin decontamination with running water. Remove exposed or contaminat clothing, taking care not to contaminate eyes. If reddening or irritation occurs, victim and rescuers must seek immediate medical attentio

PART III How can I prevent hazardous situations from occurring?

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Avoid getting chemicals ON YOU or IN YOU. Wash hands after handling chemicals. Do not eat or drink while handling chemicals.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid breathing dusts generated by this product.

PROTECTIVE PRACTICES DURING MAINTENACE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment using soapy water before maintenance begins. Collect all rinsates and dispose of according to applibale Federal, Provincial, or local procedures.

8. EXPOSURE CONTOLS - PERSONAL PROTECTION

VENTILATIONAND ENGINEERING CONTROLS: Use with adequate ventilation. Use a mechanical fan or vent area to outside.

RESPIRATORY PROTECTION: Respiratory protection is not expected to be needed. Maintain airborne contaminant concentrations below guidelines for nuisance particulates: 10 mg/m3 (total particulates) or 5 mg/m3 (respirable particulates) If respiratory protection is needed, use only protection authorized in 29CFR 1910.134, or applicable Provincial regulations. Use supplied air respiratory protection if oxygen levels are below 19.5%.

EYE PROTECTION: Safety glasses.

HAND PROTECTION: Wear rubber gloves for routine industrial use. Use triple gloves for spill response, as stated in Section 6 of MSDS.

BODY PROTECTION: Use body protection appropriate for task.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY:	Not applicable	EVAPORATION RATE (n-BuAc=1):	Not applicable
SPECIFIC GRAVITY:	Approximately 0.85	MELTING POINT RANGE:	Not applicable
SOLUBILITY IN WATER:	Not soluble. Water repellent coating	BOILING POINT:	Not applicable
VAPOR PRESSURE, mm Hg @ 20 C:	Not applicable	pH (10% solution):	Approximately 4-5

APPEARANCE AND COLOR: This material is a finely divided, yellowish powder.

HOW TO DETECT THIS SUBSTANCE (warning properties) This product does not have any specific warning properties.

10. STABILITY and REACTIVITY

STABILITY: Stable

DECOMPOSITION PRODUCTS: Sulfur oxides, carbon monoxide and carbon dioxide.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong alkalis, magnesium, swimming pool sanitizers (inorganic perachlorates, sodim dichloroisacyanurate dihydrate, trichloroisacyanuric acid, calcium hypochlorite, and other strong oxidizers).

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Incompatible materials.

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

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following data is availsble for components of this product grater than 1 percent by weight in concentrati

AMMONIUM SULFATE
TDLo (oral, man) = 150 mg/kg
LD50 (oral, rat) = 3000 mg/kg
LD50 (interperitoneal, rat) = 610 mg/kg

MONO-AMMONIUM PHOSPHATE

No toxicology information listed.

SUSPECTED CANCER AGENT: This product's ingredients are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA. A variety of silica forms (i.e. crystalline, fumed) are reported in IARC as a Group 3 Compound (Human Inadequate Evidence: Animal Inadequate Evidence).

IRRITANCY OF PRODUCT: This product may cause mild skin and respiratory irritation and moderate eye irritancy.

SENSITIZATION TO THE PRODUCT: This product is not known to cause sensitization.

11. TOXICOLOGICAL INFORMATION (Continued)

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

Mutagenicity: This product in not known to cause mutagenic effects.
Teratogenicity This product in not known to cause teratogenic effects.
Reproductive Toxicity: This product in 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.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Prolonged contact with this product may cause pre-existing dermatitis to become aggravated. Persons sensitive to pulmonary irritation upon exposure to high concentrations of dust should use appropriate engineering controls or respiratory protection when recharging fire extinguishers.

RECOMMENDATION TO PHYSICIANS: Treat patient symptoms. This product should not cause any notable clinical symptoms.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: No adverse environmental consequences are expected.
EFFECT OF MATERIAL ON PLANTS or ANIMALS: None currently known.
EFFECT OF CHEMICAL ON AQUATIC LIFE: Not expected to harm aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, Provincial and local regulatio 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.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IN NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THEU.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not applicable
HAZARD CLASS NUMBER AND DESCRIPTION: Not applicable
UN IDENTIFICATION NUMBER: Not applicable
PACKING GROUP: Not applicable
DOT LABEL(S) REQUIRED: Not applicable
EMERGENCY RESPONSE GUIDE NUMBER: Not applicable

MARINE POLLUTANT: Not applicable

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY TRANSPORT CANADA "TRANSPORTATION OF DANGEROUS GOODS" REGULATIONS.

15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: No component of this product is subject to the reporting requirements of Section 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.

SARA Threshold Planning Quantity: Not applicable

TSCA INVENTORY STATUS: All components are listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITY (RQ): Not applicable

OTHER FEDERAL REGULATIONS: Not applicable

STATE REGULATORY INFORMATION: Chemicals in this product are covered under specific State regulations, as denoted below:

4. FIRST AID MEASURES (Continued)

EYE EXPOSURE: If chemical is splashed in 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.

INHALATION: If chemical is inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. If reddening or irritation occurs, victim and rescuers must seek immediate medical attention.

INGESTION: If chemical is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTRE FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who can not swallow.

If exposure causes obvious distress, victim(s) and rescuers must be taken for medical attention. Take copy of label and MSDS to physician health professional with victim.

5. FIRE FIGHTING MEASURES

FLASH POINT, C (method): Not applicable

AUTOIGNITION TEMPERATURE, C: Not applicable

FLAMMABLE LIMITS (in air by volume, %) Lower (LEL): Not applicable

Upper (LEL): Not applicable

FIRE EXTINGUISHING MATERIALS: None. This product is a fire extinguishing agent.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose and produce irritating fumes and toxic gases including sulfur oxides, carbon dioxide and carbon monoxide.

Explosion Sensitivity to Mechanical Impact: Not sensitive

Explosion Sensitivity to Static Discharge: Not sensitive

NFPA RANKING

SPECIAL FIRE FIGHTING PROCEDURES: When involved Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel. If it is determined that exposure guidelines for nuisance particulates - 10 mg/m3 (total particulates) or 5mg/m3 (respirable particuli is exceeded, use Level C: triple gloves (rubber gloves with nitrile gloves, over latex gloves), chemically resistant suit and boots, hard hat, and air purifying respirator with a HEPA filter.

Sweep up the spilled solid and place all spill residue in a double plastic bag and seal. Dispose of in accordance with Federal, Provincial and local hazardous waste disposal regulations (see Sections 13).

15. REGULATORY INFORMATION (Continued)

Alaska - Designated Toxic and Hazardous Substances: None.
California - Permissible Exposure Limits for Chemical Contaminants: None.
Florida - Substance List: Mica Dust, Ammonium Sulfate.
Illinois - Toxic Substance List: None.
Kansas - Section 302/313 List: None.
Massachusetts - Substance List: Mica Dust, Ammonium Sulfate.
Minnesota - List of Hazardous Substances: None.
Missouri - Employer Information/Toxic Substance List: None.
North Dakota - List of Hazardous Chemicals, Reportable Quantities None.
Pennsylvania - Hazardous Substance List: None.
Rhode Island - Hazardous Substance List: Mica Dust, Ammonium Sulfate.
Texas - Hazardous Substance List: None.
West Virginia - Hazardous Substance List: None.
Wisconsin - Toxic and Hazardous Substance None.

CALIFORNIA PROPOSITION 65: No component is listed on the California Proposition 65 lists.

Labelling: CAUTION! May cause skin or eye irritation. Avoid contact with skin or eyes. In the event of contact, rinse affected part of your body with water for at least 15 minutes. Seek medical attention if reddening or irritation occurs. Keep container tightly closed. Store in a cool, dry location away from incompatible materials. Clean up spills promptly. This product will not contribute to the intensity of a fire.

TARGET ORGANS: Skin, eyes.

WHIMS SYMBOLS: Not applicable.

16. OTHER INFORMATION

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. Steel Fire Equipment Ltd. 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, Steel Fire Equipment Ltd. assumes no responsibility for injury to the 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.

DEFINITION 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 Number Which uniquely identifies each constituent. It is used for computer related searching.

EXPOSURE LIMITS IN AIR:

ACGIH - American Conference of Government Industrial Hygenists, a professional association Which establisheS exposure limits.

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

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

PEL - Permissible Exposure Limit - this exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The IDLH Immediately Dangerous to Life and Health level represents a concentration from which one can escape within 30 minutes without suffering escape preventing or permanent injury. The DFG - MAK is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. NIOSH is the National Institute of Occupational Safety and Health which is the research arms of the U.S. Occupational Safety and Health Administration (OSHA). NIOSH issues exposure guidelines called Recommended Exposure Levels (RELs). When no exposure guidelines are established, and entry of NE is made for reference.

FLAMMABILITY LIMITS IN AIR - Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION

Possible health hazards as derived from human data, animal studies or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are:

LD50 - Lethal Dose (solids & liquids) which kills 50% of the exposed animals.
LC50 - Lethal Concentration (gasses) which kills 50% of the exposed animals.
ppm - concentration expressed in parts of material per million parts of air or water.
mg/m3 - concentration expressed in weight of substance per volume of air.
mg/kg - quantity of material, by weight, administered to a test subject, based on their body weight in kg.

Data from several sources are used to evaluate the cancer causing potential of the material. The sources are:

IARC - the International Agency for Research on Cancer.
NTP - the National Toxicology Program.
RTECS - the Registry of Toxic Effects of Chemical Substances, OSHA and CAL/OSHA.
IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include:

- TDLo - the lowest dose to cause a symptom.
- TDo, LDLo, and LDo - the lowest dose to cause death.

REGULATORY INFORMATION

This section explains the impact of various laws and regulations on the material.
EPA is the U.S. Environmental Protection Agency.
WHMIS is the Canadian Workplace Hazard Information System.

DOT and CTC are the U.S. Department of Transportaion and the Canadian Transportation Commission, respectively.
SARA - Superfund Amendments and Reauthorization Act.
TSCA - the Toxic Substance Control Act.
California Proposition 65 - Californa Safe Drinking Water Act.
CERCLA - the Comprehensive Environmental Response, Compensation and Liability Act
This section also includes information on the precautionary warnings which appear on the materials package label.

FIRE EXITINGUISHER
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 under pressure. Do not puncture, incinerate, or discharge into another person's face.
- Do not store at high temperatures above 120 degrees Farenheit or 49 degrees Celcius.
- Keep away from children.
- 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 throughly 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.

EXIDE CORPORATION

I. PRODUCT IDENTIFICATION

MANUFACTURER
Exide Corporation
P.O. Box 14205
Reading, PA 19612-4205

FOR INFORMATION
(610) 378-0500
Environmental Resources Dept.

FOR EMERGENCY
CHEMTREC (800) 424-9300
24-hour Emergency Response Contact
Ask for Environmental Coordinator

CHEMICAL/TRADE NAME (as used on label): Lead-Acid Battery

CHEMICAL FAMILY/ CLASSIFICATION: Electric Storage Battery

DATE REVISED: MAR 24/2000

II. HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Components	CAS Number	% by Wt.	Approximate Air Exposure Limits (ug/m³) OSHA	ACGIH	NIOSH
Inorganic compounds of:					
Lead	7439-92-1	53	50	150	100
Antimony	7440-36-0	0.2	500	500	--
Arsenic	7440-38-2	0.003	10	200	--
Calcium	7440-70-2	0.02	--	--	--
Tin	7440-31-5	0.06	2000	2000	--
Electrolyte (sulfuric acid/water/solution)	7664-93-9	30-40	1000	1000	100
Case Material: Polypropylene Hard Rubber	9003-07-0 --	5-6	N/A	N/A	N/A
Other: Silicon dioxide (gel cell batteries only)	60676-86-0	3-5	N/A	N/A	N/A

NOTE: Inorganic lead and electrolyte (water and sulfuric acid solution) are the primary components of every battery manufactured by Exide Corporation or its subsidiaries. Other ingredients may be present dependent upon battery type. Polypropylene is the principal case material of automotive and commercial batteries.

III. PHYSICAL DATA - ELECTROLYTE

Boiling Point	203°F-240°F (for S.G. range)	Specific Gravity (H_2O=1)	1.230 to 1.350
Melting Point	Not Applicable	Vapor Pressure (mm Hg)77°F	17 to 11 (for S.G. range)
Solubility in Water	100%		
Evaporation Rate (Butyl acetate=1)	Less Than 1	Vapor Density (AIR=1)	Greater than 1
Appearance and Odor	A clear liquid with a sharp, penetrating, pungent odor. A battery is a manufactured article; no apparent odor.	% Volatiles by Weight	Not Applicable

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point:	Not Applicable
Flammable Limits:	LEL = 4.1% (Hydrogen Gas in air) UEL = 74.2%
Extinguishing media:	CO_2; foam; dry chemical
Special Fire Fighting Procedures:	Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during application and wear acid-resistant clothing, gloves, face and eye protection. If batteries are on cha shut off power to the charging equipment, but, note that strings of series connected batteries may sti risk of electric shock even when charging equipment is shut down.
Unusual Fire and Explosion hazards:	In operation, batteries generate and release flammable hydrogen gas. They must alwa assumed to contain this gas which, if ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive liquid electrolyte. Carefully follo manufacturer's instructions for installation and service. Keep away all sources of gas ignition and do allow metallic articles to simultaneously contact the negative and positive terminals of a battery.

V. REACTIVITY DATA

Stability: Stable _X_
Unstable ____

Conditions to Avoid: Prolonged overcharge at high current; sources of ignition.

Incompatibility: (materials to avoid)

Electrolyte (Water and Sulfuric Acid Solution): Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.

Hazardous Decomposition Products:

Electrolyte (Water and Sulfuric Acid Solution): Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen.

Lead compounds: Temperatures above the melting point are likely to produce toxic metal fume, vapor or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

VI. HEALTH HAZARD DATA

Routes of Entry:

Electrolyte (Water and Sulfuric Acid Solution): Harmful by all routes of entry.

Lead compounds: Hazardous exposure can occur only when product is heated above the melting point, oxidized or otherwise processed or damaged to create dust, vapor or fume.

Inhalation:

Electrolyte (Water and Sulfuric Acid Solution): Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.

Lead compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

VI. HEALTH HAZARD DATA (CONTINUED)

Ingestion:

Electrolyte (Water and Sulfuric Acid Solution): May cause severe irritation of mouth, throat, esophagus and stomach

Lead compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This lead rapidly to systemic toxicity.

Skin Contact:

Electrolyte (Water and Sulfuric Acid Solution): Severe irritation, burns and ulceration.

Lead compounds: Not absorbed through the skin.

Eye Contact:

Electrolyte (Water and Sulfuric Acid Solution): Severe irritation, burns, cornea damage, blindness.

Lead compounds: May cause eye irritation.

Effects of Overexposure - Acute:

Electrolyte (Water and Sulfuric Acid Solution): Severe skin irritation, damage to cornea may cause blindness, upper respiratory irritation.

Lead compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

Effects of Overexposure - Chronic:

Electrolyte (Water and Sulfuric Acid Solution): Possible erosion of tooth enamel; inflammation of nose, throat and bronchial tubes.

Lead compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in both males and females.

Carcinogenicity:

Electrolyte (Water and Sulfuric Acid Solution): The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category I carcinogen, a substance that is carcinogenic to humans. This classification does not apply to sulfuric acid solutions in static liquid state or to electrolyte in batteries. Batteries subjected to abusive charging at excessively high currents for prolonged periods of time without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

Lead compounds: Listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.

Arsenic: Listed by National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), OSHA and NIOSH as a carcinogen only after prolonged exposure at high levels.

Medical Conditions Generally Aggravated by Exposure:

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of electrolyte (water and sulfuric acid solution) with skin may aggravate skin diseases such as eczema and contact dermatitis. Contact of electrolyte (water and sulfuric acid solution) with eyes may damage cornea and/or cause blindness. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

VI. HEALTH HAZARD DATA (CONTINUED)

Emergency and First Aid Procedures:

Inhalation:

Electrolyte (Water and Sulfuric Acid Solution): Remove to fresh air immediately. If breathing is difficult, give oxygen.

Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

Ingestion:

Electrolyte (Water and Sulfuric Acid Solution): Give large quantities of water; do not induce vomiting; consult physician.

Lead: Consult physician immediately.

Skin:

Electrolyte (Water and Sulfuric Acid Solution): Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes.

Lead: Wash immediately with soap and water.

Eyes:

Electrolyte (Water and Sulfuric Acid Solution) and lead: Flush immediately with large amounts of water for at least 15 minutes; consult physician immediately.

VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storage:

Store batteries under roof in cool, dry, well-ventilated areas which are separated from incompabile materials and from activities which may create flames, sparks or heat. Store on smooth, impervious surfaces which are provided with measures for liquid containment in the event of electrolyte spills. Keep away from metallic objects which could bridge the terminals on a battery and create a dangerous short-circuit. Handle carefully and avoid tipping, which may allow electrolyte leakage. Single batteries pose no risk of electric shock but there may be increasing risk of electric shock from strings of connected batteries exceeding three 12-volt units.

Charging:

There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether being charged or not. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged.

Spill or Leak Procedures:

Stop flow of material, contain/absorb small spills with dry sand, earth, vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer. Neutralized acid must be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and/or federal EPA.

Waste Disposal Methods:

Spent batteries: Send to secondary lead smelter for recycling.

Electrolyte:

Place neutralized slurry into sealed acid resistant containers and dispose of as hazardous waste, as applicable. Large water-diluted spills, after neutralization and testing, should be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and/or federal EPA.

Precautionary Labelling:

POISON - CAUSES SEVERE BURNS

DANGER - EXPLOSIVE GASES

CORROSIVE - CONTAINS SULFURIC ACID

KEEP AWAY FROM CHILDREN

VIII. CONTROL MEASURES

Engineering Controls:

Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant.

Work Practices:

Handle batteries cautiously, do not tip to avoid spills. Make certain vent caps are on securely. Avoid bodily contact with internal components. Wear protective clothing, eye and face protection, when filling or handling batteries.

Respiratory Protection:

None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

Protective gloves:

Rubber or plastic acid-resistant gloves with elbow-length gauntlet.

Eye Protection:

Chemical goggles or face shield.

Other Protection:

Acid-resistant apron. Under severe exposure or emergency conditions, wear acid-resistant clothing, gloves and boots.

Emergency Flushing:

In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply.

- Debeers -

Polaris Material Safety Data Sheet

Polaris Sales Inc.
2100 Highway 55
Medina, MN 55340

Emergency: **800-424-9300**
Information: **763-542-0500**

SECTION 1 CHEMICAL PRODUCT IDENTIFICATION

Product: **POLARIS ANTIFREEZE 50/50 PRE-MIX PG**
Synonyms/Other: Not applicable.
Part Number: 2875041, 2875042, 8570099
MSDS Number: 1449
Product Type: Propylene glycol based coolant/antifreeze
Preparation/Revision Date: 02/26/2004

SECTION 2 COMPOSITION INFORMATION

INGREDIENTS	CAS #	%	OSHA TWA	OSHA STEL	ACGIH TWA	SKIN
Propylene Glycol	57-55-6	47-48	Not established	Not established	Not established	NO
Proprietary additives	--	0.5-1.5	Not established	Not established	Not established	NO
Water	7732-18-5	49	--	--	--	NO

Comments: Not applicable.

SECTION 3 HAZARDOUS IDENTIFICATION

Eye contact: Direct contact may cause irritation, redness, tearing and blurred vision.
Skin contact: Prolonged contact may cause skin irritation.
Inhalation: Information not available.
Ingestion: Slightly toxic by ingestion; ingesting large amounts may cause central nervous system effects.

SECTION 4 FIRST AID MEASURES

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.
Skin contact: Wash skin with soap and water.
Inhalation: If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medicla attention if breathing becomes difficult or respiratory irritation persists.
Ingestion: If large quantity is ingested give a pint of water and induce vomiting only if victim is completely conscious and alert. Seek immediate medical attention.

SECTION 5 FIRE FIGHTING MEASURES

Flash point: None
Flammable limits: Not applicable.
Extinguishing media: Use water spray, dry chemical, alcohol-resistant foam, all purpose AFFF or carbon dioxide to extinguish fire.

Special firefighting procedures: Evacuate area and fight fire from a safe distance. If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak.

Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow if possible (safely). Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

Fire fighters must wear MSHA/NIOSH approved positive pressure breathing

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	apparatus (SCBA) with full face mask and full protective equipment.
Unusual fire & explosion hazards:	Dense smoke may be generated while burning. Toxic fumes, gases or vapors may evolve on burning. Heavy flammable vapors may settle along ground level and low spots to create an invisible fire hazard. The vapors may extend to sources of ignition and flash back.
Byproducts of combustion:	Fires involving this product may release COx, NOx, SOx, reactive hydrocarbons and irritating vapors.
Autoignition temperature:	Information not available.
Explosion data:	Not determined. Care should always be exercised in dust/mist areas.
Other:	Not applicable

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill control procedures (land):	Contain fluid with noncombustible absorbent material and place into container for disposal. For large spills: Contain fluid with noncombustible absorbent material. Use plastic shovel to put material into containers. Eliminate all sources of ignition. Prevent fluid from running into storm sewers or natural waterways.
Spill control procedures (water):	Material will readily mix with water. If a large spill occurs notify appropriate authorities (normally the National Response Center or Coast Guard).
Waste disposal method:	Dispose according to applicable local, state and federal laws. Contact local or state agencies to obtain information on recycling.
Other:	Not applicable.

SECTION 7 HANDLING AND STORAGE

Handling procedures:	Wash thoroughly after handling. Store containers closed and away from extreme temperatures. Keep out of the reach of children.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protection:	Applicable mainly to persons in repeated contact situations such as packaging of product, service/maintenance, and cleanup/spill control personnel.
Respiratory protection:	None special.
Eye protection:	Chemical goggles or face shield.
Hand protection:	Impervious gloves such as neoprene or nitrile rubber to avoid skin sensitization and absorption.
Other protection:	Use of an apron and overboots of chemically impervious materials such as neoprene or nitrile rubber is recommended.
Local control measures:	Use adequate ventilation when working with material in an enclosed area. Mechanical methods such as fume hoods or area fans may be used to reduce localized vapor/mist areas.
Other:	Consumption of food and drink should be avoided in work areas where product is present. Always wash hands and face with soap and water before eating, drinking or smoking.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Vapor pressure:	<0.1 mmHg
API gravity:	Not determined.
Specific gravity:	Not determined.
Solubility in water:	100%
Percent volatile(VOC):	Not applicable.
Evaporation rate (n-Butyl Acetate=1):	Not applicable.
Appearance:	Clear pink liquid
Viscosity:	Not determined.

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Boiling point:	221F
PH:	10.5-10.8

SECTION 10 STABILITY AND REACTIVITY

Stability:	Material is stable at room temperatures and pressure.
Conditions to avoid:	Avoid high temperatures and product contamination.
Incompatibility with other materials:	Avoid contact with acids and oxidizing materials. Also avoid contact with caustics and aliphatic amines.
Decomposition products:	Smoke, carbon monoxide, carbon dioxide, reactive hydrocarbons and irritating vapors.
Hazardous polymerization:	Will not occur.
Other:	Not applicable.

SECTION 11 TOXICOLOGICAL INFORMATION

Oral toxicity:	May cause general anesthesia, convulsions and changes in surface EEG.
Dermal toxicity:	Contact may result in skin irritation.
Inhalation toxicity:	Information not available.
Carcinogenicity/Chronic toxicity:	Material contains items not listed by OSHA, IARC or NTP.
Mutagenicity:	Information not available.
Reproductive toxicity:	Information not available.

SECTION 12 ECOLOGICAL INFORMATION

Environmental toxicity:	Information not available.
Environmental fate:	Information not available.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste disposal method:	Dispose according to applicable local, state and federal laws. Contact local or state agencies to obtain information on recycling.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT shipping description:	Not regulated
U.S. DOT identification number:	Not applicable
U.S. DOT hazard classification:	Not applicable.
Packaging class:	Not applicable.

SECTION 15 REGULATORY INFORMATION

Clean water act/oil pollution act:	Contact the National Response Center at 800-424-8802 in the case of a spill that enters waterways.
SARA Title III:	Section 302/304 extremely hazardous substances: None
OSHA Regulations:	This product contains propylene glycol that is an OSHA regulated hazardous substance.

Section 311, 312 hazard categorization:

Acute (immediate health effects):	YES
Chronic (delayed health effects):	NO
Fire (hazard):	NO
Reactivity (hazard):	NO
Pressure (sudden release hazard):	NO

Section 313 toxic chemicals: None

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CERCLA: For stationary sources – reportable quantity:
Not applicable.
For moving sources – reportable quantity:
Not applicable.

SECTION 16 OTHER INFORMATION

	NFPA 704	NPCA-HMIS	KEY
HEALTH:	0	0	0 = Minimal
FIRE:	1	1	1 = Slight
REACTIVITY:	0	0	2 = Moderate
SPECIFIC HAZARD:	N/A	N/A	3 = Serious
PROTECTION INDEX:	N/A	B	4 = Severe

This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used. Polaris must rely on information provided by those materials manufacturers or distributors.

Creation date: 02/26/2004
File: Polaris Antifreeze 50/50 Pre-Mix PG (1449)
Version: I

Revisions / Comments:

1. IDENTIFICATION

Product Name:	Methyl Hydrate
Manufacturer:	RW Packaging Ltd. 200 Omand's Creek Blvd Winnipeg, Manitoba Canada R2R 1V7 Ph: (204) 786-6873
Emergency Telephone No.:	(613) 996-6666 (Canutec)
Composition/Purity of Hazardous Ingredients:	95% Methyl Alcohol
IUPAC Chemical Name:	Methanol
Synonym(s):	Methanol
CAS Registry Number:	67-56-1
PIN-UN/NA Number(s):	Pin 1230
TDG Classification (Class, Division and Packing Group):	3.2, 6.1 II
Chemical Family:	Aliphatic Alcohol
Molecular Formula:	CH_4O
Structural Formula:	CH_3 OH
WHMIS Classification:	D1A, B2
Warning Properties:	Very toxic, flammable liquid.

GENERAL DESCRIPTIONS

Appearance, Odour and State:	Clear liquid with stringent alcohol odour.
Odour Threshold:	2000-8800 ppm
Uses and Occurrences:	Solvent; anti-freeze; extractant; fuel; formaldehyde production; production of methyl esters; soldering; denature alcohol; dehydration of natural gas; production of paints, varnishes, cements, inks, dyes, plastics and pharmaceuticals.

2. PHYSICAL DATA

Boiling Point:	64.6 deg. C
Molecular Weight:	32.04
Melting Point/Freezing Point:	-97.8 deg. C
Specific Gravity (Water=1)	0.79 @ 20 deg. C
Solubility in Water:	soluble in all proportions.
pH:	N/A
Solubility in Other Liquids:	Miscible in ethanol, ether, benzene, ketones.
Vapour Density:	1.1
% Volatiles	100%
Saturation Vapour Concentration:	166 g/m^3 @ 20 deg. C
Evaporation Rate (Butyl Acetate = 1):	4.6
Viscosity:	No data
Co-efficient of Water/Oil Distribution:	Absorbs readily in water, separates from oil.

3. FIRE AND EXPLOSION HAZARDS

Flash Point and Method:	11 deg. C
Lower Explosive Limit/Lower Flammable Limit (%):	6
Upper Explosive Limit/Upper Flammable Limit (%):	36
Autoignition Temperature:	385 deg. C
Extinguishing Media:	For small fires, dry chemical, CO^2, water spray or aqueous film forming foam (AFFF). For large fires water spray may be effective.
Special Fire Fighting Procedures:	Do not extinguish fire unless flow/leak can be stopped. Use water spray to disperse vapours and to dilute spills to non-flammable mixtures. Use water in flooding quantities as fog or spray to extinguish fire as solid streams may be ineffective. Approach methanol fires with caution, Methanol burns with an almost invisible flame in daylight. Use self-contained breathing apparatus and protective clothing.
Combustion Products:	Carbon dioxide, carbon monoxide.
Hazardous Explosion Data - Sensitivity to Impact:	No
- Sensitivity to Static Discharge:	Vapours from methyl alcohol are heavier than air and may travel or be moved by air currents to an ignition source such as static discharge distant from the point of handling.

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4. REACTIVITY DATA

Chemical Stability:	Stable under normal conditions.
Incompatibility:	Alkali metals, concentrated nitric acid, sulphuric acid, aldehydes, acyl chlorides, and other strong oxidizing agents.
Hazardous Decomposition Products:	CO^2 CO
Hazardous Polymerization:	Does not occur
Corrosiveness to Metals:	Aluminum and lead

5. HEALTH HAZARD DATA

A. ROUTES OF ENTRY

	Yes	No
i) Inhalation	X	
ii) Eye Contact	X	
iii) Skin Contact	X	
iv) Skin Absorption	X	
v) Ingestion	X	

B. EFFECTS OF SHORT-TERM (ACUTE EXPOSURE)

Inhalation:	Coughing, headache, dizziness, weakness, drowsiness, intoxication or euphoria, nausea, vomiting, drunkenness, blurred vision.
Eye Contact:	Vapour can irritate eyes. Liquid in eyes can cause superficial, reversible lesions of the cornea.
Skin Contact:	May be absorbed through skin in toxic amounts.
Ingestion:	Initial symptoms may resemble ethanol intoxication; may be accompanied by shortness of breath, acidosis, severe abdominal pain, visual disturbances often proceeding to permanent blindness, prolonged coma, or death. Onset of symptoms may be delayed 1-30 hours (usually 12-18 hours).

C. ANIMAL TOXICITY DATA

Toxicity:	Oral, rat LD-50. 5628 mg/kg., oral, mouse LD-50

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870 mg/kg. Inhalation, rat LC-50 64,000 ppm/4 hour Skin irritation, rabbit, (liquid methanol applied t skin for 24 hours caused moderate irritation).

D. EFFECTS OF LONG-TERM (CHRONIC) EXPOSURE

Irritancy of Product:

Skin:	Effects of acute overexposure may results in chronic erythema, defatting of the skin and may aggravate an existing dermatitis. Prolonged and widespread contact with the skin may result in the absorption of harmful amounts of methanol.
Ingestion/Inhalation:	Effects of acute overexposure, if ingested in non-lethal amounts over a long period of time: kidney, heart and other organ damage, changes in color perception, restriction of visual fields and complete blindness.
Sensitizing Capability:	No data available.
Carcinogenicity:	No data found.
Mutagencity:	No data found.
Teratogenicity:	No data found.
Reproductive:	No human reproductive effects reported. Effects in animals at high doses were also toxic to mother.
Synergistic Materials:	Barbituates and some alkaloids.

E. OCCUPATIONAL EXPOSURE LIMITS

Threshold Limited Values (TLVS):	ACGIH
Time-Weighted Average (TLV-TWA):	200 ppm (261 mg/m^3) - skin
Short-Term Exposure Limit (TLV-STEL):	250 ppm (327 mg/m^3) - skin

6. FIRST AID

IN ALL CASES GET IMMEDIATE MEDICAL ATTENTION!

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Inhalation:	Remove source of contamination or move victim to fresh air and immediately give artificial respiration or if the heart has stopped, give C.P.R.
Eye Contact:	Immediately flush the eye with lukewarm gently flowing water for 15 minutes, occasionally lifting the upper and lower lids.
Skin Contact:	As quickly as possible, flush contaminated area with water for 15 minutes. Remove contaminated clothing, shoes, etc. and decontaminate before reuse.
Ingestion:	If victim is not unconscious or convulsing, give 8-10 oz. (240-300 ml) of water or juice. If vomiting occurs naturally have victim lean forward to reduce risk of aspiration.
First Aid Comments:	Provide warmth, rest, etc. to victim and consult a Poison Control Center as soon as possible for all exposures except minor instances. Protect eyes from strong light.
Notes to the Physician:	Treatment should include the following; hemodialysis; the intravenous administration of ethanol (10 ml per hour) to interfere with the metabolism of methanol; and the administration of sodium bicarbonate to correct acidosis.

7. PREVENTATIVE MEASURES

A. ENVIRONMENTAL AND DISPOSAL INFORMATION

Spill and Leak Procedures:	Restrict access to area. Provide adequate protective equipment and ventilation. Remove sources of heat and flame. Do not touch spilled material. Stop or reduce leak if safe to do so. Prevent methanol from entering sewers or confined spaces. If possible, contain spill by diking with earth, sand or absorbant material, which does not react with spilled ingredients. If feasible, recover liquid and place in covered, labelled containers. Flush area with water. Caution, the contaminated absorbent material may pose the same hazards as the spilled product.
Disposal:	Material should be incinerated at approved sites. Small amounts may be washed down the drain with

large amounts of water. Comply with all applicable environmental regulations regarding disposal.

B. STORAGE AND HANDLING

Storage: Store in tightly-closed containers in a cool, dry place separate from normal work area and in compatible substances. The storage area should have adequate independent ventilation and no sources of heat, flame or sparks. Approved safety solvent containers should be covered when not in use and stored in a grounded, fire-resistant cabinet.

Handling: Use in minimal quantities in designated areas with adequate ventilation. Keep away from sources of heat or flame. Containers should be grounded during transfer or mixing. Whenever possible, fire-resistant containers should be used. Wear appropriate protective equipment and avoid procedures which generate mist.

Exposure Control: Dependant on how methanol is used in the work place and extent of exposure, appropriate controls can be developed.

Engineering Controls: These are the preferred methods; such as mechanical ventilation, process or personnel enclosure, control of process conditions and process modification. Administrative controls and personal protective equipment may also be required. Use a non-sparking grounded ventilation system, separate from other exhaust system that vents directly to outside and ensure replacement air is sufficient.

C. PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Have appropriate equipment available for use in emergencies such as spills or fire. In high vapour concentrations have a self-contained breathing apparatus in pressure demand mode.
NIOSH recommendations:
up to 2,000 ppm SAR
up to ,5000 ppm SAR in continuous flow
up to 10,000 ppm full face piece SCBA
up to 25,000 ppm full face piece SAR in continuous flow.
(IDLH (Immediate Danger for Life and Health) is

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	25,000 ppm)
Eye/Face Protection:	Splash proof chemical goggles or full face shield.
Skin Protection:	Impervious gloves, coveralls, boots, etc.
Resistance of Materials for Protective Clothing:	Excellent - butyl rubber, nitrite rubber Good - natural rubber, neoprene, polyurethane, polyethylene Poor - P.V.C., polyvinyl alcohol
2 Personal Protection Comments:	Eye wash and safety showers should be located near the area where this compound is used. Do not smoke eat or drink in work area.

8. REFERENCES

- NIOSH Pocket Guide to Chemical Hazards.
- Canada Centre for Occupational Health and Safety.
- Trade Names - data base
- CHEMINFO - data base
- RTECS - data base
- supplier Material Safety Data Sheets
- Manufacturing Chemists Association - Material Safety Data Sheets
- American Conference of Governmental Industrial Hygienists Handbook of Threshold Limit Values and Biological Indices.

Prepared by: Douglas Love

Quality Assurance Manager
RW Packaging Ltd.
(204) 786-6873

Date: January 02, 2002

*****MATERIAL SAFETY DATA SHEET*****

For Coatings, Resins and Related Materials

SECTION I-PRODUCT AND PREPARATION INFORMATION

MANUFACTURER: RUST-OLEUM CORPORATION
ADDRESS: 11 Hawthorn Parkway
Vernon Hills, IL
60061 USA

EMERGENCY AND INFORMATION
TELEPHONE: (847)367-7700

DATE OF PREPARATION (PREPARER): January 27, 1999 (LJW)

PRODUCT CLASS: Aerosol Spray Paint
MANUFACTURERS CODE: 2123, 2124, 2125, 2133, 2134, 2137, 2143, 2147, 2148, 2155, 2156, 2163, 2164, 2169, 2171, 2172, 2175, 2178, 2179, 2182, 2183, 2187, 2190, 2192 and 2196
TRADE NAME: HARD HAT Primers and HARD HAT Finishes

SECTION II-HAZARDOUS INGREDIENTS

INGREDIENT/CAS No	WT %	EXP. LIMIT ACGIH-TLV	ACUTE HEALTH HAZARD (unless otherwise noted)
Xylene/1330-20-7	15-30%*	100ppm	oral LD50-5g/kg rat dermal LD50-3.16g/kg rabbit
Toluene/108 88-3	10-25%*	100ppm	inhal LCLo-100ppm man oral LD50-5.6g/kg rat dermal LD50-14g/kg rabbit
VM&P Naphtha/64742-89-8	0-5%	300ppm	inhal LC50-3400ppm/4hr rat
2-Butoxyethanol/111-76-2	0-10%*	25ppm	oral LD50-470mg/kg rat inhal LC50-700ppm rat dermal LD50-220mg/kg rabbit
Methyl ethyl ketone/78-93-3	0-3%	200ppm	inhal LC50-8000ppm rat dermal LD50-8ml/kg rabbit
Ethyl Benzene/100-41-4	1-4%	100ppm	oral LD50-3.5 g/kg-rat
N-Propanol/71-23-8	1%**	200ppm	oral LD50-1.87 g/kg-rat
Propellant/68476-86-8 (propane, butane, isobutane)	25%*	1000ppm	asphyxiant in deficient 02
Titanium Dioxide/13463-67-7	1%*	10mg/m3	NE
Carbon Black/1333-86-4	1%*	3.5mg/m3	NE

* Nearest 5% ** Item in 2169 and 2182 only
NE-not established NA-not applicable

SECTION III-PHYSICAL DATA

Boiling range: Below 0 C
Evaporation Rate: slower (Ether=1)
Vapor density- heavier than air
% Volatile: NA (by volume)
pH: NA
Specific gravity: NA
Odor and Appearance: liquid, solvent odor

SECTION IV-FIRE AND EXPLOSION HAZARDS

Flashpoint: <0 C (TCC)
Extinguishing Media: NFPA Class B extinguishers (Carbon dioxide, dry chemical or foam)

Special Fire Fighting Procedures:
Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion. If water is used, fog nozzles are preferred.

Unusual Fire and Explosion Hazards:

Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. DO NOT apply to hot surfaces.

SECTION V-HEALTH HAZARD DATA

TOXICOLOGICAL PROPERTIES:

Acute(Inhalation): Harmful if inhaled. May affect the brain and nervous system causing dizziness, headache or nausea. Repeated overexposures may progressively lead to staggering gait, confusion, unconsciousness or coma. Causes nose and throat irritation.

Acute(Skin or Eye Contact): Causes eye and skin irritation which can lead to dermatitis with repeated overexposures.

Ingestion: May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to Toluene and Xylene in lab animals has been associated with liver abnormalities, kidney, lung, spleen and eye damage as well as anemia. Effects in humans have included liver and cardiac abnormalities. 2- Butoxyethanol may be harmful if absorbed through the skin and has been known to cause blood abnormalities in lab animals. Exposure to titanium dioxide and carbon black may occur during spray application or sanding of finished surfaces. Overexposure to titanium dioxide and carbon black has been shown to cause lung damage to laboratory animals. Carbon black is an IARC Group 2B carcinogen, "possibly a human carcinogen".

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation: Remove from exposure, restore breathing and notify a physician.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Notify a physician.

Skin Contact: Wash affected area with soap and water, remove contaminated clothing and wash before reuse.

Ingestion: DO NOT induce vomiting. Keep person warm, quiet and get medical attention. Aspiration of this material into the lungs can cause chemical pneumonitis which can be fatal.

SECTION VI-REACTIVITY DATA

Stability: Stable

Incompatible: With strong oxidizing agents

Hazardous Decomposition Products: By open flame- Carbon monoxide and Carbon dioxide.

Hazardous Polymerization: Will Not Occur

SECTION VII-SPILL OR LEAK PROCEDURES

Release or Spill Procedures: Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools

Waste Disposal Method: Dispose of according to local, provincial and federal regulations. DO NOT incinerate closed containers.

SECTION VIII-SPECIAL PROTECTION AND PREVENTIVE MEASURES

Respiratory Protection: Use NIOSH approved chemical cartridge respirator (TC23C) to remove solid airborne particles of overspray and organic vapors during spray application. In Confined Areas: Use NIOSH approved supplied-air respirators or hoods (TC19C).

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other Protective Equipment: Use impervious gloves and/or clothing to prevent skin contact.

Ventilation: Provide general dilution or local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits.

SECTION IX-SPECIAL PRECAUTIONS

Handling and Storage Precautions: Do not store above 49 C. DO NOT puncture or incinerate containers.
Other Precautions: Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.