MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **PENTOFROST A1**
PRODUCT NUMBER:

TRADE NAME: PENTOFROST A1
GENERAL USE: Coolant / Antifreeze
CHEMICAL FAMILY: Glycols mixture
PRODUCT DESCRIPTION:
Red liquid with a characteristic odor.

MANUFACTURED FOR
CRP Industries

TELEPHONE NUMBER (General Inquiries)
609-578-4100

ADDRESS (NUMBER, STREET, P.O. BOX)
35 Commerce Drive

(CITY, STATE AND ZIP CODE) COUNTRY
Cranbury NJ 08512 USA

EFFECTIVE DATE: **January 11, 2011**
DATE OF EXPIRATION: **January 10, 2014**
SUPERSEDES DATE: **New Issue**

CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBERS

ChemTel INC.	**1-800-255-3924** North America (Toll Free)	**813-248-0585** International and Local Calls

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

OSHA HAZARDS: Target Organ Toxicity (Kidneys, Liver, Central Nervous System, Eyes) . WHMIS Hazard Classes: D1B - Acute Toxicity; D2B - Other Toxic Effects (Irritation). Product is harmful if swallowed. Mists of product are harmful if inhaled. Toxic effects may be delayed by hours. Product may be harmful to aquatic environments. Heated product can cause serious burns (scalding).

USA (DOT) CANADA (WHMIS) SYMBOL(S) GHS HAZARD SYMBOLS

None

HMIS HAZARD RATINGS

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

HEALTH:	1
FLAMMABILITY:	0
PHYSICAL HAZARD:	0

REQUIRED PERSONAL PROTECTIVE EQUIPMENT:

HMIS PERSONAL PROTECTIVE EQUIPMENT LETTER:
A

Wear safety glasses. See Section 8 for full details on Personal Protective Equipment.

POTENTIAL HEALTH EFFECTS

ACUTE EXPOSURE EFFECTS

INHALATION:
Headache, nausea, dizziness, and irritation of the respiratory tract may occur from inhalation of product mists, especially with prolonged exposure.

SKIN:
Irritation and itching may occur and prolonged contact may cause dermatitis. The problem may be exacerbated by liquid becoming trapped against the skin by contaminated clothing and shoes; skin absorption can occur in these cases.

EYES:
Tearing, redness and pain may occur; chemical conjunctivitis may result, especially in cases where the eyes are not promptly rinsed.

INGESTION:
Ingestion may result in nausea, vomiting, light-headedness, headache, dizziness, and gastrointestinal irritation; kidney and liver damage may result. Severe poisonings may be fatal. Vomiting and subsequent aspiration into the lungs may lead to pneumonitis.

CHRONIC EXPOSURE EFFECTS

Dermatitis may occur from chronic or prolonged skin exposure. Eye irritation will occur with chronic/prolonged eye exposure to product. Multiple ingestions of product may result in irreversible liver and kidney damage.

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PRODUCT NAME: **PENTOFROST A1**
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SECTION 2 - HAZARDS IDENTIFICATION (Continued)

CARCINOGENICITY:

NTP? **NO** IARC MONOGRAPHS? **NO** OSHA REGULATED? **NO**
CALIFORNIA, Prop.65? **NO** ESIS NOTATION? **NO**

SECTION 3 - HAZARDOUS INGREDIENTS

Hazardous Components	% (by Weight)	CAS #
Ethylene Glycol (ethane-1,2-diol)	<90%	107-21-1
Diethylene Glycol (2,2'-oxybisethanol)	<5%	111-46-6

NOTES: This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS). Hazard symbols and risk phrases are based on maximum listed concentration of each hazardous ingredient. Unlisted ingredients are not "hazardous" per the OSHA Hazard Communication Standard (29 CFR 1910.1200) or the Canadian Workplace Hazardous Materials Information System (WHMIS) and are considered trade secrets under relevant US and Canadian Federal Laws.

SECTION 4 - FIRST AID MEASURES

INHALATION:

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, use mouth-to-mouth resuscitation.

EYES:

Rinse eyes with cool potable water for 5 minutes, then remove contact lenses if present. Wash for at least 10 more minutes with cool potable water lifting upper and lower lids occasionally. Seek medical attention if irritation persists.

SKIN:

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury. If heated product causes burns, seek medical assistance.

INGESTION:

Contact medical authorities immediately. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs naturally, have victim lean forward to avoid aspiration of regurgitant. Give 1-2 glasses of water to victim if victim is conscious and able to swallow and seek immediate medical assistance. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE FIGHTING MEASURES

DATA RELATED TO FIRE:

FLASH POINT: **259°F / 126°C** **AUTO-IGNITION TEMPERATURE:** **770°F / 410°C**
FLAMMABLE/EXPLOSIVE LIMITS: **LOWER:** **3.2 Vol%** **UPPER:** **53.0 Vol%**
SENSITIVITY TO MECHANICAL IMPACT/ STATIC DISCHARGE: **None**

GENERAL HAZARDS:

Product is combustible at elevated temperatures. Irritating and/or harmful vapors may be emitted under fire conditions.

SUITABLE EXTINGUISHING MEDIA:

Choose extinguishing media with respect to total fire hazard; all media forms are acceptable with this product.

UNSUITABLE EXTINGUISHING MEDIA:

Choose extinguishing media with respect to total fire hazard; all media forms are acceptable with this product.

FIRE FIGHTING PROCEDURES:

Prevent product runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use protective equipment and self-contained breathing apparatus (SCBA), and should fire based on total fire hazards. Use of water spray or fog to cool fire exposed surfaces and prevent the rupture of containers is acceptable if runoff control is implemented.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Product containers will rupture and leak from heat; released product will pose a slip and fall hazard to fire-fighting personnel. Use water spray or fog to cool fire-exposed containers where runoff control is implemented.

HAZARDOUS COMBUSTION PRODUCTS:

Carbon monoxide, carbon dioxide, smoke, soot, fumes, small amounts of nitrogen oxides from product packaging.

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SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Stop leak if you can do it without risk. Small Spills: Absorb with earth, sand or other noncombustible material and transfer to containers for later disposal. Recover by pumping or with suitable absorbent. Large Spills: Prepare earthen or manufactured dikes ahead of spill; prevent discharge or entry into bodies of water, sewers, basements or confined areas. For large spills or spills on water, contact local authorities and the National Response Center toll-free at (800)424-8802.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Handling: Prevent small spills and leakage to avoid slip hazard. Wear personal protective equipment. Keep containers tightly closed. Do not store with incompatible materials (water-reactive, glycol-reactive). KEEP OUT OF THE REACH OF CHILDREN.
Storage: Do not store in open or unlabelled containers.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	CAS #	ACGIH Exposure Limits (mg/m^3 unless otherwise noted)	OSHA Exposure Limits (mg/m^3 unless otherwise noted)
Ethylene Glycol	107-21-1	100 mg/m^3 Threshold Limit Value	50 ppm (125 mg/m^3) Ceiling Value
Diethylene glycol (2,2'-oxybisethanol.)	111-46-6	10mg/m^3 (a)	None Established

(a) - American Industrial Hygiene Association (AIHA) WEEL (Workplace Environmental Exposure Level)

PERSONAL PROTECTION

RESPIRATORY PROTECTION:

Not required for normal work situations where adequate ventilation is provided. Use NIOSH European EN-149 approved self contained, positive pressure respirators or Self-Contained Breathing Apparatus (SCBA) for emergencies and in situations where air may be displaced by vapors. Follow OSHA Std. 29CFR 1910.134.

PROTECTIVE GLOVES:

Use gloves if there is prolonged or repeated contact of liquid with skin. Solvex gloves recommended.

EYE PROTECTION:

Safety glasses with side shields required.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

ENGINEERING CONTROLS:

Eyewash fountain or emergency eyewash bottle should be present in work area. Personal protective clothing and use of equipment must be in accordance with 29CFR 1910.132 and 29CFR 1910.133.

WORK / HYGIENIC PRACTICES:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR Red liquid with a characteristic odor.	VAPOR PRESSURE 0.1 hPa at 20°C (68°F) [STEAM PRESSURE]
ODOR THRESHOLD NA	SPECIFIC GRAVITY (WATER = 1) 1.13 g/cm^3 at 20ºC, 68ºF
FREEZING / MELTING POINT NE	BOILING POINT >302°F / >150°C
SOLUBILITY IN WATER Fully miscible.	COEFFICIENT OF WATER / OIL DISTRIBUTION Not Determined
pH NE	SOLUBILITY IN ORGANIC SOLVENTS Variable, dependent upon solvent
FLASH POINT 232°F / 111°C	VISCOSITY NE

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: **PENTOFROST A1**
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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES (Continued)

FLAMMABLE LIMITS LEL: 3.2% UEL: 53%	VAPOR DENSITY (AIR = 1) ~2.1
AUTOIGNITION TEMPERATURE 770°F / 410°C	EVAPORATION RATE (Butyl Acetate = 1) Not Determined

VOLATILE ORGANIC COMPOUND (VOC) INFORMATION
Not Known.
NOTES: None

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.	CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

INCOMPATIBILITY (MATERIALS TO AVOID):
Strong oxidizers

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:
Carbon monoxide and dioxide, hydrocarbon compounds, smoke, soot, fumes, small amounts of nitrogen oxides - fire conditions only.

HAZARDOUS POLYMERIZATION: Will not occur.	CONDITIONS TO AVOID: None related to hazardous polymerization.

SECTION 11 - TOXICOLOGICAL INFORMATION

Complete Product

Oral LD_{50}	> 4000 mg/kg for rat (est.); Product is harmful by ingestion, and may be more toxic to humans.
Dermal LD_{50}	> 5000 mg/kg for rat (Est.); Prolonged contact may lead to dermatitis.
Inhalation LC_{50}	Not known; prolonged inhalation of mists should be considered to be harmful.
Irritation / Sensitization	Moderate irritant to eyes; possible irritant to skin and respiratory tract.
Carcinogenicity	No ingredients have been identified by IARC, NTP, OSHA, or ECHA to be carcinogens.
Mutagenicity	Not Known
Reproductive Toxicity	Not Known
Teratogenicity	Not Known

Product Components

Component	CAS #	LD50 of Ingredient (Oral, Rat - unless otherwise specified)	LC50 of Ingredient (Inhalation, Rat - unless otherwise specified)
Ethylene Glycol	107-21-1	5840 mg/kg	9530 mg/kg (Dermal, Rat)
Diethylene glycol (2,2'-oxybisethanol).	111-46-6	12000 mg/kg	Oral, human: LDLo = 1000 mg/kg

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: Potentially harmful to aquatic organisms and ecosystems. Do not release product into bodies of water or sewage systems. **Bioaccumulation Potential:** Bioaccumulation of ethylene glycol and diethylene glycol is unlikely.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:
Recycling of used/waste product is preferable to simple disposal. Product is suitable for supervised incineration at very high temperatures to prevent formation of undesirable combustion products. End user bears the responsibility to discard unused or waste product in accordance with local, state, and federal laws and regulations.

SECTION 14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: **Not regulated**

DOT HAZARD CLASS / Pack Group: **Not regulated**	IATA HAZARD CLASS / Pack Group: **Not regulated**
REFERENCE: **49 CFR, IATA, IMDG, RID/ADR 2009**	IMDG HAZARD CLASS: **Not regulated**
UN / NA IDENTIFICATION NUMBER: **None**	RID/ADR Dangerous Goods Code: **Not regulated**
LABEL: **Not regulated**	TDG Class / Pack Group: **Not regulated**
HAZARD SYMBOLS: **None**	Hazard Identification Number (HIN): **Not regulated**

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

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SECTION 15 - REGULATORY INFORMATION

TSCA (USA - Toxic Substance Control Act): **Components listed under sections 4 and 8(b).**

SARA TITLE III (USA - Superfund Amendments and Reauthorization Act):

Acute Health:	**YES**	Chronic Health:	**NO**
Fire:	**NO**	Sudden Release of Pressure:	**NO**
Reactive:	**NO**	*** - Reproduction**	

SARA 313 REPORTABLE INGREDIENTS: **Ethylene Glycol (CAS #107-21-1)**

EPCRA (Emergency Planning and Community Right-to-Know Act): This material contains no extremely hazardous substances.

CERCLA (USA - Comprehensive Response Compensation and Liability Act): **Ethylene Glycol (CAS# 107-21-1): 5000 lb/ 2270 kg final RQ**

Clean Water Act (CWA): **No listings as Hazardous Substances, Priority Pollutants, or Toxic Pollutants under the CWA.**

Clean Air Act (CAA): **No listings under the CAA.**

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986: **No components listed.**

State Right to Know Laws: **Components are listed in the Right to Know Acts of CA, FL, MA, MN, NJ, PA, and RI.**

CPR (Canadian Controlled Products Regulations):
WHMIS Class D1B - Toxic Material. D2A: Materials causing other toxic effects.

IDL (Canadian Ingredient Disclosure List): **Components listed as required on IDL.**

DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List): **Listed on DSL.**

SECTION 16 - OTHER INFORMATION

Legend:

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

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