



MATERIAL SAFETY DATA SHEET
C-2009

Protection Required



SECTION 1 - MATERIAL IDENTIFICATION AND USE

Manufacturer's Name : PMC Water Systems Services Inc.
Manufacturer's Address : 124 Connie Crescent, Unit 9, Concord, ON L4K 1L7
Manufacturer's Phone # : (905) 669-8262
24 Emergency Phone # : Canutec (613) 996-6666
Product Identifier : C-2009
Product Use : Closed System Freeze Protectant

SECTION 2 – COMPOSITION/INGREDIENTS OF MATERIAL

Ingredients	Concentration	CAS #	LD₅₀	LC₅₀
Ethylene Glycol	100%	107-21-1	9530mg/kg (dermal – rabbit)	10.92 mg/l, 4h (oral – rat)

SECTION 3 – HAZARDS IDENTIFICATION

Classification DANGER. CAUSES EYE BURNS. CAUSES SKIN BURNS
Emergency Overview DANGER! TOXIC. May be harmful or fatal if swallowed. May cause central nervous system effects. Prolonged or repeated overexposure may cause kidney damage. Possible birth defect hazard – contains material that may cause birth defects based on animal data.
Potential Health Effects **Signs and Symptoms of Short-Term (Acute) Exposure**
Eyes Direct contact may cause very mild, temporary irritation and redness.
Skin Direct skin contact may cause slight or mild transient irritation.
Inhalation May cause nausea, vomiting, diarrhea and other central nervous system effects.
Ingestion May be harmful or fatal if swallowed. Lethal dose for humans reported to be 100mL.
Chronic Effects Chronic skin contact with low concentrations may cause dermatitis. Symptoms may include stinging, tearing, redness, swelling and blurred vision. Direct skin contact may cause slight or mild transient irritation.
Signs and Symptoms Symptoms may include redness, edema, drying, defatting and cracking of the skin. Possible birth defect hazard – contains material that may cause birth defects based on animal data. May cause central nervous system effects. May be harmful or fatal if swallowed. Symptoms of poisoning may include cyanosis (bluish discoloration of the skin), nausea, dizziness, rapid heartbeat, irregular breathing, coma and death. May result in unconsciousness and possibly death.

SECTION 4 – FIRST AID MEASURES

Eye Contact Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Get medical attention if irritation develops and persists.
Skin Contact Immediately remove all contaminated clothing. Wash thoroughly with soap and water for at least 15 minutes. Obtain medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Inhalation Move victim to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Seek immediate medical attention/advice if needed.
Ingestion Call a poison control centre or doctor immediately. Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.

SECTION 5 – FIRE FIGHTING MEASURES

Flammability Product is not flammable. Container may explode in heat of fire.
Flash Point 231.8°F, 111.0°C Closed Cup
Autoignition 748°F, 397.78°C

Temperature	
Extinguishing media	Use alcohol resistant foam, water fog, dry chemical powder and carbon dioxide (CO2). Do not use water jet as an extinguisher; it will spread the fire.
Special Firefighting Procedures/Equipment	Fire may produce irritating, corrosive and/or toxic gases. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Firefighters should wear full protective equipment including self-contained breathing apparatus.
Explosion Data	Not expected to be sensitive to mechanical impact or static discharge.
Hazardous Combustion Products	Burning will produce toxic fumes containing carbon monoxide and carbon dioxide.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions	Ventilate the contaminated area. Keep unnecessary personnel away. Remove all sources of ignition. Use only non-sparking tools. Wear appropriate protective equipment and clothing during cleanup. Avoid inhalation of vapours or mists. Local authorities should be advised if significant spillages cannot be contained.
Spill Response/Cleanup	Remove all sources of ignition and ventilate contaminated area. Stop leak if safe to do so. Dike the spilled material where possible. Use water spray to reduce vapours or divert vapour cloud drift. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas.

SECTION 7 – HANDLING AND STORAGE

Handling	Do not use in areas without adequate ventilation. Keep away from heat/sparks/open flames/hot surfaces – no smoking. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion proof equipment. Avoid breathing mist or vapour. Avoid contact with eyes, skin and clothing. Wear appropriate personal protective equipment. Pregnant or breastfeeding women must not handle this product. Wash hands after handling and before eating.
Storage Requirements	Store in a closed container away from incompatible materials. Store in original tightly closed container. Keep in a cool, dry well-ventilated area out of direct sunlight.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation	General ventilation (typically 10 air changes per hour) should be used. If applicable, use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas.
Respiratory Protection	Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known or any other circumstances where air-purifying respirators may not provide adequate protection.
Skin Protection	Impervious gloves, apron and boots. Butyl rubber gloves are recommended.
Eye/Face Protection	Chemical splash goggle; full face shield may be necessary
Other Comments	Chemical resistant clothing and boots. An eyewash station and safety shower should be available
General Hygiene	Avoid breathing vapor or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash thoroughly before reuse.

ACGIH Threshold Limit Values	Type	Value	Form
Ethylene Glycol	Ceiling	100 mg/m ³	Aerosol

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State	:	Liquid
Odour and Appearance	:	Odourless; colourless viscous liquid
Odour Threshold	:	Not Available
Specific Gravity (Water = 1)	:	1.12
Vapour Pressure (mmHg)	:	0.05 at 25°C
Vapour Density (Air = 1)	:	2.1
Evaporation Rate	:	Not Available
Boiling Point	:	388.4°F, 198°C
Freezing/Melting Point	:	8.6°F, -13°C
pH	:	Not available
Solubility in Water	:	Soluble

SECTION 10 – STABILITY AND REACTIVITY

Stability/Reactivity	Stable under normal conditions.
Conditions for Chemical Instability	Heat, open flame and direct sunlight. Keep away from incompatibles. Do not use in areas without adequate ventilation.
Incompatible Materials	Strong oxidizing agents, strong acids, strong bases, perchloric acid.
Hazardous Decomposition Products	<i>None known refer to hazardous combustion products in Section 5.</i> The following may be released during a fire: burning produces obnoxious and toxic fumes. Carbon oxides.
Hazardous Polymerization	Hazardous polymerization does not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Entry	: Eyes, skin, respiratory and digestive system
Skin Contact	: Direct skin contact may cause slight or mild transient irritation.
Eye Contact	: Direct contact may cause very mild, temporary irritation and redness.
Ingestion	: Harmful or fatal if swallowed.
Inhalation	: May cause nausea, vomiting, diarrhea and other central nervous system effects.
Chronic Exposure Effects	: Chronic skin contact with low concentrations may cause dermatitis. Prolonged or repeated overexposure may cause kidney damage.
Irritancy	: Causes mild skin irritation. Prolonged contact, such as when trapped against the skin under clothing or jewelry, may be more irritating.
Sensitization	: Not expected to be a skin or respiratory sensitizer.
Carcinogenicity	: No components listed as carcinogen by ACGIH, IARC, OSHA or NTP.
Teratogenicity	: Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals.
Mutagenicity	: Not expected to be mutagenic.
Reproductive Effects	: Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals.

SECTION 12 – ECOLOGICAL INFORMATION

General Comments Not expected to be harmful to aquatic organisms.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water suppliers. Dispose in accordance with federal, provincial or local government requirements. Contact your local, provincial or federal environmental agency for specific regulations.

SECTION 14 – TRANSPORT INFORMATION

TDG Shipping Regulations Not Regulated as dangerous goods

SECTION 15 – REGULATORY INFORMATION

WHMIS Classification Class D1B – Toxic Material
Class D2A – Very Toxic Material

Domestic Substances List All ingredients are listed on the DSL or are not required to be listed.

SECTION 16 – OTHER INFORMATION

Prepared by: Lab Services
PMC Water Systems Services Inc.
124 Connie Crescent, Unit 9
Concord Ontario L4K 1L7

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While all the data presented is believed to be accurate at the time of preparation, PMC Water Systems Services Inc. makes no warranty; the data is offered for your consideration, investigation and verification.