PMC WATER SYSTEMS SERVICES INC.
124 CONNIE CRES. UNIT 9 CONCORD, ONTARIO.
TEL 905 669 8262, FAX 905 669 8252, EMAIL info@pmcwatersystems.com, www.pmcwatersystems.com

SAFETY DATA SHEET
B-3203

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
Manufacture's Phone #	:	(905) 669-8262
24 Emergency Phone #	:	Canutec (613) 996-6666
Product Identifier	:	B-3203
Product Use	:	Water treatment

SECTION 2 – COMPOSITION/INGREDIENTS OF MATERIAL

Ingredients	Concentration	CAS #	LD_{50}	LC_{50}
Morpholine	1-10%	110-91-8	1050 mg/kg (oral – rat)	No Data Available
Cyclohexylamine	5-15%	108-91-8	156 mg/kg (oral – rat)	No Data Available

SECTION 3 – HAZARDS IDENTIFICATION

Hazard Statement Causes serious eye damage. Causes severe skin burns and eye damage. Toxic if swallowed. Suspected of damaging fertility or the unborn child. Flammable liquid and vapor

Precautionary Statement Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/light/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/ face protection. If swallowed: Rinse mouth. Do NOT induce vomiting. Call poison center or doctor. If on skin (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor physician. Wash contaminated clothing before reuse. In case of fire: Use dry chemical for extinction. Store in a well ventilated place. Keep cool. Store in a secure manner. Dispose of contents/container in accordance with local/regional national/international regulations.

SECTION 4 – FIRST AID MEASURES

Eye Contact Immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing. Hold eyelids open during flushing.

Skin Contact Immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Inhalation Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Slowly dilute with 1-2 glasses of water and seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Notes to Physician Absorption of this product into the body leads to the formation of methemoglobin, which in sufficient concentration causes cyanosis. Skin absorption symptoms may be delayed. Since reversion of methemoglobin to hemoglobin occurs spontaneously after termination of exposure, moderate degrees of cyanosis need to be treated only by supportive measures such as bed rest and oxygen inhalation. Thorough cleansing of the entire contaminated body area is of utmost importance. Due to the severely irritating or corrosive nature of the material, swallowing may lead to ulceration and inflammation of the upper alimentary tract with hemorrhage and fluid loss. Also, perforation of the esophagus or stomach may occur, leading to mediastinitis or peritonitis and the resultant complications. Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration.

SECTION 5 - FIRE FIGHTING MEASURES

Flammability	Flammable
Flash Point	57°C, 135°F
Autoignition Temperature	Not Determined
Extinguishing Media	Water, water spray, carbon dioxide, foam or dry chemicals.
Special Firefighting Procedures and Equipment	Firefighters should wear full protective clothing, including self-contained breathing equipment. Vapors are heavier than air and may travel a long distance accumulating in low lying areas. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure build-up which could result in container rupture. Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding.
Hazardous Combustion Products	Carbon monoxide. Carbon dioxide. Oxides of nitrogen. Ammonia. Irritating aldehydes and ketones may be formed on burning in a limited air supply.
NFPA Ratings	Health 3, Flammability 3, Instability 0
HMIS Ratings	Health 3, Flammability 2, Reactivity 0

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions	Safety goggles. Wear protective clothing and equipment.
Environment Precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
Spill Response/Cleanup	Isolate hazard are and restrict access. Eliminate all ignition sources. Absorb with an inert dry material and place in an appropriate waste disposal container. Avoid direct contact with material. Try to work upwind of spill.

SECTION 7 – HANDLING AND STORAGE

Handling	For industrial use only. Avoid contact with eyes, skin and clothing. Do not ingest. Do not inhale vapour or mist. DO NOT handle or store near an open flame, heat, or other sources of ignition. Use with adequate ventilation. Keep containers closed when not in use. Empty product containers may contain residue. Handle in accordance with good industrial hygiene and safety practices. Static electricity will accumulate and may ignite vapours. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. DO NOT pressurize, cut, heat, or weld containers.
Storage Requirements	Store in a cool, dry, well-ventilated area away from direct sunlight. Store tightly closed in original container. Place away from incompatible materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid).

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation	Local exhaust ventilation as necessary to maintain exposures to within applicable limits.
Respiratory Protection	If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator.
Skin Protection	Rubber or plastic gloves. Rubber boots. Chemical resistant clothing.
Eye/Face Protection	Chemical safety googles; face shield
Other Comments	An eyewash station and safety shower should be available

	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Morpholine	20 ppm TLV-TWA	20 ppm TWA 70 mg/m^3 TWA	1400 ppm
Cyclohexylamine	10 ppm TLV-TWA	10 ppm TWA 40 mg/m^3 TWA	Not Available

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State	:	Liquid
Odour and Appearance	:	Fishy amine odour; colourless to pale yellow
Odour Threshold	:	Not Available
Specific Gravity (Water = 1)	:	0.96 g/cc
Vapour Pressure (mmHg)	:	Not Available
Vapour Density (Air = 1)	:	Not Available
Evaporation Rate	:	Not Available
Boiling Point	:	127 to 124°C, 261 to 273°F
Freezing/Melting Point	:	-5 to -18°C, 23 to -4°F
pH	:	12.5, 10 (1% solution)
Solubility in Water	:	Miscible

SECTION 10 – STABILITY AND REACTIVITY

Stability/Reactivity	Stable.
Conditions for Instability	Avoid excessive heat, open flames and all ignition sources.
Incompatible Materials	Oxidizers, strong acids, all copper alloys, lead and oxides of nitrogen
Hazardous Decomposition Products	Carbon monoxide. Carbon dioxide. Oxides of nitrogen. Ammonia. Irritating aldehydes and ketones may be formed on burning in a limited air supply.
Hazardous Polymerization	Hazardous polymerization will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Skin Contact	:	Skin contact will cause corrosive burns to tissues.
Eye Contact	:	Eye contact will cause corrosive burns to tissues.
Ingestion	:	Causes irritation or chemical burns of the mouth and gastrointestinal tract.
Inhalation	:	Inhalation of vapors or mist will cause burns to the respiratory tract.
Chronic Exposure Effects	:	Prolonged or repeated exposure may result in lung damage and/or absorption of potentially harmful amounts of material.
Irritancy	:	No Data Available
Sensitization	:	No Data Available
Carcinogenicity	:	Morpholine listed as a group 3 carcinogen by IARC and A4 carcinogen by ACGIH.
Teratogenicity	:	Not Available
Mutagenicity	:	Not Available
Reproductive Effects	:	Not Available

SECTION 12 – ECOLOGICAL INFORMATION

General Comments	Expected to slowly biodegrade in the environment. Not expected to bioaccumulate. Practically nontoxic to an aquatic environment.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal	Dispose in accordance with federal, provincial or local government requirements. Contact your local, provincial or federal environmental agency for specific regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

SECTION 14 – TRANSPORT INFORMATION

TDG Shipping Regulations	UN 2920, Corrosive Liquid, Flammable, N.O.S. (Cyclohexylamine), Class 8 (3, 9.2), PG II
Domestic Substances List	All ingredients are listed on the DSL or are not required to be listed.

SECTION 15 – REGULATORY INFORMATION

WHMIS Classification	Class B2: Flammable Liquid Class D2B: Toxic Material Class E: Corrosive Material

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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