



Tel: 514-956-7503
Fax: 514-956-7504
Internet: www.megs.ca
Email : support@megs.ca

Montreal

St-Laurent

Tel : 514-956-7503

Fax : 514-956-7504

Ottawa

Nepean

Tel : 613-226-4228

Fax : 613-226-4229

Quebec

Quebec

Tel : 418-834-7447

Fax : 418-834-3774

MSDS: Cyanogen Chloride

PRODUCT INFORMATION

PRODUCT: Cyanogen Chloride

TRADE NAME: Cyanogen Chloride

CHEMICAL NAME: Cyanogen Chloride

SYNONYMS: Cyanogen Chloride, Inhibited

FORMULA: CNCl

CHEMICAL FAMILY: Organic Cyano Halide

SUPPLIER'S NAME: MEGS Inc.

SUPPLIER'S ADDRESS: 2675 De Miniac
Ville St-Laurent, Qc, H4S 1E5

EMERGENCY PHONE NUMBER: (514) 956-7503

MOLECULAR WEIGHT: 61.47

PRODUCT USE: Various

**PRODUCT IDENTIFICATION UN 1589
NUMBER:**

HAZARDOUS INGREDIENTS

CHEMICAL ID	CONCENTRATION	CAS #	LD(50)	LC(50)
	99+%			
Cyanogen Chloride		506-77-4	SCU-Mouse 39 mg/kg	Inhl-Rat 3000 ppm/2 min

PHYSICAL DATA

PHYSICAL STATE: Liquid and gas under pressure

APPEARANCE: Colorless liquid and gas

ODOR: Extremely irritating odor

ODOR THRESHOLD: 1.0 molar ppm

SPECIFIC GRAVITY (H₂O = 1): 1.25
VAPOR PRESSURE: 133 kPa
VAPOR DENSITY (air = 1): 2.12
EVAPORATION RATE: Unknown
BOILING POINT: 12.95°C
FREEZING POINT: -6.9°C
pH: Unknown
GAS DENSITY: 2.603 kg/m³ @ 15°C, 101.3 kPa
COEFFICIENT OF WATER/OIL Very soluble in water
DISTRIBUTION:

FIRE OR EXPLOSION HAZARD

CONDITIONS OF FLAMMABILITY: Nonflammable gas

MEANS OF EXTINCTION: Nonflammable gas

FLASHPOINT AND METHOD OF DETERMINATION: Nonflammable gas

UPPER EXPLOSION LIMIT (% BY VOL): Nonflammable gas

LOWER EXPLOSION LIMIT (% BY VOL): Nonflammable gas

AUTO-IGNITION TEMPERATURE: Nonflammable gas

FLAMMABILITY CLASSIFICATION: Nonflammable gas

HAZARDOUS COMBUSTION PRODUCTS: Nonflammable gas

EXPLOSION DATA: Nonflammable gas

SENSITIVITY TO STATIC DISCHARGE: None

REACTIVITY DATA

CHEMICAL STABILITY: Pure product is unstable. This product contains an inhibitor to prevent polymerization.

INCOMPATIBLE MATERIALS: Water and water vapor

CONDITIONS OF REACTIVITY: None if heat and moisture are avoided

HAZARDOUS DECOMPOSITION 2,4,6-Trichloro-S-Triazine on violent

PRODUCTS: polymerization.

TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY:

SKIN CONTACT: Irritation at very low (<10 molar ppm) concentrations for 10 minutes.

SKIN ABSORPTION: Unknown

EYE: Yes, extremely irritating in low concentrations.

INHALATION: Exposure is by inhalation of the vapors which in very low concentrations (<10 molar ppm) for as little as 10 minutes exposure will cause severe irritation of the upper respiratory tract and all mucous membranes. Severe lachrymation of eyes also occurs. Continued exposure leads to a slowdown of the breathing rate, bronchial hemorrhage and pulmonary edema. Breathing just a few breaths of high concentrations leads to immediate anoxia and death.

INGESTION: Unknown

ACUTE OVER EXPOSURE EFFECTS: Inhalation effects are similar to that for cyanogen (interference with the oxygen transfer oxygen-reduction reactions at the cell level) coupled with extremely irritating effect of the gas on the mucous membranes and the eyes. Long exposure without expiration will yield both the toxic poisonous effects on the nervous system as well as pulmonary edema from the irritant.

CHRONIC OVER EXPOSURE EFFECTS: None known

EXPOSURE LIMITS: Ceiling limit = 0.3 molar ppm (ACGIH 1995-1996)

IRRITANCY OF PRODUCT: Yes, eye-human = 100 mg/m³ for 2M is severe

SENSITIZATION TO MATERIAL: None known

CARCINOGENICITY, REPRODUCTIVE EFFECTS: None known

TERATOGENICITY, MUTAGENICITY: None known

TOXICOLOGICALLY SYNERGISTIC PRODUCTS: Yes, possibly (CN) compounds

PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Plastic or rubber gloves. Safety goggles or glasses plus a face shield. Safety shoes, safety shower and eyewash "fountain" and chemical resistant overgarments.

SPECIFIC ENGINEERING CONTROLS: Dry cyanogen chloride is compatible

with most materials of construction. Recommended metals of construction are Monel®, Inconel® and Tantalum. Teflon® and Kel-F® are the preferred gasket materials.

LEAK AND SPILL PROCEDURES: EVACUATE ALL PERSONNEL FROM AFFECTED AREA.

Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is on container or container valve, contact the closest MEGS location.

WASTE DISPOSAL: Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to MEGS for proper disposal. For emergency disposal, contact the closest MEGS location.

HANDLING PROCEDURES AND EQUIPMENT: USE ONLY IN WELL-VENTILATED AREAS.

Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to the point of use. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Close valve after each use and when empty.

STORAGE REQUIREMENTS: Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 52°C. Cylinders must be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders being stored for excessive periods of time.

TDG CLASSIFICATION: 2.3

WHMIS CLASSIFICATION: A, D1, E

SPECIAL SHIPPING INFORMATION: Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

FIRST AID MEASURES

SPECIFIC FIRST AID PROCEDURES: PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO CYANOGEN

CHLORIDE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH APPROPRIATE PROTECTIVE EQUIPMENT (SELF-CONTAINED BREATHING APPARATUS AND APPROPRIATE PROTECTIVE CLOTHING).

INHALATION: Move exposed personnel to an uncontaminated area. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm and quiet. Assure that mucous or vomited material does not obstruct the airway by use of positional drainage. Delayed pulmonary edema may occur. Keep patient under medical observation for at least 24 hours. Treatment with amyl nitrite as with cyanogen poisoning may also be required.

EYE CONTACT: PERSONS WITH POTENTIAL EXPOSURE TO CYANOGEN CHLORIDE SHOULD NOT WEAR CONTACT LENSES.

Flush contaminated eye(s) with copious quantities of water. Hold eyelids open with fingers to assure complete flushing. Continue for minimum of 15 minutes.

SKIN CONTACT: Flush affected area with copious quantities of water. Remove affected clothing as rapidly as possible.

PREPARATION INFORMATION

PREPARED BY: Safety Department

DATE PREPARED: 09/01/1999

LAST REVISION DATE: 05/21/2002

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