NIOSH EMERGENCY RESPONSE CARD

BLOOD AGENT

CYANOGEN CHLORIDE

UN #: 1589 (inhibited) (Guide 125)

CAS #: 506-77-4

RTECS #: GT2275000

Chlorine cyanide
Chlorocyanide
Chlorocyanogen
CK

Chemical Formula: ClCN

Molecular weight: 61.5

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ CLINICAL SIGNS/ SYMPTOMS	PREVENTION/ PERSONAL PROTECTIVE EQUIPMENT	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Heating will cause rise in pressure with risk of bursting. Gives off irritating or toxic gases including cyanide gas in a fire.	N/A	In case of fire in the surroundings: all extinguishing agents allowed. Cool exposed containers with water.
EXPLOSION	N/A	N/A	In case of fire: cool cylinder by spraying with water but avoid contact of the substance with water.
ROUTE OF EXPOSURE			
Synopsis:	Cyanogen Chloride has properties similar to riot control agents and it can cause irritation of the eyes, nose, and airways resulting in lacrimation (tearing), rhinorrhea (runny nose), and increased fluid production in the lungs.	**AVOID ALL CONTACT!**	Triage procedures and medical management guidelines. (See ATSDR Toxicology Profile on cyanide and ATSDR medical management guidelines on hydrogen cyanide.)
Inhalation:	• Runny nose (rhinorrhea). • Sore throat. • Drowsiness. • Confusion. • Nausea. • Vomiting. • Cough. • Unconsciousness. • Edema with symptoms which may be delayed (*See Notes*).	Ventilation, local exhaust, or breathing protection. Pressure demand, self-contained breathing apparatus (SCBA) (SCBA CBRN, if available) is recommended in response to non-routine emergency situations. CBRN, Full Facepiece APR (when available) is recommended in non-routine, emergency situation environments less than IDLH but above REL or PEL levels.	Fresh air, rest. Half-upright position. Artificial respiration if indicated. Seek medical attention immediately. Triage procedures and medical management guidelines - see ATSDR Toxicology Profile on cyanide and ATSDR medical management guidelines on hydrogen cyanide.
Skin:	Cyanogen Chloride is readily absorbed through intact skin causing systemic effects without irritant	Cold-insulating gloves. Butyl rubber gloves. Teflon, Responder, or Tychem	Frostbite: rinse with plenty of water, do NOT remove clothes.

	effects on the skin. On contact with liquid frostbite may occur. The liquid may be absorbed. Redness. Pain.	Protective clothing.	Seek medical attention immediately.
Eyes:	On contact with liquid: frostbite. Redness. Pain. Excess tears (lacrimation).	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes. Seek medical attention immediately.
Ingestion:	N/A	Do not eat, drink, or smoke during work. Wash hands before eating.	N/A

OCCUPATIONAL EXPOSURE LIMITS (OELs):	OSHA PEL: N/A NIOSH REL: C 0.3 ppm (0.6 mg/m^3) ACGIH TLV: 0.3 ppm; as (ceiling value) (ACGIH 2002). NIOSH IDLH: N/A
SAMPLING AND ANALYTICAL METHODS:	NIOSH: N/A OSHA: N/A

DECONTAMINATION	**Patients/victims:** Wet contaminated clothing should be removed and the underlying skin washed with soap and water or water alone for 2-3 minutes. **Equipment:** N/A **Environment:** *(See Spillage Disposal.)*
SPILLAGE DISPOSAL	Evacuate danger area! Consult an expert! Ventilation. NEVER direct water jet on liquid. Remove vapor cloud with fine water spray. Do NOT wash away into sewer. Chemical protection suit including self-contained breathing apparatus. **Storage**: Fireproof if in building. Provision to contain effluent from fire extinguishing. Cool.
PACKAGING & LABELLING	UN # 1589 (inhibited) (Guide 125)
	Marine Pollutant
	Hazard Class: 2.3
	Subsidiary Risks: 8
	UN # 1589 (inhibited) Guide 125
	NFPA 704 Signal: Health - N/A Flammability - N/A Reactivity - N/A Special - N/A

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** Colorless compressed liquefied gas, with pungent odor. **PHYSICAL DANGERS:** The gas is heavier than air. **CHEMICAL DANGERS:**

The substance decomposes on heating producing toxic and corrosive fumes (hydrogen cyanide, hydrochloric acid, nitrogen oxides). Reacts slowly with water or water vapor to form hydrogen chloride.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation.

INHALATION RISK:
A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance severely irritates the eyes with excessive tearing (lacrimation), the skin and the respiratory tract causing runny nose (rhinorrhea) and edema (fluid buildup in the lungs). Cyanides poison the vital organs of the body (for example the lungs and heart) including areas of the brain that regulates proper functioning of those organs. Exposure may result in convulsions, unconsciousness and in death. (See Notes.) Inhalation of the substance may cause lung edema (see Notes). The effects may be delayed. Rapid evaporation of the liquid may cause frostbite. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
unknown

PHYSICAL PROPERTIES

Melting Point: 21.2°F (-6°C)
Boiling Point: 56.8°F (13.8°C)
Vapor Pressure (25°C): 1230 mm Hg
Density/Specific Gravity (20°C): 1.19
Volatility: N/A
Relative vapor density (air = 1): 2.16
Aqueous solubility(20°C): soluble
Flashpoint: N/A
Flammability: N/A

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms.

ACUTE EXPOSURE GUIDELINES (AEGLs)

	10 min	30 min	1hr	4 hr	8 hr
AEGL 1 (discomfort, non-disabling)	N/A	N/A	N/A	N/A	N/A
AEGL 2 (irreversible or other serious, long-lasting effects or impaired ability to escape)	N/A	N/A	N/A	N/A	N/A
AEGL 3 (life-threatening effects or death)	N/A	N/A	N/A	N/A	N/A

NOTES

The occupational exposure limit value should not be exceeded during any part of the working exposure. The symptoms of lung edema (buildup of fluid in the lungs) often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Do NOT spray water on leaking cylinder (to prevent corrosion of cylinder). Turn leaking cylinder with the leak pointing up to prevent escape of gas in liquid state.

ADDITIONAL INFORMATION

Trade Names and Other Synonyms

- Chlorcyan
- Chlorocyan

GLOSSARY OF ACRONYMS	**APR -** Air-purifying Respirator **CBRN -** Chemical, Biological, Radiological, Nuclear **IDLH -** Immediately Dangerous to Life and Health **REL -** Recommended Exposure Limit **PEL -** Permissible Exposure Limit **SCBA** - Self-Contained Breathing Apparatus

IMPORTANT NOTICE:	**CYANOGEN CHLORIDE (ERC506-77-4)** The user should verify compliance of the cards with the relevant STATE or TERRITORY legislation before use. NIOSH, CDC 2003