TGV SRAAC LTD

Material Safety Data Sheet FOR Liquid Chlorine

1. Company Identification:

M/s TGVSRAAC Limited
(Formerly Sree Rayalaseema Alkalies & Allied Chemicals Ltd.,)
Gondiparla, Kurnool.
Phone: 08518 280006, 7,8
Toll Free No. : 1800111735

2. Product Identification

Chemical Name : Liquid Chlorine
Trade name : Liquid Chlorine
Synonyms : Liquid Chlorine
Chemical Formula : Cl2
Molecular Weight : 71
CAS Registry No. : 7782-50-5
UN No. : 1017

3. Hazards Identification :

THIS PRODUCT : corrosive, toxic and a major potential hazard upon contact to skin, eyes and respiratory tract.
TOXICITY ROUTES OF EXPOSURE : Ingestion
can cause severe burns of the mucous membranes of the mouth, esophagus and stomach; pain, nausea and vomiting may also occur. Inhalation causes irritation
of the upper respiratory tract resulting in cough, burning of the throat and choking sensation. Skin contact to a high concentration of the HCl gas or liquid may cause burns; repeated or prolonged exposures to dilute solutions may cause dermatitis. Eye exposure to high concentration of the acid can cause eye irritation to severe destruction like prolonged or permanent visual impairment, including blindness. These effects occur rapidly affecting all parts of the eye. Mist can also cause irritation to destructive burns.
OVEREXPOSURE : Can cause serious damage to all body tissues contacted.
MEDICAL CONDITIONS A GGRAVATED BY
EXPOSURE : Fumes may aggravate eye, skin or respiratory conditions. Effects are usually limited to inflammation and occasionally ulceration of the nose, throat and larynx, if inhaled deeply, pulmonary edema may occur.

4. First Aid Measures :

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing and shoes before reuse. Destroy contaminated shoes.
EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.
INGESTION: Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. Give large amounts of water or milk. Allow vomiting to occur. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

5. Fire Fighting Measures :

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Oxidizer. May ignite or explode on contact with combustible materials.
EXTINGUISHING MEDIA: water
Do not use dry chemicals, carbon dioxide or halogenated extinguishing agents. Large fires: Flood with fine water spray.
FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. For small fires, contain and let burn. Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Evacuation radius: 800 meters.

6. Accidental Release Measures

AIR RELEASE:
Reduce vapors with water spray. Collect runoff for disposal as potential hazardous waste.
SOIL RELEASE:
Dig holding area such as lagoon, pond or pit for containment. Dike for later disposal. Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers. Absorb with sand or other non-combustible material. Add an alkaline material (lime, crushed limestone, sodium bicarbonate, or soda ash

WATER RELEASE:
Add an alkaline material (lime, crushed limestone, sodium bicarbonate, or soda ash). Absorb with activated carbon. Collect spilled material using mechanical equipment.
OCCUPATIONAL RELEASE:
Stop leak if possible without personal risk. Avoid contact with combustible materials. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Notify Local Emergency.

7. Handling and Storage :

STORAGE: Store and handle in accordance with all current regulations and standards. Protect from
physical damage. Keep separated from incompatible substances. Store outside or in a detached building.
Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ.

8. Exposure controls and protection :

EXPOSURE LIMITS:
CHLORINE:
1 ppm (3 mg/m3) OSHA ceiling
0.5 ppm (1.5 mg/m3) OSHA TWA
1 ppm (3 mg/m3) OSHA STEL
0.5 ppm ACGIH TWA
1 ppm ACGIH STEL
0.5 ppm (1.45 mg/m3) NIOSH recommended ceiling 15 minute(s)
VENTILATION: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.
EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
CLOTHING: Wear appropriate chemical resistant clothing.
GLOVES: Wear appropriate chemical resistant gloves.
RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
5 ppm
Any chemical cartridge respirator with cartridge(s) providing protection against this substance. Any supplied-air respirator.
10 ppm
Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with cartridge(s) providing protection against this substance.
Any chemical cartridge respirator with a full face piece and cartridge(s) providing protection against this substance. Any air-purifying respirator with a full face piece and a canister providing protection against this substance.
Any self-contained breathing apparatus with a full face piece. Any supplied-air respirator with a full face piece.
Escape -
Any air-purifying respirator with a full face piece and a canister providing protection against this substance.
Any appropriate escape-type, self-contained breathing apparatus.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

9. Physical and Chemical Properties

PHYSICAL STATE: gas
COLOR: yellow or green
ODOR: distinct odor, irritating odor
MOLECULAR WEIGHT: 70.906
MOLECULAR FORMULA: Cl2
BOILING POINT: -31 F (-35 C)
FREEZING POINT: -150 F (-101 C)
VAPOR PRESSURE: 5168 mmHg @ 21 C
VAPOR DENSITY (air=1): 2.49
SPECIFIC GRAVITY: Not applicable

10. Stability and reactivity

Stability : Stable under normal handling conditions.
Hazardous polymerization will not occur.
Hazardous decomposition product: HCl gas will not decompose. Materials and conditions to avoid (incompatibility) are: Avoid high temperatures. Containers may burst. Corrosive to most metals, concrete, some plastics, some rubber and coatings. Fumes form droplets which settle and promote corrosion of metals and unprotected equipment. Mixing with strong acids can cause evolution of hydrogen chloride gas. Oxidizing agents will cause the release

11. Toxicological Information :

CHLORINE:
TOXICITY DATA:
293 ppm/1 hour(s) inhalation-rat LC50
CARCINOGEN STATUS: ACGIH: A4 -Not Classifiable as a Human Carcinogen
LOCAL EFFECTS:
Corrosive: inhalation, skin, eye
ACUTE TOXICITY LEVEL:
Toxic: inhalation
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
heart problems.
DENSITY: 3.214 g/L @ 0 C
WATER SOLUBILITY: 1.46% @ 0 C
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: 0.01 ppm
EVAPORATION RATE: Not applicable
VISCOSITY: 0.01327 cP @ 20 C
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable
SOLVENT SOLUBILITY:
Soluble: alkali

12. Ecological Information :

ECOTOXICITY DATA:
FISH TOXICITY: 390 µg/L 96 hour(s) LC50 (Mortality) Orangethroat darter (Etheostoma spectabile)
INVERTEBRATE TOXICITY: 637.5 µg /L 1 hour(s) LC50 (Mortality) Pacific oyster (Crassostrea gigas)
ALGAL TOXICITY: 50-1000 µg/L 23 hour(s) (Population) Algae, phytoplankton, algal mat (Algae)
PHYTOTOXICITY: 20 µg/L 96 day(s) (Growth) Water-milfoil (Myriophyllum spicatum)
Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ.
cartridge(s) providing protection against this substance.
Any air-purifying respirator with a full face piece and a
of toxic chlorine gas. Contact of liquid acid or gas with alkali or active metal may develop enough heat to cause fire in adjacent combustible material. Canister providing protection against this substance.

Any self-contained breathing apparatus with a full face piece. Any supplied-air respirator with a full face piece.

Escape -
Any air-purifying respirator with a full face piece and a canister providing protection against this substance.
Any appropriate escape-type, self-contained breathing apparatus.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full face piece.

13. Disposal Considerations:

All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove for physico-chemical/ biological treatment. May be discharged to company wastewater treatment plant.

14. Transport Information

Transportation of Dangerous Goods
TDG Classification: Do not ship by air.
DOT Hazard Classification: Class 8 : Corrosive: Group II DOT Shipping Name : Liquid chlorine ID: UN 1017

15. Regulatory Information;

APPCB, Kurnool.
Dy.Chief Inspector of Factories,
Kurnool

16 . Other Information

Information containing in this MSDS is believe to be reliable. But no guarantee is made as to its accuracy, suitability for a particular application or results to be obtained from them.

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