MATERIAL SAFETY DATA SHEET

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CHLOROPICRIN

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SECTION I  MATERIAL IDENTIFICATION

CHEMICAL NAME: Chloropicrin Nitrotrichloromethane  C.A.S. NO.: 76-06-2
TRADE NAME: Chloropicrin  WHMIS: 0.1%
SYNONYMS: Trichloronitromethane, Nitrochloroform  R.Q. = N.R.
CHEMICAL FORMULA: CCl₃NO₂ or Cl₃CNO₂
CHEMICAL FAMILY: Chlorinated Nitrified Hydrocarbon
N.F.P.A. REGISTRY: 4-0-3  OSHA PSM: 500 lbs
LABELING: Poison  REPORTABLE QUANTITY: None
D.O.T. IDENTIFICATION NO.: UN 1580  D.O.T. PACKING GROUP: I
D.O.T. SHIPPING NAME: Chloropicrin-liquid  D.O.T. HAZARD GUIDE: 154
D.O.T. HAZARD CLASS: 6.1  PLACARD: UN 1580

SECTION II  INGREDIENTS AND HAZARDS

PRINCIPAL COMPONENT: Chloropicrin  PERCENT: 96.0% minimum
Trace quantities of water and HCl; remainder are inert substances.
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES:
The substance decomposes in flame or on a hot surface, forming toxic and corrosive gases. It is a strong oxidant and reacts violently with combustible and reducing materials. Above a critical volume it can be shock detonated.
ADDITIONAL INFORMATION: ACGIH TLV = 0.1 PPM, 0.67 mg/m³
OSHA PEL = 0.1 PPM, 0.7 mg/m³

SECTION III  PHYSICAL DATA

BOILING POINT: 112°C  pH: Non aqueous
SPECIFIC GRAVITY: 1.692  MOLECULAR WEIGHT: 164.38
VAPOR PRESSURE: At 25°C = 23.9 mm Hg  VAPOR DENSITY: 5.7
APPEARANCE/ODOR: Slightly oily, colorless to light green liquid with an intense irritating odor.
PERCENT VOLATILE BY VOLUME: 96%
EVAPORATION RATE: Contingent on ambient turbulence & temperature.
SOLUBILITY IN WATER: 25°C = .162 g/100 g H₂O
FREEZE/SOLIDIFICATION TEMP: -64°C
DENSITY: 14.1 lbs/gallon

SECTION IV  FIRE AND EXPLOSION DATA

FLASH POINT (METHOD): None.
EXTINGUISHING MEDIA: Use dry chemical or carbon dioxide on small fires. On larger fires use foam. Non-combustible.
AUTO IGNITION TEMP:
SPECIAL FIRE FIGHTING PROCEDURES: Wear self contained breathing apparatus and full protective clothing. Contact with combustible materials may cause fire and explosion.
UNUSUAL FIRE/EXPLOSION HAZARDS: Chloropicrin possesses some shock sensitivity. A detonator cap ignited in chloropicrin released more energy than from the detonator cap alone.
ADDITIONAL INFORMATION:
SECTION V  HEALTH HAZARD DATA

OSHA PERMISSIBLE EXPOSURE LIMIT: 0.1 PPM, 0.7 mg/m³
ACGIH THRESHOLD LIMIT VALUE: 0.1 PPM, 0.67 mg/m³
IARC/NTP CARCINOGEN: Not listed
MUTAGENIC: Not listed
REPRODUCTIVE TOXICITY: Not listed
AGGRAVATED BY EXPOSURE: Respiratory tract and severe eye irritant.
PRIMARY ROUTES OF EXPOSURE: Inhalation and vapor irritant to eyes
TARGET ORGANS: Respiratory tract, eyes.
EFFECTS OF EXPOSURE:

INHALATION: Pungent, sore throat, coughing, labored breathing, dizziness, nausea, vomiting, bluish skin, faintness. Serious cases may be fatal.

SKIN: Corrosive, causes redness and chemical burns.

EYES: Powerful lachrymator - commonly referred to as tear gas.

INGESTION: Corrosive with the same effect as inhalation.

EMERGENCY FIRST AID:

INHALATION: Remove to fresh air, place in half upright position and transport to hospital.

SKIN: Remove contaminated clothing, rinse skin with plenty of water or shower. Transport to hospital.

EYES: Wash with water for 15 minutes. Obtain medical help.

INGESTION: Rinse mouth, give plenty of water to drink, transport to hospital immediately.

ADDITIONAL INFORMATION: Liquid chloropicrin has a corrosive action on the skin. Scratches or abrasions exposed to chloropicrin fumes invariably become septic.

SECTION VI  REACTIVITY DATA

STABILITY: Chloropicrin is stable under normal conditions.
CONDITIONS TO AVOID: Open flame or hot surfaces.
INCOMPATIBILITY: Reducing agents, combustible substances and sulfuric acid.
HAZARDOUS DECOMPOSITION PRODUCTS: Will decompose if exposed to high temperatures forming toxic gases.
POLYMERIZATION: Will not polymerize.

SECTION VII  ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE: Evacuate the danger area. Collect leaking liquid in a sealable container. If this is not possible, absorb in sand or inert absorbent and remove to a safe place. Do not use sawdust or other flammable materials for absorbing a spill. Spilled chloropicrin will vaporize into the atmosphere. Clean-up crew must use self contained breathing apparatus. Consult the supplier for assistance.

WASTE DISPOSAL METHODS: Chloropicrin can be neutralized with sodium bisulfite. This step should be performed before washing area with water. Large spills may require transporting clean-up waste to a licensed disposal site.

SECTION VIII  SPECIAL PROTECTION INFORMATION

EYE PROTECTION: Chemical goggles.
RESPIRATORY PROTECTION: Approved self-contained breathing apparatus with full face piece must be used.
OTHER PROTECTION: Protective clothing must be worn. Safety eye wash and shower station should be available in the handling area.
VENTILATION RECOMMENDED: Exhaust ventilation is required to meet PEL limits.
GLOVE TYPE RECOMMENDED: Polyethylene lined. Do not use rubber.
ADDITIONAL INFORMATION: Impervious clothing other than rubber.

SECTION IX  SPECIAL PRECAUTIONS

HYGIENIC PRACTICES IN HANDLING/STORING: Only trained personnel with necessary safety equipment (eye, respiratory, skin) should be allowed to handle chloropicrin containers.
PRECAUTIONS TO BE TAKEN FOR HANDLING/STORING:

Do not allow combustibles in the storage area. Avoid the use of rubber compounds, PVC and PVDC materials to store or transfer chloropicrin. All storages should be properly vented to prevent toxic fumes from entering the atmosphere. Dry chloropicrin can be handled in mild steel containers, vessels and piping.

PRECAUTIONS FOR REPAIR MAINTENANCE OF CONTAMINATED EQUIPMENT:

Only personnel trained and qualified in handling this product should prepare equipment for maintenance.

OTHER PRECAUTIONS:

Do not permit personnel to handle this material without proper training and all necessary safety equipment.

SECTION X

TRANSPORTATION

USUAL SHIPPING CONTAINERS:

Tank cars, ton containers, cylinders.

USUAL SHELF LIFE:

Indefinite (life of containers).

STORAGE/TRANSPORT TEMPERATURES:

Ambient.

SUITABLE STORAGE MATERIALS/COATINGS:

Mild steel (if dry), teflon-lined equipment.

UNSUITABLE:

Rubber, PVC, and PVDC materials.

REVIEVED:  04/09 (No changes made)
SUPERSEDES:  03/06 (No changes made)
            11/03 (Added WHMIS percentage, OSHA PSM Threshold Quantity)

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