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Material Safety Data Sheet

Mercuric chloride MSDS

Section 1: Chemical Product and Company Identification

Product Name: Mercuric chloride

Catalog Codes: 10900, 20990

CAS#: 7487-94-7

RTECS: OV9100000

TSCA: TSCA 8(b) inventory: Mercuric chloride

CI#: Not applicable.

Synonym: Calochlor; Mercury (II) Chloride; Bichloride of Mercury

Chemical Name: Mercuric chloride

Chemical Formula: HgCl₂

Contact Information:

Finar Limited

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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Mercuric chloride	7487-94-7	100

Toxicological Data on Ingredients: Mercuric chloride: ORAL (LD50): Acute: 1 mg/kg [Rat]. 6 mg/kg [Mouse]. DERMAL (LD50): Acute: 41 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:

Extremely hazardous in case of ingestion, of inhalation. Very hazardous in case of skin contact (irritant, permeator), of eye contact (irritant). Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. CARCINOGENIC EFFECTS: Classified POSSIBLE by IRIS, 3 (Equivocal evidence.) by NTP. A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male

[POSSIBLE]. The substance is toxic to brain, peripheral nervous system, skin, central nervous system (CNS), eye, lens or cornea. The substance may be toxic to the reproductive system. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Toxic fumes of mercury, chloride fumes.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: When heated to decomposition it emits toxic fumes.

Special Remarks on Explosion Hazards:

Mixture of Mercuric Chloride with Potassium and metallic halides produces strong explosion on impact. Mixture of Mercuric Chloride with sodium and halide compounds produces a strong explosion in impact.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:

Corrosive solid. Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep locked up.. Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 0.025 (mg (Hg)/m) from ACGIH (TLV) [United States] SKIN TWA: 0.1 (mg/m3) from ACGIH (TLV) [United States] TWA: 0.05 (mg/m3) from OSHA (PEL) [United States] Inhalation TWA: 0.01 (mg/m3) from Occupational Reproductive Guidelines - Screening Method, Jankovic and Drake Inhalation TWA: 0.1 (mg/m3) from OSHA (PEL) [United States] Inhalation3 Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystals solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 271.5 g/mole

Color: White.

pH (1% soln/water): Not available.

Boiling Point: 302°C (575.6°F)

Melting Point: 276°C (528.8°F)

Critical Temperature: Not available.

Specific Gravity: 5.44 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether.

Solubility:

Easily soluble in cold water, hot water. Soluble in methanol, diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, light, excess heat, organic matter.

Incompatibility with various substances: Reactive with oxidizing agents, metals, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

May decompose on exposure to light. Reacts with sodium, potassium and their alloys. Incompatible with Acids, Albumin, Alkalis, alkaloid salts, ammonia, antimony, arsenic, borax, bromides, carbonates, copper, formates, gelatin, hypophosphites, iron, lead, lime water, metals, phosphates, potassium, reduced iron, sodium, sulfates, sulfides, tannic acid, and vegetable astringents.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:

Acute oral toxicity (LD50): 1 mg/kg [Rat.]. Acute dermal toxicity (LD50): 41 mg/kg [Rat].

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified POSSIBLE by IRIS, 3 (Equivocal evidence.) by NTP. A4 (Not classifiable for human or animal.) by ACGIH. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. **DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE]. Causes damage to the following organs: brain, peripheral nervous system, skin, central nervous system (CNS), eye, lens or cornea. May cause damage to the following organs: the reproductive system.

Other Toxic Effects on Humans:

Extremely hazardous in case of ingestion, . Very hazardous in case of skin contact (irritant, permeator). Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May affect genetic material and cause adverse reproductive effects (fetotoxicity, developmental abnormalities, fertility). Found in human breast milk.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes severe skin irritation. May be fatal if absorbed through skin Eyes: Causes severe eye irritation. It can also be corrosive to eyes. Inhalation: May be fatal if inhaled. Causes respiratory tract irritation and can be corrosive to the throat and mucous membranes. May cause coughing, shortness of breath. May also affect behavior and brain (central and peripheral nervous systems) with vertigo, anxiety, depression, muscle incoordination, and emotional instability. Ingestion: May be fatal if swallowed. Causes gastrointestinal tract irritation with nausea, vomiting, bloody diarrhea, foul taste, corrosive ulceration, and loosened teeth. May also affect the liver, blood, and urinary system (kidneys, ureter, bladder). Affects the brain, behavior (the central and peripheral nervous systems). Chronic Potential Health Effects: Skin: Repeated skin exposure may cause allergic contact dermatitis. Eyes: May cause Mercurialentis (brown mercury deposits in the lens of the eye), with visual defects. Ingestion: Excessive salivation, muscle weakness, Mercurial Erethism (short term memory loss, personality changes). May cause effects of those of acute ingestion. Inhalation: May cause effects similar to acute inhalation.

Section 12: Ecological Information**Ecotoxicity:**

Ecotoxicity in water (LC50): 0.9 ppm 24 hours [Rainbow Trout (juvenile)]. 0.1 ppm 48 hours [Fathead Minnow]. 0.2 ppm 96 hours [Bluegill Sunfish].

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Mercuric chloride UNNA: 1624 PG: II

Special Provisions for Transport: Marine Pollutant

Section 15: Other Regulatory Information**Federal and State Regulations:**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Mercuric chloride California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Mercuric chloride Connecticut hazardous material survey.: Mercuric chloride Illinois chemical safety act: Mercuric chloride New York release reporting list: Mercuric chloride Pennsylvania RTK: Mercuric chloride Florida: Mercuric chloride Michigan critical material: Mercuric chloride Massachusetts RTK: Mercuric chloride Massachusetts spill list: Mercuric chloride New Jersey: Mercuric chloride New Jersey spill list: Mercuric chloride Louisiana RTK reporting list: Mercuric chloride TSCA 8(b) inventory: Mercuric chloride SARA 302/304/311/312 extremely hazardous substances: Mercuric

chloride SARA 313 toxic chemical notification and release reporting: Mercuric chloride; Notification de minims is 1% CERCLA: Hazardous substances.: Mercuric chloride

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):

CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):

R24- Toxic in contact with skin. R28- Very toxic if swallowed. R34- Causes burns. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S60- This material and its container must be disposed of as hazardous waste. S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

HMIS (U.S.A.):

Health Hazard: 4

Fire Hazard: 0

Reactivity: 0

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 4

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References:

-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. -Material safety data sheet emitted by: la Commission de la Santé et de la Sécurité du Travail du Québec. -SAX, N.I. Dangerous Properties of Industrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Guide de la loi et du règlement sur le transport des marchandises dangereuses au Canada. Centre de conformité international Ltée. 1986.

Other Special Considerations: Not available.

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