



Health	2
Fire	0
Reactivity	0
Personal Protection	

# Material Safety Data Sheet

## Titanium (III) Chloride, 20% Solution MSDS

### Section 1: Chemical Product and Company Identification

**Product Name:** Titanium (III) Chloride, 20% Solution  
**Catalog Codes:** SLT2539  
**CAS#:** Mixture.  
**RTECS:** Not applicable.  
**TSCA:** TSCA 8(b) inventory: Hydrogen chloride; Water  
**CI#:** Not applicable.  
**Synonym:** Titanium Trichloride Solution  
**Chemical Name:** Titanium (III) Chloride, 20% Solution  
**Chemical Formula:**  $TiCl_3 \cdot HCl \cdot H_2O$

**Contact Information:**  
**Sciencelab.com, Inc.**  
14025 Smith Rd.  
Houston, Texas 77396  
US Sales: **1-800-901-7247**  
International Sales: **1-281-441-4400**  
Order Online: [ScienceLab.com](http://ScienceLab.com)  
**CHEMTREC (24HR Emergency Telephone), call:**  
1-800-424-9300  
**International CHEMTREC, call:** 1-703-527-3887  
**For non-emergency assistance, call:** 1-281-441-4400

### Section 2: Composition and Information on Ingredients

#### Composition:

Name	CAS #	% by Weight
Titanium (III) Chloride	7705-07-9	20
Hydrogen chloride	7647-01-0	3
Water	7732-18-5	77

#### Toxicological Data on Ingredients:

### Section 3: Hazards Identification

#### Potential Acute Health Effects:

Hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of ingestion, of inhalation (lung irritant, lung sensitizer). Slightly hazardous in case of skin contact (corrosive, permeator). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath.

#### Potential Chronic Health Effects:

Non-corrosive for skin. Non-irritant for skin. Non-sensitizer for skin. Non-permeator by skin. Non-irritating to the eyes. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: PROVEN The substance is toxic to the reproductive system, ovary, testes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe

skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

#### Section 4: First Aid Measures

**Eye Contact:**

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

**Skin Contact:**

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention.

**Serious Skin Contact:**

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

**Inhalation:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

**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:**

Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**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:** Not available.

**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:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

#### Section 6: Accidental Release Measures

**Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

**Large Spill:**

Corrosive liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. 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 container dry. Do not ingest. Do not breathe gas/fumes/ vapour/spray. 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 May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package.

**Storage:**

May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package. Corrosive materials should be stored in a separate safety storage cabinet or room.

### Section 8: Exposure Controls/Personal Protection

**Engineering Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection:**

Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor 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:**

Hydrogen chloride TWA: 5 CEIL: 5 (ppm) from OSHA (PEL) TWA: 7.5 CEIL: 7 (mg/m3) from OSHA Consult local authorities for acceptable exposure limits.

### Section 9: Physical and Chemical Properties

**Physical state and appearance:** Liquid.

**Odor:** Similar to HCl

**Taste:** Not available.

**Molecular Weight:** Not applicable.

**Color:** Purple.

**pH (1% soln/water):** Acidic.

**Boiling Point:** The lowest known value is 100°C (212°F) (Water).

**Melting Point:** Not available.

**Critical Temperature:** Not available.

**Specific Gravity:** 1.22 (Water = 1)

**Vapor Pressure:** The highest known value is 17.535 mm of Hg (@ 20°C) (Water).

**Vapor Density:** The highest known value is 0.62 (Air = 1) (Water).

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** The product is equally soluble in oil and water.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, methanol, n-octanol.

**Solubility:**

Soluble in hot water. Partially soluble in cold water, methanol, n-octanol. Insoluble in diethyl ether.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Pyrophoric in air. Very reactive and readily dissociated by moisture in air (Titanium (III) Chloride)

**Incompatibility with various substances:** Slightly reactive to reactive with oxidizing agents, organic materials, metals, alkalis.

**Corrosivity:**

Corrosive in presence of steel, of aluminum, of copper. Non-corrosive in presence of glass.

**Special Remarks on Reactivity:** Reacts violently with water especially when water is added to the product. (Hydrogen chloride)

**Special Remarks on Corrosivity:** Highly corrosive. Incompatible with copper alloys. (Hydrogen chloride)

**Polymerization:** No.

## Section 11: Toxicological Information

**Routes of Entry:** Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals:**

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute toxicity of the vapor (LC50): 1562 ppm 4 hour(s) [Rat]. (Hydrogen chloride).

**Chronic Effects on Humans:**

DEVELOPMENTAL TOXICITY: PROVEN The substance is toxic to the reproductive system, ovary, testes.

**Other Toxic Effects on Humans:**

Hazardous in case of skin contact (irritant, sensitizer), of ingestion, of inhalation (lung irritant, lung sensitizer). Slightly hazardous in case of skin contact (corrosive, permeator).

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. (Hydrogen chloride)

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**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:**

### Section 14: Transport Information

**DOT Classification:** CLASS 8: Corrosive liquid.

**Identification:** : Corrosive Liquid, n.o.s. ( Titanium Trichloride, Solution) : UN1760 PG: III

**Special Provisions for Transport:** Not available.

### Section 15: Other Regulatory Information

**Federal and State Regulations:**

Pennsylvania RTK: Hydrogen chloride Massachusetts RTK: Hydrogen chloride TSCA 8(b) inventory: Hydrogen chloride; Water SARA 302/304/311/312 extremely hazardous substances: Hydrogen chloride SARA 313 toxic chemical notification and release reporting: Hydrogen chloride CERCLA: Hazardous substances.: Hydrogen chloride;

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):**

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

**DSCL (EEC):**

R35- Causes severe burns. R43- May cause sensitization by skin contact.

**HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 0

**Reactivity:** 0

**Personal Protection:**

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

**Health:** 1

**Flammability:** 0

**Reactivity:** 1

**Specific hazard:**

**Protective Equipment:**

Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

## Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

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