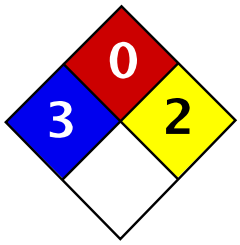

Health	3
Fire	0
Reactivity	1
Personal Protection	J

Material Safety Data Sheet
Zirconium (IV) Chloride, anhydrous MSDS

Section 1: Chemical Product and Company Identification

Product Name: Zirconium (IV) Chloride, anhydrous

Catalog Codes: SLZ1108

CAS#: 10026-11-6

RTECS: ZH7175000

TSCA: TSCA 8(b) inventory: Zirconium (IV) Chloride, anhydrous

CI#: Not available.

Synonym: Zirconium Chloride; Zirconium Tetrachloride

Chemical Name: Zirconium (IV) Chloride (1:4)

Chemical Formula: Cl4Zr

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

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
Zirconium (IV) Chloride, anhydrous	10026-11-6	100

Toxicological Data on Ingredients: Zirconium (IV) Chloride, anhydrous: ORAL (LD50): Acute: 1688 mg/kg [Rat]. 489 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive), of eye contact (corrosive). Slightly hazardous in case of skin contact (permeator). 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:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH.
MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance may be toxic to lungs, mucous membranes, skin, eyes.
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.

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. 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. 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:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

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

Large Spill:
Corrosive 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 container dry. Keep away from heat. 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 acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

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: 5 STEL: 10 (mg(Zr)/m) from ACGIH (TLV) [United States]
TWA: 5 (mg(Zr)/m) from OSHA (PEL) [United States]
Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

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

Odor: Not available.

Taste: Not available.

Molecular Weight: 233.03 g/mole

Color: White.

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

Boiling Point: Decomposition temperature: 437°C (818.6°F)

Melting Point: Sublimation temperature: 300°C (572°F)

Critical Temperature: Not available.

Specific Gravity: Density: 2.8 (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: Not available.

Solubility: It reacts with water

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Exposure to moist air or water, incompatible materials

Incompatibility with various substances:
Reactive with acids.
Slightly reactive to reactive with moisture.
The product may undergo hazardous decomposition, condensation or polymerization, it may react violently with water to emit toxic gases or it may become self-reactive under conditions of shock or increase in temperature or pressure.

Corrosivity: Not available.

Special Remarks on Reactivity:
Evolves heat and hydrochloric acid in presence of moisture.
Incompatible with acids, alcohols, amines, moisture.
Moisture sensitive

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

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

Toxicity to Animals: Acute oral toxicity (LD50): 489 mg/kg [Mouse].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH.
May cause damage to the following organs: lungs, mucous membranes, skin, eyes.

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (irritant), of ingestion, .
Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung corrosive).
Slightly hazardous in case of skin contact (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:
Acute Potential Health Effects:
Skin: Causes severe skin irritation and burns.
Eyes: Causes severe eye irritaiton and burns. May cause eye damage
Inhalation: It can irritate the lungs causing coughing and/or shortness of breath. Higher exposures can cause build-up of fluid in the lungs (pulmonary edema) with severe shortness of breath. May cause lung granulomas. May cause chemical burns to the respiratory tract.
Ingestion: May be harmful if swallowed. Causes gastrointestinal tract burns and burning pain in mouth and throat, vomiting, water or bloody diarrhea, retching, tenesmus, hemolysis, hematuria, anuria, ulceration or bleeding from the stomach, liver damage with jaundice, hypotension, collapse, and convulsions. May cause loss of appetite and weight loss. May affect behavior/central nervous system (depression, somnolence, convulsions). May cause severe and permanent damage to the digestive tract.
Chronic Potential Health Effects:
Skin: Repeated exposure can cause allergic skin reaction with small nodules on the skin (granulomas).

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

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Zirconium Tetrachloride UNNA: 2503 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Zirconium (IV) Chloride, anhydrous
Illinois toxic substances disclosure to employee act: Zirconium (IV) Chloride, anhydrous

Illinois chemical safety act: Zirconium (IV) Chloride, anhydrous
New York release reporting list: Zirconium (IV) Chloride, anhydrous
Rhode Island RTK hazardous substances: Zirconium (IV) Chloride, anhydrous
Pennsylvania RTK: Zirconium (IV) Chloride, anhydrous
Massachusetts RTK: Zirconium (IV) Chloride, anhydrous
Massachusetts spill list: Zirconium (IV) Chloride, anhydrous
New Jersey: Zirconium (IV) Chloride, anhydrous
New Jersey spill list: Zirconium (IV) Chloride, anhydrous
Louisiana RTK reporting list: Zirconium (IV) Chloride, anhydrous
California Director's List of Hazardous Substances: Zirconium (IV) Chloride, anhydrous
TSCA 8(b) inventory: Zirconium (IV) Chloride, anhydrous
CERCLA: Hazardous substances.: Zirconium (IV) Chloride, anhydrous: 5000 lbs. (2268 kg)

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-1B: Material causing immediate and serious toxic effects (TOXIC).
CLASS E: Corrosive solid.
CLASS F: Dangerously reactive material.

DSCL (EEC):
R14- Reacts violently with water.
R22- Harmful if swallowed.
R34- Causes burns.
S7/8- Keep container tightly closed and dry.
S24/25- Avoid contact with skin and eyes.
S36/37/39- Wear suitable protective clothing,
gloves and eye/face protection.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 1

Personal Protection: j

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

Health: 3

Flammability: 0

Reactivity: 2

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: Not available.

Other Special Considerations: Not available.

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