



SAFETY DATA SHEET

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SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Zirconium (IV) Chloride**

PRODUCT NUMBER: 3907

CAS NUMBER: 10026-11-6

SYNONYMS: Zirconium tetrachloride

MANUFACTURER:

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SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Pictogram



Signal Word

Danger

Hazard Statements

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

Precautionary Phrases

P260	Do not breathe dust or mist.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so.
P310	Immediately call a POISON CENTER or doctor/ physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P406	Store in corrosive resistant stainless steel container with a resistant inner liner.
P501	Dispose of contents/ container to an approved waste disposal plant.

SECTION 2 HAZARDS IDENTIFICATION (Cont.)

HMIS CLASSIFICATION:

Health: 3 Fire: 0 Reactivity Hazard: 0

NFPA RATING:

Health: 3 Flammability: 0 Reactivity Hazard: 0

EYE CONTACT: May be a severe irritant to the eyes.

SKIN CONTACT: May cause mild to severe irritation of the skin.

INHALATION: Forms hydrogen chloride in the presence of moisture. Inhalation can lead to irritation of the respiratory tract.

INGESTION: Harmful if swallowed. Swallowing will lead to a strong corrosive effect on the mouth and throat.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: $ZrCl_4$

Molecular Weight: 233.04

CHEMICAL NAME	CAS#	%
Zirconium (IV) Chloride	10026-11-6	100

SECTION 4 FIRST AID MEASURES

EYE EXPOSURE: Immediately flush the eyes with copious amounts of water for at least 15 minutes. Assure flushing under eyelids. A victim may need assistance in keeping their eyelids open. Get immediate competent medical attention.

SKIN EXPOSURE: Wash affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

INHALATION: Remove to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.

INGESTION: Seek medical assistance immediately. Keep the victim calm. Induce vomiting only if directed by medical personnel.

SECTION 5 FIREFIGHTING MEASURES

FLASH POINT: Not available

AUTO IGNITION TEMPERATURE: Not available

EXPLOSION LIMITS: Not available

EXTINGUISHING MEDIUM: Dry powder, sand, carbon dioxide, or an extinguishing agent. Never use water.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Hydrogen chloride and Zirconium oxides. Reacts violently with water.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear all appropriate equipment when using this material. Ensure adequate ventilation. Keep unprotected persons away.

ENVIRONMENTAL PRECAUTIONS: Prevent spillage from entering drains or allowing to be released into the environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Small spills can be mixed with vermiculite or sodium carbonate and swept up. Large spills outside of a ventilated area can lead to the generation of hydrogen chloride fumes from the reaction of the material with atmospheric moisture. Do not flush with water.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Wear appropriate personal protective equipment. Use with adequate ventilation. Handle under dry protective gas.

CONDITIONS FOR SAFE STORAGE: Store in cool, dry, and well-ventilated area. Store away from water, moisture, strong bases, and oxidizing agents. Protect from humidity and water.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE CONTROLS

Component	Exposure Limits	Basis	Entity
Zirconium (IV) Chloride	5 mg/m ³	TLV	ACGIH
	10 mg/m ³	STEL	ACGIH
	5 mg/m ³	PEL	OSHA
	10 mg/m ³	STEL	OSHA

STEL: Short Term Exposure Limit during x minutes.

TLV: Threshold Limit Value over 8 hours of work.

PEL: Permissible Exposure Limit

EYE PROTECTION: Wear chemical safety glasses or goggles and face shield.

SKIN PROTECTION: Wear nitrile or rubber gloves, flame retardant protective equipment.

VENTILATION: Provide local exhaust, preferably mechanical.

RESPIRATOR: Use an approved respirator.

ADDITIONAL PROTECTION: Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: White to orange powder

ODOR: Not available

MOLECULAR WEIGHT: 233.04

BOILING POINT: Not available

MELTING POINT: 331°C (subl.)

SPECIFIC GRAVITY: 2.803 gm/ml

VAPOR DENSITY: No data available

SOLUBILITY: Reacts with water

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable under recommended storage conditions

HAZARDOUS POLYMERIZATION: Reacts violently with water

CONDITIONS TO AVOID: Moisture

INCOMPATIBILITY: Strong oxidizing agents, water, and bases.

DECOMPOSITION PRODUCTS: Hydrogen chloride and zirconium oxide.

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: LD50 Oral – Rat – 1,688mg/kg

CARCINOGENIC EFFECTS: No components of this product present at levels greater than or equal to 0.1% is identified a carcinogen.

MUTAGENIC EFFECTS: Not available

TETRATOGENIC EFFECTS: Not available

CHRONIC TOXICITY:

RTECS: No data

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

SECTION 12 ECOLOGICAL DATA

No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in according to local, state, and federal regulations.

SECTION 14 TRANSPORTATION DATA

UN2503
Zirconium Tetrachloride
CLASS 8
PG III

Marine Pollutant: No

SECTION 15 REGULATORY INFORMATION

TSCA: Listed in the TSCA inventory
SARA 302/304: Not Listed
SARA 311/312: Not Listed
SARA (TITLE 313): Not Listed
CALIFORNIA PROP. 65: Not Listed
MASSACHUSETTS RIGHT TO KNOW: Zirconium tetrachloride
PENNSYLVANIA RIGHT TO KNOW: Zirconium tetrachloride
NEW JERSEY RIGHT TO KNOW: Zirconium tetrachloride
WHMIS CANADA: Class D-2B: Toxic material causing other toxic effects. Class E: Corrosive material

SECTION 16 OTHER INFORMATION

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, Prochem, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information in this document or any use of the product based on the information.

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