

# Material Safety Data Sheet

Zirconium(IV) chloride, anhydrous

ACC# 52782

## Section 1 - Chemical Product and Company Identification

**MSDS Name:** Zirconium(IV) chloride, anhydrous

**Catalog Numbers:** AC206410000, AC206410050, AC206411000, AC206415000

**Synonyms:** Zirconium chloride.

**Company Identification:**

Naicher Advanced Material(YingKou) Co.,Ltd  
#139 South BinHai Road YingKou

**For information, call:** 86 417 2927527

**For emergencies:** 86 417 2927527

## Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10026-11-6	Zirconium(IV) chloride, anhydrous	98	233-058-2

## Section 3 - Hazards Identification

### EMERGENCY OVERVIEW

Appearance: fine powder.

**Danger!** Reacts violently with water. Causes burns by all exposure routes.

Harmful if swallowed. Hygroscopic (absorbs moisture from the air).

**Target Organs:** Kidneys, liver, respiratory system, gastrointestinal system, eyes, skin.

#### Potential Health Effects

**Eye:** Causes eye burns.

**Skin:** Causes skin burns. May be harmful if absorbed through the skin.

**Ingestion:** Harmful if swallowed. Causes gastrointestinal tract burns.

**Inhalation:** Causes chemical burns to the respiratory tract. May be harmful if inhaled. Material releases hydrogen chloride on contact with water.

**Chronic:** May cause liver and kidney damage. In one inhalation study, exposure to zirconium tetrachloride (converted to zirconyl chloride in water) at a concentration of 6 mg Zr/m<sup>3</sup> for 2 months was associated with a small increase in mortality of rats & guinea pigs and no increased mortality for rabbits, cats, or dogs. Respiratory infection subsequent to the inhaled zirconyl chloride mist was the reported cause of death. In 1-year inhalation studies with zirconium tetrachloride at 3.5 mg Zr/m<sup>3</sup>, no adverse effects on lab animals could be

## Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** Do not induce vomiting. Get medical aid immediately. Call a poison control center.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water reactive. Material will react with water and may release a flammable and/or toxic gas.

**Extinguishing Media:** Use foam, dry chemical, or carbon dioxide. DO NOT USE WATER!

**Flash Point:** Not available.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 1; Instability: 2; Special Hazard: -W-

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Provide ventilation. Do not expose spill to water. Do not get water inside containers. Do not let this chemical enter the environment.

## Section 7 - Handling and Storage

**Handling:** Do not allow water to get into the container because of violent reaction. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Handle under an inert atmosphere. Do not allow contact with water. Use only in a chemical fume hood.

**Storage:** Store in a cool, dry place. Store in a tightly closed container. Corrosives area. Water free area. Store protected from moisture.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Zirconium(IV) chloride, anhydrous	5 mg/m <sup>3</sup> TWA (as Zr) (listed under Zirconium compounds,	5 mg/m <sup>3</sup> TWA (as Zr, except Zirconium tetrachloride) (listed under Zirconium	5 mg/m <sup>3</sup> TWA (as Zr) (listed under Zirconium compounds, n.o.s.).

	n.o.s.).10 mg/m <sup>3</sup> STEL (as Zr) (listed under Zirconium compounds, n.o.s.).	compounds, n.o.s.).50 mg/m <sup>3</sup> IDLH (as Zr, except Zirconium tetrachloride) (listed under Zirconium compounds, n.o.s.).	
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**OSHA Vacated PELs:** Zirconium(IV) chloride, anhydrous: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

**Physical State:** Powder

**Appearance:** white - fine

**Odor:** None reported.

**pH:** Not available.

**Vapor Pressure:** 1.3 hPa @ 190 deg C

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** Not available.

**Freezing/Melting Point:** 437 deg C(subl)

**Decomposition Temperature:** Not available.

**Solubility:** Insoluble.

**Specific Gravity/Density:** Not available.

**Molecular Formula:** Cl<sub>4</sub>Zr

**Molecular Weight:** 233.03

## Section 10 - Stability and Reactivity

**Chemical Stability:** Reacts violently with water. Hygroscopic: absorbs moisture or water from the air.

**Conditions to Avoid:** Incompatible materials, excess heat, exposure to moist air or water.

**Incompatibilities with Other Materials:** Amines, alcohols, acids, strong oxidizing agents.

**Hazardous Decomposition Products:** Hydrogen chloride, carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 10026-11-6: ZH7175000

**LD50/LC50:**

CAS# 10026-11-6:

Oral, mouse: LD50 = 489 mg/kg;

Oral, rat: LD50 = 1688 mg/kg;

**Carcinogenicity:**

CAS# 10026-11-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information found.

**Teratogenicity:** No information found.

**Reproductive Effects:** No information found.

**Mutagenicity:** No information found.

**Neurotoxicity:** No information found.

**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** No information available.

**Physical:** No information available.

**Other:** Do not empty into drains.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	ZIRCONIUM TETRACHLORIDE	ZIRCONIUM TETRACHLORIDE
<b>Hazard Class:</b>	8	8
<b>UN Number:</b>	UN2503	UN2503
<b>Packing Group:</b>	III	III

## Section 15 - Regulatory Information

### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

### Section 12b

None of the chemicals are listed under TSCA Section 12b.

### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**

CAS# 10026-11-6: 5000 lb final RQ; 2270 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

**SARA Codes**

CAS # 10026-11-6: immediate, reactive.

**Section 313** No chemicals are reportable under Section 313.

**Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**

CAS# 10026-11-6 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 10026-11-6 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, (listed as Zirconium compounds, n.o.s.), Massachusetts.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**

C

**Risk Phrases:**

R 14 Reacts violently with water.

R 22 Harmful if swallowed.

R 34 Causes burns.

**Safety Phrases:**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice

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immediately (show the label where possible).

S 8 Keep container dry.

**WGK (Water Danger/Protection)**

CAS# 10026-11-6: No information available.

**Canada - DSL/NDSL**

CAS# 10026-11-6 is listed on Canada's NDSL List.

**Canada - WHMIS**

This product has a WHMIS classification of E, F, D1B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

CAS# 10026-11-6 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information**

**MSDS Creation Date:** 12/14/2005

**Revision #5 Date:** 08/03/2018

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