



SIGMA-ALDRICH

Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name ZIRCONYL CHLORIDE OCTAHYDRATE
Product Number 96609
Brand Fluka Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052

Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
ZIRCONIUM OXIDE CHLORIDE-8-HYDRATE	13520-92-8	No	231-717-9	

Formula ZrOCl₂·8H₂O
Synonyms Dichlorooxozirconium octahydrate, Zirconium, dichlorooxo-, octahydrate (8Cl,9Cl), Zirconium oxychloride octahydrate, Zirconyl chloride octahydrate

Section 3 - Hazards Identification

Emergency Overview

Corrosive.
Causes burns.

HMS Rating
Health: 3 Flammability: 0 Reactivity: 1

NFPA Rating
Health: 3 Flammability: 0 Reactivity: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Inhalation Exposure

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

Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed In Case of Leak or Spill

Evacuate area.

Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep tightly closed.

Special Requirements

Hygroscopic.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Use only in a chemical fume hood.

Personal Protective Equipment

Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

Exposure Limits, RTECS

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Country	Source	Type	Value
USA	ACGIH	TWASTEL	5 MG(ZR)/M3 10
USA	MSHA Standard-air	TWA	MG(ZR)/M3
USA	OSHA	PEL	5 MG(ZR)/M3
New Zealand	OEL		8H TWA 5
			MG(ZR)/M3

Remarks: check ACGIH TLV

Section 9 - Physical/Chemical Properties

Appearance	
Physical State	
Solid	
Molecular Weight:	322.25 AMU
pH	N/A
BP/BP Range	N/A
MP/MP Range	N/A
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	1.91 g/cm ³
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable
 Stable.
Conditions to Avoid
 Moisture.
Materials to Avoid
 Strong oxidizing agents.

Hazardous Decomposition Products
Hazardous Decomposition Products
 Hydrogen chloride gas, Zirconium oxides.

Hazardous Polymerization
Hazardous Polymerization
 Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
 Causes burns.
Skin Absorption
 May be harmful if absorbed through the skin.
Eye Contact
 Causes burns.
Inhalation
 Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion
 May be harmful if swallowed.

Signs and Symptoms of Exposure
 Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: ZH7250000

Chronic Exposure - Carcinogen
 Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Mouse - Intradermal: 800 UG/KG
 Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Ear Tumors. Musculoskeletal: Tumors.

ACGIH Carcinogen List

Rating
 A4

Chronic Exposure - Mutagen

Species	Dose	Cell Type	Mutation test
Human	10 MG/L	leukocyte	Cytogenetic analysis
Human	10 MG/L	leukocyte	Sister chromatid exchange
Mouse	220 MG/KG	Oral	Cytogenetic analysis

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
 Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.
UN#: 3260
Class: 8
Packing Group: Packing Group II

Hazard Label: Corrosive
PIH: Not PIH

IATA

Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.
IATA UN Number: 3260
Hazard Class: 8
Packing Group: II

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: C

Indication of Danger

Corrosive.

Risk Statements R: 34

Causes burns.

Safety Statements S: 26 27 36/37/39

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.

US Classification and Label Text

Indication of Danger

Corrosive.

Risk Statements

Causes burns.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.

United States Regulatory Information

SARA Listed: No

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

