ALADDIN SCIENTIFIC CORPORATION
14078 Meridian Parkway, Riverside, CA. 92518

# SAFETY DATA SHEET

Version: v1
Revision Date: 2025-09-22
Print Date: 2025-09-28

## SECTION 1:Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

| | |
|---|---|
| Product name | : Zirconyl chloride hydrate |
| Product Number | : Z302988 |
| Brand | : aladdin |
| CAS-No. | : 15461-27-5 |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| Identified uses | : Laboratory chemicals,Manufacture of substances. |

### 1.3 Company

| | |
|---|---|
| Company | : ALADDIN SCIENTIFIC CORPORATION |
| Address | : 14078 Meridian Parkway, |
| Riverside, CA. 92518 | |
| Telephone | : +1 (833) 552-7181 |
| Fax | : no data available |

### 1.4 Emergency telephone number

| | |
|---|---|
| CHEMTREC®, Inside the USA | : 1-800-424-9300 |
| CHEMTREC®, Outside the USA | : |

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Metal Corrosives (Class 1), H290

Acute toxicity, oral (Category 5), H303

Skin corrosion/irritation (Category 1B), H314

Serious eye damage/eye irritation (Category 1), H318

### 2.2 GHS Label elements, including precautionary statements

**Pictogram**



**Signal word** Danger

**Hazard statement(s)**

| | |
|---|---|
| H314 | Causes severe skin burns and eye damage |

**Precautionary statement(s)**

| | |
|---|---|
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| P264 | Wash hands [and ...] thoroughly after handling. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P321 | Specific treatment (see ... on this label). |
| P363 | Wash contaminated clothing before reuse. |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container to an approved waste disposal plant. |
| P305+P354+P338 | IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. |
| P302+P361+P354 | IF ON SKIN: Take off Immediately all contaminated clothing. Immediately rinse with water for several minutes. |
| P316 | Get emergency medical help immediately. |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

## SECTION 3: Composition/information on ingredients

## 3.1 Substances

| | |
|---|---|
| Synonyms | : Zirconium oxychloride ; Zirconyl chloride |
| Formula | : ZrOCl2·nH2O |
| Molecular weight | : 178.13 (anhydrous basis) |
| CAS No. | : 15461-27-5 |
| EC-NO. | : no data available |

| Component | Classification | Concentration |
|---|---|---|
| **Zirconyl chloride hydrate** | | |
| | no data available | PrimorTrace™, ≥99.99% metals basis |

## SECTION 4: First aid measures

## 4.1 Description of first aid measures

**General advice**

Show this material safety data sheet to the doctor in attendance.

**If inhaled**

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

**In case of skin contact**
Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.
**In case of eye contact**
Rinse with pure water for at least 15 minutes. Consult a doctor.
**If swallowed**
Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use dry chemical, carbon dioxide or alcohol-resistant foam.
**Unsuitable extinguishing media**
no data available

### 5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas Zirconia Non combustible. The surrounding fire source may cause the release of hazardous vapor

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

no data available

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

### 6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly

disposed of, in accordance with appropriate laws and regulations.

### 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Operators should be specially trained and strictly abide by the operating procedures. Operation and disposal should be carried out in a place with local ventilation or general ventilation facilities. Avoid eye and skin contact and avoid breathing vapor. See Section 8 for personal protective measures. Keep away from fire and heat sources, and smoking is strictly prohibited in the workplace. Use explosion-proof ventilation systems and equipment. If canning is required, the flow rate should be controlled, and there should be a grounding device to prevent the accumulation of static electricity. Avoid contact with incompatible substances such as oxidizing agents (see section 10 for incompatible substances). When handling, it should be lightly loaded and unloaded to prevent damage to packaging and containers. Empty containers may be harmful residues. Wash hands after use and prohibit eating or drinking in the workplace. Equipped with the corresponding variety and quantity of fire fighting equipment and leakage emer

### 7.2 Conditions for safe storage, including any incompatibilities

Store at room temperature under argon filled and dry conditions

### 7.3 Specific end use(s)

no data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Hazard composition and occupational exposure limit：**

| Components | CAS No. | value | Control parameters | basis |
|---|---|---|---|---|
| zirconium dichloride oxide hydrate | 15461-27-5 | PC-TWA | 5mg/m3 | Occupational exposure limit for hazardous factors in the workplace - chemical hazardous factors |
| | | PC-STEL | 10mg/m3 | Occupational exposure limit for hazardous factors in the workplace - chemical hazardous factors |

### 8.2 Exposure controls

**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of

workday.

**Personal protective equipment**

**Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374 derived from it.

**Body Protection**

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a fullface 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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

**Control of environmental exposure**

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| a) Appearance | no data available |
| b) Odour | no data available |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | no data available |
| f) Initial boiling point and boiling range | no data available |
| g) Flash point | no data available |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure | no data available |
| l) Vapour density | no data available |
| m) Relative density | no data available |
| n) Water solubility | no data available |
| o) Partition coefficient: n-octanol/water | no data available |
| p) Auto-ignition temperature | no data available |
| q) Decomposition temperature | no data available |
| r) Viscosity | no data available |

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| | |
|---|---|
| s) Explosive properties N | no data available |
| t) Oxidizing properties N | no data available |

### 9.2 Other safety information

no data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**
LD50 Oral Rat 3500 mg/kg(OECD Test Guideline 401)

Remarks: Corresponding values are specified for the following substances: zirconium oxychloride (iv)

Inhalation: no data

Transcutaneous: no data

**Skin corrosion/irritation**
no data available
**Serious eye damage/eye irritation**
no data available
**Respiratory or skin sensitisation**
no data available
**Germ cell mutagenicity**

Test type: Ames test Test system: Salmonella typhimurium Metabolic activation: with or without metabolic activation Method: OECD Test Guideline 471 Result: Negative Remarks: Corresponding values are specified for the following substances: zirconium oxychloride (iv) Test type: mutagenicity (mammalian cell test): chromosome variation negative Sex Test system: Chinese hamster ovary cells Metabolic activation: with or without metabolic activation Method: OECD Test Guideline 473 Result: Negative Remarks: Corresponding values are specified for the following substances: zirconium oxychloride has corresponding values for the following substances: zirconium oxychloride (iv) carcinogenicity No data

**Carcinogenicity**

no data available

**Reproductive toxicity**

no data available

**Specific target organ toxicity - single exposure**

no data available

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Additional Information**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## SECTION 12: Ecological information

### 12.1 Toxicity

Static toxicity test on fish LC50 - Danio rerio (zebrafish) ->100 mg/l - 96 h (OECD Test Guideline 203) Remarks: Corresponding values are specified for the following substances: zirconia

Static test of toxicity to Daphnia magna and other aquatic invertebrates EC50 - Daphnia magna ->100 mg/l - 48 h (Directive 67/548/EEC, Appendix V, C2) Remarks: Corresponding values are specified for the following substances: zirconia

### 12.2 Persistence and degradability

hydrolysis

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Results of PBT and vPvB assessment

no data available

### 12.6 Other adverse effects

no data available

## SECTION 13:

### 13.1 Disposal considerations

**Product**

Recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur. Observe all federal, state and local regulations when disposing of the substance.

**Contaminated packaging**

Dispose of as unused product.

## SECTION 14: Transport information

**DOT (US)**

| | | |
|---|---|---|
| UN number: 3260 | Packing group: II | Class: 8 |
| Proper shipping name: Inorganic acid corrosive solid, n.o.s. (zirconium chloride hydrate) | Reportable Quantity(RQ): no data available | Poison Inhalation Hazard: no data available |
| Environmental Hazards: no | | |

**IMDG**

| | | |
|---|---|---|
| UN number: 3260 | Packing group: II | EMS-No: no data available |
| Proper shipping name: Inorganic acid corrosive solid, n.o.s. (zirconium chloride hydrate) | | |

**IATA**

| | | |
|---|---|---|
| UN number: 3260 | Packing group: II | Class: 8 |
| Proper shipping name: Inorganic acid corrosive solid, n.o.s. (zirconium chloride hydrate) | | |

## SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

## SECTION 16: Other information

| | |
|---|---|
| **Prepared By** | Regulatory Affairs<br>ALADDIN SCIENTIFIC CORPORATION<br>Email: QualityAssurance@aladdinsci.com |
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