

GHS Safety Data Sheet

MSDS No. : ZRR08XAEG

Date Issued: 2012/12/27

Section 1. Identification of the substance or mixture and of the supplier

1.1 Product Information

Product name: Zr(O-n-C₄H₉)₄ Zirconium tetra-n-butoxide

Product number	Purity	Form
ZRR15XB	99.9% (3N, excluding Hf)	Solid

1.2 Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd.
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Section 2. Hazards identification

GHS Classification

Health Hazards	Environmental Hazards	Physical Hazards
No data available	No data available	No data available

GHS Label:

Pictograms or symbols No data available**Warning word:** Not applicable

Hazard information	Description of precaution
Not applicable	Not applicable

Additional hazard information :

May be ignited by heat, sparks or flames.

In case of fire, may liberate toxic gases/ fume.

With respect to additional hazard information, see Section 11.

Section 3. Composition / information on ingredients

Chemical or common name: Zirconium() -n-butoxide
Single Substance or Compound: Single substance
Chemical formula: Zr(O-n-C₄H₉)₄
Composition: 100%
CAS #: 1071-76-7
RTECS#: No data available
TSCA inventory : listed
EINECS#: 2139953

Section 4. First aid measures

Eye contact: Promptly rinse eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

- Skin contact: Remove immediately all contaminated clothing. Wipe off the product immediately by tissue or soft cloth, etc. Promptly flush contaminated skin with soap or mild detergent and water. Contact physician if irritation continues.
- Ingestion: Rinse mouth and throat with water. Get medical attention immediately.
- Inhalation: Remove the exposed person immediately and provide fresh air.
Get medical attention.

Section 5. Fire fighting measures

Chemical Name	Flash Point	Autoignition Temperature	Explosion Level (Lower-Upper)	Vapour Pressure
Zr(O-n-C ₄ H ₉) ₄	—	—	—	—

Extinguishing agents:

Carbon dioxide, Dry chemical powder, water spray or regular form.
DO NOT use a direct water stream.

Fire fighting:

Flammable material.
Remove containers to safe place if possible.
Use water spray to Cool down nearby structures and containers.
Self-contained breathing apparatus and full protective clothing should be used, if the material is involved in fire.

Specific hazards arising from the chemical:

Burning material releases toxic organic fumes.

Section 6. Accidental release measures

Personal Precaution: Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor.

Environmental hazard precaution:

Shut off leak if without risk.
Prevent flow out to river, etc. so as not to badly affect.

Methods for containment and cleaning up:

Remove all sources of ignition.
Avoid unnecessary contacts with spills.
Indoor leakage: Ventilate as much as possible until the cleaning is completed.
Outdoor leakage: Work from the windward and evacuate the leeward crowd.
Cover with inert material(e.g. vermiculite, sand, earth or other suitable absorbent), then place in closed dry container.
Ventilate area and carefully wash spill site with plenty of water after material pick up.

Section 7. Handling and storage

Precautions to be taken in handling:

Safe handling: Handle the material in a dry inert gas atmosphere, utilizing glove bag or glove box.
Keep away from moisture when handling.
Keep container or bottle tightly closed when not in use.
Avoid prolonged or repeated exposure.
Handling worker wears suitable protective clothing.
Keep away from heat, sparks and naked flame.

Precautions to be taken in storage:

General precautions: Store the material in a sealed container.
Store in a cool, dry, well ventilated and dark place away from incompatible materials.
Keep away from any heat, sparks, and flames.

Section 8. Exposure controls / personal protection

Exposure guideline: ACGIH(2012) : Zirconium and compounds(as Zr) TLV-TWA 5 mg/m³
TLV-STEL 10 mg/m³
OSHA (2006) : Zirconium compounds(as Zr) PRL-TWA 5 mg/m³

Facility measures: Local ventilation of closed work room or total proper ventilation to prevent inhalation.

Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, safety goggles, face shields, protective gloves.

Section 9. Physical and chemical properties

Color and Form: Pale orange solid

Chemical formula: Zr(O-n-C₄H₉)₄

Formula weigh 383.7

Melting point: No data available

Boiling point: 260 /13.3Pa

Density: 1.070 g/cm³

Water solubility: Decomposes (Zirconium oxides and 1-butanol)

Flammable: Flammable substance

Oxidation: No data available

Section 10. Stability and reactivity

Stability: Stable in an inert gas under room temperature.
Decomposed by moisture in the air.

Reactivity

Incompatibility: Oxidizing agents, acids, halogens.

Conditions to avoid: Heat, sparks and flames.
Water, Moisture

Hazard decomposition products :
Carbon monoxide, carbon dioxide, metallic oxide of zirconium and toxic fumes.

Section 11. Toxicological information

Acute toxicity : GHS : No data available

Skin corrosive / irritation: GHS : No data available

Serious eye damage / irritation: GHS : No data available

Respiratory sensitization: GHS : No data available

Skin sensitization: GHS : No data available

Germ cell mutagenicity: GHS : No data available

Carcinogenicity: GHS : No data available

Toxic to reproduction: GHS : No data available

Specific target organ toxicity
— single exposure: GHS : No data available

Specific target organ toxicity

—repeated exposure: GHS : No data available

Aspiration hazard: GHS : No data available

Other cautions: Mechanical stimulation by dust affects eyes, skin and respiratory system
Careful attention to the risk of 1-butanol (degradation product).

Section 12. Ecological information

Ecotoxicity:

Hazards to the aquatic environment

—acute toxicity: GHS : No data available

Hazards to the aquatic environment

—chronic toxicity: GHS : No data available

Hazardous to the ozone layer: GHS : No data available

No Freon or Halon

Fish toxicity: No data available

Degradability: No data available

Bioaccumulative potential: Zr Biological half-life 450 day,
Rate of absorption oral= 0.0001, Respiratory tract= 0.25

Mobility in soil: No data available

Section 13. Disposal considerations

Disposal method: User of the product should contract with the local government or licensed
'Industrial Waste Haulers' for disposal of waste.

Section 14. Transport information

UN number: 1325

IATA shipping name: Flammable solid, organic, n.o.s.

IATA classification: Hazardous Class 4.1 (Flammable solids)

IATA packing group:

HS code: 2905.13

Marine pollution: None

Section 15. Regulatory information

TSCA inventory : listed.

Please refer to any other local / national measures that may be relevant.

Section 16. Other information

The information described above is believed to be correct. However, Kojundo Chemical Lab. makes no representation, warranty nor guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.