

CHAITANYA CHS, 2nd FLOOR, OFFICE # 206, SIDDHARTH NAGAR, S.V.ROAD, GOREGAON (W), MUMBAI 400062, MH, INDIA.
 CONTACT: +9122 28725393 /94/ 95 | EMAILID: CARE@SUVCHEM.COM

MATERIAL SAFETY DATA SHEET (MSDS)

ZIRCONIUM DIOXIDE LR

1 - Chemical Product

MSDS Name: Zirconium (IV) Oxide
 Synonym: None

Cas NO: 1314-23-4

Product Coad: Z0221505000

Molecular Formula: ZrO₂
 Molecular Weight: 123.2188

2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
1314-23-4	Zirconium oxide	100	215-227-2

3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

The toxicological properties of this material have not been fully investigated.

Potential Health Effects

Eye: Dust may cause mechanical irritation.

Skin: Dust may cause mechanical irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. The toxicological properties of this substance have not been fully investigated.

Inhalation: Dust is irritating to the respiratory tract. The toxicological properties of this substance have not been fully investigated.

Chronic: Repeated inhalation may cause chronic bronchitis. Chronic inhalation may cause pulmonary fibrosis.

4 - FIRST AID MEASURES

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

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Notes to Physician:

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Extinguishing

Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

6 - ACCIDENTAL RELEASE MEASURES

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

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

7 - HANDLING and STORAGE

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

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 adequate

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ventilation to keep airborne concentrations low.

Exposure Limits CAS# 1314-23-4: United Kingdom, WEL - TWA: (listed as zirconium compounds, n.o.s. mg/m³ TWA (as Zr) United Kingdom, WEL - STEL: (listed as zirconium compounds, n.o.s. 10 mg/m³ STEL (as Zr) United States OSHA: 5 mg/m³ TWA (listed under Zirconium).5 mg/m³ (as Zr) (listed under Zirconium compounds, n.o.s.).
 Belgium - TWA: (listed as zirconium compounds, n.o.s.): 5 mg/m³ V (as Zr) Belgium - STEL: (listed as zirconium compounds, n.o.s.): 10 mg/m³ (as Zr)
 Malaysia: (listed as zirconium compounds, n.o.s.): 5 mg/m³ TWA (a Zr) Netherlands: (listed as zirconium compounds, n.o.s.): 5 mg/m³ MAC Zr) Russia: 6 mg/m³ TWA Spain: (listed as zirconium compounds, n.o.s.): 5 mg/m³ VLA-ED (a Zr) Spain: (listed as zirconium compounds, n.o.s.): 10 mg/m³ VLA-EC (Zr) 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:A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
 Color: white
 Odor: Not available.
 pH: Not available.
 Vapor Pressure: Not available.
 Viscosity: Not available.
 Boiling Point: Not available.
 Freezing/Melting Point: > 2500 deg C
 Autoignition Temperature: Not available.
 Flash Point: Not available.
 Explosion Limits, lower: Not available.
 Explosion Limits, upper: Not available.
 Decomposition Temperature:
 Solubility in water: Insoluble in water.
 Specific Gravity/Density:

10 - STABILITY AND REACTIVITY

Chemical Stability:Stable under normal temperatures and pressures.
 Conditions to Avoid:Incompatible materials, dust generation.
 Incompatibilities with Other Materials:Oxidizing agents.
 Hazardous Decomposition Products:Irritating and toxic fumes and gases.
 Hazardous Polymerization: Has not been reported.

11 - TOXICOLOGICAL INFORMATION

RTECS#:
 CAS# 1314-23-4: ZH8800000 LD50/LC50:
 Not available.
 Carcinogenicity:
 Zirconium oxide - Not listed by ACGIH, IARC, or NTP.
 Other:
 See actual entry in RTECS for complete information.

12 - ECOLOGICAL INFORMATION

13 - DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

14 - TRANSPORT INFORMATION

Not regulated

15 - REGULATORY INFORMATION

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European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases:

Safety Phrases:

S 28A After contact with skin, wash immediately with plenty of water.

S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 1314-23-4: 0

Canada

CAS# 1314-23-4 is listed on Canada's DSL List.

CAS# 1314-23-4 is not listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 1314-23-4 is listed on the TSCA inventory.

16. Other Information

Product Use: Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

DISCLAIMER:

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

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