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

1.1 Product identifiers
   Product name: Zirconium Dioxide
   CAS-No.: 1314-23-4

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses: Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
   Company: Central Drug House (P) Ltd
   7/28 Varadaan House
   New Delhi-10002
   INDIA
   Telephone: +91 11 49404040
   Email: care@cdhfinechemical.com

1.4 Emergency telephone number
   Emergency Phone #: +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements
   Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3 Other hazards
   This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances
   Synonyms: Zirconia
   Formula: O₂Zr
   Molecular weight: 123.22 g/mol
   CAS-No.: 1314-23-4
   EC-No.: 215-227-2
No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

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 water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Zirconium oxides

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 vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(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.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: powder
   Colour: white

b) Odour
   No data available

c) Odour Threshold
   No data available

d) pH
   No data available

e) Melting point/freezing point
   Melting point/range: 2,700 °C - lit.

f) Initial boiling point and boiling range
   5,000 °C - lit.

g) Flash point
   Not applicable

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
   5.89 g/mL at 25 °C

n) Water solubility
   0.1 g/l - insoluble

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
s) Explosive properties  
No data available
t) Oxidizing properties  
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  
Strong oxidizing agents, Strong acids

10.6 Hazardous decomposition products  
Hazardous decomposition products formed under fire conditions. - Zirconium oxides  
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity  
No data available(Zirconium dioxide)

Skin corrosion/irritation  
Skin - Rabbit(Zirconium dioxide)  
Result: No skin irritation  
(OECD Test Guideline 404)

Serious eye damage/eye irritation  
Eyes - Rabbit(Zirconium dioxide)  
Result: Mild eye irritation  
(OECD Test Guideline 405)

Respiratory or skin sensitisation  
No data available(Zirconium dioxide)

Germ cell mutagenicity  
No data available(Zirconium dioxide)

Carcinogenicity  
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity  
No data available(Zirconium dioxide)
Specific target organ toxicity - single exposure
No data available (Zirconium dioxide)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available (Zirconium dioxide)

Additional Information
RTECS: ZH8800000

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

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish mortality LC50 - Brachydanio rerio (zebrafish) - > 100 mg/l - 96 h (Zirconium dioxide) (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (Zirconium dioxide)

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available (Zirconium dioxide)

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.
SECTION 14: Transport information

14.1 UN number
    ADR/RID: -  
    IMDG: -  
    IATA: -  

14.2 UN proper shipping name
    ADR/RID: Not dangerous goods  
    IMDG: Not dangerous goods  
    IATA: Not dangerous goods  

14.3 Transport hazard class(es)
    ADR/RID: -  
    IMDG: -  
    IATA: -  

14.4 Packaging group
    ADR/RID: -  
    IMDG: -  
    IATA: -  

14.5 Environmental hazards
    ADR/RID: no  
    IMDG Marine pollutant: no  
    IATA: no  

14.6 Special precautions for user
    No data available  

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
    This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.  

15.2 Chemical safety assessment
    For this product a chemical safety assessment was not carried out  

SECTION 16: Other information

Further information
    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. Central Drug House (P) Ltd and its Affiliates shall not 
    be held liable for any damage resulting from handling or from contact with the above product. See 
    www.cdhfinechemical.com for additional terms and conditions of sale.