



SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006 (REACH)
ZIRCOCEM-5 JYOTI

Date of Printing: 10.04.2024

SDS/Zircocem-5/Rev 3

Created:10/04/2024

➤ **Section 1.0 Identification of the substance / mixture and of the company**

1.1 Product Identifier

Product Name : ZIRCOCEM-5
HSN Code : 3816 0000
Physical state : Powder
Formula : ZrSiO_4
Synonyms : NA
Chemical family : Inorganic Silicate

1.2 Recommended use of the chemical and restrictions on use

Recommended use : High Temperature Adhesive for Refractory and Ceramic

For research and industrial use only

1.3 Details of the supplier of the safety data sheet



Jyoti Ceramic Industries Pvt Ltd
C-21, N.I.C.E, Satpur Nashik Maharashtra India
Tel +91-253-2350120/2351251 Fax +91-253-2350023
www.jyoticeramic.com
E-mail: info@jyoticeramic.com

For EU member states:

| | |
|-----------|------------|
| EC | REP |
|-----------|------------|

Jyoti Ceramic GmbH
Frankenstr. 12, 90762 Fürth, Germany
Tel: +49 911 7871 2084; Fax +49 911 7871 2082
E-Mail: sales@jyoticeramic.com

1.4 Emergency Telephone Number

Jyoti Ceramic Industries Pvt Ltd
+ 91-253-2350120

Reachable during office hours (Indian Standard time): Sunday - Friday: 9.00 AM – 5.00 PM

Jyoti Ceramic GmbH
+49 911 7871 2084;

Reachable during office hours (Central European time): Monday - Friday: 8.30 AM – 5.00 PM



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➤ **Section 2.0 Hazard(s) identification**

2.1 Classification of the substance or mixture :

Hazard Statements

H301 : Toxic if swallowed
H315 : Causes skin irritation
H318 : Causes serious eye damage
H335 : May cause respiratory irritation

Precautionary: Prevention
P264, P265, P270, 280

Precautionary: Response
P301, P302, P304, P305, P316, P317, P319, P321, P330, P332, P338, P340, P352, P354, P362+P364



2.2 Label elements

2.3 Hazards not otherwise classified (HNOC) : No additional information available

➤ **Section 3.0 Composition / Information on Ingredients**

3.1 Substance : Not Applicable

3.2 Mixture

Name : Zircocem 5 (Zirconium Silicate Adhesive Cement)
CAS No. : NA
EINECS No : NA

| Name of ingredient | Product Identifier (CAS No) | EINECS No | Wt % | GHS classification | REACH Reg. |
|--------------------|-----------------------------|-----------|------|----------------------|------------|
| Zirconium Silicate | 14940-68-2 | 239-019-6 | > 75 | Not classified | |
| Quartz | 14808-60-7 | 238-878-4 | < 10 | Not classified | |
| Binder | Proprietary* | | < 10 | H314 H315 H318 | |
| Additive | Proprietary* | | < 5 | H301 | |

*The chemical identity is withheld because it is trade secret information of Jyoti Ceramic Industries

Full text of hazard classes and H-statement : see section 15



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➤ **Section 4.0 Description of First Aid measures**

4.1 Description of first aid measures

- General : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; If not available show packaging or label.
- After inhaled : In case if powder / dust is inhaled and there symptoms of cough or shortness of breath, move from exposure to a well ventilated place, and if breathing difficulty occurs then consult a physician.
- After skin contact : If irritation to skin occurs then wash the affected area with fresh and clean water. Remove contaminated clothing.
- After eye contact : If irritation occurs flush the eyes with fresh clean running tap water. Get medical attention if irritation continues.
- After Ingestion : If substantial quantity of dust is swallowed, dilute with large amount of water, then consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Powder / Product dust generated through handling or post-setting grinding, sanding and machining may cause irritation to the mucous membrane, eyes, skin and respiratory organs.

- Symptoms/injuries after inhalation : May cause irritation
Symptoms/injuries after skin contact : May cause skin irritation
Symptoms/injuries after eye contact : May cause eye irritation
Symptoms/injuries after ingestion : No information available

4.3 Indication of any immediate medical attention and special treatment method

No additional information available

➤ **Section 5.0 Firefighting measures**

5.1 Extinguishing media

- Suitable extinguishing media : Product is not combustible and non-explosive.
Use a suitable extinguishing media for the surrounding fire
- Unsuitable extinguishing media : None known

5.2 Special hazards arising from the substrate or mixture

- Fire hazard : None known



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5.3 Advice for firefighters

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust.

➤ Section 6.0 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8

Emergency procedures : Evacuate unnecessary and unprotected personnel.

6.1.2 For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. Use protective clothing, dust mask, and eye protection.
For further information refer to section 8: "Exposure controls/personal protection".

6.2 Environmental Precautions

: Prevent entry of product into sewers and public waters.

Notify authorities if product enters sewers or public waters.

6.3 Methods and material for contamination and cleaning up

For containment : Prevent migration and entry into sewers or streams
Methods for cleaning up : Collect the spilt material by vacuum or manually for disposal and land filling as per local regulations.

6.4 Reference to other sections:

See Heading 8. Exposure controls and personal protection



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➤ **Section 7.0 Handling and storage**

7.1 Precautions for safe handling

Use safety shoes while handling. Wear safety glasses for eye protection. Sweep up and recover into a container for reuse or disposal. Wear personal protecting clothing including particle filter/dust mask and eye protection.

7.2 Hygiene Measures

Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.3 Conditions for safe storage, including any incompatibilities:

| | |
|------------------------|---|
| Storage conditions | : Keep container tightly closed |
| Incompatible materials | : Not known |
| Storage area | : Material should be stored in well protected dry place, in its original packing. |

7.4 Specific end uses

See section 1.2

➤ **Section 8.0 Exposure controls and personal protection**

8.1 Control parameters

Product dust generated through handling, grinding, or sanding may cause irritation to the mucous membrane, eyes, skin and respiratory organs. The limits of dust concentration (mg/m³) at the work-place have to be considered.

| Zirconium Oxide (1314-23-4)* | | |
|-------------------------------|---------------------------|-------------------------|
| ACGIH | STEL (mg/m ³) | 10 mg/m ³ Zr |
| | TWA (mg/m ³) | 5 mg/m ³ Zr |
| OSHA | STEL (mg/m ³) | 10 mg/m ³ Zr |
| | TWA (mg/m ³) | 5 mg/m ³ Zr |
| Silicon Dioxide (7631-86-9)** | | |
| ACGIH | TWA (mg/m ³) | 10 mg/m ³ |
| DFG | MAK(mg/m ³) | 4 mg/m ³ |

* As the ingredients are present as a solid solution, the individual values for ZrO₂ (considering major component) may be applicable for this material.

** The values are for total dust containing no asbestos and < 1 % crystalline silica.



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8.2 Exposure controls

| | |
|----------------------------------|--|
| Appropriate engineering controls | : Provide local exhaust or general room ventilation. Suitable ventilation / dust extraction system must be used in the workplace or on the equipment. |
| Personal protective equipment | : Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. |
| Hand protection | : Neoprene or nitrile rubber gloves |
| Eye protection | : Safety glasses/goggles |
| Skin and body protection | : Wear suitable protective clothing. After work ensure that skin is cleaned and hand care products are used. |
| Respiratory protection | : In case of dust exposure respiratory protection equipment must be worn. FFP2/FFP3 dust masks with particle filters are recommended. |

➤ Section 9.0 Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|------------------------|----------------|
| Appearance | Cream |
| Condition | Powder |
| Odour | None |
| Melting point | >1600 °C |
| Freezing point | Not Applicable |
| Ignition point | Non Flammable |
| Bulk Density (powder) | 1.1 |
| Solubility in water | Non soluble |
| Porosity | Not Applicable |
| PH | Not Applicable |
| Vapour Pressure | Not Applicable |
| Viscosity | Not Applicable |
| Vapour Density | Not Applicable |
| Partition Co-efficient | Not Applicable |
| Explosive Properties | Not Applicable |
| Oxidising Properties | Not Applicable |
| Evaporation Rate | Not Applicable |

9.2. Other information

No additional information available



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➤ **Section 10.0 Stability and reactivity**

| | | |
|-------------|---|-------------|
| 10.1 | Reactivity | : Not known |
| 10.2 | Chemical stability | : Stable |
| 10.3 | Possibility of hazardous reactions | : Not known |
| 10.4 | Conditions to avoid | : Not known |
| 10.5 | Incompatible materials | : Not known |
| 10.6 | Hazardous decomposition products | : Not known |

➤ **Section 11.0 Toxicological information**

11.1 Information on the toxicological effects

| | |
|--|--|
| Acute toxicity | : Not classified |
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Not classified |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : No evidence of carcinogenic effect |
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : Not classified |
| Specific target organ toxicity (repeated exposure) | : Not classified |
| Aspiration hazard | : Not classified |
| Symptoms/injuries after inhalation | : Product dust generated through handling, grinding, or sanding may cause irritation to the mucous membrane, eyes, skin and respiratory organs |
| Symptoms/injuries after skin contact | : Product dust may cause skin irritation |
| Symptoms/injuries after eye contact | : Product dust may cause eye irritation |
| Symptoms/injuries after ingestion | : No information available |

Section 12.0 Ecological information

If used properly, no environmental problems are anticipated. Do not empty the product or collected dust into ground water or drains.

12.1 Toxicity :

BINDER

| | |
|----------------------|-----------|
| LC100 (4 days), Fish | 1.949 g/L |
|----------------------|-----------|

| | | |
|-------------|---|---|
| 12.2 | Persistence & Degradability | : Not known |
| 12.3 | Bioaccumulative Potential | : Not known |
| 12.4 | Mobility in soil | |
| 12.5 | Results of PBT and vPvB assessment | : Product does not contain PBT or vPvB substances (see. REACH Annex XIII) |



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12.6 Other Adverse Effect

| | |
|------------------------------|---------------------------------------|
| Effect on ozone layer | : Not known |
| Effect on the global warming | : No Known effects from this product. |
| GWP mix comment | : No Known effects from this product. |

➤ Section 13.0 Disposal considerations

13.1 Waste treatment methods

| | |
|---------------------------------|---|
| Sewage disposal recommendations | : Do not dispose of waste into sewer |
| Waste disposal recommendations | : Landfill Dispose in a safe manner in accordance with local/national regulations. |
| Ecology - waste materials | : Avoid release to the environment |

➤ Section 14.0 Transport information

No dangerous goods as defined by ADR/RID/ADN/GGVSEB, ICAO/IATA, IMDG, USDOT

| | |
|---|--------------------------------|
| 14.1 UN number | : Not regulated for transport. |
| 14.2 UN proper shipping name | : Not applicable |
| 14.3 Transport hazard class(es) | : Not applicable |
| 14.4 Packing Group | : Not applicable |
| 14.5 Environmental Hazards | : Not applicable |
| 14.6 Special Precautions for the user | : See section 7 and 8 |
| 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | : Not applicable |

➤ Section 15.0 Regulatory information

15.1.: Safety, health and environmental regulations/legislation specific for the substance or mixture

| | |
|--------|----------------------------------|
| H301 : | Toxic if swallowed |
| H315 : | Causes skin irritation |
| H318 : | Causes serious eye damage |
| H335 : | May cause respiratory irritation |



None of the chemicals in this product are considered highly hazardous by OSHA.

15.2.: Chemical safety assessment

A chemical safety assessment of the product or its components is not available.



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➤ **Section 16.0 Other information**

16.1.: Abbreviations and acronyms

REACH: Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals.

TWA: Time Weighted Average;

OEL: Occupational exposure limit;

MAK: Maximum Workplace Concentration of the DGF (German Research Foundation)

ACGIH: American Conference of Governmental Industrial Hygienists;

OSHA: Occupational Safety and Health Administration;

CAS No. : Chemical Abstract Service Registration Number;

EINECS: European Inventory of Existing Commercial Chemical Substances

GHS: The Globally Harmonized System of Classification and labelling;

IATA: International Air Transport Association;

DOT: Department Of Transport;

IMDG: International Maritime Dangerous Goods;

RID: Regulations concerning the International Transport of Dangerous Goods by Rail;

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road;

ICAO: International Civil Aviation Organization

PBT: Persistent, bioaccumulative and toxic substances

vPvB: Very persistent and very bioaccumulative substances

Prepared by Jyoti Ceramic Industries In-House R&D Unit

Date of issue: 10.04.2024 Version: 3.0

This SDS covers Zircocem-5 Adhesive Cement.

The information is based on the current state of our knowledge and relates to the product in its condition as applied.

However, no guarantee, warranty or assurance is accepted either explicitly or implicitly for the accuracy, reliability and/or completeness of this information. We expressly call on the person receiving this information to check on the suitability and completeness of this information for their particular information.