

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II – Europe
ZIRCON SAND / FLOUR / OPACIFIER

SAFETY DATA SHEET

ZIRCON SAND / FLOUR / OPACIFIER

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

1.1 Product identifier

Product / trade name: Zirconium Silicate: Zircon Sand / "Zirconon"/ "Zirc 5"
EC number: 239-019-6
CAS number: 14940-68-2
Product type: Solid

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

Material uses: Industrial applications: Ceramics, Refractories, foundry applications, abrasives, and other zirconium containing compounds.

Identified uses:

Not subject to REACH registration. Naturally occurring substance.

1.3 Details of the supplier of the safety data sheet. Simba Materials Limited t/a CTM Potters Supplies

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T +44 (0)1709 770801- F +44 (0)1709 770803 doncaster@ctmpotterssupplies.co.uk

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+44 (0)1395 233077 - F +44 (0)1395 233905 admin@ctmpotterssupplies.co.uk

1.4 Emergency telephone number

Office hours only: +44 (0)1709 770801

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition: Mono-constituent substance

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

Not classified.

Classification according to Directive 67/548/EEC (DSD)

Not classified.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

See Section 12 for environmental precautions.

2.2 Label elements:

Signal word: No signal word.

Hazard Statements: No known significant effects or critical hazards.

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Precautionary statements:

General: Not applicable.
Prevention: Not applicable.
Response: Not applicable.
Storage: Not applicable.
Disposal: Not applicable.
Hazardous ingredients: Zircon
Supplemental label: Safety data sheet available for professional user on request.

2.3 Other hazards:

Other hazards which do not result in classification: Not available.

SECTION 3: Composition / information on ingredients

3.1 Substance / mixture: Mono-constituent substance

Product / ingredient name	Identifiers	%	Classification No. 67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	Type
Zircon (ZrSiO ₄)	EC: 239-019-6 CAS: 14940-68-2	>96	Not classified.	Not classified.	[A]
Rutile (TiO ₂)	EC: 215-282-2 CAS: 1317-80-2	<0.6	Not classified.	Not classified.	[B]
Quartz (SiO ₂)	EC: 238-878-4 CAS: 14808-60-7	0.5	Not classified.	Not classified.	[B]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Additional Information

This product as supplied contains less than 0.01% respirable crystalline silica (RCS).

This material is a naturally occurring radioactive material (NORM) and is considered a radioactive product (IAEA radioactive material if above 1 Bq/g) however it is not considered a radioactive product for transportation purpose, limit of 10 Bq/g for NORM. Some countries may use different limits; therefore local regulations should be consulted for the latest requirements.

Uranium 285 – 343 ppm 3.5 – 4.3 Bq/g

Thorium 116 – 157 ppm 0.5 – 0.6 Bq/g

Other daughter nuclides: In secular equilibrium

The contact dose rate from bulk quantities is in the order of 1 to 2µSv/h above the background. A person may work in dust concentrations of 3 mg/m³ for a full year with out exceeding the maximum dose for a worker. Respirable dust levels in typical zircon processing operations are reported in IAEA Safety Report No 51, and are less than 25% of the maximum dose to workers of 1 mSv/y (ICRP).

For downstream users of zircon, the thermal production of zirconia can generate risks associated with worker exposure to radioactive dust; and the chemical production of zirconia can generate risks associated with disposal of radionuclide containing wastes. It is recommended that regulatory guidance be obtained by the producers of zirconia, when using zircon.

For more details on the composition, refer to the Certificate of Analysis.

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Type

- [A] Constituent
[B] Impurity
[C] Stabilizing additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- Eye contact:** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation:** Move exposed person to fresh air. Get medical attention if symptoms occur.
- Skin contact:** Wash with soap and water. Get medical attention if symptoms occur.
- Ingestion:** Wash out mouth with water. Get medical attention if symptoms occur.
- Protection of first-aiders:** No special protection is required. See Section 8 for information on appropriate personal protective equipment.

4.2 Most important symptoms and effects, both acute and delayed**Potential acute health effects**

- Eye contact:** No known significant effects or critical hazards.
- Inhalation:** No known significant effects or critical hazards.
- Skin contact:** No known significant effects or critical hazards.
- Ingestion:** No known significant effects or critical hazards.

Over exposure signs or symptoms

- Eye contact:** No specific data.
- Inhalation:** No specific data.
- Skin contact:** No specific data.
- Ingestion:** No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician:** Treat symptomatically. No specific treatment.
- Specific treatments:** No specific treatment.

SECTION 5: Fire fighting measures**5.1 Extinguishing media**

- Suitable extinguishing media:** Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media:** None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** No specific fire or explosion hazard.
- Hazardous combustion Products** None.

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5.3 Advice for fire fighters

Special protective actions

For fire-fighters:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective

equipment for fire fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency

No action shall be taken involving any personal risk or without suitable training.

Personnel:

Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders:

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in “for non-emergency personnel”.

6.2 Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill:

Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill:

Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4 Reference to other

Sections:

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures:

Put on appropriate personal protective equipment (see Section 8).

7.2 Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

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7.3 Specific end uses(s)

Recommendations: Not available.
Industrial sector specific solutions Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

Product/ingredient name	Exposure limit values
Zircon (ZrO ₂)	EH40/2005 WELs (United Kingdom, 8/2007). TWA: 5 mg/m ³ . (as Zr) 8 hour(s). STEL: 10 mg/m ³ , (as Zr) 15 minute(s).
Quartz (SiO ₂)	EH40/2005 WELs (United Kingdom, 8/2007). TWA: 0.1 mg/m ³ 8 hour(s). Form: Respirable dust

Recommended monitoring procedures:

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

DNELs/DMELs:

No DNELs/DMELs available.

PNECs:

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls:

Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Eye / face protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection

Hand protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: overall.

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Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection:	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls:	Avoid creating dusty conditions and prevent wind dispersal.

Personal protective Equipment (Pictograms):



SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	Solid. [Granular solid].
Colour:	White. Beige.
Odour:	Odourless.
Odour threshold:	Not applicable.
pH:	Not applicable.
Melting point/freezing point:	2250°C
Initial boiling point and boiling range:	Not applicable.
Flash point:	Not applicable.
Evaporation rate:	Not applicable.
Flammability (solid, gas):	Not applicable.
Burning time:	Not applicable.
Burning rate:	Not applicable.
Upper/lower flammability or explosive limits:	Not applicable.
Vapour pressure:	Not applicable.
Vapour density:	Not applicable.
Bulk Density:	1.7-3 [g/cm ³]
Granulometry:	7 - 130 Microns
Relative density:	Not applicable.
Solubility(ies):	Insoluble in the following materials: cold water, hot water, methanol, diethyl ether, n-octanol and acetone.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature:	Not applicable.
Decomposition temperature:	Not applicable.
Viscosity:	Not applicable.
Explosive properties:	Not applicable.
Oxidizing properties:	Not applicable.
Molecular weight:	Not applicable.

9.2 Other information

No additional information.

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SECTION 10: Stability and reactivity

- 10.1 Reactivity:** No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability:** The product is stable.
- 10.3 Possibility of hazardous reactions:** Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid:** No specific data.
- 10.5 Incompatible materials:** None known.
- 10.6 Hazardous decomposition products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Zircon (ZrSiO ₄)	LD50 Oral LD50 Oral	Rat Rat	>10g/kg 10 g/kg	- -

Conclusion/Summary: Inert substance. Very low toxicity to humans or animals.

Irritation/Corrosion

Conclusion/Summary:

- Skin:** Non-irritating to the skin. OECD 404
- Eyes:** Non-irritating to the eyes. OECD 404
- Respiratory:** Non-irritating to the respiratory system

Sensitisation

Conclusion / Summary:

- Skin:** Non-sensitizer to skin.
- Respiratory:** Non sensitizer

Mutagenicity

Conclusion / Summary: Not mutagenic in Ames test.

Carcinogenicity

Conclusion / Summary: Not available.

Reproductive toxicity

Conclusion / Summary: Not available.

Teratogenicity

Conclusion / Summary: No teratogenic effect. In vitro

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard:

Not applicable.

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Information on the likely routes of exposure: Routes of entry anticipated: Oral, Dermal and Inhalation.

Potential acute health effects

Inhalation: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Eye contact: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No specific data.
Ingestion: No specific data.
Skin contact: No specific data.
Eye contact: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short-term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long-term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available

Potential chronic health affects

Conclusion / Summary: Prolonged and / or massive exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica.

General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Other information: Prolonged and / or massive exposure to respirable crystalline silica-containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine respirable particles of crystalline silica.

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SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Test	Result	Species	Exposure
Zircon ($ZrSiO_4$)	OECD 201 Chronic Growth inhibition	EC10>1 mg/l	Algae	28 days
	OECD 201 Acute Growth inhibition	EC50 >100 mg/l	Algae	72 hours
	OECD 202 Immobilization	EC50 >100 mg/l	Daphnia	48 hours
	OECD 203 Survival	EC50 >100 mg/l	Fish	96 hours

Conclusion / Summary: No known significant effects or critical hazards.

12.2 Persistence and degradability

Conclusion / Summary: Inorganic. Not readily biodegradable.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Zircon	-	-	-

12.4 Mobility in soil

Soil / water partition coefficient (K_{oc}): Not available.

Mobility: Not available.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable

P: Not available. B: Not available. T: Not available.

vPvB: Not applicable.

vP: Not available. vB: Not available.

12.6 Other adverse effects: No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Hazardous waste: Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

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Special precautions: This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers

SECTION 14: Transport information

	ADR/RID	ADN/ADNR	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional Information	-	-	-	-

14.6 Special precautions for user: Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
 Proper shipping name: Compliant to IMSBC

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

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Other EU regulations

Priority List Chemicals: Not listed
(793/93/EEC)

Integrated pollution prevention and control list (IPPC)-Air: Not listed

Integrated pollution prevention and control list (IPPC)-Water: Not listed

Seveso II Directive

This product is not controlled under the Seveso II Directive

International regulations

Australia inventory (AICS): All components are listed as exempted.

Canada inventory: All components are listed as exempted.

China inventory (IECSC): All components are listed as exempted.

Europe inventory: All components are listed as exempted.

Japan inventory: All components are listed as exempted.

Korea inventory: All components are listed as exempted.

New Zealand inventory of Chemicals (NZIoC): All components are listed as exempted.

Philippines inventory (PICCS): All components are listed as exempted.

United States inventory (TSCA 8b): All components are listed as exempted.

15.2 Chemical Safety

Assessment: Not applicable.

SECTION 16: Other information

* Indicates information that has changed from previously issued version.

Abbreviations and Acronyms:

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- IMSBC = International Maritime Solid Bulk Cargoes Code
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- vPvB = Very Persistent and Very Bioaccumulative

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Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

Classification	Justification
Not classified.	

Full text of abbreviated H statements: Not applicable.
Full text of classifications [CLP/GHS]: Not applicable.
Full text of abbreviated R Phrases: Not applicable.
Full text of classifications [DSD/DPD]: Not applicable.

Additional information

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Europe/EN-GB

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its agents or subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.