

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND OF THE COMPANY

1.1 Product identifiers

Product name	Barium yttrium zirconate
Formula	$\text{BaZr}_{1-x}\text{Y}_x\text{O}_{3-d}$, $0 < x < 0.25$
Brand	CerPoTech
REACH No	Not available as the annual tonnage of this substance does not require a registration

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

Identified uses	Laboratory chemicals, Manufacture of substances
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1.3 Details of the supplier of the safety data sheet

Company	Ceramic Powder Technology AS Kvenildmyra 6, 7093 Tiller, Norway
Telephone	+47 982 83 966
e-mail address	sales@cerpotech.com

1.4 Emergency telephone number

Emergency Phone #	Toxicology information central (Norway): +47 22 59 13 00
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2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, oral (category 4), H302
Skin irritation (category 2), H315
Eye irritation (category 2), H319
Acute toxicity, inhalation (category 4), H332

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Irritating to eyes, skin and respiratory system, R36/37/38
Harmful by inhalation and if swallowed, R20/22

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

Pictogram



Signal word

Warning

Hazard statement(s)

H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled

Precautionary statement(s)

P261

Avoid breathing dust/fume/gas/mist/vapours/spray

P280

Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Synonyms: BZY, barium zirconium yttrium oxide, yttria-doped barium zirconate

<i>Chemical name</i>	<i>CAS-No.</i>	<i>H-phase</i>	<i>Concentration (wt %)</i>
Barium zirconate	12009-21-1	H302/H332	
Yttrium (III) oxide	1314-36-9	H315/H335	
Zirconium (IV) oxide	1314-23-4	H315/H319/H335	

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Move the person to fresh air. If symptoms persist, call a physician.

In case of skin contact

Wash off with soap and water. In case of skin irritation or allergic reactions, see a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical, and toxicological properties of soluble barium salts as impurities have not been thoroughly investigated. Prolonged inhalation of dust may cause baritosis, a benign pneumoconiosis. Damage to the lungs. If ingested, the presence of soluble barium salts as impurities may cause toxic reactions due to bioaccumulation, Nausea, Vomiting, and Diarrhoea.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIRE-FIGHTING 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

Metal oxide fumes can be released in case of fire.

5.3 Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid formation and deposition of dust. Effective exhaust ventilation system. Avoid breathing dust. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

6.2 Environmental precautions

Do not let product enter drains.

6.3. Methods for cleaning up

Use mechanical handling equipment. Avoid dust formation. Fill into labelled, sealable containers.

7. HANDLING AND STORAGE

7.1 Advice on safe handling

Avoid dust formation. Ensure adequate ventilation and, if necessary, exhaust ventilation when handling or transferring the product. Avoid contact with the skin and the eyes.

7.2 Advice on safe storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses tested and approved under appropriate government standards such as EN 166.

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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body protection

Protective suit is recommended.

Respiratory protection

Respiratory protective device with particle filter EN 143-P2 or P3.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	Powder
Odour	Odourless
pH	No data available
Melting point range	No data available
Burning number	No data available
Flammability	No data available
Dust explosibility	The material represents no explosion hazard
Explosive limits	Not applicable
Bulk density	No data available
Solubility	No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Materials to avoid

Water, oxidizing agents, reducing agents.

10.6 Hazardous decomposition

Metal oxides formed under fire conditions.

11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral – rat – 1.980 mg/kg.

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity – single exposure

No data available

Specific target organ toxicity – repeated exposure

No data available

Aspiration hazard

No data available

Additional information

To our best knowledge, chemical, physical and toxicological properties of nano-sized particle are not completely investigated and should be handled with care.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

13.2 Other information

No data available

14. TRANSPORT INFORMATION

14.1 Land transport (ADR/RID)

Not dangerous goods.

14.2 Air transport (ICAO-TI/IA TA – DGR)

Not dangerous goods.

14.3 Sea transport (IMDG)

Not dangerous goods.

15. REGULATORY INFORMATION

Labelling according to EC Directives no. 1907/2006

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

No data available

15.21 Chemical Safety assessment

No data available

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation

The information provided in this Safety Data Sheet is correct to the best of our knowledge at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release. The above details do not imply any guarantee concerning composition, properties or performance. It is not to be considered a warranty or quality specification and do not apply for the material in combination with any other materials or in any process.