



Revision date: 05.05.2025 Revision No: 09

Page 1 of 9
Printing date: 25.06.2025

Zirkon BioStar, Zirkon BioStar Colour

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

- 1.1 Product identifier:**
Commercial product name: Zirkon BioStar, Zirkon BioStar Colour
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Use of the substance/mixture: Zirkon BioStar, Zirkon BioStar Colour milling blanks are intended for the fabrication of fixed dentures for long-term use.
Uses advised against: No information available.
- 1.3 Details of the supplier of the safety data sheet**
Manufacturer:
Company name: Dental Direkt GmbH
Street: Industriezentrum 106-108
Place: DE-32139 Spenge
Telephone: +49-(0)5225 - 8 63 19-0
Telefax: +49-(0)5225 - 8 63 19-99
e-mail:
Contact person: main office - Telephone: +49-(0)5225 - 8 63 19-0
Internet: www.dentaldirekt.de
Responsible Department: info@dentaldirekt.de
- Supplier:** ERNST HINRICHS Dental GmbH
Street / mailbox: Borsigstr. 1
Country code. / postal code / city: DE - 38644 Goslar
Phone: +49 (0) 53 21 / 5 06 24
Fax: 0 53 21 / 5 08 81
E-mail / Website: info@hinrichs-dental.de / www.hinrichs-dental.de
- 1.4 Emergency telephone number** +49 (0) 761 19240 (VIZ Freiburg)
Further Information: Medical device

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture**
Regulation (EC) No. 1272/2008: Aquatic Chronic 3; H412
Full text of hazard statements: see SECTION 16.
- 2.2 Label Elements**
Regulation (EC) No 1272/2008
Hazard statements:
H412 Harmful to aquatic life with long lasting effects.
Precautionary statements
P273 Avoid release to the environment.
P501 Dispose of contents/container to an appropriate recycling or disposal facility.
- 2.3 Other hazards:** The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria. This product does not contain a substance that has endocrine



Revision date: 05.05.2025

Revision No: 09

Page 2 of 9
Printing date: 25.06.2025

Zirkon BioStar, Zirkon BioStar Colour

disrupting properties with respect to humans as no components meets the criteria.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical characterization:

The product contains: Yttrium zirconium oxide

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
12061-16-4	Dierbium trioxide			< 1 %
	235-045-7			
	Aquatic Acute 1, Aquatic Chronic 1; H400 H410			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
12061-16-4	235-045-7	Dierbium trioxide	< 1 %
	M chron.; H410: M=1		

Further Information:

No information available

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Take off contaminated clothing and wash it before reuse.
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation:

Remove person to fresh air and keep comfortable for breathing. In case of respiratory tract irritation, consult a physician.

After contact with skin:

After contact with skin, wash immediately with plenty of water and soap. If skin irritation occurs: Get medical advice/attention.

After contact with eyes:

Protect uninjured eye.
Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

After ingestion:

Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person or a person with cramps. Do NOT induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed:

No information available.



Zirkon BioStar, Zirkon BioStar Colour

- | | |
|--|--|
| 4.3 Indication of any immediate medical attention and special treatment needed: | First Aid, decontamination, treatment of symptoms. |
|--|--|

SECTION 5: Firefighting measures

- | | |
|---|---|
| 5.1 Extinguishing media | |
| Suitable extinguishing agent: | The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings. |
| Unsuitable extinguishing media: | No data available |
| 5.2 Special hazards arising from the substance or mixture: | In case of fire may be liberated: Carbon dioxide (CO ₂), Carbon monoxide, MetalOx |
| 5.3 Advice for firefighters: | In case of fire: Wear self-contained breathing apparatus. |
| Additional information: | Do not allow run-off from fire-fighting to enter drains or water courses. Residues of fire and contaminated water have to be disposed according to the local regulations. |

SECTION 6: Accidental release measures

- | | |
|--|---|
| 6.1 Personal precautions, protective equipment and emergency procedures | |
| General advice: | See protective measures under point 7 and 8.
Personal protection equipment: see section 8
Provide adequate ventilation.
Avoid dust formation. In case of inadequate ventilation wear respiratory protection.
Avoid contact with skin, eyes and clothes. |
| For non-emergency personnel: | Remove persons to safety.
Keep unprotected persons away. Stay on the side facing the wind. |
| For emergency responders: | Knock down dust with water spray jet. |
| 6.2 Environmental precautions: | Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. |
| 6.3 Methods and material for containment and cleaning up | |
| For containment: | Take up mechanically. Avoid dust formation. Collect in closed and suitable containers for disposal. Dispose of waste according to applicable legislation. |
| For cleaning up: | Clean with detergents. Avoid solvent cleaners.
Retain contaminated washing water and dispose it. |
| Other information: | Provide fresh air. |
| 6.4 Reference to other sections: | Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13 |

SECTION 7: Handling and storage

- | | |
|--|--|
| 7.1 Precautions for safe handling | |
| Advice on safe handling: | Wear personal protection equipment (refer to section 8). |



Revision date: 05.05.2025

Revision No: 09

Page 4 of 9
Printing date: 25.06.2025

Zirkon BioStar, Zirkon BioStar Colour

Keep container tightly closed.
Avoid contact with skin, eyes and clothes.
Avoid release to the environment. Clear spills immediately.
Avoid dust formation. Avoid: Dust deposits
Do not breathe dust. In case of inadequate ventilation wear respiratory protection.

Advice on protection against fire and explosion:

No special fire protection measures are necessary.

Advice on general occupational hygiene:

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.
Wash contaminated clothing prior to re-use.
When using do not eat, drink, smoke, sniff.
Wash hands before breaks and after work.
Apply skin care products after work.

Further information on handling:

Avoid dust formation. Observe instructions for use.
Provide adequate ventilation as well as local exhaustion at critical locations.
To follow: Occupational exposure limit values

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container.
Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

Hints on joint storage:

Keep away from food, drink and animal feedingstuffs.

Further information on storage conditions:

Keep away from: Frost, Heat Protect from moisture.
Handle with care - avoid bumps, friction and impact.

7.3 Specific end use(s):

No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
-	Dust non-specific, respirable	-	4		TWA (8 h)	
-	Dust non-specific, total inhalable	-	10		TWA (8 h)	

8.2 Exposure controls

Appropriate engineering controls:

Technical ventilation of workplace.

Individual protection measures, such as personal protective equipment

Eye/face protection:

Suitable eye protection: EN 166
Eye glasses with side protection
goggles



Revision date: 05.05.2025

Revision No: 09

Page 5 of 9
Printing date: 25.06.2025

Zirkon BioStar, Zirkon BioStar Colour

Hand protection:

Tested protective gloves must be worn: EN ISO 374
The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Suitable material: NBR (Nitrile rubber), Butyl caoutchouc (butyl rubber) Breakthrough times and swelling properties of the material must be taken into consideration. Observe the wear time limits as specified by the manufacturer.

Replace when worn.

Skin protection:

Protective clothing.

Respiratory protection:

Usually no personal respiratory protection necessary.
Respiratory protection necessary at: exceeding exposure limit values, dust formation
Use appropriate respiratory protection. Particle filter device (EN 143)

Thermal hazards:

No information available.

Environmental exposure controls:

See section 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	solid, Powder
Colour:	white
Odour:	odourless
Changes in the physical state	
Melting point/freezing point:	No data available
Boiling point or initial boiling point and boiling range:	No data available
Flammability:	No data available
Lower explosion limits:	No data available
Upper explosion limits:	No data available
Flash point:	No data available
Decomposition temperature:	No data available
pH-Value:	No data available
Water solubility:	practically insoluble
Solubility in other solvents:	No information available.
Partition coefficient n-octanol/water:	No data available
Vapour pressure:	No data available
Density:	No data available
Bulk density:	1.000-1.500 kg/m ³
Relative vapour density:	No data available

9.2 Other information

Information with regard to physical hazard classes

Explosive properties:	No data available
Sustained combustibility:	No data available
Self-ignition temperature	
Solid:	No data available
Gas:	No data available
Oxidizing properties:	No data available

Other safety characteristics



Zirkon BioStar, Zirkon BioStar Colour

Evaporation rate:	No data available
Solid content:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
Viscosity / dynamic:	No data available

Further Information No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity:	No hazardous reaction when handled and stored according to provisions.
10.2 Chemical stability:	The product is chemically stable under recommended conditions of storage, use and temperature.
10.3 Possibility of hazardous reactions:	No information available.
10.4 Conditions to avoid:	No information available.
10.5 Incompatible materials:	No information available.
10.6 Hazardous decomposition products:	MetalOx
Further information:	No further relevant information available.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicocinetics, metabolism and distribution:	No information available.
Acute toxicity:	Based on available data, the classification criteria are not met.
ATEmix calculated:	ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l
Irritation and corrosivity:	Skin corrosion/irritation: Based on available data, the classification criteria are not met. Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.
Sensitising effects:	Based on available data, the classification criteria are not met.
Carcinogenic/mutagenic/toxic effects for reproduction	
Germ cell mutagenicity:	Based on available data, the classification criteria are not met.
Carcinogenicity:	Based on available data, the classification criteria are not met.
Reproductive toxicity:	Based on available data, the classification criteria are not met.
STOT-single exposure:	Based on available data, the classification criteria are not met.



Revision date: 05.05.2025

Revision No: 09

Page 7 of 9
Printing date: 25.06.2025

Zirkon BioStar, Zirkon BioStar Colour

STOT-repeated exposure:	Based on available data, the classification criteria are not met.
Aspiration hazard:	Based on available data, the classification criteria are not met.
Practical experience:	After eye contact: Dust may cause mechanical irritation. Following inhalation: dust/mist May cause respiratory irritation.

11.2 Information on other hazards
Further information:

Calculation method.

SECTION 12: Ecological information

12.1 Toxicity:	Harmful to aquatic life with long lasting effects. No information available.
12.2 Persistence and degradability:	Product/Substance is inorganic.
12.3 Bioaccumulative potential:	No information available.
12.4 Mobility in soil:	No information available.
12.5 Results of PBT and vPvB assessment:	The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
12.6 Endocrine disrupting properties:	This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.
12.7 Other adverse effects:	No information available.
Further information:	Water hazard class 2

SECTION 13: Disposal considerations

13.1 Waste treatment methods Disposal recommendations:	Dispose of waste according to applicable legislation. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. (AVV 180106*; 160303*) Hazardous waste according to Directive 2008/98/EC (waste framework directive).
Contaminated packaging:	Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)	
14.1 UN number or ID number:	No dangerous good in sense of this transport regulation.
Inland waterways transport (ADN)	
14.1 UN number or ID number:	No dangerous good in sense of this transport regulation.
Marine transport (IMDG)	
14.1 UN number or ID number:	No dangerous good in sense of this transport regulation.
Air transport (ICAO-TI/IATA-DGR)	



Zirkon BioStar, Zirkon BioStar Colour

14.1 UN number or ID number: No dangerous good in sense of this transport regulation.

14.5 Environmental hazards
ENVIRONMENTALLY HAZARDOUS: No

14.6 Special precautions for user: No dangerous good in sense of this transport regulation.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

Information according to 2012/18/EU (SEVESO III):

Not subject to 2012/18/EU (SEVESO III)

Additional information:

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Classification according to Regulation (EC) No 1272/2008 [CLP]
COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste
Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D):

2 - obviously hazardous to water

Additional information.

Germany:
Hazardous Substances Ordinance (GefStoffV)
Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV)
TRGS 201, TRGS 220, TRGS 400, TRGS 420, TRGS 500, TRGS 509, TRGS 510, TRGS 555, TRGS 600, TRGS 900
DGUV Information 213-850
DGUV Information 213-730

15.2 Chemical safety assessment: For the following substances of this mixture a chemical safety assessment has been carried out:
Dierbium trioxide

SECTION 16: Other information

Changes:

This data sheet contains changes from the previous version in section(s): 1,4,5,6,11,12,13,15.

Abbreviations and acronyms

Aquatic Acute: Acute aquatic hazard

Aquatic Chronic: Chronic aquatic hazard



Revision date: 05.05.2025

Revision No: 09

Page 9 of 9
Printing date: 25.06.2025

Zirkon BioStar, Zirkon BioStar Colour

ADR:	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID:	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG:	International Maritime Code for Dangerous Goods
IATA:	International Air Transport Association
IATA-DGR:	Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO:	International Civil Aviation Organization
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO)
CAS:	Chemical Abstracts Service (division of the American Chemical Society)
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
CLP:	Regulation on Classification, Labelling and Packaging of Substances and Mixtures,
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent
EC50:	Effective concentration, 50 percent
DNEL:	Derived No Effect Level
PNEC:	Predicted No Effect Concentration
PBT:	Persistent, Bioaccumulative and Toxic
vPvB:	very Persistent and very Bioaccumulative

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Aquatic Chronic 3; H412	Calculation method

Relevant H and EUH statements (number and full text)

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)