



According to 1907/2006 (REACH)

Date of issue: 15.10.2015

**Zirkon BioStar HT Smile, Zirkon BioStar S-HT Smile**

**1. Identification of the substance / Preparation and Company:**

- 1.1 Identification of the substance or preparation:  
 Commercial product name: Zirkon BioStar HT Smile, Zirkon BioStar S-HT Smile  
 Product description: Milling disc / block for medical applications
- 1.2 Relevant identified uses of the substance or mixture and uses advised against  
 Use of the Substance/Mixture: Medical applications
- 1.3 Details of the supplier of the safety data sheet  
 Manufacturer/Supplier: ERNST HINRICHS Dental GmbH  
 Street / mailbox: Borsigstr. 1  
 Country code. / postal code / city: D - 38644 Goslar  
 Phone: 0 53 21 / 5 06 24  
 Fax: 0 53 21 / 5 08 81  
 E-mail / Website: info@hinrichs-dental.de / www.hinrichs-dental.de  
 Further information obtainable from: ERNST HINRICHS Dental GmbH
- 1.4 Emergency telephone number  
 ERNST HINRICHS Dental GmbH: +49 (0) 53 21 / 5 06 24 - 25 (Mon-Fri. 8 a.m. – 4 p.m.)

**2. Hazards identification**

- 2.1 Classification of the substance or mixture  
 Classification (REGULATION (EC) No 1272/2008): No classification
- 2.2 Label elements  
 Labelling (REGULATION (EC) No 1272/2008): No labelling required
- 2.3 Other hazards:  
 This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).  
 Zirconium oxide (ZrO<sub>2</sub>): This substance is not considered to be persistent, bioaccumulating and toxic (PBT).  
 Yttrium oxide: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

**3. Composition/information on ingredients**

- 3.1 Mixtures  
 Chemical nature: Mixture  
 Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
zirconium dioxide	1314-23-4 215-227-2			> 88 - < 96
yttrium oxide	1314-36-9 215-233-5 /			> 5 - < 10

**4. First aid measures:**

- 4.1 Description of first aid measures
- If inhaled: Remove to fresh air.  
 If symptoms persist, call a physician.
- In case of skin contact: Wash off with soap and water.
- In case of eye contact: Rinse with plenty of water.  
 If eye irritation persists, consult a specialist.
- If swallowed: Clean mouth with water and drink afterwards plenty of water.  
 Obtain medical attention.



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- 4.2 Most important symptoms and effects, both acute and delayed  
 Symptoms: No information available.  
 Risks: No information available.
- 4.3 Indication of any immediate medical attention and special treatment needed  
 Treatment: No information available.

**5. Fire Fighting measures:**

- 5.1 Extinguishing media  
 Suitable extinguishing media: The product itself does not burn., Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media: None known.
- 5.2 Special hazards arising from the substance or mixture  
 Specific hazards during firefighting: None known.  
 Hazardous combustion products: None known.
- 5.3 Advice for firefighters  
 Special protective equipment for Firefighters: In the event of fire, wear self-contained breathing apparatus.  
 Further information: Prevent fire extinguishing water from contaminating surface water or the ground water system.

**6. Accidental release measures:**

- 6.1 Personal precautions, protective equipment and emergency procedures  
 Personal precautions: Use personal protective equipment.  
 Avoid dust formation.  
 Avoid dust accumulation in enclosed space.
- 6.2 Environmental precautions  
 Environmental precautions: Do not flush into surface water or sanitary sewer system.
- 6.3 Methods and materials for containment and cleaning up  
 Methods for cleaning up: Use mechanical handling equipment.  
 Pick up and transfer to properly labelled containers.
- 6.4 Reference to other sections:  
 For personal protection see section 8.

**7. Handling and Storage:**

- 7.1 Precautions for safe handling  
 Advice on safe handling: Avoid dust formation. Provide sufficient air exchange and/or exhaust in workrooms. Avoid exceeding of the given occupational exposure limits (see section 8).  
 Advice on protection against fire and explosion: No special precautions required.  
 Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Keep working clothes separately.
- Dust explosion class: No data available
- 7.2 Conditions for safe storage, including any incompatibilities  
 Requirements for storage areas and containers: Store in accordance with the particular national regulations.  
 Further information on storage: Store in tightly closed containers in a dry place.  
 Conditions:
- 7.3 Specific end use(s)  
 Specific use(s): No data available



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**8. Exposure controls / Personal protection:**

8.1 Control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Update	Basis
zirconium dioxide	1314-23-4	TWA	5 mg/m3	2005-04-06	GB EH40
Further information	Zirconium				
		STEL	10 mg/m3	2005-04-06	GB EH40
Further information	Zirconium				

DNEL

Zirconium oxide (ZrO<sub>2</sub>): No data available

Yttrium oxide: No data available

PNEC

Zirconium oxide (ZrO<sub>2</sub>): No data available

Yttrium oxide: No data available

8.2 Exposure controls

Personal protective equipment

Eye protection: Safety glasses

Hand protection

Material: Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.

Remarks: The data about break through time/strength of material is not valid for undissolved solids/dust.

Skin and body protection: Protective suit

Respiratory protection: Respiratory protective device with particle filter EN 143

Environmental exposure controls

General advice: Do not flush into surface water or sanitary sewer system.

**9. Physical and chemical properties:**

9.1 Information on basic physical and chemical properties

Appearance: disc  
 Colour: white  
 Odour: odourless  
 Odour Threshold: No data available  
 pH: No data available  
 Melting point/range: No data available  
 Boiling point/boiling range: No data available  
 Flash point: Not applicable  
 Evaporation rate: Not applicable  
 Flammability: Negative  
 Lower explosion limit: No data available  
 Upper explosion limit: No data available  
 Vapour pressure: No data available  
 Relative vapour density: Remarks: not applicable  
 Density: > 6 g/cm<sup>3</sup>  
 Water solubility: No data available  
 Partition coefficient: noctanol/water: Not applicable  
 Auto-ignition temperature: Not auto-flammable  
 Thermal decomposition: Not applicable  
 Viscosity, dynamic: Not applicable  
 Viscosity, kinematic: Not applicable



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Explosive properties:	Not explosive
Oxidizing properties:	Not oxidizing
9.2 Other information:	
Burning number:	1
Flammability (contact with water):	not highly flammable

**10. Stability and Reactivity:**

10.1 Reactivity:	No hazards to be specially mentioned.
10.2 Chemical stability:	Stable under normal conditions.
10.3 Possibility of hazardous reactions:	
Hazardous reactions:	None known.
10.4 Conditions to avoid	None known.
10.5 Incompatible materials	
Materials to avoid:	None known.
10.6 Hazardous decomposition products	
Other information:	Not applicable.

**11. Toxicological Information:**

11.1 Information on toxicological effects	
Product	
Acute oral toxicity:	No data available
Acute inhalation toxicity:	No data available
Acute dermal toxicity:	No data available
Skin corrosion/irritation:	No data available
Serious eye damage/eye irritation:	No data available
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity	
Genotoxicity in vitro:	No data available
Genotoxicity in vivo:	No data available
Carcinogenicity:	No data available
Reproductive toxicity:	No data available
Teratogenicity:	No data available
STOT - single exposure:	Remarks: No data available
Repeated dose toxicity:	Remarks: No data available
STOT - repeated exposure:	Remarks: No data available
Further information:	None known.
Components:	
Zirconium oxide (ZrO <sub>2</sub> ) :	
Acute oral toxicity:	No data available
Acute inhalation toxicity:	No data available
Acute dermal toxicity:	No data available
Skin corrosion/irritation:	No data available
Serious eye damage/eye Irritation:	No data available
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity	
Genotoxicity in vitro:	No data available
Genotoxicity in vivo:	No data available
Carcinogenicity:	No data available
Reproductive toxicity:	No data available
Teratogenicity:	No data available
STOT - single exposure:	Remarks: No data available
Repeated dose toxicity:	Remarks: No data available
STOT - repeated exposure:	Remarks: No data available



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Further information:	None known.
Yttrium oxide :	
Acute oral toxicity:	LD50 rat: > 5,000 mg/kg Method: No information available. GLP: No information available.
Acute inhalation toxicity:	No data available
Acute dermal toxicity:	No data available
Skin corrosion/irritation:	Species: rabbit Exposure time: 24 h Result: No skin irritation Method: No information available.
Serious eye damage/eye irritation:	Result: Mild eye irritation Method: No information available.
Respiratory or skin sensitisation:	No data available
Germ cell mutagenicity	
Genotoxicity in vitro:	No data available
Genotoxicity in vivo:	No data available
Carcinogenicity:	No data available
Reproductive toxicity:	No data available
Teratogenicity:	No data available
STOT - single exposure:	Remarks: No data available
Repeated dose toxicity:	Remarks: No data available
STOT - repeated exposure:	Remarks: No data available
Further information:	None known.

**12. Ecological Information:**

12.1 Toxicity	
Product:	
Toxicity to fish:	No data available
Toxicity to daphnia and other aquatic invertebrates:	No data available
Toxicity to algae:	No data available
Toxicity to bacteria:	No data available
Toxicity to fish (Chronic toxicity):	No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	No data available
Toxicity to soil dwelling organisms:	No data available
Toxicity to terrestrial organisms:	No data available
Components:	
Zirconium oxide (ZrO <sub>2</sub> ) :	
Toxicity to fish:	No data available
Toxicity to daphnia and other aquatic invertebrates:	No data available
Toxicity to algae:	No data available
Toxicity to bacteria:	No data available
Toxicity to fish (Chronic toxicity):	No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	No data available
Toxicity to soil dwelling organisms:	No data available
Plant toxicity:	No data available
Toxicity to terrestrial organisms:	No data available
Yttrium oxide :	
Toxicity to fish:	No data available
Toxicity to daphnia and other aquatic	No data available



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invertebrates:	
Toxicity to algae:	No data available
Toxicity to bacteria:	No data available
Toxicity to fish (Chronic toxicity):	No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	No data available
Toxicity to soil dwelling organisms:	No data available
Plant toxicity:	No data available
Toxicity to terrestrial organisms:	No data available
12.2 Persistence and degradability	
Product:	
Biodegradability:	The methods for determining biodegradability are not applicable to inorganic substances.
Stability in water:	No data available
Components:	
Zirconium oxide (ZrO <sub>2</sub> ) :	
Biodegradability:	The methods for determining biodegradability are not applicable to inorganic substances.
Stability in water:	No data available
Yttrium oxide :	
Biodegradability:	The methods for determining biodegradability are not applicable to inorganic substances.
Stability in water:	No data available
12.3 Bioaccumulative potential	
Product:	
Bioaccumulation:	This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
Partition coefficient: noctanol/ Water:	Not applicable
Components:	
Zirconium oxide (ZrO <sub>2</sub> ) :	
Bioaccumulation:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
Partition coefficient: noctanol/ water	Not applicable
Yttrium oxide :	
Bioaccumulation:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
Partition coefficient: noctanol/ water	Not applicable
12.4 Mobility in soil	
Product:	
Mobility:	No data available
Components:	
Zirconium oxide (ZrO <sub>2</sub> ) :	
Mobility:	No data available
Yttrium oxide :	
Mobility:	No data available
12.5 Results of PBT and vPvB assessment	
Product:	
Assessment:	This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
Components:	
Zirconium oxide (ZrO <sub>2</sub> ) :	
Assessment:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).



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Yttrium oxide :  
Assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

12.6 Other adverse effects

Product:  
Ozone-Depletion Potential: No data available  
Additional ecological information: None known.  
Components:  
Zirconium oxide (ZrO<sub>2</sub>) :  
Ozone-Depletion Potential: No data available  
Additional ecological information: None known.  
Yttrium oxide :  
Ozone-Depletion Potential: No data available  
Additional ecological information: None known.

**13. Disposal Considerations:**

13.1 Waste treatment methods

Product: In accordance with local and national regulations.  
This product cannot be classified with disposal identification key acc. to the EU disposal directives as a classification results from the intended utilisation purpose of the consumer.

**14. Transport Information:**

14.1 UN number

ADR: Not dangerous goods  
IMDG: Not dangerous goods  
IATA: Not dangerous goods

14.2 Proper shipping name

ADR: Not dangerous goods  
IMDG: Not dangerous goods  
IATA: Not dangerous goods

14.3 Transport hazard class

ADR: Not dangerous goods  
IMDG: Not dangerous goods  
IATA: Not dangerous goods

14.4 Packing group

ADR: Not dangerous goods  
IMDG: Not dangerous goods  
IATA: Not dangerous goods

14.5 Environmental hazards

ADR: Not dangerous goods  
IMDG: Not dangerous goods  
IATA: Not dangerous goods

14.6 Special precautions for user:

For personal protection see section 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

No data available

**15. Regulatory Information:**

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

Major Accident Hazard Legislation Update: 16. December 2003  
96/82/EC: Is not subject to the Seveso II Directive.

15.2 Chemical Safety Assessment:

no



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**16. Further Information:**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.