

**1. Product and Company Identification**

Product Name: ORIGIN Beyond Plus Zirconia Disc  
Revision Date: 6.24.2018  
SDS Number: 42  
Product Use: Dental Restorations  
(Zirconia-based Crown and Bridge frameworks, Full contour application)

Manufacturer B&D Dental Corp  
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**2. Chemical Composition / Information on Ingredients**

Dental Ceramic discs of yttria stabilized tetragonal zirconia polycrystal (YTZP)  
comprising:  
(Conforms to ISO 13356)

ZrO <sub>2</sub> + HfO <sub>2</sub> + Y <sub>2</sub> O <sub>3</sub>	≥ 99.8
Y <sub>2</sub> O <sub>3</sub>	>4.95 to ≤ 5.35
Al <sub>2</sub> O <sub>3</sub>	<0.1
SiO <sub>2</sub>	<0.02
Fe <sub>2</sub> O <sub>3</sub>	<0.01
Na <sub>2</sub> O	<0.04

**3. Hazards Identification**

An odorless white solid block/slab/cylinder.

**WARNING**

May cause eye, skin, and respiratory tract irritation.

This material presents little or no hazard (if spilled) and no unusual hazard if involved with a fire.

**Potential Health Effects:**

Eye Contact: Airborne dust may irritate eyes.

Skin Contact:	May irritate skin.
Ingestion:	No hazard anticipated from ingestion
Inhalation:	May irritate respiratory system
Radiation:	Non-radioactive

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

#### 4. First Aid Measures

General info	If symptoms persist or in case of doubt, seek medical advice.
Eye Contact:	This product is an inert solid substance. Flush with copious amounts of gentle stream of clean water for several minutes; Consult an ophthalmologist or medical attention if any irritation or soreness of eye persists.
Skin Contact:	Rinse with soap and water.
Ingestion:	No hazard anticipated from ingestion but if necessary rinse mouth with water. Seek medical attention if large amounts have been ingested
Inhalation:	Remove to fresh air.

#### 5. Fire Fighting Measures

Extinguishing media:	Use dry chemical, foam, water
Suitable extinguishing agents:	This product is not combustible and does not support the combustion. Use fire fighting measures for the surrounding area.
Flash Point:	No data available
Special hazards arising from the substance or mixture:	No specific hazards known
Protective equipments:	Wear NIOSH/MSHA-approved self-contained respiratory protective device.

#### 6. Accidental Release Measures

Wear safety equipment as described in Section 8 for normal handling, avoid generating dust. Scoop up material and place in appropriate containers for disposal or reuse. For smaller amounts,

sweep or vacuum up material. Disposal to landfill is subject to local regulations. Transport is not regulated and there are no specific storage requirements.

## 7. Handling and Storage

### Handling

#### Precautions for safe handling

- Machining only by trained staff.
- Prevent formation of dust and avoid breathing dusts.
- Ensure good ventilation at the workplace

### Storage

Requirements to be met by storerooms: Not required

Store in dry conditions.

Protect from exposure to direct light

Storage class: Non combustible solid

## 8. Exposure Controls/Personal Protection

### Control parameters

Components with limit values that require monitoring at the workplace.

Chemical Name: Ceramic (Zirconia dioxide dust)

OSHA Permissible Exposure Limit:

- Respirable Fraction: 5 mg/m<sup>3</sup>
- Short-term Value: 10 mg/m<sup>3</sup>
- Total Dust: 15 mg/m<sup>3</sup>

General protective and hygienic measures: The usual protective measures based on the application have to be followed.

Protection of Hands: Protective gloves are not required but can be worn to avoid prolonged or repeated exposure.

Eye protection: Safety glasses with side shields.

Body protection: Protective work clothing

Respiratory Protection:

- Under normal use, exposure levels are not expected to be significant.
- A dust type respirator may be used to prevent inhalation.

## 9. Physical and Chemical properties

Information on basic physical and chemical properties

General information

Appearance: Pre-fabricated white solid block

Odor:	Odorless
Odor Threshold:	Not applicable
pH-value:	Not applicable
Melting point:	2700 °C, 4892 °F
Boiling point:	Not applicable
Flash point:	Not applicable
Decomposition Temperature:	Not applicable
Self Ignition Temperature:	Product is not self-igniting
Danger of explosion:	Product does not present an explosion hazard.
Flammability:	Noncombustible
Explosion limit:	Lower - Not applicable Upper - Not applicable
Bulk density:	approx. 3 g/cm <sup>3</sup>
Solubility in water:	Insoluble
Segregation coefficient (n-octanol/water):	Not applicable
Vapor Pressure	Not applicable
Vapor Density	Not applicable

## 10. Stability and Reactivity

Stability:	Stable under ambient temperature and pressure
Conditions to avoid:	None known
Materials to avoid (incompatibility):	None known
Hazardous Decomposition products:	None known
Hazardous Polymerization:	None known

## 11. Toxicological information

Information on toxicological effects

LD/LC 50 values that are relevant for classification: No adverse effects known.

Acute toxicity - this product is not hazardous according to EEC criteria.

Subacute/Chronic toxicity - No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

Primary irritant effect:

On the skin: Long time accumulation of swarf may be irritant to skin and respiratory tract.

On the eye: Eye irritation is possible after mechanical influence (dust).

On respiratory tract: Slight irritation possible

Sensitization: No sensitizing effect known.

Aspiration hazard: not relevant

Additional toxicological information: When used and handled according to specification, the product does not have any harmful effects according to our experience and the information provided to us.

**12. Ecological Information**

No ecological problems to be anticipated if properly handled and used.  
The product is insoluble in water, inert and not biodegradable.

**13. Disposal Consideration**

This is non-hazardous material. Waste must be handled in accordance with all applicable regulations. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state, and local requirements.

**14. Transport Information**

Land transport ADR/RID

ADR/RID class: No hazardous good according to the regulation.

Maritime transport IMDG:

IMDG Class: No hazardous good according to the regulation.

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: No hazardous good according to the regulation.

Special precautions for user: Not applicable

Transport is not regulated by the United States Department of Transportation and may be transported in alkali proof containers as a non-hazardous material. Trucks transporting/carrying bulk material should be covered to prevent dust generation.

**15. Regulatory Information**

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

Radiological Protection: The regulations pertaining to radiological protection vary from country to country. It is the responsibility of the buyer to ensure that those are met in accordance with his/her law.

Canada WHMIS All chemicals in this product do not possess a WHMIS classification.

Canada DSL All chemicals in this product are listed on the Canadian Domestic Substances List inventory list.

European Union EINECS All chemicals in this product are listed in the European Inventory of Existing Commercial Chemical Substances.

California Prop 65 None of the chemicals in this product are listed as known to cause cancer or reproductive toxicity.

ROC None of the chemicals in this product are listed in the 11th edition of the National Toxicology Program(NTP) Annual Report on Carcinogens as known or reasonably suspected carcinogens.

IARC

None of the chemicals in this product have been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs.

**16. Other Information**

The information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof. B&D Dental Corp., however, makes no representations as to the completeness or accuracy of this information and supplies it on the condition that the persons receiving same will make their own determinations as to its suitability for their purpose prior to use. In no event will B&D Dental Corp. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon this information.

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