

## MATERIAL SAFETY DATA SHEET

### 1 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** BioStructure MTA Putty

**Other Names:** n/a

**Recommended Use:**

**Company name:** Safe Endo Dental India Pvt. Ltd.

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**Website:** [www.safeendo.org](http://www.safeendo.org)

### 2 - HAZARDS IDENTIFICATION

Emergency Overview: Dry paste may irritate throat and respiratory system and cause coughing. Frequent inhalation of dust from dry paste over a long period of time increase the risk of developing lung diseases. Paste may cause permanent eye damage if left untreated. Paste has an irritating effect on moist skin. Prolonged contact may cause burns. It is unlikely that exposure to small amounts for short periods, may have any irritant or toxic effect..

Routes of Exposure	Signs and Symptoms	Single, Repeated, or Lifetime Exposure	Severity (Mild, Moderate, Severe)	Acute and Chronic Health Effect(s) of hazardous component	Target Organ(s)
Eye	Can cause eye immediate or delayed irritation of cornea.	Single	Mild	-	-
Skin	Exposure may cause drying of the skin with mild irritation. Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure.	Single	Mild	Acute irritation to skin and mucous membranes. Can aggravate other skin conditions.	-
Inhalation	Exposure may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system.	Single	Mild	Frequent inhalation of large quantities of dry paste, over along period of time increases the risk of lung diseases.	Lung
Ingestion	Internal discomfort or ill	Single	Mild	Acute irritation	-

	effects are possible if large quantities are swallowed.				
Other	-	-	-	-	-

### 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	Contents (%)	w/w %	CAS
Mineral Trioxides : Tricalcium silicate, Dicalcium Silicate, Tricalcium Aluminate	<80		12168-85-3
Zirconium Oxide	q.s		1314-23-4
Pate forming agents	q.s		

### 4 - FIRST AID MEASURES

Routes of Exposure	First Aid Instructions	Immediate Medical Attention	Effects	
			Acute	Delayed
Eye	Immediately flush eyes with plenty of water for 15 minutes, while holding eyelids apart. Remove contact lenses. Do not use eye ointments.	Get medical attention immediately, even if no symptoms develop.	-	-
Skin	Immediately flush skin with plenty of cool soapy water. Remove contaminated clothing and wash contact areas thoroughly. Seek prompt medical attention.	Get medical attention.	-	-
Inhalation	Move individual away from exposure into fresh air. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen. Keep patient warm.	Get medical attention.	-	-
Ingestion	Seek prompt medical attention. Do not induce vomiting. Vomiting should only be induced by medical personnel. If vomiting occurs, keep the head lower than chest to avoid aspiration. Never give anything by mouth to an unconscious or convulsing person.	Get medical attention.	-	-
Other	Seek medical advice after large-scale (>25 gm) exposure.	-	-	-

Note to Physicians (Treatment, Testing, and Monitoring): Treat symptomatically.

### 5 - FIRE-FIGHTING MEASURES

Flashpoint & Method: > 200 °C (open cup)	Flammable (Explosive) Limits in Air LEL/UEL: not	Autoignition Temperature: 260 °C	Other: Slight fire hazard. In case of
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	applicable		combustion it may generate minor amounts of CO & CO <sub>2</sub> .
Flame Propagation or Burning Rate (for solids): not applicable	Properties Contributing to fire Intensity: none	Flammability Classification: 1	
Extinguishing Media: Water spray, alcohol resistant foam, carbon dioxide, or dry chemical.		Extinguishing Media to Avoid: None	
Protection and Procedures for Firefighters: Water jets should not be used directly on igniting products because it may disperse the material and intensify the fire. Self-contained breathing apparatus and protective clothing are required. Cool intact fire-exposed containers with water spray and remove them.			
Unusual Fire and Explosion Hazards: Irritating fumes may be released by thermal decomposition which may be hazardous to health. A fire may produce thick black smoke. Fumes of silicon dioxide or carbon monoxide and carbon dioxide may be evolved from material in a fire.			

### 6 - ACCIDENTAL RELEASE MEASURES

Containment Techniques: Discard in trash. Prevent any material from entering drains or waterways.

Spill/Leak Clean-Up Procedures and Equipment Wipe up spills with moist rags or vacuum immediately to prevent dust of material from being disperse, and discard in trash. Avoid skin contact and inhalation.

Dispose of container and unused contents in accordance with federal, state, and local requirements.

Evacuation Procedures: N/E Special Instructions: N/E Reporting Requirements: N/E

### 7 – HANDLING AND STORAGE

Handling Practices and Warnings: Paste is caustic. Keep out of eyes, lungs, or contact with mucosal tissues. After incidental contact, wash and rinse with water. Wear suitable gloves and protective glasses during use. Keep well sealed and free of contamination by pyrogens. Protect from humidity. Do not to contaminate with a contaminated instrument. Trained personnel use this product exclusively for dental purposes.

Storage Practices and Warnings: Store at temperatures at room temperature (25°C/77°F), not refrigerated. Keep container tightly closed; material is hydrophilic. Inadequate storage conditions will shorten the shelf life.

### 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Use in a well-ventilated area.		Other Engineering Controls: None
Routes of Entry:	Personal Protective Equipment (PPE) for Normal Use:	PPE for Emergencies:
Eye/Face	Face mask & safety glasses	Safety glasses or face shield
Skin	Wear latex or nitrile gloves and avoid skin contact.	Gloves and Face shield
Inhalation	Face mask	Dust mask or respirator

General Hygiene Considerations and Work Practices: Wear gloves as per universal precautions in dentistry. Wash your hands after use. No eating,

drinking, or smoking while handling this product. Remove and wash clothing with spills of material on clothing.

Protective Measures During Repair and Maintenance of Contaminated Equipment: Use water to remove dust. Use vinegar to dissolve hardened material.

Other Protective Measures and Equipment: N/E

## 9 - PHYSICAL AND CHEMICAL PROPERTIES

**General Information Form:** Paste in Syringe

**Colour:** Off White

**Odour:** None

Boiling Point not applicable; Melting Point: not applicable

Freezing Point: ~0°C

Specific Gravity or Density (H<sub>2</sub>O=1): ~2.5

Solubility in Water: reacts & sets with water

pH: ~10-12 mixed with water

Vapor Pressure (mm Hg @ 20°C): ~0

Vapor Density (AIR= 1): N/A

Evaporation Rate (Butyl Acetate = 1): N/A

## 10 - STABILITY AND REACTIVITY

Incompatibility (Materials to Avoid): Keep dry to avoid reaction with moisture otherwise the product hardens into stable hydrates.

Hazardous Products Produced During Decomposition: carbon monoxide

Hazardous Polymerization May Occur :  May Not Occur

Conditions to Avoid: Moisture will set the paste

Stability  Stable  Unstable

## 11 - TOXICOLOGICAL INFORMATION

Toxicity Data, Epidemiology Studies, Carcinogenicity, Neurological Effects, Genetic Effects, Reproductive Effects, or Structure Activity Data:

Oral: LD<sub>50</sub>/rat = 22 g/kg, LD<sub>50</sub>/mouse = 36 g/kg. Dermal: LD<sub>50</sub>/rabbit = 20 ml/kg.

No known carcinogenic, mutagenic or teratogenic activity.

## 12 - ECOLOGICAL INFORMATION

Toxicity, Environmental Fate, Physical/Chemical Data, or Other Data Supporting Environmental Hazard Statements: Product is not expected to bioaccumulate in the environment. Minimally volatile. LC<sub>50</sub>, 24h, Fresh Water Fish: > 5,000 mg/L.

## 13 - DISPOSAL CONSIDERATIONS

Regulations: Dispose of container and unused contents in accordance with federal, state, and local requirements. Do not pour into drains or waterways.

Wash the contaminated surface with water.

**Properties (Physical/Chemical) Affecting Disposal: Do not spread dust. When mixed with water, a solid, non-biodegradable mass will form.**

## 14 TRANSPORT INFORMATION

DOT shipping name	Not-regulated
DOT hazard class	Not-regulated
UN number	N/A
Sea transport IMDG/GGV sea class	N/A
UN number	N/A
MFGA number	N/A
EmS number	N/A

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<b>Air transport ICAO-Ti and</b>	N/A
<b>IAT A-DGR class</b>	Not-regulated
<b>UN number</b>	N/A

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#### 15 - **REGULATORY INFORMATION**

Federal Regulations: Hazard code: Xn (irritant): Components are considered to be hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class D2A, E - Corrosive Material) and subject to the requirements of WHMIS.

##### TSCA listed

Risk phrases: R37/38 Irritating to respiratory system and skin. R41 Risk of serious damage to eyes. Safety phrases: S22 Do not breathe dust. S24 Avoid contact with skin. S25 Avoid contact with eyes. S26 In case of eye contact, rinse immediately with plenty of water and seek medical advice. S36 Wear suitable protective clothing. S45. In case of accident, or if you feel unwell, seek medical advice immediately

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#### 16 - **OTHER INFORMATION**

This information is based on our present knowledge; however, this shall not constitute a guarantee for a specific product feature. No toxicity data are available for this specific formulation. This health hazard assessment is based on information that is available for its components.

N/A= not applicable. N/D= not determined. N/E= not established.