



**HARZ Labs**  
MATERIALS FOR 3D PRINTING

# HARZ Labs Dental Sand

Material Technical Data Sheet (TDS)

Version 1.5 / ENG  
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## SECTION 1: DESCRIPTION AND APPLICATION

Dental Sand is a composite resin designed for the printing of temporary crowns and bridges, as well as master models, available in A1-A2/A3 according to the Vita scale. It has high hardness, strength, abrasion resistance and good polishability. The color depends on the exposure time.

## SECTION 2: MATERIAL PROPERTIES

### 2.1 Characteristics of liquid

| Tested property   | Standard/Method | Result (Metric)              |
|-------------------|-----------------|------------------------------|
| Color             | -               | A1-A2/A3                     |
| Odor              | -               | Weak                         |
| Density           | ASTM D1298      | $1.1 \pm 0.1 \text{ g/sm}^3$ |
| Viscosity (25 °C) | ASTM D2393      | $800 \pm 400 \text{ mPa*s}$  |

### 2.2 Mechanical properties

| Tested property                         | Standard/Method | Result (Metric)                |
|-----------------------------------------|-----------------|--------------------------------|
| Flexural Strength                       | ASTM D790       | $100.0 \pm 20.0 \text{ MPa}$   |
| Flexural Modulus                        | ASTM D790       | $2800.0 \pm 300.0 \text{ MPa}$ |
| Ultimate Tensile Strength               | ASTM D638       | $45.0 \pm 10.0 \text{ MPa}$    |
| Tensile Modulus                         | ASTM D638       | $650.0 \pm 100.0 \text{ MPa}$  |
| Elongation at Break                     | ASTM D638       | $7.0 \pm 2.0 \%$               |
| Hardness                                | ASTM D2240      | $82 \pm 3$ , Shore D           |
| Charpy Impact (Unnotched)               | ASTM D6110      | $4.0 \pm 2.0 \text{ kJ/m}^2$   |
| Heat Deflection Temperature @ 1.82 MPa  | ASTM D648       | $73.0 \pm 5.0^\circ\text{C}$   |
| Heat Deflection Temperature @ 0.455 MPa | ASTM D648       | $120.0 \pm 5.0^\circ\text{C}$  |

### 2.3 Special properties

| Tested property         | Standard/Method | Result (Metric) |
|-------------------------|-----------------|-----------------|
| Solubility (24h)        | ASTM D3132      | $\leq 0.01 \%$  |
| Sorption (24h)          | ASTM D570       | $\leq 0.47 \%$  |
| Free Monomer Extraction | ISO 10993       | Passed          |
| Cytotoxicity            | ISO 10993       | Passed          |
| Irritation              | ISO 10993       | Passed          |
| Sensitization           | ISO 10993       | Passed          |

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