



**HARZ Labs**

MATERIALS FOR 3D PRINTING

# HARZ Labs Dental Sand

Material Technical Data Sheet (TDS)

Version 1.1 / EN  
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## SECTION 1: DESCRIPTION AND APPLICATION

Ceramic-filled resin for printing temporary crowns and bridges with A1-A2 or A3 color according Vita scale. It has increased endurance, abrasion resistance and well polishing. Protective varnishes are recommended before use. It has good adhesion to cement when installed on the frame. The color depends on postcuring time.

## SECTION 2: MATERIAL PROPERTIES

### 2.1 Characteristics of liquid

Tested property	Standard/Method	Result (Metric)	Result (Imperial)
Color	-	Sand (opaque)	
Odor	-	Odorless	
Density	ASTM D1298	1.2 g/cm <sup>3</sup>	0.0434 lb/in <sup>3</sup>
Viscosity (20 °C)	ASTM D2393	1.2 Pa·s	0.806 lb/ft·s

### 2.2 Mechanical properties

Tested property	Standard/Method	Result (Metric)	Result (Imperial)
Flexural Strength	ASTM D790	109.0 ± 5.0 MPa	16.0 ± 0.7 ksi
Flexural Modulus	ASTM D790	2050 ± 198 MPa	297 ± 29 ksi
Ultimate Tensile Strength	ASTM D638	56.0 ± 5.0 MPa	8.0 ± 0.7 ksi
Elongation at Break	ASTM D638	7.1 ± 3.1 %	
Hardness	ASTM D2240	82 ± 3, Shore D	
IZOD Impact (Unnotched)	ASTM D4812	6.4 ± 0.2 kJ/m <sup>2</sup>	3.1 ± 0.2 ft-lb/in <sup>2</sup>

### 2.3 Special parameters

Tested property	Standard/Method	Result
Solubility (24h)	ASTM D3132	≤ 0.01 %
Sorption (24h)	ASTM D570	≤ 0.47 %
Free Monomer Extraction	ISO 10993	Passed
Cytotoxicity	ISO 10993	Passed
Irritation	ISO 10993	Passed
Sensitization	ISO 10993	Passed

The information above is believed to be accurate and represents the best information currently available to us. The Imperial values are converted from Metric measurements and are for reference only. All test specimens were printed, cleaned, and post-processed per instructions provided by HARZ Labs company. Results provided here are representative of these processes and may vary if these established protocols are not followed. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall HARZ Labs LLC (ООО «ХАРЦ Лабс») be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if HARZ Labs LLC (ООО «ХАРЦ Лабс») has been advised of the possibility of such damages.