



**HARZ Labs**  
MATERIALS FOR 3D PRINTING

# HARZ Labs

# Industrial Rigid Black

Material Technical Data Sheet (TDS)

Version 1.0 / EN  
9 December 2022

## SECTION 1: DESCRIPTION AND APPLICATION

Designed for printing models that have high requirements in hardness, durability, flexural strength.

## SECTION 2: MATERIAL PROPERTIES

### 2.1 Characteristics of liquid

Tested property	Standard/Method	Result (Metric)
Color	-	Yellowish
Odor	-	Weak
Density	ASTM D1298	$1.1 \pm 0.1 \text{ g/cm}^3$
Viscosity (25 °C)	ASTM D2393	$700 \pm 250 \text{ mPa}\cdot\text{s}$

### 2.2 Mechanical properties

Tested property	Standard/Method	Result (Metric)
Flexural Strength	ASTM D790	$138.0 \pm 10.0 \text{ MPa}$
Flexural Modulus	ASTM D790	$2500 \pm 300 \text{ MPa}$
Ultimate Tensile Strength	ASTM D638	$75 \pm 5 \text{ MPa}$
Tensile Modulus	ASTM D638	$970 \pm 100 \text{ MPa}$
Elongation at Break	ASTM D638	$17 \pm 3 \%$
Hardness	ASTM D2240	$86 \pm 3 \text{ Shore D}$
HDT @ 0.45 MPa	ASTM D648	$88 \pm 4 \text{ }^\circ\text{C}$
HDT @ 1.82 MPa	ASTM D648	$47 \pm 3 \text{ }^\circ\text{C}$
Izod Impact resistance (unnotched)	ASTM D256	$20 \pm 5 \text{ MJ/cm}^2$
Charpy Impact resistance (unnotched)	ASTM D6110	$31 \pm 6 \text{ MJ/cm}^2$

The information above is believed to be accurate and represents the best information currently available to us. 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.