



**HARZ Labs**  
MATERIALS FOR 3D PRINTING

# HARZ Labs

# Industrial Rigid Black

Material Technical Data Sheet (TDS)

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## 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 @ 0.455 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	$20 \pm 5 \text{ kJ/m}^2$
Charpy Impact resistance (unnotched)	ASTM D6110	$31 \pm 6 \text{ kJ/m}^2$

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