

# TECHNICAL DATA SHEET

Date of issue: 19.10.2021 | Update: - | Version: 1.00

**Zortrax Resin Tough** is an ABS-like photopolymer resin with distinctive properties targeted at both professionals and hobbyists. It allows users to produce models with smooth surfaces and sharp details, which is crucial when assembling multiple items into one object. Thanks to the resin's low shrinkage, separate elements of movable parts, functional prototypes, or action figurines match each other perfectly.

## Applications:

end-use products, functional prototypes, engineering prototypes, jigs and fixtures, elements of tools, products' casing, artistic projects, action figurines/toys, movable parts.

Mechanical Properties	Metric	Imperial	Test Method
Izod Impact, Notched	58.4 J/m	1.09 ft-lb/in	ASTM D256-10
Flexural Strength	60.8 MPa	8820 psi	ASTM D790-10
Flexural Modulus	1586.8 MPa	230 ksi	ASTM D790-10
Tensile Strength	52.5 MPa	7610 psi	ASTM D638-14
Elastic Modulus	674.8 MPa	97.9 ksi	ASTM D638-14
Elongation at Break	16.8%	16.8%	ASTM D638-14
Other Properties	Metric	Imperial	Test Method
Liquid Density	1.115 g/cm <sup>3</sup>	9.31 lb/gal	ASTM D647-12
Solid Density	1.211 g/cm <sup>3</sup>	10.1 lb/gal	ASTM D647-12
Viscosity	307 MPa*s Temperature 25 °C	0.00641 lbf-s/ft <sup>2</sup> Temperature 77 °F	ASTM D4212-10
Shore Hardness (D)	82	82	ASTM D2240-05

The data presented in this document are intended for information and comparison purposes only. They should not be used for project specifications or its quality evaluation. The material's actual properties depend on the printing process conditions, the design structure and its purpose, test conditions, etc.

Product specifications are subject to change without notice.

Each user is responsible for complying with product safety standards, its intended use as well as the law and waste disposal (and recycling) rules for electrical and electronic equipment. Zortrax does not make any express or implied warranties, including but not limited to implied warranties of merchantability or fitness for a particular purpose.



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## Applications:

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Mechanical Properties	Metric	Imperial	Test Method
Izod Impact, Notched	63.8 J/m	1.2 ft-lb/in	ASTM D256-10
Flexural Strength	67.9 MPa	9850 psi	ASTM D790-10
Flexural Modulus	1674.2 MPa	243 ksi	ASTM D790-10
Tensile Strength	46.4 MPa	6730 psi	ASTM D638-14
Elastic Modulus	614.5 MPa	89.1 ksi	ASTM D638-14
Elongation at Break	13.3%	13.3%	ASTM D638-14
Other Properties	Metric	Imperial	Test Method
Liquid Density	1.115 g/cm <sup>3</sup>	9.31 lb/gal	ASTM D647-12
Solid Density	1.204 g/cm <sup>3</sup>	10 lb/gal	ASTM D647-12
Viscosity	307 MPa*s Temperature 25 °C	0.00641 lbf-s/ft <sup>2</sup> Temperature 77 °F	ASTM D4212-10
Shore Hardness (D)	84	84	ASTM D2240-05

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**Applications:**

end-use products, functional prototypes, engineering prototypes, jigs and fixtures, elements of tools, products' casing, artistic projects, action figurines/toys, movable parts.

Mechanical Properties	Metric	Imperial	Test Method
Izod Impact, Notched	58.1 J/m	1.09 ft-lb/in	ASTM D256-10
Flexural Strength	63.8 MPa	9250 psi	ASTM D790-10
Flexural Modulus	1586.8 MPa	230 ksi	ASTM D790-10
Tensile Strength	54.3 MPa	7880 psi	ASTM D638-14
Elastic Modulus	674.8 MPa	97.9 ksi	ASTM D638-14
Elongation at Break	13.9%	13.9%	ASTM D638-14
Other Properties	Metric	Imperial	Test Method
Liquid Density	1.115 g/cm <sup>3</sup>	9.31 lb/gal	ASTM D647-12
Solid Density	1.211 g/cm <sup>3</sup>	10.1 lb/gal	ASTM D647-12
Viscosity	307 MPa*s Temperature 25 °C	0.00641 lbf-s/ft <sup>2</sup> Temperature 77 °F	ASTM D4212-10
Shore Hardness (D)	86	86	ASTM D2240-05

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