



Introduction

The Crestaform® Tough resin is an Engineering 3D printing resin for designing and prototyping. It is strong, stiff, and resilient for ABS-like materials with lower crack propagation.

Crestaform® Tough comes with the following benefits:

- Excellent mechanical performance
- High reactivity and printing speed
- Rigorously tested to ensure optimal performance
- Globally available technical support
- Reputable manufacturer with over 100 years of experience and expertise

Typical printing parameters*

Printer Type	LCD, DLP
Printer Wavelength (nm)	385 - 405
Layer Height (µm)	25 - 100
Printing Temperature (°C)	21 - 30
Base Layer Exposure Time (sec)	10 - 30
Normal Layer Exposure Time (sec)	1.5 - 3.5

* For DLP printers, it is recommended that light power is reduced to around 2.5mW/cm²

Recommended cleaning

- Soak the print in a clean isopropanol (IPA) (or similar solvent) bath for a minimum of 5 minutes. Alternatively, rinse the part with IPA until all the visible uncured resin has been removed. Reusing IPA in multiple cleans can reduce the cleanliness and clarity of a print
- Leave the print to dry off any residual solvent prior to post-curing

Recommended post-curing

- Post-cure as soon as possible after completion of printing
- Post-cure every print for a minimum of 10 minutes under a dedicated curing UV light operating at 385-405nm wavelength. Alternatively, leave the print to cure for a minimum of 2 hours under direct sunlight
- Temperature-assisted UV curing will increase the rigidity of the print

Instructions to use the Crestaform® Tough resin:

- Always shake or mix the resin thoroughly before use
- Open the container and pour the appropriate amount of resin into the tank according to the size of the printer model
- Make sure to not spill the resin onto the printer, LCD screen or anywhere outside of the resin tank
- If not used for a long time, please filter the resin and pour the resin into the storage container



Physical properties

	Values	Description
Viscosity (Poise)	5.5 – 8.5	ICI Viscosity @ 25°C
Liquid Density (g/cm ³)	1.12 – 1.13	-
Colour Options	-	Black, Blue, Grey

Mechanical properties

Typical properties below: Mechanical Testing Specimen Print Orientation - 50°

	Values	Description
Tensile strength (MPa)*	40	ISO 527-2 Type 5A
Tensile modulus (GPa)*	1.6	ISO 527-2 Type 5A
Elongation at break (%)*	17	ISO 527-2 Type 5A
Flexural strength (MPa)*	84	ISO 178
Flexural modulus (GPa)*	1.9	ISO 178
Izod Impact Strength (kJ/m ²)**	2.94	ISO 180 Type A
Hardness (Shore)*	78D	ISO 868
Heat deflection temperature (°C)*	50	ISO 75-2, Method A (1.8 MPa)

* 60 mins at 60°C + 405nm UV Post Cure for cured properties

** 16 mins at 60°C + 405nm UV Post Cure for cured properties

Chemical Resistance*

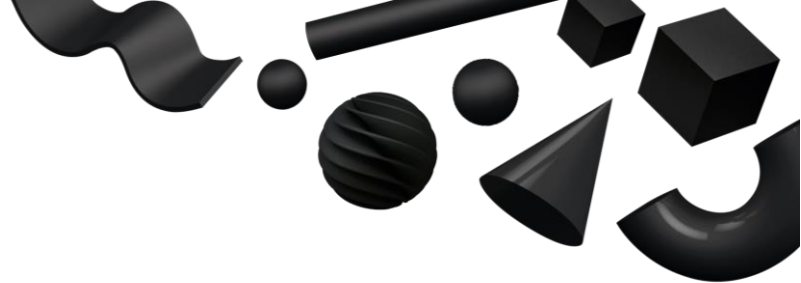
	Concentration	Mass increase (%)			
		1 day	7 days	14 days	28 days
Sodium Hydroxide	33%	0	2	2	8

* Testing Conducted at 40°C using 1cm³ cubes



Crestaform®

High performance 3D printing resins



Compatibility

Crestaform® Tough has been designed to work with any UV LCD and DLP 3D printer that is open to 3rd party resins, including, but not limited to:

- Anycubic
- Elegoo
- Phrozen
- Creality
- Asiga



Do

- Always wear Personal Protection Equipment (PPE), protective eyewear and chemical nitrile gloves when handling resin
- Shake the resin well every time before you use it or decant from the container
- If spilled, please clean the spill immediately with paper towel, and Isopropanol (IPA)
- Store it in its original container at room temperature, away from children, untrained personnel, direct or indirect sunlight, heat sources, sparks and open flames
- Use it in well ventilated rooms
- Use every sensible preventive precaution to avoid skin contact, spillage of resin, eye contact or swallowing. Make note of Local Poison Centres availability

X Do not

- Expose resin to direct or indirect sunlight, UV light, heat sources, sparks and open flame while handling and storing the resin
- Touch the resin with bare hands. Always wear appropriate gloves. If skin contact occurs, wash it with soapy water. If you feel unwell, please consult immediately medical assistance
- Swallow the resin or printed objects
- Expose to children or pets
- Handle before completing training
- Expose persons sensitive to the resin components – please see Material Safety Datasheet
- Inhale the resin fumes. Use only in well ventilated rooms or areas
- Pour the resin or used IPA into the draining system

Storage

Crestaform® Tough should be stored in the dark, in suitable, closed containers. It is recommended that the storage temperature should be between 15°C and 35°C. Ideally, containers should be opened only immediately prior to use. Keep out direct light/sunlight.

Packaging

Crestaform® Tough is supplied in 1000 g bottles. Bulk supply available.

Health and safety

Please see separate Safety Data Sheet.

© 2021 Scott Bader Company Limited, July 2023, Issue No. 3

All information on this data sheet is based on laboratory testing and is not intended for design purposes. Scott Bader makes no representations or warranties of any kind concerning this data. Due to variance of storage, handling and application of these materials, Scott Bader cannot accept liability for results obtained. The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.