RESINIFY – TECHNICAL DATA SHEET

Product Name: CarbonTough RT
Code: RT-CP1100
Category: Engineering Resin – Carbon Composite

1. Product Description

CarbonTough is a high-performance, carbon-reinforced engineering resin designed for functional parts requiring superior stiffness, dimensional stability, and impact resistance. The resin delivers a balanced combination of strength, rigidity, and thermal performance, making it suitable for jigs, fixtures, housings, brackets, and load-bearing components.
Carbon-filled formulation improves modulus, reduces deformation under load, and provides a premium matte-black finish with low reflectivity.

2. Key Features & Benefits

- High stiffness and flexural modulus
- Excellent dimensional stability
- Matte black carbon composite finish
- Low shrinkage and high heat resistance
- Improved layer adhesion
- Suitable for functional prototyping and production parts

3. Mechanical & Thermal Properties

Property	Value
Tensile Strength	55–65 MPa
Tensile Modulus	2,200–2,800 MPa
Elongation at Break	3–6%
Flexural Strength	90–110 MPa
Flexural Modulus	2,800–3,400 MPa
Impact Strength	25–35 J/m
HDT @ 0.45 MPa	70–80°C
Shore Hardness	85D
Notched Izod	20–28 J/m
Water Absorption	<0.35%
Shrinkage	Low (0.3–0.7%)
Density	1.20–1.28 g/cm^3
Viscosity	650–900 cP

Values may vary based on printer type, cure conditions, and part geometry.

4. Recommended 3D Printing Parameters

Parameter	Setting
Printer Type	LCD, mSLA, DLP

Parameter	Setting
Wavelength	385–405 nm
Layer Thickness	50–100 µm
Normal Layer Exposure	2.8–3.6 sec
Bottom Layers	5–8
Bottom Exposure	35–55 sec
Lift Speed	Medium
Rest Time	Optional for tall parts

5. Post-Processing

- Wash for 3–5 minutes in IPA or resin cleaner
- Air dry or use compressed air
- Post-cure under 405 nm UV for 20–30 minutes
- For maximum stiffness, perform a 60°C heated post-cure (10–15 minutes)

6. Applications

- Functional prototypes
- Drone, robotics, and automotive parts
- Jigs, fixtures, and housings
- Load-bearing mechanical components
- High-strength tooling

7. Storage & Handling

- Store at 10–30°C away from UV light
- Mix gently before use
- Shelf Life: 12 months in sealed container

8. Compliance

- RoHS
- REACH
- ASTM D638, D790, D256 test references

This document is subject to change. Always refer to the latest version available.
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