RESINIFY – TECHNICAL DATA SHEET

Product Name: ToughPro 2000 **RT Code:** RT-TF2000 **Category:** Engineering Resin – Tough / Impact Resistant / Functional Parts

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1. Product Description

ToughPro 2000 is a **high-strength, high-elongation engineering resin** designed for demanding mechanical applications. It simulates the performance of engineering-grade plastics like ABS and PC blends, providing **high durability, improved toughness, and excellent impact resistance**. This resin is engineered for **functional prototypes, snap-fit components, mechanical assemblies, and load-bearing parts**, offering a balance of strength, stiffness, and flexibility. Compared to standard tough resins, ToughPro 2000 delivers **higher modulus, better impact absorption, and superior fatigue resistance**.

2. Key Features & Benefits

- High toughness and ductile failure behavior
- Excellent impact resistance
- Strong layer adhesion for durable mechanical parts
- Good tensile and flexural strength
- Functions well in snap-fit and hinge components
- Reduced brittleness vs. rigid resins
- Ideal for real-world functional prototyping

3. Mechanical & Thermal Properties

Property	Value
Tensile Strength	50–60 MPa
Tensile Modulus	1,800–2,400 MPa

Property	Value
Elongation at Break	25–40%
Flexural Strength	80–100 MPa
Flexural Modulus	2,000–2,500 MPa
Impact Strength	40–60 J/m
Notched Izod	35–50 J/m
HDT @ 0.45 MPa	55–65°C
Shore Hardness	82–84D
Shrinkage	0.3–0.6%
Density	1.10–1.20 g/cm³
Viscosity	700–900 cP

Note: Optimized to perform similarly to industrial tough photopolymers.

4. Recommended 3D Printing Parameters

Parameter	Setting
Printer Type	LCD / mSLA / DLP
Wavelength	385–405 nm
Layer Thickness	50–100 µm

Parameter	Setting
Normal Exposure	2.6–3.2 sec
Bottom Layers	6–9
Bottom Exposure	40–60 sec
Lift Speed	Medium
Rest Time	Recommended for large/solid parts

5. Post-Processing

1. **Wash**: Wash for 3–5 minutes in IPA or an approved cleaner.
2. **Dry**: Air dry or use compressed air.
3. **Cure**: UV post-cure for **20–30 minutes**.
    - A mild heat cure (**50–60°C**) increases toughness and impact strength.
    - Avoid over-curing, as it may slightly reduce elongation.

6. Applications

- Snap-fit mechanical parts, housings, and functional prototypes
- Tools, fixtures, brackets, and structural components
- Robotics and drone parts
- Consumer product and automotive interior prototypes

7. Storage & Handling

- Store in a sealed container between **10–30°C**.
- Shake or stir gently before printing.
- **Shelf Life:** 12 months from the date of manufacture when stored properly.

8. Compliance

- RoHS
- REACH
- Tested in accordance with ASTM D638, D790, D256.

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