# Resinify FlexPro™ 80A

Engineering Resin — Flexible / Elastomeric (80A Hardness)

**RT Code:** RT-FX80A

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**Manufacturer:** Resinify Technology LLC — Detroit, MI

## Product Description

FlexPro 80A is a balanced flexible engineering resin designed to simulate high-performance TPU with excellent toughness, flexibility, and rebound. With a Shore hardness of 80A, it delivers the perfect balance between rigidity and elasticity, making it suitable for functional prototypes, snap-fit joints, vibration dampening components, and protective housings. Compared to softer elastomers, FlexPro 80A maintains higher tear strength, better dimensional accuracy, and improved resistance to deformation under repeated stress.

## Key Features & Benefits

- True TPU-like feel with Shore 80A hardness
- High tear resistance and elongation
- Strong layer bonding for durable functional parts
- Excellent fatigue resistance
- Good flexibility without excessive softness
- Consistent performance on LCD, mSLA, and DLP printers

## Mechanical & Thermal Properties

| Property | Value |
|---|---|
| Shore Hardness | 80A |
| Tensile Strength | 7–10 MPa |
| Elongation at Break | 70–120% |
| Tear Strength | High (20–30 kN/m equivalent) |
| Tensile Modulus | Moderate (semi-rigid elastomer) |
| Impact Resistance | High |
| Heat Deflection Temp. | 50–60°C |
| Density | 1.05–1.15 g/cm³ |
| Viscosity | 700–1000 cP |

> Flexural properties are not applicable for flexible materials.

## Recommended 3D Printing Parameters

| Property | Value |
|---|---|
| Printer Type | LCD / mSLA / DLP |
| Wavelength | 385–405 nm |
| Layer Thickness | 50–100 µm |
| Normal Exposure | 2.8–3.6 sec |
| Bottom Layers | 6–10 |
| Bottom Exposure | 45–65 sec |
| Lift Speed | Medium–Slow |
| Rest Time | Recommended for part stability |

> Flexible resins require slower lift speeds to avoid suction-induced tearing.

## Post-Processing

1. Wash: Wash for 2–3 minutes in IPA or resin cleaner with gentle agitation. Do NOT over-wash, as this can affect the material's softness.
2. Dry: Air dry or blow dry with compressed air.
3. Cure: UV post-cure for 10–20 minutes.
    - For maximum flexibility, avoid overheating during cure.
    - A heat-assisted cure up to 50°C can improve rebound memory.

## Applications

- Snap-fit connectors and functional clips
- Protective housings and flexible covers
- Gaskets and seals
- Robotics and drone components
- Shock absorbers and vibration dampeners
- Consumer product prototypes requiring TPU-like behavior

## Storage & Handling

- Store in a sealed container between 10–25°C.

- Shake or stir gently before printing.
- Shelf Life: 12 months unopened from the date of manufacture.

## Compliance

- RoHS
- REACH
- Mechanical properties tested in accordance with ASTM D412.

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