RESINIFY – TECHNICAL DATA SHEET

Product Name: HighTemp 230 **RT Code:** RT-HT230 **Category:** Engineering Resin – Ultra High-Temperature

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1. Product Description

HighTemp 230 is an extreme-performance engineering resin formulated for applications requiring **very high heat resistance**, **dimensional stability**, and **structural rigidity** under demanding thermal conditions. With a heat deflection temperature (HDT) of **210–230°C**, this material is designed for direct-use tooling, mold inserts, thermoforming masters, vulcanizing tools, and components exposed to intense industrial heat. HighTemp 230 outperforms standard high-temp resins with improved crack resistance, better thermal cycling stability, and higher strength at elevated temperatures.

2. Key Features & Benefits

- **Ultra high heat deflection — up to 230°C**
- Exceptional dimensional stability under heat load
- Low thermal expansion and low shrinkage
- Strong mechanical structure with ceramic-like rigidity
- Resistant to thermal cycling, deformation, and creep
- Ideal for molds, dies, and high-temperature functional parts

3. Mechanical & Thermal Properties

Property	Value
Tensile Strength	60–75 MPa
Tensile Modulus	2,500–3,200 MPa
Elongation at Break	3–6%

Property	Value
Flexural Strength	100–125 MPa
Flexural Modulus	3,200–4,000 MPa
Impact Strength	15–25 J/m
HDT @ 0.45 MPa	**210–230°C**
Shore Hardness	88–90D
Shrinkage	0.25–0.55%
Density	1.25–1.38 g/cm³
Viscosity	950–1400 cP

Note: Values vary based on curing, annealing, and post-process conditions.

4. Recommended 3D Printing Parameters

Parameter	Setting
Printer Type	LCD, mSLA, DLP
Wavelength	385–405 nm
Layer Thickness	50–100 µm
Normal Exposure	3.0–4.2 sec
Bottom Layers	6–10

Parameter	Setting
Bottom Exposure	50–75 sec
Lift Speed	Medium
Rest Time	Recommended for large cross-sections

Important: To unlock full thermal performance, **annealing is mandatory**.

5. Post-Processing

1. **Wash**: Wash gently for 3–5 minutes in IPA.
2. **Dry**: Dry fully before curing.
3. **Cure**: UV post-cure for **30–45 minutes**.
4. **Mandatory Annealing Procedure**:
    - Heat part to **90°C for 1 hour**.
    - Increase temperature to **120°C for 30 minutes**.
    - Cool slowly to room temperature.
    - This process stabilizes the polymer network and maximizes HDT >200°C.

6. Applications

- High-temperature molds, dies, thermoforming mandrels, and vulcanizing tools
- Industrial heat-resistant housings and engine-bay prototype components
- Functional testing under extreme heat
- Manufacturing jigs, fixtures, and low-volume injection molding masters

7. Storage & Handling

- Store in a sealed container between **10–30°C**, away from UV light.
- Mix well before use.
- **Shelf Life:** 12 months from the date of manufacture when stored properly.

8. Compliance

- RoHS
- REACH
- Tested in accordance with ASTM D638, D790, D648.

This document is subject to change. For the latest version, please contact Resinify Technology LLC.

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