RESINIFY – TECHNICAL DATA SHEET

Product Name: UltraClear **RT Code:** RT-CL010 **Category:** Engineering Resin – Optical / Clear / High Transparency

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1. Product Description

UltraClear (RT-CL010) is Resinify's **optical-grade transparent resin**, engineered to deliver exceptional clarity, low haze, and high light transmission. It is ideal for applications requiring glass-like visual quality, smooth surfaces, and high accuracy. Compared to standard clear resins, UltraClear offers **lower yellowing over time**, **better UV stability**, **improved optical repeatability**, and **higher impact and flexural performance**. With proper polishing and post-processing, UltraClear can achieve near–optical transparency suitable for lenses, light pipes, fluid reservoirs, and display components.

2. Key Features & Benefits

- High transparency with low haze
- Excellent optical stability (lower yellowing)
- Smooth surface finish, ideal for polishing
- Strong mechanical performance for a clear resin
- Good impact resistance
- Ideal for functional and aesthetic prototypes
- Compatible with LCD, mSLA, and DLP systems

3. Mechanical & Optical Properties

Property	Value
Light Transmission	**88–92% @ 2 mm**
Haze	Low

Property	Value
Tensile Strength	45–55 MPa
Tensile Modulus	1,600–2,100 MPa
Elongation at Break	12–20%
Flexural Strength	70–85 MPa
Flexural Modulus	1,900–2,300 MPa
Impact Strength	20–30 J/m
HDT @ 0.45 MPa	55–65°C
Shore Hardness	82–84D
Shrinkage	0.3–0.55%
Density	1.10–1.18 g/cm³
Viscosity	600–900 cP

Note: Performance optimized for optical clarity and toughness.

4. Recommended 3D Printing Parameters

Parameter	Setting
Printer Type	LCD / mSLA / DLP
Wavelength	385–405 nm

Parameter	Setting
Layer Thickness	25–100 µm
Normal Exposure	2.8–3.4 sec
Bottom Layers	6–8
Bottom Exposure	40–55 sec
Lift Speed	Medium
Rest Time	Recommended for large transparent sections

5. Post-Processing

Standard Steps:

1. Wash for 3–4 minutes in clean IPA.
2. Air dry or blow dry with filtered air.
3. UV post-cure for **20–30 minutes**.

Clarity Enhancement Techniques (Optional):

- **Polishing:** Sand and polish to 2000–5000 grit.
- **Coating:** Apply a clear coat spray (optical acrylic gloss) or use a resin dip to remove micro-scratches.
- **Cure Control:** A slow cure at **50–60°C** can minimize microbubbles.
- *Professional Technique:* Flame polishing (for professionals only).

6. Applications

- Lenses (non-functional prototypes), light pipes, and illumination components
- Cosmetic packaging and transparent housing prototypes

- Fluid reservoirs, display covers, and visual design parts
- Optical prototyping, R&D, and clear demonstration models

7. Storage & Handling

- Store in a sealed container between **10–30°C**, away from UV light.
- Shake gently 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, D256.

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