

## Roto-Cast System / Replicating Polyethylene

Polyethylene-like polyurethane

### Key Properties

- Excellent physical properties after RT cure
- Free of mercury, MOCA or TDI
- Excellent green strength yielding enhanced demold characteristics

### Applications

- For hand-batch processing, roto-casting or vacuum cast methods

### Processing Properties

			Resin (Isocyanate)	Hardener (Polyol)
Mix ratio		pbw	70	100
		pbv	61	100
Density	ASTM D-792	g/cm <sup>3</sup>	ca. 1.21	ca. 1.05
Viscosity at 77°F (25°C)	ASTM D-2393	cP	ca. 75	ca. 900

			Mixture
Mix viscosity at 77°F (25°C)	ASTM D-2393	cP	ca. 300
Gel time at 77°F (25°C)		min	4-6
Peak Exotherm	200gr	°F (°C)	225 (107)
Demold time at 77°F (25°C)		h	1-2

### Cured / Mechanical Properties (approximate values)

**Cure 1: 24 hours at 77°F + 1 hour at 150°F**  
**Cure 2: 7 days at 77°F**

			Cure 1	Cure 2
Aspect	visual		White	White
Density	ASTM D-792	g/cm <sup>3</sup>	1.08	1.08
Shore hardness D	ASTM D-2240		55-65	55-65
Deflection temperature, HDT (66psi)	ASTM D-648	°F (°C)	142 (61)	137 (58)
Tensile strength	ASTM D-638	psi	3,400	3,400
Elongation at Break	ASTM D-638	%	55	40
Flexural strength	ASTM D-790	psi	1,700	1,750
Flexural modulus	ASTM D-790	psi	45,000	48,500
Notched Izod	ASTM D-256	ft-lbf/in	2.8	2.4
Linear shrinkage	ASTM D-2566	in/in	0.001-0.005	0.001-0.005

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### **Processing**

**The processing and material temperature should be between 68-77°F (20-25°C).**

For best results, place the vacuum cast tool into a pressure vessel and pressurize to 60 psi until cured.

**Agitate the hardener and resin before mixing to ensure that the formula is homogeneous.**

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### **Packaging**

IE-3040 Quart Kit	3.4 lbs.
IE-3040 1 Gal. Kit	13.6 lbs.
IE-3040 5 Gal. Kit	68 lbs.
IE-3040 Drum Kit	765 lbs.

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### **Storage**

Original containers should be kept tightly sealed and stored at ambient temperatures 59-86°F (15°C to 30°C). If properly stored the products have the shelf-life indicated on the product label.

Partly used containers should always be sealed appropriately and used up as soon as possible.

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### **Handling Precautions**

Good workplace ventilation is to be ensured during processing. At the same time, the employer's liability insurance association's industrial hygiene safety regulations regarding the handling of reaction resins and their hardeners are to be observed. Please take heed of the appropriate safety data sheets.

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