

50D Tooling Urethane

Impact resistant polyurethane

Key Properties

- Excellent physical properties
- Free of mercury, MOCA or TDI

Applications

- For hand-batch or vacuum assisted casting methods

Processing Properties

			Resin (Isocyanate)	Hardener (Polyol)
Mix ratio		pbw	100	20
		pbv	100	20
Density	ASTM D-792	g/cm ³	ca. 1.09	ca. 1.06
Viscosity at 77°F (25°C)	ASTM D-2393	cP	ca. 3,000	ca. 100

			Mixture
Mix viscosity at 77°F (25°C)	ASTM D-2393	cP	ca. 2,000
Gel time at 77°F (25°C)		min	10-14
Demold time at 77°F (25°C)		h	2-4

Cured / Mechanical Properties (approximate values)

Cure 1: 24 hours at 77°F + 16 hours at 180°F Cure 2: 7 days at 77°F			Cure 1	Cure 2
Aspect	visual		Translucent Amber	Translucent Amber
Density	ASTM D-792	g/cm ³	1.08	1.08
Shore hardness D	ASTM D-2240		45-55	45-55
Tensile strength	ASTM D-638	psi	2,400	2,300
Elongation at Break	ASTM D-638	%	210	275
Flexural modulus	ASTM D-790	psi	35,000	45,000
Notched Izod	ASTM D-256	ft·lbf/in	343,500	310,200
Linear shrinkage	ASTM D-2566	in/in	10	10

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

For best results, de-air the material prior to casting, then pressurize to 60psi until cured. The hardener component will darken as it ages. It is recommended that dry nitrogen be used to blanket the material to prevent oxidation and from becoming moisture contaminated.

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

Packaging

IE-3665 Quart Kit	2.4 lbs.
IE-3665 1 Gal. Kit	9.6 lbs.
IE-3665 5 Gal. Kit	48 lbs.
IE-3665 Drum Kit	540 lbs.

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.

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.
