

High Performance 90A Polyester Urethane

High performance 90 shore A polyester based polyurethane elastomer

Key Properties

- Excellent physical properties after post cure
- Free of mercury, MOCA or TDI

Applications

- For hand-batch or meter mix processing methods

Processing Properties

			Resin (Isocyanate)	Hardener (Polyol)
Mix ratio		pbw	100	90
		pbv	100	96
Density	ASTM D-792	g/cm ³	ca. 1.20	ca. 1.14
Viscosity at 120°F (49°C)	ASTM D-2393	cP	ca. 700	ca. 725

			Mixture
Mix viscosity at 120°F (49°C)	ASTM D-2393	cP	ca. 600
Gel time at 120°F (49°C)		min	10-20
Demold time at 120°F (49°C)		h	ca. 1-3

Cured / Mechanical Properties (approximate values)

Cure 1: 16 hours at 200°F + 7 days at 77°F

			Cure 1
Aspect	visual		White
Density	ASTM D-792	g/cm ³	1.15
Shore hardness A	ASTM D-2240		85-95
Tensile strength	ASTM D-638	psi	4,500
Elongation at Break	ASTM D-638	%	450
Tear strength	ASTM D-624	pli	410
Taber abrasion*	ASTM D-4060	mg loss	15
Linear shrinkage	ASTM D-2566	in/in	.01-.015

*H-18 wheel, 1000g load, 1000 cycles

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The processing and material temperature should be between 120°F (120°C).

It is recommended that silicone molds not be used to cast parts, as the material will be inhibited.

It is recommended that Release Coat 8601 be used to release the mold surfaces.

1. Preheat tool to 200°F
2. Warm resin and hardener to 120°F. (If hand mixing, resin can be mixed at room temperature.)
3. Agitate the resin and hardener components individually.
4. Weigh appropriate amounts of each component into mixing container.
5. Mix thoroughly. We recommend using a drill mixer for best results. Make sure to scrape the sides and bottom of the mix container.
6. De-gas the product using VS-1000 de-gassing chamber to 29 inches of mercury. After the mixed material rises and falls, continue to de-gas for 30 seconds.
7. Pour mixed polyurethane into mold/tool. Let gel.
8. Return mold to heat for 2-4 hours. De-mold time is dependent upon mass and geometry.
9. De-mold product. Use care not to distort the product, as it may be slightly soft.
10. Post-cure the parts for 16 hours at 150°F- 200°F. Fixturing may be necessary depending upon part mass and geometry.

Packaging

HP-2590 Quart Kit	3.8 lbs.
HP-2590 1 Gal. Kit	15.2 lbs.
HP-2590 5 Gal. Kit	76 lbs.
HP-2590 Drum Kit	855 lbs.

Storage

Original containers should be kept tightly sealed and stored at ambient temperatures 77-95°F (25°C to 35°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.

If solids form in the Hardener due to cold temperatures, Hardener can be re-liquefied by reheating. Hardener should not exceed 150°F and agitation is recommended to avoid excessive local heating.

Exposure of Resin to temperatures less than 77°F for any amount of time will result in the formation of solid material. If solids form in the Resin due to cold temperatures, Resin can be re-liquefied by reheating.

Resin should not exceed 140°F and agitation is recommended to avoid excessive local heating.

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

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.