

# Starting Formulation

## SF 7006

### Epoxy Casting Compound : Light Color, Room Temperature Cure EPON™ Resin 828 / HELOXY™ Modifier 505 / EPIKURE™ Curing Agent 3234

**Introduction** This formulation illustrates the use of stress relieving epoxy resins in a room temperature curing system that provides a hard, polishable surface combined with high resilience and impact resistance. The light color of the binder system permits white or pastel color pigmentation, as well as decorative effects that can be achieved with color chips or granules encapsulated in a clear or dyed shell. Up to 1 1/2-inch thick sections can be cast and cured at room temperature. Thicker sections can be cast when mineral fillers are incorporated. Potential end uses include bowling balls and cast tooling.

- Suggested Uses**
- Molded parts such as sand-core boxes for foundry work, pipe fitting, cases, and housings
  - Electrical insulation such as transformer bushings for interior service

Formula	Material	Supplier	Pounds	Gallons
Resin Portion				
	EPON Resin 828	Hexion	85.5	9.00
	HELOXY Modifier 505	Hexion	14.5	1.71
	DC-200 Fluid, 100 centistoke grade	Dow-Corning Corp.	<u>0.005</u>	<u>0.0006</u>
			100.005	10.7106
Converter Portion				
	EPIKURE Curing Agent 3234	Hexion	5	0.61
	EPIKURE Curing Agent 3230	Hexion	<u>15</u>	<u>1.89</u>
			20	2.50

**Compounding Procedure** Resin Portion – Weigh the three components into a mixing vessel and blend at low to moderate speed agitation until homogeneous. The addition of DC-200 Fluid may produce a slight haze in the compounded resin, but this air release agent remains uniformly dispersed during storage.

Converter Portion – Weigh the EPIKURE Curing Agent 3230 and 3234 into a mixing tank and blend until homogeneous. Store in tightly sealed metal or polyolefin plastic containers.

**Mixing Procedure** – Mix the resin and converter portions in a 100:20 weight ratio just prior to use and blend thoroughly. When practical, vacuum deaerate the mix then pour into molds treated with release agent. Add fillers such as aluminum powder or granules, silica, calcium carbonate, clay or talc when casting sections thicker than 1 1/2 inches.

To obtain maximum mold turn-over, heat the molds to between 49° and 66 °C after filling, or preheat them. Thermal degradation due to excessive exothermic temperature rise

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should not occur.

Typical Properties Table 1 / Typical Properties

	<u>Units</u>	<u>Value</u>
Resin Portion	pbw	100
Converter Portion	pbw	20
Gel Time @ 25°C		
1.0 inch thick	min.	108
1.5 inches thick	min.	80
1.0 Gallon	min.	55
Density		
Resin	lbs/gal	9.34
Converter	lbs/gal	8.00
Resin system	lbs/gal	9.17

Typical Cured State Properties Table 2 / Cured State Properties <sup>1</sup>

	<u>Method</u>	<u>Units</u>	<u>Value</u>
Tensile strength, Ultimate	ASTM D638	psi	9,700
Tensile elongation		%	5.0
Tensile modulus, Initial		ksi	470
Flexural strength, Ultimate	ASTM D790	psi	16,500
Flexural modulus, Initial		ksi	470
Flexural deflection at failure		inch	0.60
Compressive strength, Ultimate		psi	30,000
Compressive strength, Yield		psi	12,200
Compressive deflection at failure		inch	0.60
Izod impact, notched	ASTM D256	ft.·lb./in.	1.00
Izod impact, unnotched		ft.·lb./in.	5.51
Hardness			
at 25°C	Shore D		80
at 52°C			79
at 66°C			73

<sup>1</sup> All specimens were cured for 16 hours at 25 °C followed by 1 hour at 93 °C.

Storage Recommendations regarding storage conditions can be obtained by visiting our web site at [www.hexion.com](http://www.hexion.com)

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