

# Starting Formulation

## SF 7004

### Casting Compound for High Temperature Applications EPON™ Resin 828 / EPIKURE™ Curing Agent 3223

**Introduction** This formulation is for a casting compound that can be used in continuous service at temperatures between 150 and 177 °C.

- Suggested Uses**
- Injection and vacuum forming molds
  - Curing molds for honeycomb structure

Formula	<u>Material</u>	<u>Supplier</u>	<u>Pounds</u>	<u>Gallons</u>
Resin Portion				
	EPON Resin 828	Hexion	50	5.15
	Aluminum Powder #120	Reynolds Metals Co.	<u>50</u>	<u>2.22</u>
			100	7.37
Converter Portion				
	Aromatic Amine Eutectic <sup>1</sup>		9.61	1.01
	EPIKURE Curing Agent 3223	Hexion	<u>0.75</u>	<u>0.092</u>
			10.36	1.102

<sup>1</sup>A 60/40 blend of para, para'-diaminodiphenylmethane and meta-phenylenediamine.

**Compounding** Heat the EPON Resin 828 to 66 °C, add Aluminum Powder #120 and blend well. Add the converter portion and mix thoroughly with a mechanical mixer. Coat the mold with a high temperature release agent such as Dow DC-7 (Dow Chemical Co.) and preheat to 66 °C. Pour the resin while it is still warm and cure for 4 hours at 66 °C. At this time the casting can be removed from the mold if desired but do not allow it to cool below 57 °C. Return the casting to the oven and cure for 1 hour at 120 °C; then cure for an additional hour at 205 °C. Turn off the heat and let the mold gradually return to room temperature. Castings up to 2 inches thick have been made with no appreciable exotherm.

**Typical Handling Properties** Table 1 / Handling Properties at 66 °C

	<u>Units</u>	<u>Value</u>
Brookfield Viscosity		
#5 spindle at 20 rpm	cP	1,200
#4 spindle at 4 rpm	cP	50,000
Pot Life, 1-pound batch	min.	50
Density	lbs/gal	13.10

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

	<u>Units</u>	<u>Value</u>
Heat Deflection Temperature	°C	138
Tensile Strength, Ultimate	psi	9,900
Tensile Elongation	%	6.2
Flexural Strength, Ultimate	psi	17,900
Flexural Modulus	ksi	801
Compressive Yield Strength	psi	18,300
Compressive Modulus	ksi	590
Izod Impact, notch	ft•lb/in.	0.37
Hardness	Rockwell M	81

<sup>1</sup> Castings were cured for 4 hours at 66 °C followed by 1 hour at 120 °C and an additional hour at 204 °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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