Starting Formulation

SF 7005

Epoxy Casting Compound : Room Temperature Cure
EPON™ Resin 828 / HELOXY™ Modifier 505 / EPIKURE™ Curing Agents 3046 and 3234

Introduction This unfilled casting compound illustrates the use of stress relieving epoxy resins in formulating a room temperature curing system to provide a hard, polishable surface compound with high resilience and impact resistance. Sections up to 1-inch thick 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.	0.005	0.0006
		100.005	10.7106
Converter Portion			
EPIKURE 3046 Curing Agent	Hexion	25	3.20
EPIKURE 3234 Curing Agent	Hexion	5	0.61
		30	3.81

Compounding

Resin Portion

Weigh all the components into a mixing vessel and blend under low to moderate speed agitation until homogeneous. Although the addition of DC-200 Fluid may result in a slight haze in the compounded resin, this air release agent remains uniformly dispersed during storage.

Converter Portion

Weigh the EPIKURE 3046 Curing Agent and EPIKURE 3234 Curing Agent into a mixing tank and blend until homogeneous. Store the compounded curing agent in tightly sealed metal or polyolefin plastic containers.

Typical Handling Properties

Table 1 / Handling Properties

	Units	Value
Resin Portion	pbw	100
Converter Portion	pbw	30

Generated: October 19, 2021
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Gel Time at 25 °C		
1-inch thick section	min.	80
1 1/2-inch thick section	min.	65
Gallon quantity	min.	45
Density		
Resin Portion	lbs/gal	9.34
Converter Portion	lbs/gal	7.87
Combined System	lbs/gal	9.03

Typical Cured State Properties

Table 2 / Cured State Properties[1]

	Units	Value
Tensile Strength, Ultimate	psi	8,500
Tensile Modulus, Initial	ksi	380
Tensile Elongation	%	6.0
Flexural Strength, Ultimate	psi	14,800
Flexural Modulus, Initial	ksi	390
Flexural Deflection at failure	in	0.50
Compressive Strength, Ultimate	psi	27,800
Compressive Strength, Yield	psi	10,800
Deflection at failure	inch	0.53
Izod Impact, notched	ft•lb/in.	0.56
Izod Impact, unnotched	ft•lb/in.	4.87
Hardness		
at 25 °C	Shore D	81
at 52 °C	Shore D	80
at 66 °C	Shore D	75

[1]All specimens were cured for 16 hours at 25 °C followed by 1hour at 93 °C.

Mixing

Mix the resin and converter portions in a 100:30 weight ratio just prior to use and blend thoroughly. When practical, the mixture should be vacuum deaerated before pouring into molds treated with release agent. Fillers such as aluminum powder, aluminum granules, silica, calcium carbonate, clay or talc should be incorporated when sections thicker than 1-inch are to be cast.

To obtain maximum mold turn-over, preheat the molds, or heat after filling, to between 50 and 66 °C. This will not cause thermal degradation due to excessive exothermic temperature rise.

Storage

Recommendations regarding storage conditions can be obtained by visiting our web site at www.hexion.com

General Information

These are starting formulations and are not proven in the user's particular application but are simply meant to demonstrate the efficacy of the products and to assist in the development of the user's own formulation. It is the user's responsibility to fully-test and qualify the formulation, along with the ingredients, methods, applications or equipment identified herein ("Information"), by the user's knowledgeable formulator or scientist, and to determine the appropriate use conditions and legal restrictions, prior to use of any Information.

Safety, Storage & Handling

Please refer to the MSDS for the most current Safety and Handling information.

Exposure to these materials should be minimized and avoided, if feasible, through the observance of proper precautions, use of appropriate engineering controls and proper personal protective clothing and equipment, and adherence to proper handling procedures. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheet (MSDS) for these and all other products being used are understood by all persons who will work with them. Questions and requests for information on Hexion Inc. ("Hexion") products should be directed to your Hexion sales representative, or the nearest Hexion sales office. Information and MSDSs on non-Hexion products should be obtained from the respective manufacturer.

Contact Information

For product prices, availability, or order placement, please contact customer service:

www.hexion.com/Contacts/

For literature and technical assistance, visit our website atwww.hexion.com

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