Starting Formulation

SF 7000

Flexibilized, One-Component Electrical Potting and Impregnating Compound
EPON™ Resin 828 / HELOXY™ Modifier 32

Introduction This single package epoxy/anhydride compound utilizes HELOXY Modifier 32 as a low viscosity flexibilizer for thermal shock resistance and metallic stearates as latent catalysts. The combination of lithium and zinc stearates eliminates surface tack but retains long shelf life and provides good electrical insulating properties at temperatures up to 130 °C. The low volatility of all components permits the use of high vacuum to insure complete impregnation and absence of air voids.

Formula

Material	Supplier	Pounds	Gallons
EPON Resin 828	Westlake Epoxy	60	6.19
HELOXY Modifier 32	Westlake Epoxy	40	4.52
Dodecenylsuccinic Anhydride	Allied Chemical Corp.	70	8.37
Lithium Stearate #304	Witco Chemical Corp.	1	0.12
Zinc Stearate Grade H	Metasap Chemical Co.	4	0.44
	Total	175	19.64

Typical Handling Properties Table 1 / Handling Properties

	Units	Value
Density	lbs/gal	8.92
Initial Viscosity at 25 °C	cP	900
Expected Shelf Life at 77 °F	months	>2
Gel Time at 250 °F	min.	12
Gel Time at 300 °F	min.	7
Suggested Cure Schedule		
at 250 °F	hrs	5
at 300 °F	hrs	3

Compounding Procedure Weigh the Dodecenylsuccinic Anhydride into a mixing vessel and heat to 300 °F to 340 °F. Use an inert gas sparge to prevent hydrolysis of the anhydride. Add lithium stearate and agitate until dissolved. Add zinc stearate and agitate until dissolved. Cool to 100 °F or less prior to blending with the EPON Resin 828.

Application The compound may be heated to temperatures of 150 °F to 200 °F, if necessary, to lower viscosity and improve air release properties. Most electrical compounds are potted, impregnated or encapsulated under vacuum to insure complete penetration of fine windings and elimination of air voids.

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Typical Cured State Properties

Table 2 / Cured State Properties[1]

	Units	Value
Tensile Strength, Ultimate	psi	2,100
Tensile Elongation	%	42
Izod Impact, notch	ft•lb/in.	1.02
Weight Loss - 24 Hrs. at 300 °F	%	0.53
Water Absorption - 24 Hrs. at 77 °F	%	0.19

Electrical Properties

Volume Resistivity

25 °C	ohm-cm	2.9×10^{15}
66 °C	ohm-cm	6.8×10^{12}
93 °C	ohm-cm	3.0×10^{11}
130 °C	ohm-cm	2.1×10^{10}
150 °C	ohm-cm	5.5×10^{9}
180 °C	ohm-cm	$<10^{9}$

Capacitance at 60 HZ	Dielectric Constant	Dissipation Factor
25 °C	3.56	0.024
40 °C	3.90	0.015
60 °C	3.25	0.009
80 °C	3.34	0.001
100 °C	3.11	0.018
120 °C	3.00	0.149
140 °C	3.17	0.458
160 °C	3.34	0.707
180 °C	4.26	1.018
200 °C	Off Scale	Off Scale

[1] Cure Schedule 16 hrs at 250°F

Storage

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

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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 Westlake Epoxy products should be directed to your Westlake Epoxy sales representative, or the nearest Westlake Epoxy sales office. Information and MSDSs on non-Westlake Epoxy products should be obtained from the respective manufacturer.

Contact Information

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

www.westlakeepoxy.com/Contacts/

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