Thermoset 600 Epoxy Resin

Description

LORD Thermoset 600 epoxy resin is a general purpose, unfilled epoxy resin formulated for use with several Thermoset hardeners to obtain a variety of handling and cured properties. Thermoset 600 epoxy resin can be used in many applications including adhesive, laminating and electrical/electronic insulation.

Features and Benefits

Handling and cured properties of the two-component epoxy system are dependent on the hardener used with Thermoset 600 epoxy resin.

Thermoset Hardener No. 37

- ***Flexible Bond Strength*** – provides high bond strength for use as an adhesive to a variety of surfaces. Rigidity of bond may be varied depending on mix ratio. A 1:2 (resin to hardener, by weight) ratio will yield a relatively flexible bond; a 2:1 ratio will provide a rigid bond.

Thermoset Hardener No. 65

- ***Low Viscosity*** – maintains low viscosity for complete and void-free encapsulation.
- ***Excellent Appearance*** – cures to a high gloss surface, free of “blush” or “sweat-out”.

Thermoset Hardener No. 66

- ***Low Stress*** – exhibits low shrinkage and stress on components as it cures.
- ***Flexible Bond Strength*** – provides high bond strength for use as an adhesive to a variety of surfaces. Rigidity of bond may be varied depending on mix ratio. A 1:2 (resin to hardener, by weight) ratio will yield a relatively flexible bond; a 2:1 ratio will provide a rigid bond.

Thermoset Hardener No. 67

- ***Elevated Temperature Cure*** – requires an elevated temperature cure to obtain a rigid bond.
- ***High Temperature Resistant*** – provides good resistance for cured system that experiences continuous operating temperature up to 155°C.
- ***Chemically Resistant*** – cured system provides excellent resistance to chemicals.

Thermoset Hardener No. 71

- ***Low Exotherm*** – exhibits low exothermic heat rise during room temperature cure.
- ***Environmentally Resistant*** – cured system provides excellent mechanical and thermal shock resistance; retains flexibility even after severe heat aging.

Typical Properties*

Appearance	Clear Liquid
Viscosity, cps @ 25°C	13,500
Specific Gravity	1.17

*Data is typical and not to be used for specification purposes.

Application

Mixing – Transfer amount of resin needed to a clean container and add proper amount of hardener by weight. Thoroughly mix resin and hardener together. Automatic meter/mix/dispense equipment may be used for high volume production.

Unless a closed-chamber mechanical mixer is used, air will be introduced when catalyzing the mixture. Electrical properties of the epoxy are best when air bubbles and voids are minimized. Therefore, in extremely high voltage or other critical applications, vacuuming may be appropriate.

Applying – Apply epoxy system using automatic meter/mix/dispense equipment.

Curing – Cure time will vary depending on hardener used. Refer to cure schedule indicated below. This time-at-temperature profile refers to the time the material should be allowed to cure once it reaches the target temperature. Allowance should be made for oven ramp rates, parts with large thermal mass and other circumstances that may delay material actually reaching the target temperature.

Cleanup - Disposable containers and utensils are recommended when working with epoxies. However, when disposable materials are impractical, uncured epoxy can be removed by cleaning equipment with solvent. Solvent-cleaned utensils should be thoroughly dried before reuse; any remaining solvent can contaminate the next mixture.

Shelf Life/Storage

Shelf life is two years from date of manufacture when stored at 25°C in original, unopened container.

If stored or shipped at cooler temperatures, Thermoset 600 resin may crystallize. If crystals appear, gently warm resin at 50-60°C to melt crystals before mixing with hardener.

Cautionary Information

Before using this or any LORD product, refer to the Safety Data Sheet (SDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Typical Properties* of Resin Mixed with Hardener

	Thermoset Hardener No. 37	Thermoset Hardener No. 65	Thermoset Hardener No. 66	Thermoset Hardener No. 67	Thermoset Hardener No. 71
Mix Ratio, Resin to Hardener					
by Weight	100:100†	100:40	100:50†	100:24	100:100
by Volume	100:120	100:50	100:60†	100:30	100:120
Working Life, min @ 25°C 200 g	75	50	60	60	60
Cure Time, hr					
@ 25°C	24	24	24	–	24
@ 66°C	2	–	–	–	–
@ 93°C	0.05	–	–	–	–
@ 100°C	–	–	–	2**	–

*Data is typical and not to be used for specification purposes.
** Optional post cure - 2 hrs @ 150°C.
† Mix ratio may be varied to achieve different bond strength.

Typical Cured Properties*

	Thermoset Hardener No. 37	Thermoset Hardener No. 65	Thermoset Hardener No. 66	Thermoset Hardener No. 67	Thermoset Hardener No. 71
Volume Resistivity, ohm-cm @ 25°C	1 x 10^{16}	1 x 10^{15}	1 x 10^{16}	1 x 10^{16}	1 x 10^{14}
Hardness Shore D	84	85	85	92	60
Tensile Strength, MPa @ 25°C	51.7	62.1	52.4	75.2	15.9
Elongation at Break, %	4.5	4.5	12	5.2	55
Moisture Absorption, % 24 hours @ 25°C	0.55	0.22	0.35	0.20	0.85
Dielectric Constant 1 MHz @ 25°C	3.7	4.2	3.7	4.4	4.2
Dissipation Factor 1 MHz @ 25°C	0.016	0.016	0.016	0.038	0.021

*Data is typical and not to be used for specification purposes.

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

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