

CoolTherm® EP-636 Epoxy Encapsulant

Technical Data Sheet

CoolTherm® EP-636 epoxy encapsulant is a two-component system specifically designed for high temperature applications. CoolTherm EP-636 encapsulant is recommended for encapsulation of electric motor stator assemblies used on downhole oil pumps.

Features and Benefits:

High Temperature Electrical Performance – maintains electrical insulation stability at extremely high temperatures.

Environmentally Resistant – provides protection of electrical devices exposed to harsh environmental conditions.

Durable – exhibits very low weight loss over extended periods at elevated temperatures.

Application:

Mixing – Thoroughly mix each component prior to combining resin and hardener. Mix CoolTherm EP-636 resin with CoolTherm EP-636 hardener at a ratio of 100 parts resin to 1 part hardener, by weight, until uniform in color. Automatic meter/mix/dispense equipment may be used for high volume production.

Applications involving large mass castings may require a mix ratio of 100 part resin to 0.75 parts hardener, by weight. Tests should be conducted to determine the optimal mix ratio.

Unless a closed-chamber mechanical mixer is used, air may be introduced into the encapsulant system either during mixing or when catalyzing the mixture. Electrical properties of the epoxy encapsulant 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 encapsulant using handheld cartridges or automatic meter/mix/dispense equipment.

Curing – Allow encapsulant to cure for 16-24 hours at 50-65°C, followed by 2 hours each at 95°C, 150°C and 205°C. In special circumstances where conditions do not permit the use of the typical cure schedule, alternate curing cycles may be determined by consultation with Parker LORD.

Cleanup – Disposable containers and utensils are recommended when working with epoxies. However, when disposable materials are impractical, uncured encapsulant 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.

Typical Properties*

	EP-636 Resin	EP-636 Hardener	Mixed
Appearance	White Liquid	Black Liquid	Gray Liquid
Viscosity, cP @ 25°C	86,000	3500	50,000
Specific Gravity @ 25°C	1.61	1.00	1.58
Gel Time, minutes @ 93°C	–	–	30
Working Life, days @ 25°C	–	–	1 - 2

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



ENGINEERING YOUR SUCCESS.

Typical Cured Properties**

Thermal Conductivity, W/m·K	0.7
Coefficient of Linear Thermal Expansion, ppm/°C	35
Glass Transition Temperature (T _g), °C by TMA	180
Hardness Shore D, ASTM D 2240	95
Tensile Strength, MPa (psi) ASTM D 636	42.75 (6200)
Volume Resistivity, ohm-cm @ 25°C ASTM D 257	5.6 x 10 ¹⁵
Dielectric Strength, kV/mm (V/mil) ASTM D 149	18.3 (464)
Dielectric Constant @ 25°C 1 Mz, ASTM D 150	3.62
Dissipation Factor @ 25°C 1 MHz, ASTM D 150	0.023

**Data is typical and not to be used for specification purposes. Cure schedule of 24 hours at 65°C plus 2 hours each at 95°C, 150°C and 205°C.

Shelf Life/Storage:

Shelf life is one year for CoolTherm EP-636 resin and two years for CoolTherm EP-636 hardener when stored at 25°C in original, unopened container. CoolTherm EP-636 resin must be periodically rotated within its container to maintain maximum shelf life. Settling will occur if not mixed.

CoolTherm EP-636 hardener may crystallize during shipment or storage. If crystals appear, gently warm hardener at 50-65°C to melt crystals before mixing with resin.

Cautionary Information:

Before using this or any Parker 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.

Values stated in this document 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.

Information provided herein is based upon tests believed to be reliable. In as much as Parker LORD has no control over the manner in which others may use this information, it does not guarantee the results to be obtained. In addition, Parker LORD does not guarantee the performance of the product or the results obtained from the use of the product or this information where the product has been repackaged by any third party, including but not limited to any product end-user. Nor does the company make any express or implied warranty of merchantability or fitness for a particular purpose concerning the effects or results of such use.

WARNING — USER RESPONSIBILITY. FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

©2022 Parker Hannifin - All Rights Reserved

Information and specifications subject to change without notice and without liability therefor. Trademarks used herein are the property of their respective owners.

OD DS3599 07/22 Rev.4

Parker LORD
Engineered Materials Group

111 LORD Drive
Cary, NC 27511-7923
USA

phone +1 877 ASK LORD (275 5673)

www.lord.com

