ER1122

Epoxy Resin

DESCRIPTION

ER1122 is a general purpose, two-part, hot, or cold curing resin with superior adhesive properties. The cured material is tough however flexibility can be adjusted by altering the amount of hardener used. Increasing the amount of hardener will produce a more flexible product and decreasing the amount of hardener will produce a more rigid product. However, this should only be carried out after careful testing; some mix ratios are provided below.

READ ENTIRE TECHNICAL BULLETIN BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- Excellent adhesion to a wide variety of substrates
- Adjustable flexibility to suit a range of applications, very versatile in use
- Good bond strength even in harsh conditions, including certain chemical environments
- Excellent electrical properties; can be used for encapsulation as well as bonding applications

APPROVALS

Standard	Status
RoHS Compliant (2015/863/EU)	Yes
UL Approval	No

PRODUCT INFORMATION

For available packaging sizes please visit:

electrolube.com

PHYSICAL PROPERTIES

Category	Results
Liquid Properties	
Base Material	Epoxy
Color Part A - Resin Part B - Hardener	 Clear Amber
Density Part A - Resin (g/mL) Part B - Hardener (g/mL)	 1.16 0.97
Viscosity (mPa s 23 °C) Part A Part B Mixed System	 11000 15000 12000
Mix Ratio Weight Volume	 1:1 0.83:1
Usable Life (20 °C)	1 to 2 hours
Gel Time (23 °C)	4 hours
Cure Time 23 °C 60 °C 100 °C	 48 hours 4 hours 1 hours
Storage Conditions	Dry Conditions: Above 15 °C, Below 35 °C
Shelf Life	24 Months
Exotherm (Measured on 100 mL sample, cylinder of diameter 49.4 mm @ 23 °C)	<35 °C
Shrinkage	<0.5%
Cured System	
Color (Mixed System)	Clear Amber
Thermal Conductivity (W/m.K)	0.20

Category	Results
Cured Density (g/mL)	1.05
Temperature Range (°C)	-40 to 120
Max Temperature Range (Short Term (°C)/30 Mins) (Application and Geometry Dependent)	+140
Volume Resistivity (ohm-cm)	10^{14}
Dielectric Strength (kV/mm)	12
Shore Hardness	D80
Flame Retardancy	No
Tensile Strength (MPa)	45 to 50
Compressive Strength (MPa)	90
Deflection Temperature (°C)	35
Coefficient of Expansion (ppm/°C)	100
Loss Tangent @ 50 Hz	0.01
Permittivity @ 50 Hz	4.50
Comparative Tracking Index	Not Measured
Water Absorption (9.7 mm thick disk, 51 mm diameter) 10 days @ 20 °C / 1 hour @ 100 °C	< 0.5% / < 1.0%
Elongation at Break	2.5%

APPLICATION GUIDELINES - BULK

Bulk Mixing

When mixing, care must be taken to avoid the introduction of excessive amounts of air. Automatic mixing equipment is available which will not only mix both the resin and hardener accurately in the correct ratio but do this without introducing air. Containers of Part A (Resin) and Part B (Hardener) should be kept sealed at all times when not in use to prevent the ingress of moisture. Bulk material must be thoroughly mixed before use. Incomplete mixing or use of the wrong mix ratio will result in erratic or partial curing.

TYPICAL PRODUCT APPLICATION

Typical Properties of Cured Resin

Tensile shear strength of bonded pickled light alloy:

Mix Ratio (Resin:Hardener)	Cured 7 Days @ 25 °C	Cured 20 mins @ 150 °C
2.0:1	170kg/cm^2	**300kg/cm^2**
1.5:1	180kg/cm^2	**310kg/cm^2**
1.0:1	180kg/cm^2	**350kg/cm^2**
0.67:1	**150kg/cm^2**	**300kg/cm^2**

Tensile shear strength of bonded LD polyethylene (cured 7 days at room temperature):

Mix Ratio (Resin:Hardener)	Flame Treated Polyethylene	Chromic Acid Pickled Polyethylene
0.67:1	13.1kg/cm^2	13.2kg/cm^2

Chemical resistance: Bond strength is fully retained after 12 months immersion in diesel oil and substantially retained after 6 months immersion in water, ethanol, or benzene.

Effect of room temperature aging on bond strength of bonded pickled light alloy.
Cured for 20 minutes @ 150 °C, resin:hardener ratio 1:1:

Not Aged	1 Month	3 Month	6 Month	18 Months	24 Months	60 Months
330kg/cm^2	340kg/cm^2	280kg/cm^2	280kg/cm^2	300kg/cm^2	280kg/cm^2	210kg/cm^2

ADDITIONAL INFORMATION

Cleaning: It is far easier for machines & containers to be cleaned before the resin has been allowed to cure. RRS is suitable for cleaning machines and containers and cured resin may be slowly softened and removed by soaking in our RRS.

Storage: When storing under very cold conditions, the hardener may crystallize. If this occurs, simply warm (40 °C) the container gently until all crystals have re-melted.

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

CONTACT INFORMATION

To confirm this document is the most recent version, please contact

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE . Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588