



TECHNICAL DATA

NP1003

GENERAL PURPOSE EPOXY RESIN SYSTEM

UL 94 V-0 Approved

Product Description

NP1003 is a two-part epoxy resin system that has been given UL 94 V-0 Approval. The system cures at room temperature to a high gloss finish. It is flame retardant and thermally conductive. The resin system is slightly flexible to allow for thermal fluctuations and is suitable for encapsulation of PCBs and general electronics.

The LED Range of Resins

The electronics and the power supplies behind the LEDs require advanced resins for protection and to dissipate generated heat. The NP1003 epoxy system offers an internationally recognised solution to many power supply problems. The water uptake is minimal (0.1%/30 days) and the slight flexibility makes NP1003 useful in most outdoor applications. The excellent thermal conductivity of 0.9 W/mK and low expansion coefficient (40 ppm/°C) provide the necessary performance for LED Power supplies.

Features

- * UL 94 V-0 Approved
- * High Gloss Finish
- * Ambient or Elevated Temperature Dispensing and Curing
- * Contains No Halogens and is Non-Toxic.
- * Good Thermal Conductivity to Dissipate Heat

Applications

- * Assemblies
- * Power Supplies
- * Modules
- * Drivers

Typical Uncured Physical Properties

Property	Base	Hardener	Mixed System
Viscosity (mPas)	30,000	300	7,000
Colour	Black	Clear Amber	Black
Specific Gravity	1.82	0.96	1.70
Mix Ratio	10.1 5.3	1 1	By Weight By Volume



Pot Life	45 Minutes	150 g @ 23°C
Gel Time	180 Minutes	150 g @ 23°C
Peak Exotherm	37°C	150 g @ 23°C
Complete Cure	24 Hours	150 g @ 23°C

Typical Cured Properties

Property	Result	Units
Operating Temperature	-55 to +130	°C Continuous (Application & Geometry Dependent)
Shore D Hardness	80	
Electric Strength	15	kV/mm
Thermal Conductivity	0.9	W/mK
Volume Resistivity	10 ¹⁴	Ohm.cm
Loss Tangent	0.04	@ 50 Hz
Permittivity	4.00	@ 50 Hz
Comparative Tracking Index	>850	V
Cure Shrinkage	0.3	% (volume)
Flammability	UL 94 V-0	Certified
Deflection Temperature	60	°C
Coefficient of Expansion	40	ppm/°C
Water Absorption	0.3	% (30 days @ 20°C)

Note: The above technical information and data should be considered representative or typical only and should not be used for specification purposes.

Supply	Details
Twinpacks	Ideal for mixing without the entrapment of air.
Kits	The resin base and hardener are supplied in two separate containers, pre-weighed to facilitate accurate mixing for larger applications.
Bulk	The NP1003 system is formulated to prevent sedimentation on storage. However, storage at higher ambient temperatures (above 25°C for instance) or for long times, can cause some settlement. It is important that any sediment is redispersed into the bulk resin prior to using the resin. This can be done by stirring with a long spatula.
Shelf Life	The materials should be stored in the original unopened containers under cool dry conditions at temperatures between 10 and 25°C. The shelf life is one year. Opened containers should be resealed.



Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. All Products should be used in accordance with your own COSHH Assessments. For additional health and safety information, call 01373 858234.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that ALH believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond ALH's control and uniquely within user's knowledge and control can affect the use and performance of an ALH product in a particular application. Given the variety of factors that can affect the use and performance of an ALH product, the user is solely responsible for evaluating the ALH product and determining whether it is fit for a particular purpose and suitable for the user's methods of application.

Warranty, Limited Remedy and Disclaimer

Unless an additional warranty is specifically state on the applicable ALH product packaging or product literature, ALH warrants that each ALH product meets the applicable ALH product specification at the time ALH ships the product. ALH MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the ALH product does not conform to this warranty, then the sole and exclusive remedy is, at ALH's option, replacement of the ALH product or refund of the purchase price.

Limitation of Liability

Except where prohibited by law, ALH will not be liable for any loss or damage arising from the ALH product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

Version: 2

Date: August 2019