PERMABOND ES569

Single-part, heat-cure Epoxy

Technical Datasheet

Features & Benefits

- Excellent adhesive strength
- Excellent resistance to vibration
- Easy to use – no mixing required
- High shear and peel strength
- High temperature resistance
- Good resistance to chemicals
- Non-sag, thixotropic

Description

PERMABOND ES569 is a single-part heat cured epoxy adhesive with excellent adhesion to metal surfaces as well as composite materials. The high bond strength of this adhesive allows it to replace mechanical fastening, soldering, brazing or welding. ES569 has been designed to be non-sagging, allowing the product to be used in large gaps and on vertical surfaces. It is also ideal for bonding electronic components as it has high wet strength and is non-stringing and produces an excellent drop profile as well as withstanding solder reflow processes.

Physical Properties of Uncured Adhesive

Chemical composition	Epoxy Resin
Appearance	Black paste
Viscosity @ 25°C	250,000 – 500,000 mPa.s (cP)
Density	1.2

Typical Curing Properties

Flow at high temperature	No flow, high wet strength
Maximum gap fill	5 mm ***0.2 in***
Cure speed (oven) *	120°C *(250°F)*: 60 minutes 150°C *(300°F)*: 45 minutes 180°C *(350°F)*: 20 minutes 200°C *(390°F)*: 15 minutes
Cure speed (induction)	<3 minutes

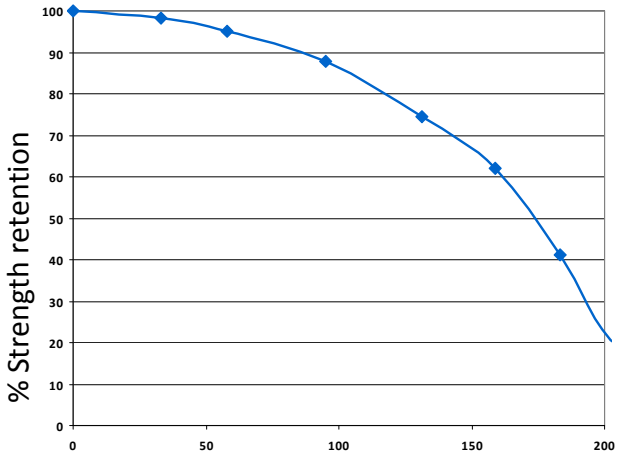
**Actual cure times will depend on the time it takes for the adhesive to reach this temperature - for example, large assemblies or a crowded oven will require longer to reach full cure. Alternative, quicker methods of curing include induction, hotplates, infrared lamps and hot-air guns.*

Typical Performance of Cured Adhesive

Shear strength* ASTM D-1002	Steel 27 - 41 N/mm² ***(4000 – 6000 psi)*** Aluminium 17 - 31 N/mm² ***(2500 – 4500 psi)*** Zinc 14 - 27 N/mm² ***(2000 – 4000 psi)***
Hardness	80 Shore D
Coefficient of thermal expansion	45 x 10^{-6} mm/mm/°C
Dielectric constant @ 1 mHz	5.4
Dielectric strength	17.7 kV/mm
Thermal conductivity	0.5 W/(m.K)

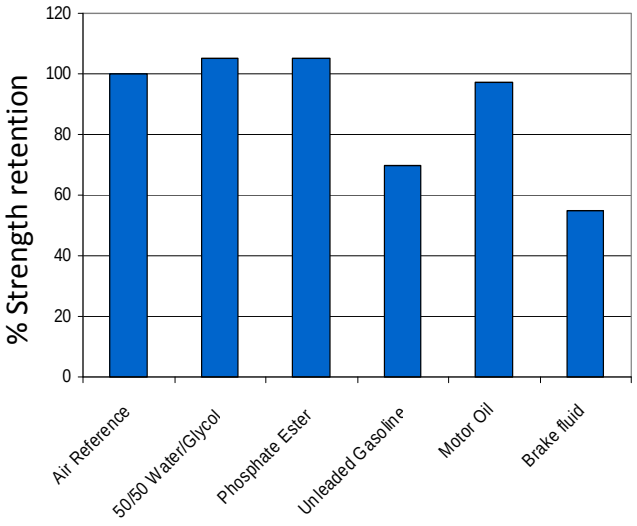
**Strength results will vary depending on the level of surface preparation and gap.*

Temperature Resistance



ES569 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -40°C (-40°F) depending on the materials being bonded.

Chemical Resistance



Specimens were immersed for 30 days at 85ºC and tested at room temperature.

Additional Information

This product is not recommended for use in contact with strong oxidizing materials.
Information regarding the safe handling of this material may be obtained from the material safety data sheet (MSDS).
Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene.

Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Use a suitable solvent (such as acetone or isopropanol) for the degreasing of surfaces. Some metals such as aluminium, copper and its alloys will benefit from light abrasion with emery cloth (or similar), to remove the oxide layer.

Directions for Use

1) The adhesive should be dispensed from the cartridge via the nozzle supplied (this can be cut to give the appropriate sized bead to cover the bond area).
2) Apply the adhesive to one surface and avoid entrapping air.
3) Assemble parts applying sufficient pressure to ensure the adhesive spreads to cover the entire bond area.
4) Use a jig / clamp to prevent parts moving during cure.
5) It is advisable not to disturb the joint until the adhesive is fully cured.

Storage & Handling

Storage Temperature	2 to 7°C ***(35 to 45°F)***
Shelf Life Stored in original unopened containers	6 months

Contact Permabond:

Europe: Tel. +44 (0)1962 711661
UK Helpline: 0800 975 9800
Deutschland: 0800 10 13 177
France: 0805 11 13 88
info.europe@permabond.com

US: Tel. +1 732-868-1372
Helpline: 800-640-7599
info.americas@permabond.com

Asia: Tel. +86 21 5773 4913
info.asia@permabond.com

www.permabond.com