PERMABOND® ET530

Two-Part Epoxy

Technical Datasheet

Features & Benefits

- Adhesion to a wide variety of substrates
- Full cure at room temperature
- Resistant to discoloration
- Low viscosity for good penetration
- Ideal for potting applications

Description

PERMABOND® ET530 2-part epoxy is suitable for bonding outer wrapping filters (reverse osmosis); low viscosity allows a rapid penetration on fibres, filaments (i.e. glass filaments). It is ideal for glass artistic mosaics, due to its low yellowing upon light exposure.

Its low viscosity also makes it suitable for potting and encapsulation of electronic components.

Physical Properties of Uncured Adhesive

	ET530A	**ET530B**
Chemical composition	Epoxy Resin	Polyamine Hardener
Appearance	Colourless	Colourless
Viscosity @ 25°C	500-700 mPa.s *(cP)*	400-700 mPa.s *(cP)*
Mixed viscosity	400-700 mPa.s *(cP)*	
Specific gravity	1.1	1.0

Typical Curing Properties

Mix ratio by volume	2:1
Usable / pot life @23°C	3g: 90-150 mins 150g: 60 mins
Handling time @23°C	8-12 hours
Working strength @23°C	24 hours
Full cure @23°C	72 hours

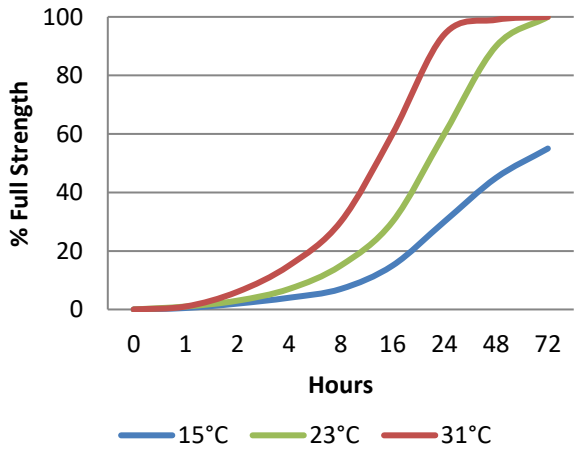
Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Steel: 10-12 N/mm² *(1450 - 1700 psi)* Zinc: 7-10 N/mm² *(1000 - 1450 psi)*
Tensile strength (ISO37)	>20 N/mm² *(>2900 psi)*
Hardness (ISO868)	65-80 Shore D
Elongation at break (ISO37)	<5%
Glass transition temperature Tg	+50°C *(122°F)*
Dielectric strength	450 V/mil
Dielectric constant @25°C	3.5 @ 1MHz
Volume resistivity	3 x 10 ^{15} ohm-cm
Thermal conductivity	0.31 W/(m.K)
Refractive index	1.540
Light transmission**	380-980 nm: >97% 980-1640 nm: >98% 1640-2040 nm: >98%
Water absorption (ISO62)	7 days @23°C: <1%

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

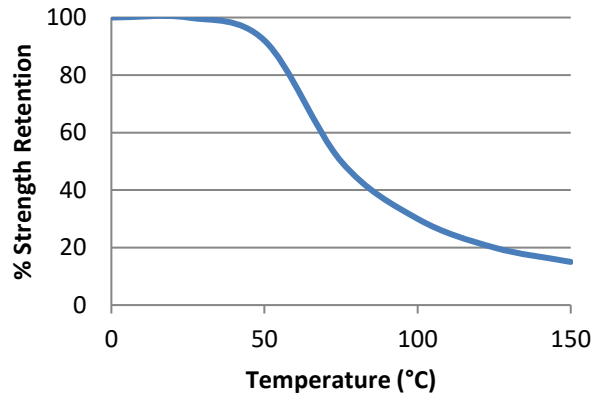
***Thickness of adhesive will affect light transmission.*

Strength Development



Graph shows typical strength development of bonded components. An increase of 8°C in temperature will halve the cure time. Lower temperatures will result in a slower cure time.

Hot Strength



"Hot strength" shear strength tests performed on mild steel. Fully cured specimens conditioned to pull temperature for 30 minutes before testing at temperature.

ET530 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.

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 safety data sheet.

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. Measure volumetrically 100 parts resin 50 parts hardener. Mix thoroughly taking care not to entrap air. Adhesive can be applied and mixed by automated dispensing equipment.
2. Apply material to one of the substrates.
3. Join the parts. Parts must be joined within 60-90 minutes of mixing the two epoxy components.
4. Large quantities and/or higher temperature will decrease the usable life or pot life.
5. Apply pressure to the assembly by clamping for 8 – 12 hours or until handling strength is obtained.
6. Full cure will be obtained after 72 hours at 25°C (77°F). Heat can be used to accelerate the curing process.

Storage & Handling

Storage Temperature	5 to 25°C ***(41 to 77°F)***