PERMABOND® MT3809

Modified Two-Part Epoxy

Technical Datasheet

Features & Benefits

- Adhesion to a wide variety of substrates
- Full cure at room temperature
- Easy to apply
- Soft & flexible
- Self levelling
- Low viscosity

Description

PERMABOND® MT3809 is a 10:1, two-part, modified epoxy adhesive designed for potting applications. It has excellent adhesion to Nylon, ABS, Polycarbonate and other plastics. When cured, this adhesive is soft and reasonably flexible. Its low viscosity makes it suitable for potting intricate parts.

Physical Properties of Uncured Adhesive

	MT3809A	**MT3809B**
Chemical composition	Epoxy based resin	Polyamine based hardener
Appearance	Grey	Black
Mixed appearance	Charcoal black	
Viscosity @ 25°C	20rpm: 6,000 – 10,000 mPa.s *(cP)* 2rpm: 15,000 – 25,000 mPa.s *(cP)*	5,000-10,000 mPa.s *(cP)*
Specific gravity	1.3	1.1

Typical Curing Properties

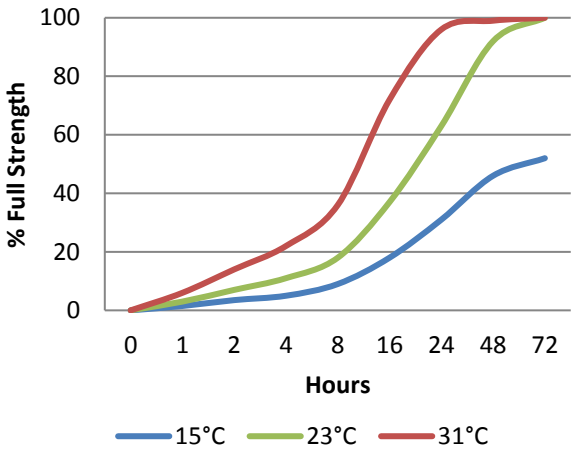
Mix ratio	10:1 by volume 12.5:1 by weight
Usable / pot life @25°C	10-12 mins
Handling time to 0.1 N/mm² @25°C	25-30 mins
Full cure @25°C	≥72 hours

Typical Performance of Cured Adhesive

Shear strength (ISO4587)	Mild steel: 6 - 8 N/mm² *(900 - 1200 psi)* ABS: 4-6 N/mm² *(600-900psi)* Acrylic: 3-5 N/mm² *(400-700psi)* Nylon: 3-5 N/mm² *(400-700psi)* Polycarbonate: 5-7 N/mm² *(700-1000psi)* PVC: 3-5 N/mm² *(400-700psi)*
Hardness (ISO868)	75-85 Shore A 20-30 Shore D
Elongation at break (ISO37)	150%
Peel strength (aluminium) (ISO4578)	60-80 N/25mm *(13-18 PIW)*

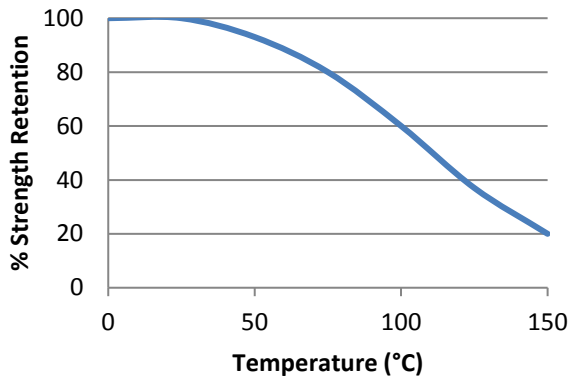
**Strength results will vary depending on the level of surface preparation and gap.*

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.

MT3809 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.
This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.

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.

Video Link

Surface preparation:
https://youtu.be/8CMOMP7hXjU

Directions for Use

1. Measure volumetrically 10 parts resin to 1 part hardener. Mix thoroughly taking care not to entrap air. Adhesive can be applied and mixed by automated dispensing equipment. If using cartridges, put cartridge in dispensing gun and affix static mixing nozzle.
2. Apply material. If potting; take care to fill component and not entrap air.
3. If bonding a joint, assemble the parts. Parts must be joined within 10-12 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 25-30 minutes or until handling strength is obtained.
6. Full cure will be obtained after **a minimum of** 72 hours at 25°C (77°F). Heat can be used to accelerate the curing process.

NB. Exercise caution when mixing large quantities due to exothermic reaction.

Storage & Handling

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

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