PERMABOND® ET5140

Two-Part Epoxy

Provisional Technical Datasheet

Features & Benefits

- Adhesion to a wide variety of substrates
- Full cure at room temperature
- High shear and peel strength
- Good impact strength

Description

PERMABOND® ET5140 is a 2:1 mixable epoxy adhesive. It has been developed primarily for the potting of membrane filters in static casting processes. ET5140 has excellent resistance to high temperatures and aggressive chemicals. It has a very low viscosity and low exotherm for large volume potting.

Physical Properties of Uncured Adhesive

	ET5140A	ET5140B
Chemical composition	Epoxy Resin	Polyamine Hardener
Appearance	Clear, colourless	Amber
Viscosity @ 25°C	1,500-3,000 mPa.s	2,500-4,500 mPa.s
Specific gravity	1.2	1.0

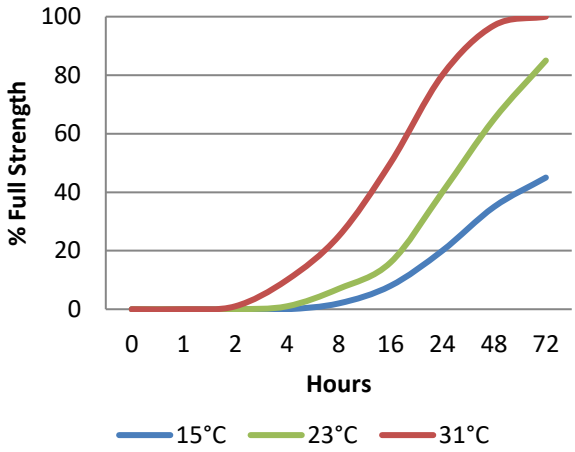
Typical Curing Properties

Mix ratio	2:1 by volume 2:1 by weight
Usable / pot life @23°C 2(40 g total mass)	5 hours
Full cure	@23°C: >72 hours

Typical Performance of Cured Adhesive

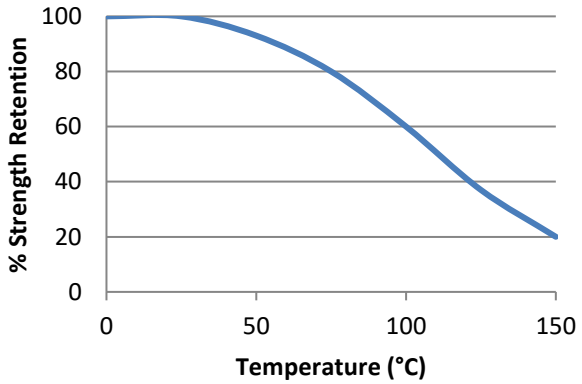
Hardness (ISO868)	>60 Shore D (24hr cure) >75 Shore D (72hr cure)
Glass transition temperature Tg	70°C

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.

ET5140 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.

Storage & Handling

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

Directions for Use

1. Measure volumetrically 2 parts resin (part A) to 1 part hardener (part B).
2. Mix thoroughly, taking care not to entrap air.
3. Pour into “pot” or mold, ensuring the adhesive flows around component to be potted.
4. If there is entrapped air, this can be brought to the surface by using a vibration table or applying a vacuum.
5. Adhesive must be used within 5 hours of mixing.
6. This product has been developed to have minimal exotherm (for a 40g mixed mass at 25°C, the temperature increase is <10°C over the 5 hours after mixing). Heating uncured bulk adhesive could result in exotherm.

Video Links

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

Two-part epoxy directions for use:
https://youtu.be/GRX1RyknYqc

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