PERMABOND® ET5143

Two-Part Epoxy

Technical Datasheet

Features & Benefits

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

Description

PERMABOND® ET5143 is a thixotropic two part adhesive with good resistance to impact and vibration. The controlled flow properties as well as its ease of mixing and application, enables the adhesive to be used where gap filling is required.

Permabond ET5143 has been specifically formulated to meet the requirements of:

- FDA 175.105 and 175.300

Physical Properties of Uncured Adhesive

	ET5143A	ET5143B
Chemical composition	Epoxy Resin	Polyamine Hardener
Appearance	White	Black
Viscosity @ 25°C	20rpm: 50,000-80,000 mPa.s *(cP)* 2rpm: 200,000-300,000 mPa.s *(cP)*	20rpm: 100,000-200,000 mPa.s *(cP)* 2rpm: 200,000-300,000 mPa.s *(cP)*
Specific gravity	1.3	1.3

Typical Curing Properties

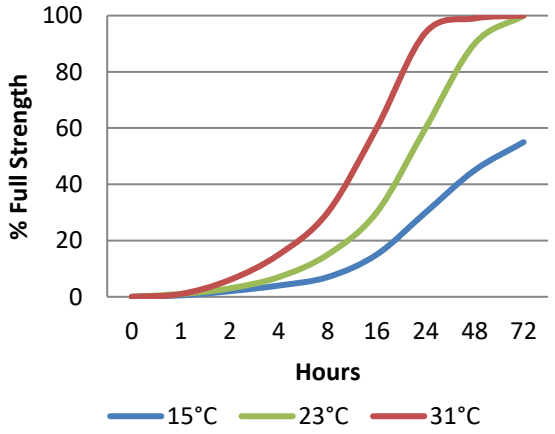
Mix ratio by volume	1:1
Maximum gap fill	2 mm *0.08 in*
Usable / pot life @23°C 1+1g	60-80 mins
Handling time @23°C	3-5 hours
Working strength	@23°C: 16 hours @60°C: 30 minutes
Full cure	@23°C: 72 hours @60°C: 1 hour

Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Mild steel: 18-22 N/mm² *(2600 -3200 psi)* Stainless steel: 12-15 N/mm² *(1750 -2200 psi)* Aluminium: 10-14 N/mm² *(1450 -2000 psi)*
Peel strength (aluminium) (ISO4578)	30-50 N/25mm *(7-11 PIW)*
Hardness (ISO868)	>75 Shore D
Glass transition temperature Tg	40-50°C *(104-122°F)*
Dielectric strength	15-25 kV/ mm

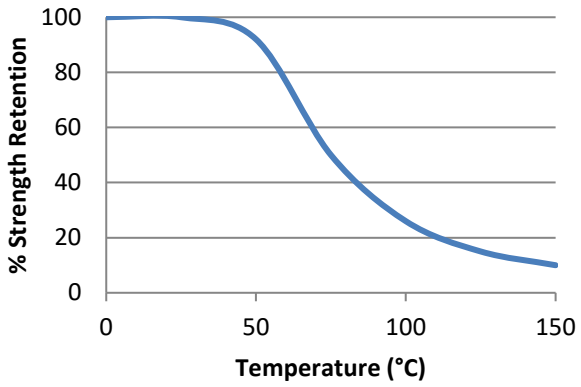
**Strength results will vary depending on the level of surface preparation and gap.*

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.

ET5143 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.

Storage & Handling

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

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. Dual cartridges:
   a) Insert the cartridge into the application gun and guide the plunger into the cartridge.
   b) Remove the cartridge cap and dispense material until both sides are flowing.
   c) Attach the static mixer to the end of the cartridge and begin dispensing the material.
2. Apply material to one of the substrates.
3. Join the parts. Parts must be joined within 60-80 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 5 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.

Video Links

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

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

Ihr Lieferant/Your Supplier:

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