Technical data sheet

Product:	ET5392
Manufacturer:	PERMABOND ENGINEERING ADHESIVES
Product group:	KLEBSTOFF
Article group:	2-K KLEBSTOFF
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PERMABOND® ET5392

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PERMABOND® ET5392

Two-Part Epoxy

Provisional Technical Datasheet

Features & Benefits

- Adhesion to a wide variety of substrates
- Full cure at room temperature
- Easy to apply
- Semi-toughened
- Good impact strength

Description

PERMABOND® ET5392 is a 1:1 mixable epoxy adhesive. It is semi-toughened and ideal for structural applications exposed impact and vibration stresses. It is ideal for bonding different materials where differential thermal expansion is anticipated. ET5392 can be used to bond a wide variety of materials including plastics, composites and metals – in particular, stainless steel.

Physical Properties of Uncured Adhesive

	ET5392A	ET5392B
Chemical composition	Epoxy Resin	Polyamide
Appearance	White	Black
Viscosity @ 23°C	2rpm: 500,000-750,000 20rpm: 140,000-180,000 mPa.s *(cP)*	20rpm: 30,000-50,000 mPa.s *(cP)*
Specific gravity	1.1	1.3

Typical Curing Properties

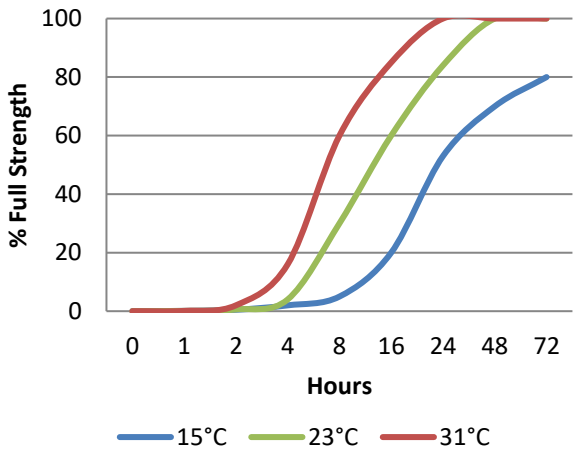
Mix ratio	1:1 by volume 95:100 by weight
Maximum gap fill	4 mm *0.08 in*
Usable / pot life @23°C 10g mixed	2 hours
Handling time @23°C	8-12 hours
Working strength @23°C	24 hours
Full cure	@23°C: 72 hours @60°C: 2 hours

Typical Performance of Cured Adhesive

Shear strength (mild steel)* (ISO4587)	**Cured 72hrs @23°C:** 22-24 N/mm² *(3200-3500 psi)* **Cured 2 hrs @ 60°C:** 23-25 N/mm² *(3300-3600 psi)*
Shear strength (stainless steel)* (ISO4587)	**Cured 72 hrs @ 23°C** As received: 23-26 N/mm² *(3300-3800 psi)* Gritblast/degrease: 26-28 N/mm² *(3800-4000 psi)* **Cured 2 hrs @ 60°C** As received: 23-26 N/mm² *(3300-3800 psi)* Gritblast/degrease: 30-33 N/mm² *(4400-4800 psi)*
Peel strength (aluminium) (ISO4578)	Cured 2hrs @ 60°C: 100-110 N/25mm *(22-24 PIW)*
Hardness (ISO868)	72-76 Shore D

**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.

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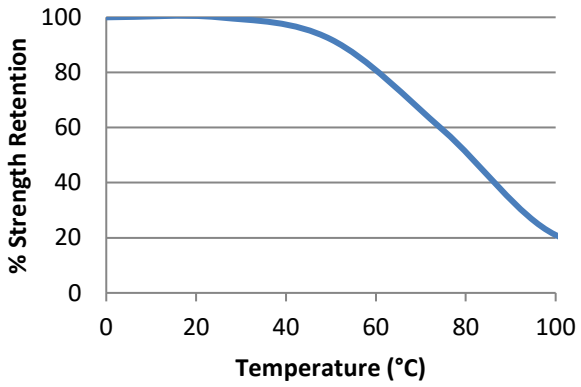
Hot Strength



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

ET5392 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 -55°C (-65°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 two hours 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 until handling strength is obtained.
6. Full cure will be obtained after 72 hours at 23°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

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