PERMABOND ET5164

Two-Part Epoxy

Provisional Technical Datasheet

Features & Benefits

- Excellent adhesion to stainless steel
- EU Food Contact 10/2011 compliant
- FDA 175.300 compliant
- High shear strength

Description

PERMABOND® ET5164 is a lightly thixotropic, 2-part epoxy adhesive designed to be compliant to both FDA 175.300 and EU food contact regulations 10/2011. ET5164 is designed primarily for bonding of stainless steel in food contact applications, however it will bond a variety of other substrates including steel and aluminium.

Physical Properties of Uncured Adhesive

	ET5164A	ET5164B
Chemical composition	Epoxy Resin	Modified Amine
Appearance	White paste	Off-white paste
Viscosity @ 25°C	54,000 mPa.s *(cP)*	52,000 mPa.s *(cP)*
Specific Gravity	1.23	1.14

Typical Curing Properties

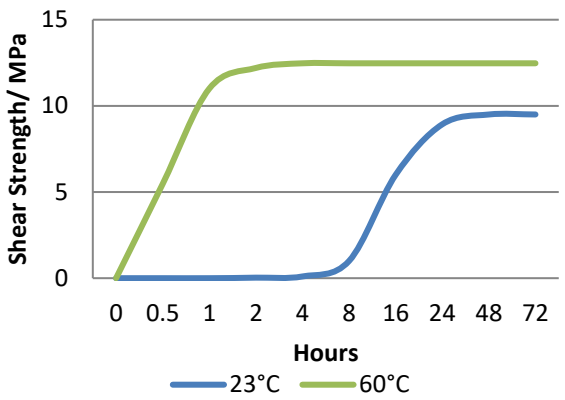
Mix ratio by volume	1:1
Maximum gap fill	2 mm *0.08 in*
Gel time @23°C 10g mixed	50-70 mins
Working strength @23°C Working strength @60°C	8 hours 20 mins
Full cure @23°C Full cure @60°C	24 hours 1 hour

Typical Performance of Cured Adhesive

Shear strength* (ISO4587) cured 1 hour @ 60°C	Stainless Steel: 17-23 N/mm² *(2465-3335 psi)*
Hardness (ISO868)	75-85 Shore D

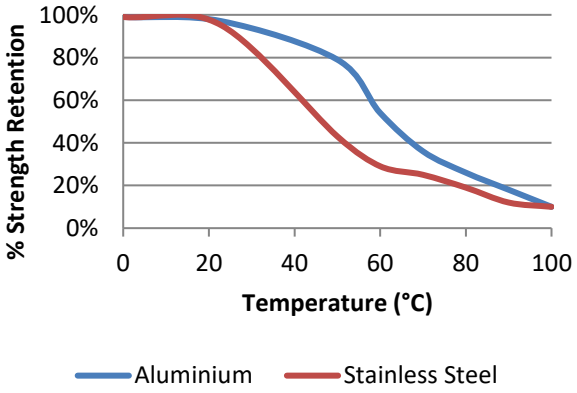
**Strength results will vary depending on the level of surface preparation and gap.*

Strength Development



Graph shows typical strength development of bonded aluminium components. Curing at 60°C improves the crosslinking and results in higher final strength values. Lower temperatures will result in a slower cure.

Hot Strength



Fully cured specimens conditioned to pull temperature for 30 minutes before testing at temperature.

ET5164 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 (-67°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.

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 the usable pot life 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 24 hours at 23°C (74°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

Storage & Handling

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

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