

Features & Benefits

- Colourless
- Full cure at room temperature
- Adhesion to a variety of substrates
- Good flow properties

Description

PERMABOND® ET5011 is a two-part colourless epoxy adhesive which bonds to a wide variety of substrates such as wood, metal, ceramics and some plastics and composites. It cures at room temperature to give handling strength in approximately 25 minutes. This product is ideal for general purpose bonding and is suitable for applications that require a clear bond line.

Physical Properties of Uncured Adhesive

	ET5011A	ET5011B
Chemical composition	Epoxy Resin	Amine Hardener
Appearance	Colourless	Colourless
Viscosity @ 25°C	70,000-120,000 mPa.s (cP)	10,000-25,000 mPa.s (cP)
	Mixed: 40,000-80,000 mPa.s (cP)	
Specific gravity	1.2	1.1

Typical Curing Properties

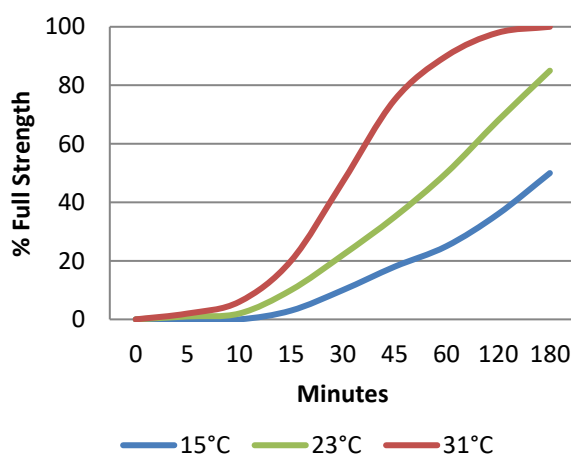
Mix ratio	1:1 by volume 100:94 by weight
Maximum gap fill	2 mm 0.08 in
Usable / pot life @23°C	10-25 min.
Handling time @23°C	25-30 min.
Working strength @23°C	1-2 hours
Full cure @23°C	24 hours

Typical Performance of Cured Adhesive

Shear strength (mild steel)* (ISO4587)	6-12 N/mm ² (900 – 1700 psi)
Peel strength (aluminium) (ISO4578)	5-20 N/25mm (1-4 PIW)
Hardness (ISO868)	70-80 Shore D
Elongation at break (ISO37)	<5%
Glass transition temperature Tg	40-50°C (104-122°F)
Dielectric strength	15-25 kV/ mm
Thermal conductivity	0.34 W/(m.K)

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

Strength Development

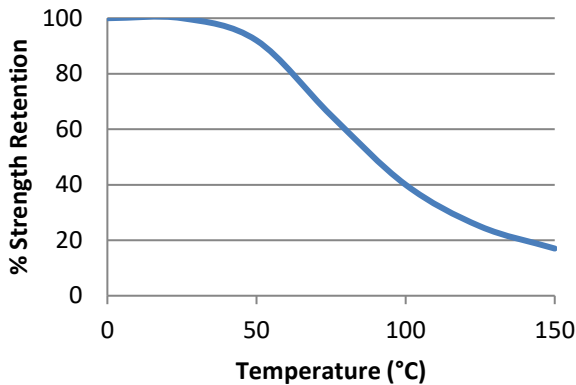


Graph shows typical strength development of bonded components. An increase of 8°C in temperature will halve the cure time. Lower temperatures will result in a slower cure time.

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

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.

ET5011 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.

Directions for Use

- Dual cartridges:
 - Insert the cartridge into the application gun and guide the plunger into the cartridge.
 - Remove the cartridge cap and dispense material until both sides are flowing.
 - Attach the static mixer to the end of the cartridge and begin dispensing the material.
 - Apply material to one of the substrates.
 - Join the parts. Parts must be joined within 10-15 minutes of mixing the two epoxy components.
 - Large quantities and/or higher temperature will decrease the usable life or pot life.
 - Apply pressure to the assembly by clamping for 8 minutes or until handling strength is obtained.
 - Full cure will be obtained after 24 hours at 23°C. 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)
---------------------	------------------------

Supplied by:

www.hitek-ltd.co.uk

+44 (0)1724 851678



HITEK
ELECTRONIC MATERIALS LTD

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.