

# Technical data sheet



Product: TA4660

Manufacturer: PERMABOND ENGINEERING ADHESIVES

Product group: KLEBSTOFF

Article group: 2-K KLEBSTOFF

Download: 23.11.2024

## PERMABOND® TA4660

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## Features & Benefits

- Excellent adhesion to nylon
- No primers required
- Full cure at room temperature
- Low odour
- Good temperature resistance

## Description

PERMABOND® TA4660 is a 2-part, 2:1 low odour, acrylic adhesive. It was developed for structural bonding of nylon/polyamide (filled and unfilled) without the need for any primers or additional surface treatment, such as plasma. TA4660 is also good for bonding nylon in combination with certain metals. It cures at room temperature and contains microbeads to control the bondline thickness for superior performance.

## Physical Properties of Uncured Adhesive

	TA4660 A-side	TA4660 B-side
Chemical composition	Acrylic	Acrylic
Colour	Yellow	Black
Mixed colour	Dark green/grey	
Viscosity @ 25°C	100,000 mPa.s (cP) Thixo	100,000 mPa.s (cP) Thixo
Specific gravity	1.0	1.0

## Typical Curing Properties

Ratio of use	2 : 1
Maximum gap fill (NB: Contains microparticles to control gap)	1 mm (0.04 in)
Pot life (10g mixed) @23°C	5 minutes
Fixture time (0.1 N/mm <sup>2</sup> shear strength is achieved) @23°C	25 minutes
Handling time (0.3 N/mm <sup>2</sup> shear strength is achieved) @23°C	90 minutes
Working strength @23°C	2 hours
Full cure @23°C	48 hours

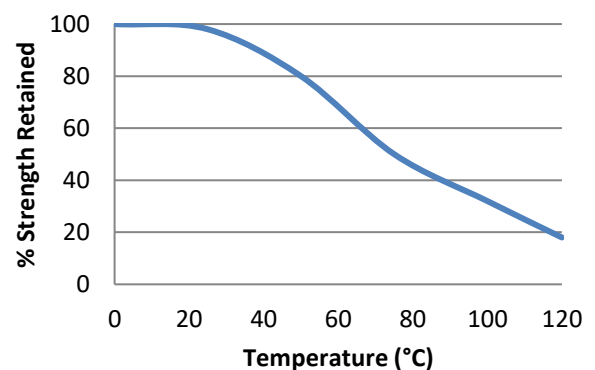
## Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	PA6: >10 N/mm <sup>2</sup> **SF (>1450 psi) PA6,6: >6 N/mm <sup>2</sup> **SF (>870 psi)* PA6 30% GF: 14-18 N/mm <sup>2</sup> (2030-2610 psi) Mild Steel to PA6,6: >10 N/mm <sup>2</sup> **SF (>1450 psi)* Aluminium to PA6,6: >10 N/mm <sup>2</sup> **SF (1450 psi)
Tensile strength (ASTM D638)	20 N/mm <sup>2</sup> (2900 psi)
Elongation at break (ASTM D638)	11%

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

\*\*SF denotes substrate failure.

## Hot Strength



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

TA4660 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 depending on the materials being bonded.

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## Additional Information

This product is not recommended for use in contact with strong oxidizing materials. This product may affect some thermoplastics and users must check compatibility of the product with such substrates.

Information regarding the safe handling of this material may be obtained from the safety data sheet (SDS). 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)
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## Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Surfaces may have traces of mold release agent present – wipe with isopropanol (IPA) solvent and allow to fully evaporate before bonding. If bonding to metal: 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) Surfaces must be clean, dry and grease-free prior to bonding.
- 2) Apply a thin bead of adhesive pre-mixed through a static mixer nozzle.
- 3) Assemble components and clamp.
- 4) Maintain pressure until handling strength is achieved. The time required will vary according to the joint design and surfaces being bonded.
- 5) Allow 48 hours for adhesive to fully cure.

NB: Adhesive outside of a closed joint (i.e. excess material) will cure more slowly and may feel soft due to air contact. Adhesive inside the joint will cure solid.

## Video Links

Surface preparation:

<https://youtu.be/8CMOMP7hXjU>



Structural acrylic directions for use:

<https://youtu.be/YVeKBCVhYo>



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