PERMABOND® TA4230

Toughened Acrylic Adhesive

Provisional Technical Datasheet

Features & Benefits

- Adhesion to a wide variety of substrates
- Fast cure at room temperature
- High shear and peel strength
- Good impact strength
- Designed to meet the requirements of UL94 V-0

Description

PERMABOND® TA4230 is a 2-part, 1:1 toughened acrylic adhesive. It can be used to bond a wide variety of materials including metals, plastics, composites, ceramics, and other substrates. The adhesive can provide excellent shear strength on many substrates with little surface preparation. The cured adhesive has been designed to meet the fire retardancy requirements of UL94 V-0.

Physical Properties of Uncured Adhesive

	TA4230 A-side	**TA4230 B-side**
Chemical composition	Methyl methacrylate	Methyl methacrylate
Colour	Cream	Yellow
Mixed colour	Straw	
Viscosity @ 25°C	8000 mPa.s *(cP)*	700 mPa.s *(cP)*
Specific gravity	1.14	1.0

Typical Curing Properties

Ratio of use	1 : 1
Maximum gap fill	0.5 mm *(0.02 in)*
Gel time (4g mix) @23°C	3 - 8 minutes
Handling time *(0.3 N/mm² shear strength is achieved)* @23°C	10 - 20 minutes
Working strength @23°C	25 - 35 minutes
Full cure @23°C	24 hours

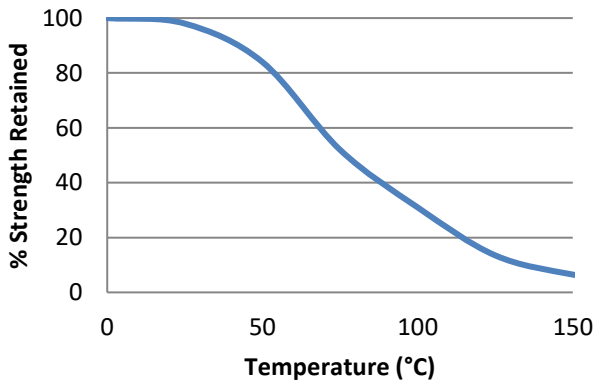
Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Aluminium: 25-30 N/mm² *(3625-4351 psi)* Mild steel: 23-28 N/mm² *(3335-4061 psi)* Stainless steel: 27-32 N/mm² *(3916-4641psi)* Hot dip galv steel: 16-20 N/mm² *(2320-2900 psi)* Carbon fibre: 12-16 N/mm² *(1740-2320 psi)* Epoxy FRP: 7-11 N/mm² *(1015-1595 psi)* SF* PMMA: >6 N/mm² *(>870 psi)* SF* Polycarbonate: >4 N/mm² *(>580 psi)* SF* PVC: >6 N/mm² *(>870 psi)* SF* ABS : >5 N/mm² *(>725 psi)* SF*
Peel strength (ISO11339)	100-200 N/25mm *(23-46 PIW)*
Hardness (ISO868)	80-85 Shore D
Thermal conductivity	0.28 W/(m.K)

**Strength results will vary depending on the level of surface preparation and gap. If using a cleaning solvent, allow 3-4 minutes to fully evaporate before applying adhesive. Figures above were on degreased-only substrates.*

SF* = Substrate failure

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.

TA4230 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.

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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	2 to 25°C *(35 to 77°F)**

*Room temperature storage may increase the cure time of the adhesive. For best results on zinc alloys, store at 2 to 7°C.

Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Permabond Cleaner A is recommended for the degreasing of most 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) Surfaces must be clean, dry and grease-free. If using a cleaning solvent, allow 3-4 minutes to fully evaporate before applying adhesive.
2) Apply a thin bead of adhesive pre-mixed through a static mixer nozzle.
3) Alternatively apply a thin layer of resin on one component and hardener on the other.
4) Assemble components and clamp.
5) Maintain pressure until handling strength is achieved. The time required will vary according to the joint design and surfaces being bonded.
6) Allow 24 hours for adhesive to fully cure. Accelerated cure times may be achieved by heating.

Video Links

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

Structural acrylic directions for use:
https://youtu.be/edvBe4iYNCY

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