

# Technical data sheet



Product: PT321

Manufacturer: PERMABOND ENGINEERING ADHESIVES

Product group: KLEBSTOFF

Article group: 2-K KLEBSTOFF

Download: 06.05.2024

## PERMABOND® PT321

This data sheet was provided to you by Tewipack Uhl GmbH. The company tewipack Uhl GmbH assumes no responsibility for the topicality and the Accuracy of the information contained. The properties of the products can vary due to various influences such as composition and condition of the Substrate, impurities in or on the substrate, temperature and humidity at the Change storage and environmental conditions during use. Using this product in combination with other material, the customer is responsible for to check through our own tests whether the product is suitable for the planned combination and whether this combination delivers the expected results

Tewipack Uhl GmbH  
Industriestraße 15  
D-75382 Althengstett

Telephone:  
+49(0)7051/9297-0  
Fax:  
+49(0)7051/9297-99

E-Mail:  
info@tewipack.de  
Website:  
www.tewipack.de

Managing director:  
Alexander Uhl,  
Michael Uhl  
HRB 330424  
Amtsgericht  
Stuttgart

Bank details:  
Sparkasse  
Sindelfingen  
Pforzheim  
Calw  
BLZ 666 500  
85  
Konto 17 787

Commerzbank  
Sindelfingen  
BLZ 603 400 71  
Konto 8 001 166

Vereinigte  
Volksbank AG  
Böblingen  
BLZ 603 900 00  
Konto 80 089  
003

Postbank  
Stuttgart  
BLZ 600 100  
70  
Konto 146  
294 708

## Features & Benefits

- Adhesion to a wide variety of substrates
- Cures at room temperature
- Easy 1:1 mix ratio
- Good resistance to impact and vibration
- Thixotropic, non-slump rheology

## Description

**PERMABOND® PT321** is a 2-part, room temperature curing polyurethane adhesive. It is ideal for use on a wide variety of substrate materials including metals, plastics and composites.

**FOR INDUSTRIAL USE ONLY**

## Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Zinc: 6-8 MPa (900 -1200 psi) Steel: 18-25 MPa (2600 -3600 psi) Carbon fibre: 6-8 MPa (900 -1200 psi)
Tensile strength (ISO37)	20-25 MPa (2900-3600 psi)
Elongation at break (ISO37)	<10%
Hardness (ISO868)	70-80 Shore D
Coefficient of thermal expansion (ASTM D-696)	85 x 10 <sup>-6</sup> 1/K

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

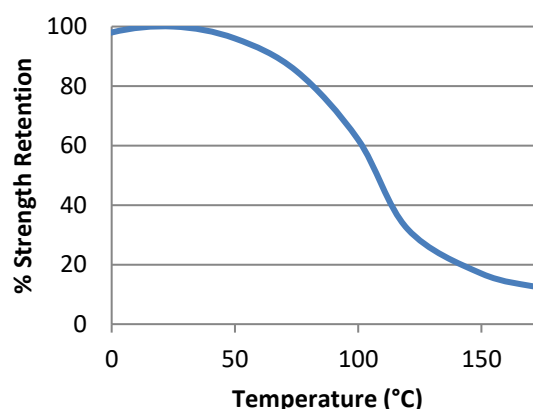
## Physical Properties of Uncured Adhesive

	PT321 A	PT321 B
Chemical composition	Polyurethane	Isocyanate
Appearance	Black	Cream
Viscosity @ 25°C	4000-8000 mPa.s (cP) Thixotropic	3000-6000 mPa.s (cP) Thixotropic
Specific Gravity	1.25	1.45

## Typical Curing Properties

Ratio of use	1 : 1 by volume
Maximum gap fill	5 mm (0.2 in)
Pot life	60-90 seconds
Handling time (steel) ISO4587 (0.3 N/mm <sup>2</sup> shear strength is achieved)	10-15 minutes
Full cure	@23°C: 24 hours @90°C: 30 minutes

## Hot Strength



"Hot strength" shear strength tests performed on mild steel. Product fully cured at room temperature and conditioned to pull temperature for 30 minutes before testing.

PT321 can withstand higher temperatures for brief periods 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.

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.

## 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.

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. 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 prior to bonding.
- 2) Shake cartridge (or stir bulk material) before use if separation has occurred.
- 3) Apply a thin bead of adhesive pre-mixed through a static mixer nozzle. (Alternatively bulk material can be dispensed via metered dispensing equipment).
- 4) Assemble components and clamp.
- 5) Maintain pressure until handling strength is achieved.
- 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>

Polyurethane directions for use:

<https://youtu.be/xUh2cf0b7O8>



## Storage & Handling

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

Due to separation (common in Polyurethane adhesives) it may be necessary to shake or stir product thoroughly before use.

## Other Products Available

### Anaerobics

- Thread lockers
- Thread sealants
- Gasket makers
- Sealants / retainers

### Cyanoacrylates

- Instant adhesives
- For rapid bonding of metals, plastics, rubber and many other materials

### Epoxies

- Two-part room temperature cure adhesives
  - Single-part heat cure adhesives
- Modified Technology (MT) flexible grades available

### MS-Polymers

- Single-part, moisture-curing, flexible sealants

### Polyurethanes

- Two-part room temperature curing adhesives

### Toughened Acrylics

- Rapid curing, high strength structural adhesives

### UV Light Cured Adhesives

- Glass / plastic bonding
  - Optically clear
  - Non-yellowing

[www.permabond.com](http://www.permabond.com)

• UK: 0800 975 9800

• General Enquiries: +44 (0)1962 711661

• US: 732-868-1372

• Asia: + 86 21 5773 4913

[info.europe@permabond.com](mailto:info.europe@permabond.com)

[info.americas@permabond.com](mailto:info.americas@permabond.com)

[info.asia@permabond.com](mailto:info.asia@permabond.com)

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.