PERMABOND® 825

Cyanoacrylate

Technical Datasheet

Features & Benefits

- High temperature resistance
- Rapid curing
- Ease of use - no mixing or heat cure
- 100% reactive, no solvents
- Excellent thermal ageing

Description

PERMABOND® 825 is a low viscosity, modified ethyl cyanoacrylate suitable for applications where high temperature resistance is required. This material is fast setting and has good adhesion to rubber, metal and plastics. Permabond® 825 has excellent retention of strength during thermal ageing.

Cyanoacrylate adhesives are single component adhesives that polymerize rapidly when pressed into a thin film between parts. The moisture adsorbed on the surface initiates the curing of the adhesive. Strong bonds are developed extremely fast and on a great variety of materials. These properties make **PERMABOND®** cyanoacrylates the ideal adhesives for high-speed production lines.

Physical Properties of Uncured Adhesive

Chemical composition	Ethyl cyanoacrylate
Appearance	Colourless
Viscosity @ 25°C	100-150 mPa.s *(cP)*

Typical Curing Properties

Maximum gap fill	0.15 mm *0.006 in*
Fixture / handling time* *(0.3 N/mm² shear strength is achieved)*	10-20 seconds (Steel) 5-10 seconds (NBR) 10-15 seconds (Buna N Rubber) 5-10 seconds (Phenolic) 10-20 seconds (HDPE) 40-60 seconds (LDPE)
Full strength	24 hours

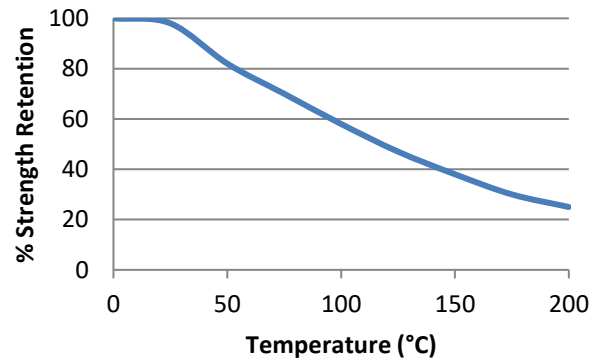
**Handling times can be affected by temperature, humidity and specific surfaces being bonded. Larger gaps or acidic surfaces will also reduce cure speed but this can be overcome by the use of Permabond® Cyanoacrylate Surface Activator (CSA) or Permabond® QFS 16*

Typical Performance of Cured Adhesive

Shear strength** (ISO4587)	Mild Steel	15-20 N/mm² *(2175-2900 psi)*
	Stainless Steel	18-22 N/mm² *(2610-3190 psi)*
	Aluminium	12-16 N/mm² *(1740-2320 psi)*
	Acrylic	>6 N/mm² *(>870 psi)**
	Polycarbonate	>5 N/mm² *(>725 psi)**
	ABS	>6 N/mm² *(>870 psi)**
	PVC	>5 N/mm² *(>725 psi)**

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

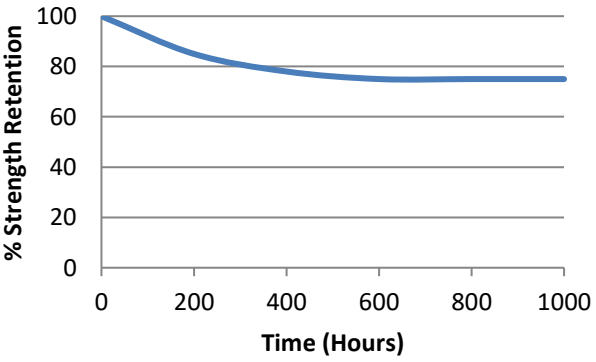
Hot Strength



"Hot strength" shear strength tests performed on mild steel. 24hr cure at room temperature and conditioned to pull temperature for 30 minutes before testing

825 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 (-65°F) depending on the materials being bonded.

Thermal Ageing at 180°C *(356°F)*

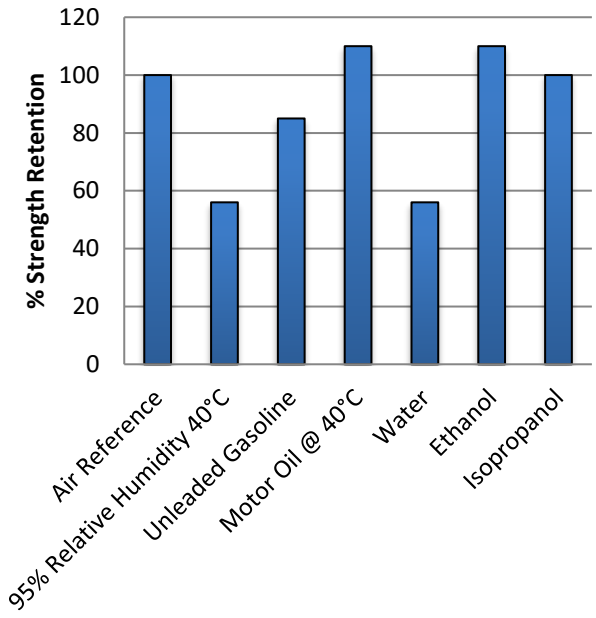


The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their 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.

FOR PROFESSIONAL OR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN

Chemical Resistance



Specimens were immersed for 1000 hours at 22°C (unless otherwise stated)

Additional Information

This product is not recommended for use in contact with strong oxidizing materials and polar solvents although will withstand a solvent wash without any bond strength deterioration. Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Safety Data Sheet.

This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.

Storage & Handling

Storage Temperature	2°C to 7°C ***(35°F to 45°F)***

Allow adhesive to reach room temperature before opening bottle to prevent condensation inside the bottle which can reduce shelf life.

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) Apply the adhesive sparingly to one surface.
2) Bring the components together quickly and correctly aligned.
3) Apply sufficient pressure to ensure the adhesive spreads into a thin film.
4) Do not disturb or re-align until sufficient strength is achieved, normally in a few seconds.
5) Any surplus adhesive can be removed with Permabond® CA solvent, nitromethane or acetone.

NB:

For difficult or porous surfaces using a Permabond® activator is recommended. If bonding polypropylene, polyethylene, PTFE or silicone, prime first with Permabond® Polyolefin Primer (POP). The use of these may affect the adhesive's high temperature resistance.

Video Links

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

Cyanoacrylate directions for use:
https://youtu.be/PiPzutdRmsk

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
info.americas@permabond.com
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.

FOR PROFESSIONAL OR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN