PERMABOND® 3D Series

3D Print Infiltrants

Technical Datasheet

Features & Benefits

- Single component - no mixing required
- Low odour – ideal for use in dip baths
- Solvent-free - to minimise workplace hazard
- Adds strength and improves printed part durability
- Moisture cure mechanism
- No curing equipment required
- Fills porosities
- Easy to apply either as “on the spot” coating or in a dip bath
- For use on simple or complex, small or large parts
- Clear, colourless appearance
- Tack-free finish
- 100% reactive, no solvents
- Parts can be bonded, sanded or painted after infiltration

Description

PERMABOND® 3D Series are low odour, low bloom 3D print infiltrants for toughening 3D printed parts. The full range of products allow the ideal features for each application.

Chemical composition	Alkoxyethyl cyanoacrylate
Appearance	Colourless
Specific gravity	1.1
Temperature resistance	-55 to +82°C *(-65 to +180°F)*

Product	*Permabond 3D30*	*Permabond 3D10*	*Permabond 3D90*
Speed	Ultra-fast Cure	Fast Cure	Delayed Set
Surface	High Gloss Surface	Shiny Surface	Matte
Features	Crystal Clear High Gloss Product Provides Brilliant Colour Vibrancy	Good Penetration Product Provides Brilliant Colour with Shiny Surface	Maximum Penetration Delayed Set Product Provides Maximum Strength and is Ideal for Light Colours
Viscosity	Medium Low 90-110 mPa.s *cPs*	Low 10-20 mPa.s *cPs*	Ultra-low 4 mPa.s *cPs*
*Tensile Strength**	10 N/mm² *(1400 psi)*	13 N/mm² *(1900 psi)*	15 N/mm² *(2200 psi)*
***Tensile Strength of Granules and Binder with No Infiltrant is 400 psi**			

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.
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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.

Directions for Use

Before use:

1. Refer to SDS for safe handling.
2. Wear nitrile gloves, safety glasses and protective clothing.
3. Work in a ventilated area.
4. Prepare surface with a non-stick paper such as freezer paper, PTFE sheet, wax paper etc…
5. Determine which method below best suits your part.

Drizzle Method – Ideal for small or delicate parts.

1) Place part on a protective sheet in a catch pan.
2) Apply directly from small size bottle or use spout with larger packaging.
3) Either apply to the entire part – turning the part as you drizzle, or apply only to very fragile sections then follow with the Dip Method below.
4) Allow the part to cure – times vary with product used and part configuration. Most parts can be handled in less than 15 minutes.

Dip Method

1) Remove excess powder.
2) Pour Permabond 3D Infiltrant into a clean metal, glass, polypropylene or polyethylene container. Ensure the quantity is sufficient to allow complete submersion of the part.
3) Submerge part slowly so as not to splash the infiltrant.
4) Keep the part submerged as long as you see bubbles rising. If there are no bubbles, remove part after 10 seconds.
5) Transfer part hand to hand over the bath. This will allow excess to drip back into the container and ensure the part will not stick to your gloves.
6) Wipe any excess infiltrant with paper towels. (Wet towels with water prior to disposing.)
7) If excess infiltrant pools under the part – wipe it away with paper towels.
8) Allow the part to cure – times vary with product used and part configuration. Most parts can be handled in less than 15 minutes.
9) Carefully pour any unused infiltrant back into the bottle and cap tightly.

Storage & Handling

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

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

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

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

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