


	VITAL TECHNICAL SDN. BHD.	  
	Technical Data Sheet	
	VT-146 / VT-148 / VT-149 Rapid 3 Ton 4 Minutes Epoxy	

Issuance date: 31/03/08

Revision date: 23/05/19

Revision No.: 19-01

Product Description

A rapid setting, general purpose, 1:1 mix ratio epoxy adhesive. It exhibits a remarkable combination of properties; fast setting, good resistance towards water, most solvents and automotive oils. It can be used as an adhesive on various substrates, to fill gaps and surface repairs. It can be sanded, does not shrink upon curing and does not crack if drilled. It cures clear can be handled after an hour.

Features

- 100% solid, no solvents
- Non-shrinking
- Fast setting
- Rapid strength development
- Good resistance against solvents and common automotive oils
- Easy 1:1 epoxy dispensing cartridge



Applications

Suitable for bonding metal, wood, plastic, china, ceramics, tools, and glassware. Not suitable for bonding of polyethylene, polypropylene, PTFE and other flexible materials.

Directions

Surface preparation

1. Surfaces must be clean and dry.
2. Use solvent to wipe off any dust, dirt, grease, oil or water.
3. Roughen or abrade smooth surfaces to improve the adhesion strength.

Mixing

1. Turn nozzle end up and pull plunger back slightly.
2. Snap off or cut off the storage cap.
3. Puncture syringe with the storage cap.
4. Squeeze out equal amount of resin and hardener and mix thoroughly for one minute.

Application

1. Apply a small amount of the adhesive on both surfaces immediately after mixing thoroughly, before it starts to gel.
2. Press together and wipe off any excess epoxy with acetone.
3. Support the bond for 15 - 30 minutes at room temperature.
4. Handling strength achieved in one hour and full cure strength in six hours.

Caution

Contains epoxy resin and polymercaptan hardener. May cause severe eyes and skin irritation. Avoid prolonged contact with eyes or skin. In case of contact with eyes, flush with water for 15 minutes and seek medical attention immediately. In case of skin contact, wipe off and wash with soap and water. Use in well ventilated areas.

KEEP OUT OF REACH OF CHILDREN.

Storage

Store in a dry and cool place. Not damaged by freezing. If frozen, warm to room temperature.

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Typical Uncured Properties

Base	Part A :	Epoxy resin
	Part B :	Polymercaptan hardener
Appearance	Part A :	Clear liquid
	Part B :	Slightly yellowish clear liquid
Viscosity¹	Part A :	6,000 - 12,000 cPs
	Part B :	9,000 - 15,000 cPs
Density²	Part A :	approximately 1.16 g/mL (9.7 lb/gal)
	Part B :	approximately 1.13 g/mL (9.4 lb/gal)
Mix ratio (R:H) by weight	:	1:1
Mix ratio (R:H) by volume	:	1:1
Gel time (10 g)³	:	3 - 5 minutes (depending on the adhesive amount and temperature)
Application temperature	:	15 - 35 °C (59 - 95 °F)
Set time	:	10 - 20 minutes
Time to handling strength	:	1 hour
Time to full strength	:	6 hours
Exotherm	:	130 - 160 °C (266 - 320 °F)
Shelf life	:	12 months from day of delivery (if stored correctly)

Typical Cured Properties

Colour	:	Clear to slightly yellowish
Shore D hardness (1 day)⁴	:	75 - 85

Rate of strength build up, single lap shear strength (anodised aluminium, etched)⁵

- 1 day	:	14.2 ± 1.0 N/mm ² (2059 ± 144 psi)
- 7 days	:	16.2 ± 0.5 N/mm ² (2349 ± 72 psi)
- 14 days	:	15.2 ± 0.9 N/mm ² (2204 ± 130 psi)

Solvent resistance, single lap shear strength (anodised aluminium, etched)⁵

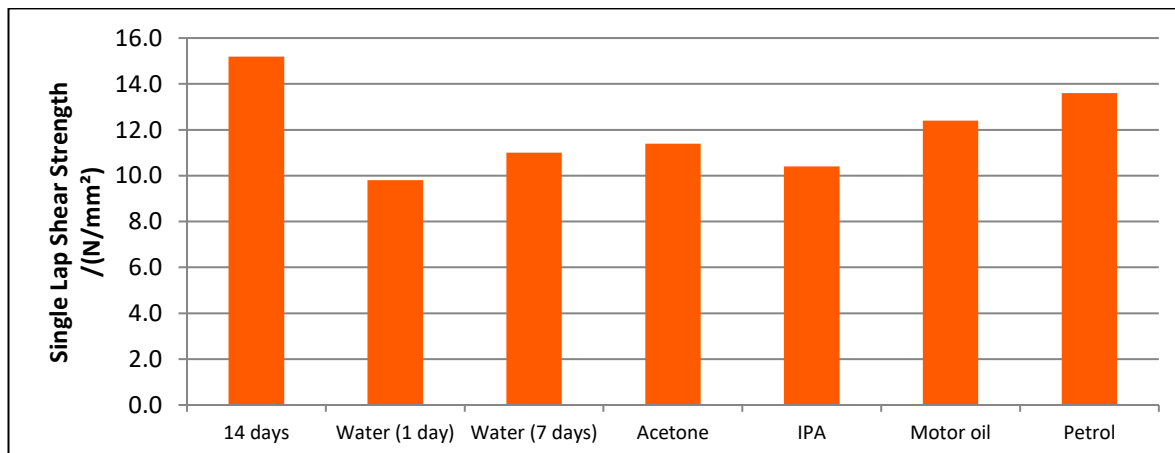
7 days RT cure, immersion for 7 days

- Isopropanol	:	10.4 ± 0.4 N/mm ² (1508 ± 58 psi)
- Acetone	:	11.4 ± 0.8 N/mm ² (1653 ± 116 psi)
- Petrol	:	12.4 ± 0.3 N/mm ² (1798 ± 44 psi)
- Motor oil	:	13.6 ± 0.7 N/mm ² (1972 ± 102 psi)

Water resistance, single lap shear strength (anodised aluminium, etched)⁵

7 days RT cure

- 1 day immersion	:	9.8 ± 3.4 N/mm ² (1421 ± 493 psi)
- 7 days immersion	:	11.0 ± 0.6 N/mm ² (1595 ± 87 psi)



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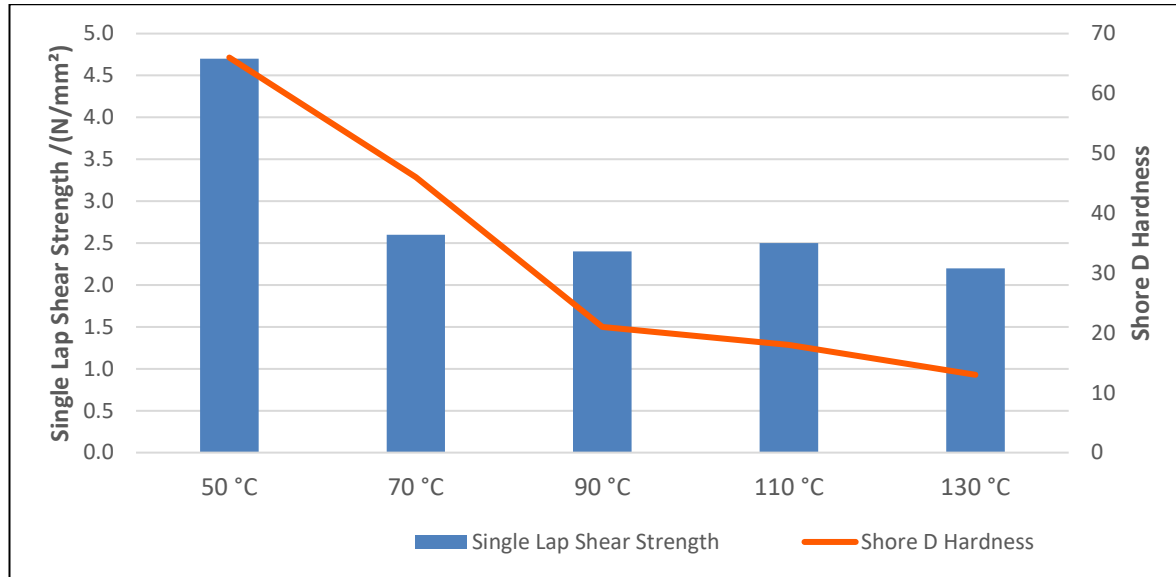
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Heat resistance, single lap shear strength (anodised aluminium, etched)⁵

24 hours RT cure

- 50 °C	: 4.7 ± 0.8 N/mm ² (681 ± 116 psi)	Shore D	: 66
- 70 °C	: 2.6 ± 0.6 N/mm ² (377 ± 87 psi)	Shore D	: 46
- 90 °C	: 2.4 ± 0.4 N/mm ² (348 ± 58 psi)	Shore D	: 21
- 110 °C	: 2.5 ± 0.5 N/mm ² (362 ± 72 psi)	Shore D	: 18
- 130 °C	: 2.2 ± 0.3 N/mm ² (319 ± 43 psi)	Shore D	: 13



¹ Tested according to ASTM D2196 (LV3, 5 rpm).

² Measured according to modified ASTM D1875.

³ Tested according to DOTD TR 703-85 Method A.

⁴ Tested according to modified ASTM D2240 (Cylindrical sample; diameter = 51mm; thickness = 3mm).

⁵ Aluminium coupon prepared and tested according to ASTM D1002; surface treated according to ASTM D2651.

Order information

Code No.	Packaging size
VT-146	25 ml / pack
VT-148	6 ml / pack
VT-149	25ml / pack + 2 Mixers

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