


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

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## 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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### Technical Data:

#### Typical Uncured Properties

<b>Base</b>	<b>Part A :</b>	Epoxy resin
	<b>Part B :</b>	Polymercaptan hardener
<b>Appearance</b>	<b>Part A :</b>	Clear liquid
	<b>Part B :</b>	Slightly yellowish clear liquid
<b>Viscosity<sup>1</sup></b>	<b>Part A :</b>	6,000 - 12,000 cPs
	<b>Part B :</b>	9,000 - 15,000 cPs
<b>Density<sup>2</sup></b>	<b>Part A :</b>	approximately 1.16 g/mL (9.7 lb/gal)
	<b>Part B :</b>	approximately 1.13 g/mL (9.4 lb/gal)
<b>Mix ratio (R:H) by weight</b>	:	1:1
<b>Mix ratio (R:H) by volume</b>	:	1:1
<b>Gel time (10 g)<sup>3</sup></b>	:	3 - 5 minutes (depending on the adhesive amount and temperature)
<b>Application temperature</b>	:	15 - 35 °C (59 - 95 °F)
<b>Set time</b>	:	10 - 20 minutes
<b>Time to handling strength</b>	:	1 hour
<b>Time to full strength</b>	:	6 hours
<b>Exotherm</b>	:	130 - 160 °C (266 - 320 °F)
<b>Shelf life</b>	:	24 months from day of delivery (if stored correctly)

#### Typical Cured Properties

<b>Colour</b>	:	Clear to slightly yellowish
<b>Shore D hardness (1 day)<sup>4</sup></b>	:	75 - 85

#### Rate of strength build up, single lap shear strength (anodised aluminium, etched)<sup>5</sup>

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

#### Solvent resistance, single lap shear strength (anodised aluminium, etched)<sup>5</sup>

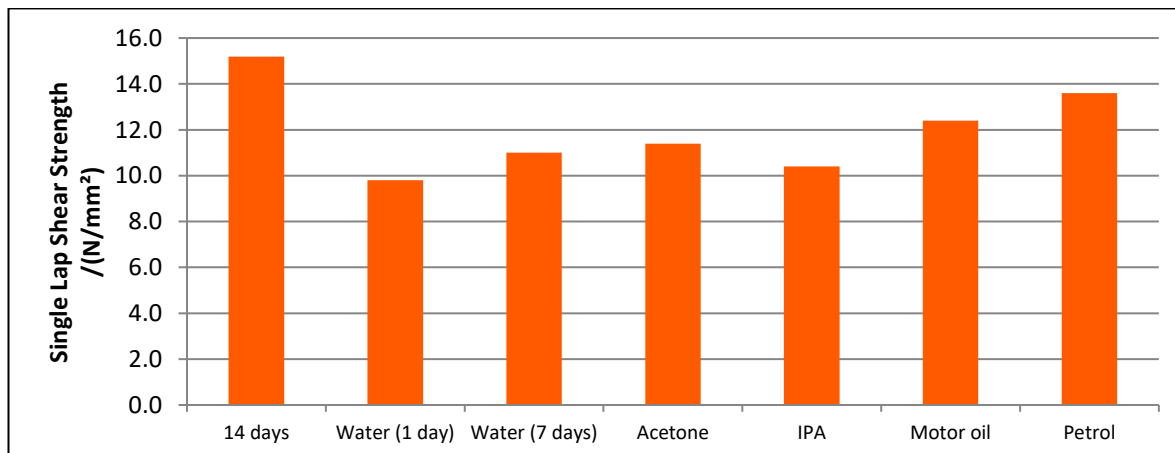
7 days RT cure, immersion for 7 days

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

#### Water resistance, single lap shear strength (anodised aluminium, etched)<sup>5</sup>

7 days RT cure

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



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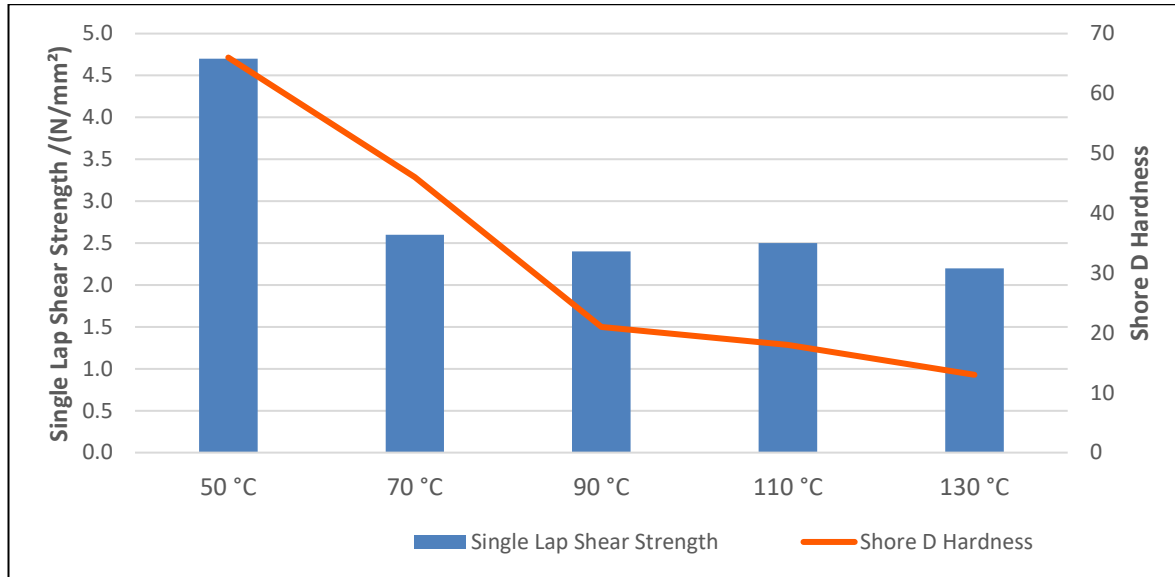
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**Heat resistance, single lap shear strength (anodised aluminium, etched)<sup>5</sup>**

**24 hours RT cure**

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



<sup>1</sup> Tested according to ASTM D2196 (LV3, 5 rpm).

<sup>2</sup> Measured according to modified ASTM D1875.

<sup>3</sup> Tested according to DOTD TR 703-85 Method A.

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

<sup>5</sup> 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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