


	VITAL TECHNICAL SDN. BHD.	  
	Technical Data Sheet	
	VT-140 / VT-144 / VT-191V Rapid Steel 4 Minutes Epoxy	

Issuance date: 31/03/08

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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 can be handled after an hour.

Features

- 100% solid, no solvents
- Non-shrinking
- Fast setting
- Good resistance against solvents and common automotive oils

Applicable Tests / Standards

- ASTM D1002-05

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. Puncture tube with the cap and squeeze out equal amounts of resin and hardener on any disposable container or surface.
2. Mix thoroughly for one minute with the mixing stick provided.

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.
3. Support the bond for 15 - 30 minutes at room temperature.
4. Handling strength achieved in one hour and full cure strength in 24 hours.

Caution

Contains epoxy resin, polyamine 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.



Scan to learn how to use



Visit product page:
<https://vitaltechnical.com/product/vt-140-vt-144-vt-191v-rapid-steel-4-minutes-epoxy//>

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Technical Data:

Typical Uncured Properties

Base	Part A :	Epoxy resin
	Part B :	Polymercaptan hardener
Appearance	Part A :	Black paste
	Part B :	Off-white paste
Viscosity¹	Part A :	800,000 - 1,200,000 cPs
	Part B :	200,000 - 350,000 cPs
Density²	Part A :	approximately 1.78 g/mL (14.8 lb/gal)
	Part B :	approximately 1.78 g/mL (14.8 lb/gal)
Mix ratio (R:H) by weight	:	1:1
Mix ratio (R:H) by volume	:	1:1
Working time (10 g, 25 °C)³	:	3 minutes (depending on the adhesive amount and temperature)
Set time	:	4 minutes
Application temperature	:	15 - 35 °C (59 - 95 °F)
Time to handling strength	:	1 hour
Time to full strength	:	24 hours
Exotherm	:	60 - 80 °C (248 - 284 °F)
Shelf life	:	24 months from day of delivery (if stored correctly)

Typical Cured Properties

Colour	:	Dark grey
Shore D hardness (1 day)⁴	:	75 - 85

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

- 1 hour	:	~20% full strength, 2.9 ± 0.3 N/mm ² (420 ± 44 psi)
- 4 hours	:	~50% full strength, 7.7 ± 0.6 N/mm ² (1116 ± 87 psi)
- 16 hours	:	~90% full strength, 14.6 ± 0.9 N/mm ² (2117 ± 130 psi)
- 1 day	:	16.2 ± 0.6 N/mm ² (2349 ± 87 psi)
- 14 days	:	16.8 ± 0.7 N/mm ² (2436 ± 102 psi)

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

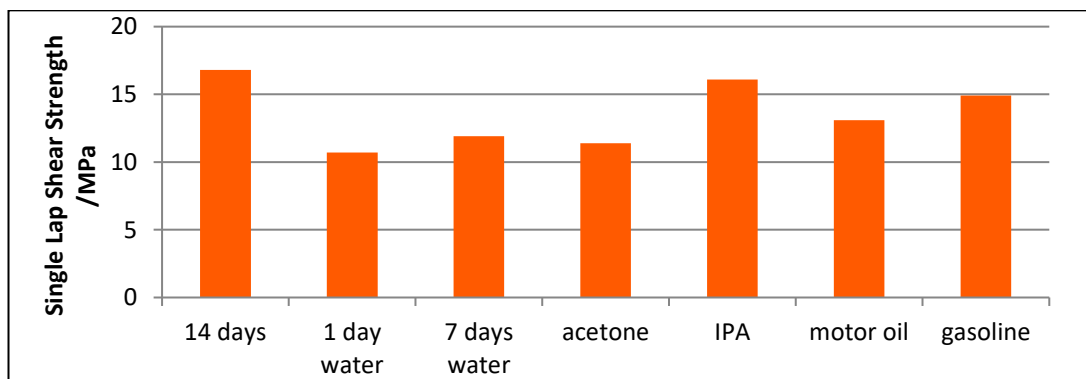
7 days RT cure, immersion for 7 days

- Isopropanol	:	16.4 ± 0.6 N/mm ² (2378 ± 87 psi)
- Acetone	:	11.4 ± 1.0 N/mm ² (1653 ± 145 psi)
- Petrol	:	14.9 ± 0.3 N/mm ² (2160 ± 44 psi)
- Motor oil	:	13.1 ± 0.7 N/mm ² (1900 ± 102 psi)

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

7 days RT cure

- 1 day immersion	:	10.7 ± 1.3 N/mm ² (1552 ± 188 psi)
- 7 days immersion	:	11.9 ± 1.9 N/mm ² (1726 ± 276 psi)



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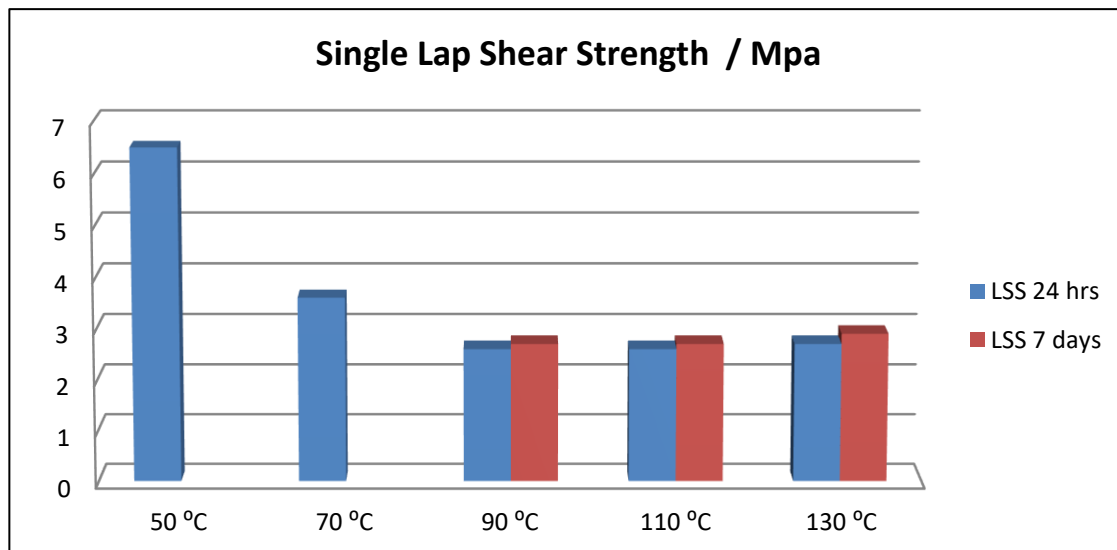
Heat resistant, single lap shear strength (anodised aluminium, etched)⁵

24 hours RT cure

- 50 °C	: 6.5 ± 0.6 N/mm ² (942 ± 87 psi)	Shore D	: 64
- 70 °C	: 3.6 ± 0.2 N/mm ² (522 ± 29 psi)	Shore D	: 52
- 90 °C	: 2.6 ± 0.2 N/mm ² (377 ± 29 psi)	Shore D	: 50
- 110 °C	: 2.6 ± 0.2 N/mm ² (377 ± 29 psi)	Shore D	: 48
- 130 °C	: 2.7 ± 0.2 N/mm ² (391 ± 29 psi)	Shore D	: 46

7 days RT cure

- 90 °C	: 2.7 ± 0.3 N/mm ² (391 ± 43 psi)	Shore D	: 49
- 110 °C	: 2.7 ± 0.3 N/mm ² (391 ± 43 psi)	Shore D	: 44
- 130 °C	: 2.9 ± 0.1 N/mm ² (420 ± 14 psi)	Shore D	: 41



¹ Tested according to ASTM D2196 (LV4, 0.5 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 Aluminum coupon prepared and tested according to ASTM D1002; surface treated according to ASTM D2651.

Order information

Code No.	Packaging size
VT-140	56.8 g (2 oz.)/pack
VT-1403K	3.0 kg/set
VT-144	20 g/pack
VT-191V	10 g x 6/pack

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