

 A member of 	VITAL TECHNICAL SDN. BHD.	 
	Technical Data Sheet	
	VT-143 Vital 3 Ton Epoxy	

Issuance date: 31/03/2008

Revision date: 20/06/2025

Revision No.: 25-01

Product Description

VT-143 is a general purpose, 1:1 mix ratio epoxy adhesive. It exhibits a remarkable combination of properties; good resistance towards water, most solvents and automotive oils, longer pot life for large assemblies. VT-143 can be used as an adhesive on various substrates, to fill gaps and surface repairs. It does not shrink upon curing and does not crack if drilled.



Features

- 100% solid, no solvents
- Non-shrinking
- Longer pot life (~120 minutes)
- Good resistance against solvents and common automotive oils
- Super Strong Bonding

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 with acetone.
3. Support the bond for at least 8 hours at room temperature.
4. Handling strength achieved in one hour and full cure strength in 6 hours.

Caution

Contains epoxy resin, polyamide 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.



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Storage

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

Technical Data:

Typical Uncured Properties

Base	Part A :	Epoxy resin
	Part B :	Polyamide hardener
Appearance	Part A :	Clear liquid
	Part B :	Amber clear liquid
Viscosity¹	Part A :	6,000 - 12,000 cPs
	Part B :	35,000 - 45,000 cPs
Density²	Part A :	approximately 1.16 g/mL (9.7 lb/gal)
	Part B :	approximately 0.98 g/mL (8.2 lb/gal)
Mix ratio (R:H) by weight	:	100:84
Mix ratio (R:H) by volume	:	1:1
Working time (10 g, 25 °C)³	:	2 hours (depending on the adhesive amount and temperature)
Set time	:	3 hours
Application temperature	:	15 - 35 °C (59 - 95 °F)
Time to handling strength	:	8 hours
Time to full strength	:	18 hours
Shelf life	:	24 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

- 8 hours	:	~25% full strength, 3.1 ± 1.6 N/mm ² (450 ± 232 psi)
- 18 hours	:	~90% full strength, 11.5 ± 1.2 N/mm ² (1668 ± 174 psi)
- 1 day	:	14.4 ± 1.0 N/mm ² (2088 ± 145 psi)
- 2 days	:	14.1 ± 1.0 N/mm ² (2044 ± 145 psi)
- 7 days	:	12.7 ± 1.2 N/mm ² (1841 ± 174 psi)
- 14 days	:	12.1 ± 0.9 N/mm ² (1754 ± 130 psi)
- 30 days	:	13.6 ± 0.7 N/mm ² (1972 ± 102 psi)

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

7 days RT cure, immersion for 7 days

- Isopropanol	:	9.2 ± 1.4 N/mm ² (1334 ± 203 psi)
- Acetone	:	7.1 ± 0.9 N/mm ² (1030 ± 130 psi)
- Petrol	:	7.9 ± 0.3 N/mm ² (1146 ± 44 psi)
- Motor oil	:	9.8 ± 0.7 N/mm ² (1421 ± 102 psi)

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

7 days RT cure

- 1 day immersion	:	13.3 ± 1.8 N/mm ² (1928 ± 261 psi)
- 7 days immersion	:	8.2 ± 0.4 N/mm ² (1189 ± 58 psi)



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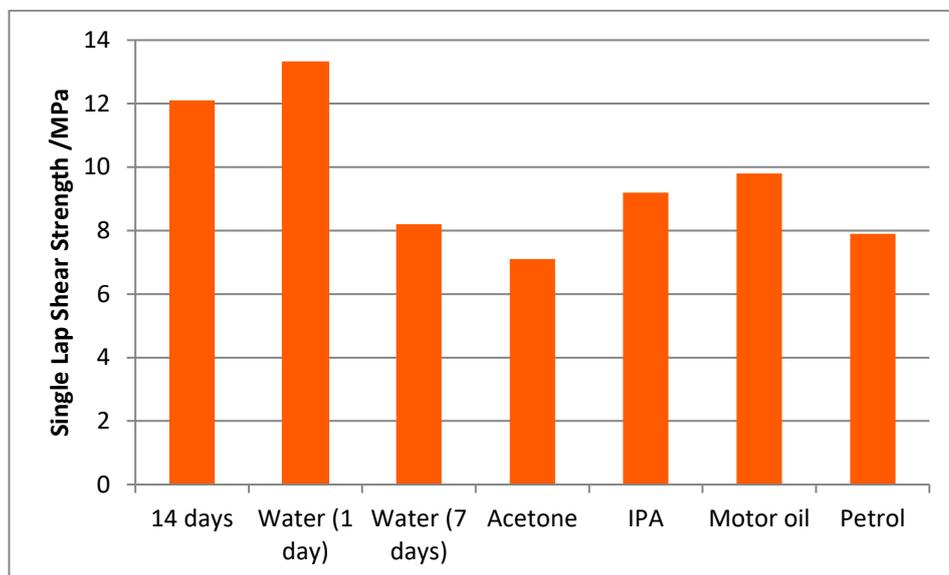
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**Heat resistant, single lap shear strength (anodised aluminium, etched)⁵
 24 hours RT cure**

Temperature	Lap Shear Strength	Shore D Hardness
Room Temperature	12.1 +/- 0.9 N/mm ² (1755 +/- 135 psi)	75
50°C	4.4 +/- 0.8 N/mm ² (638 +/- 116 psi)	55
70°C	1.8 +/- 0.5 N/mm ² (270 +/- 73 psi)	31
90°C	1.4 +/- 0.1 N/mm ² (203 +/- 15 psi)	28
110°C	1.0 +/- 0.2 N/mm ² (145 +/- 29 psi)	22



- 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-143	28.4 g/set
VT-143100	50 g x 2/tube boxed

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