

**Advanced Materials****Araldite<sup>®</sup> AV 8503 Resin  
Hardener HV 8503 Adhesive**

EPOXY ADHESIVE PASTE



chemical-concepts.com

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**DESCRIPTION :**

Araldite<sup>®</sup> AV 8503 Resin/Hardener HV 8503 epoxy adhesive is a two-component paste with a one-to-one by volume mix ratio. It is designed for bonding sheet molding compound. Araldite<sup>®</sup> AV 8503 Resin/Hardener HV 8503 epoxy adhesive fixes itself in one minute on a heated fixture at 240 °F (116 °C). It requires only a dry wipe for surface preparation before bonding.

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**APPLICATIONS :**

- Sheet Molding Compound
- Plastics
- Metals

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**ADVANTAGES :**

- Fast fixture time
- Good flexibility
- Convenient mix ratio
- Minimal surface preparation required
- Good heat resistance

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**TYPICAL PROPERTIES :**

	<b>Resin</b>	<b>Hardener</b>
Color/Appearance	Blue paste	Beige paste
Specific gravity @ 77 °F (25 °C)	1.32	1.21
Brookfield Viscosity, cP @ 77 °F (25 °C) (Spindle # @ 10 rpm)	172,000	368,000
Solids content, %	100	100

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**PROCESSING PROPERTIES :**

<b>Resin/Hardener</b>		
Ratio	(by weight)	100/92
	(by volume)	100/100
Pot Life, minutes @ 77 °F (25 °C) (100 gram. Mass)		30 minutes
Sag resistance, inch (mm) (0.23 in/6mm bead) @77 °F (25 °C)		0.08 (2)
Weldability		Good
Sandability		Fair
Cleaning/flushing solvent		Methylene chloride

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**TYPICAL BULK PROPERTIES :**

Glass transition temperature, °F (°C)	217 (103)
Young's modulus, psi (Mpa) (ASTM D-638)	142,000 (979)
Shear modulus, psi (Mpa) @ 77 °F (25 °C) (Rheometrics RDA-700)	90,300 (623)
Shore D hardness	78
Elongation, % (ASTM D-638)	15
Coefficient of linear expansion, in/in/°C (by TMA)	$1.5 \times 10^{-5}$
Ultimate tensile strength, psi (Mpa) (ASTM D-638)	3400 (23.4)

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**CURING CONDITION :**

<u>Temperature</u>	<u>Handling Strength</u>	<u>Minimum Cure Time</u>
77 °F (25 °C)	4 hours	24 hours
250 °F (120 °C)	1 minute	5 minutes

**CURED PROPERTIES :**

Cured adhesive properties evaluated on SMC (automotive grade, dry wiped) and Aluminum (Acia 2024 T-3) etched per ASTM D-2851 methods. Unless otherwise stated, lap shear testing determined with 0.030 inch (0.76 mm) bond line thickness and 0.5 x 1 inch (12.5 mm x 2.5 cm) joint area.

**Lap Shear Strength (ASTM D-1002)****Effect of Test Temperature**

Substrate	Cure Cycle	Test Temperature	Shear Strength	
			Psi	MPa
SMC	1 hour @ 250 °F (120 °C)	-40 °F (-40 °C)	630	4
		77 °F (25 °C)	430	3
		140 °F (60 °C)	380	2.5
Aluminum	1 hour @ 250 °F (120 °C)	77 °F (25 °C)	3380	23
		140 °F (60 °C)	2420	17
		179 °F (82 °C)	2370	16
		212 °F (100 °C)	1400	10

**Effect of Bond line Thickness**

Substrate	Cure Cycle	Bond line Thickness	Shear Strength	
			Psi	MPa
SMC	1 hour @ 250 °F (120 °C)	0.030 in/0.76 mm	430	3
		0.125 in/3 mm	260	2
		0.250 in/6 mm	165	1

**Effect of Environmental Conditioning**

Substrate	Cure Cycle	Environmental	Shear Strength	
			Psi	MPa
SMC	1 hour @ 250 °F (120 °C)	Initial	430	3
		Salt spray (500 hrs.)	360	2.5
		Water soak (7 days)	310	2
		Scab cycle (20 cycles)	300	2

**T-peel Strength,**

Pli (N/mm)  
(ASTM D-1876)

10 (1.75)

**Wedge Test,**

Ft.-lb/in. (J/mm)  
(breack Energy)  
(SAE J882)

75 (4,003)

**Impact Strength,**

Ft.-lb/in. (J/mm)  
(GM 9751 P)

50 (2,669)

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**STORAGE:**

Araldite® AV 8503 Resin/Hardener HV 8503 epoxy adhesive should be stored in a dry place, in the sealed original container, at temperatures between +2°C and +40°C (+36°F and 104°F). Under these storage conditions, the shelf life is 3 years. The product should not be exposed to direct sunlight.

If stored below 60°F, the adhesive should be brought to 60°F – 77°F and conditioned at this temperature for some time prior to use.

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Huntsman Advanced Materials Americas LLC maintains up-to-date Material Safety Data Sheets (MSDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

**First Aid!**

Refer to MSDS as mentioned above.

**KEEP OUT OF REACH OF CHILDREN****FOR PROFESSIONAL AND INDUSTRIAL USE ONLY**

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