



Advanced Materials

**ARALDITE[®] 8579 Resin
 Hardener 8579**

HEAT- AND CHEMICAL-RESISTANT EPOXY ADHESIVE

GENERAL

ARALDITE 8579 Resin/Hardener 8579 epoxy adhesive is a solvent-free, thixotropic, cold-setting paste that spreads easily and has good gap-filling characteristics. The cured system is chemical resistant and has good mechanical strength up to 248°F (120°C).

NOTE: This product is the equivalent of ARALDITE AV 138M resin/Hardener HV 998 epoxy adhesive.

FEATURES

- Easy to mix and apply
- Gap-filling
- No-pressure curing
- Cures with negligible shrinkage and without releasing volatiles
- Good high-temperature performance

ADVANTAGES

- Good resistance to static and dynamic loading
- Good resistance to chemicals and tropical weathering
- Electrically insulating

TYPICAL PROPERTIES

<u>Property</u>	<u>Test Method</u>	<u>Test Values⁽¹⁾</u>	
		<u>Resin</u>	<u>Hardener</u>
Color/appearance	Visual	Pale Beige	Gray
Specific Gravity	ASTM D-792	1.68	1.71
Viscosity, cP @ 77°F (25°C)	ASTM D-2393	500,000	60,000

TYPICAL MIXED PROPERTIES

<u>Property</u>	<u>Test Method</u>	<u>Test Values⁽¹⁾</u>
Reaction Ratio (by weight)		100R/40H
Reaction Ratio (by volume)		100R/40H
Pot Life, minutes @ 77°F (25°C), 100 gram mass	ASTM D-2471	60
Mixed viscosity, cP @ 77°F (25°C)	ASTM D-2393	125,000

¹Tested @ 77°F (25°C)



**RECOMMENDED
CURE SCHEDULES**

Temperature

41°F (5°C)
50°F (10°C)
73°F (23°C)
104°F (40°C)
176°F (80°C)
212°F (100°C)

Minimum Cure Time

3 days
24 hours
8 hours
2 hours
15 minutes
15 minutes

PROCESSING

Application of Adhesive

The resin/hardener mix is applied with a spatula to the pretreated and dry joint surfaces.

A layer of adhesive 0.002 to 0.004-inches (0.05 to 0.10-mm) thick will normally impart the greatest lap shear strength to a joint.

The joint components should be assembled and clamped as soon as the adhesive has been applied. Even contact throughout suffices to ensure proper cure.

Standard Test Specimens

Unless otherwise stated, the figures given below were all determined by testing standard specimens made up by lap-jointing 4-inch x 1-inch x 0.06-inch (10-cm x 2.5-cm x 1.5-mm) strips of aluminum. The joint area was 0.5 x 1 inch (12.5 mm x 2.5 cm) in each case.



TYPICAL PHYSICAL PROPERTIES

Lap Shear Strength, psi (MPa)		Test Method
Effect of Cure Time and Test Temperature		ASTM D-1002
Cure Temperature	Time	Test Values⁽¹⁾
41°F(5°C)	4 days	1700(11.7)
59°F(15°C)	24 hours	1900(13.1)
77°F (25°C)	24 hours	2300(15.8)
104°F(40°C)	16 hours	2500(17.2)
176°F(80°C)	15 minutes	2900 (20)
212°F(100°C)	10 minutes	3000 (20.6)

¹Tested @ 77°F (25°C)

Lap Shear Strength, psi (MPa)
Effects of Test Temperature
 Load applied 10 minutes after specimens reach test temperature.

Cure Cycle	Test Temp.	Test Values⁽¹⁾
48 hours at 77°F (25°C)	-4°F (-20°C)	2100(14.5)
	68°F (20°C)	2300(15.8)
	104°F (40°C)	2500(17.2)
	140°F (60°C)	2700(18.6)
	212°F(100°C)	1900(13.1)
	248°F (120°C)	1200(8.3)

¹Tested @ 77°F (25°C)

Lap Shear Strength, psi (MPa)	Test Method
Effect of Immersion	ASTM D-1002
Cure cycle 48 hours @ 77°F (25°C). Immersion for 90 days in media listed.	

Properties	Test Values⁽¹⁾
Standard - As prepared	2500(17.2)
Acetone (30 days)	2300(15.8)
Gasoline	2350(16.2)
Ethyl Acetate (30 days)	2800(19.3)
Acetic Acid 10%	2000(13.8)
Methanol	2500(17.2)
Lubricating Oil - HD30	2500(17.2)
Kerosene	2600(17.9)
Trichloroethylene	2400(16.5)
Water @ 68°F (20°C)	2700(18.6)
Water @ 194°F (90°C)	2600(17.9)

Lap Shear Strength, psi (MPa)
Effect of Tropical Exposure
 (104°F/40°C/92% R.H.)

Cure Cycle	Exposure Time	Test Values⁽¹⁾
48 hours @ 77°F (25°C)	0 days	2500(17.2)
	30 days	3000 (20.6)



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Lap Shear Strength, psi (MPa)

Effect of Heat Aging

Cured 16 hours @ 77°F (25°C).

Aging Temperature

77°F (25°C)

176°F (80°C)

212°F(100°C)

302°F(150°C)

Exposure Time

Standard-as

prepared

1 year

90 days

1 year

90 days

90 days

Test Values

2500(17.2)

2700(18.6)

2700(18.6)

2700(18.6)

2700(18.6)

2500(17.2)

Lap Shear Strength, psi (MPa)

Tested on Metal Substrates

(Cured 20 min @ 77°F (25°C))

Metal

Carbon Steel

Stainless Steel

Galvanized Steel

Copper

Substrate

Thickness (in./mm)

1.0 (25 mm)

1.0 (25 mm)

1.5 (40 mm)

1.5 (40 mm)

Test

Values

3000 (20.6)

2700(18.6)

2700(18.6)

2700(18.6)

Test Method

ASTM D-1002

Fatigue Strength

Fatigue Limit Load,

% Static Shear Strength

40

30

25

Cycles to Failure

10^5 -- 10^6

10^5 -- 10^6

$>10^7$

NOTE:

These physical properties are reported as typical test values obtained by our test laboratory. If assistance is needed in establishing product specifications, please consult with the Huntsman Quality Control Department.



STORAGE AND SHELF LIFE

ARALDITE epoxy adhesive components should be stored in their original, sealed containers at room temperature. When stored at temperatures from 59-77°F (15-25°C), the resin and hardener will remain in useable condition for 3 years from date of shipping from Huntsman.

SAFETY/HANDLING PRECAUTIONS

Do not use or handle this product until the Material Safety Data Sheet has been read and understood

Personal Hygiene

Safety precautions at workplace

Protective clothing	Yes
Gloves	Essential
Arm protectors	Recommended when skin contact is likely
Goggles/safety glasses	Yes

Skin protection

Before starting work	Apply barrier cream to exposed skin
After washing	Apply barrier or nourishing cream

Cleansing of contaminated skin

Dab off with absorbent paper, wash with warm water and alkali-free soap, then dry with disposable towels. Do not use solvents.

Clean shop requirements

Cover workbenches/areas with light colored paper. Use disposable beakers.

Disposal of spillage

Soak up with sawdust or cotton waste cloth and deposit in plastic-lined bin.

Ventilation

Of workshop	Renew air 3 to 5 times an hour
Of workplaces	Exhaust fans should be used to prevent operators from inhaling vapors.



FIRST AID

Contamination of the eyes by resin, hardener or mix should be treated immediately by flushing with clean, running water for 10 to 15 minutes. A doctor should then be consulted.

Material smeared or splashed on the *skin* should be dabbed off, and the contaminated area then washed and treated with a cleansing cream (see above). A doctor should be consulted in the event of severe irritation or burns. Contaminated clothing should be changed immediately.

Anyone taken ill after inhaling vapors should be moved out of doors immediately.

In all cases of doubt call for medical assistance.

CAUTION:

Huntsman Advanced Materials Americas Inc. 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. Copies of the latest MSDS may be requested by calling our customer service group at 888-564-9318 or emailing your request to adhesives@huntsman.com.

**KEEP OUT OF REACH OF CHILDREN
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