

Araldite[®] 8579 Resin / Hardener 8579

Product Description

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).

Features

- Easy to process
- Gap filling
- Excellent chemical resistance
- Low out gassing
- Temperature resistant up to 120°C

Typical Properties*

Property	Araldite [®] 8579 Resin	Hardener 8579	Mixed System
Appearance	Pale beige	Gray	Pale gray
Density, g/cm ³	~1.68	~1.71	~1.70
Viscosity at 25°C, cP	160,000	88,000	177,000
Pot life at 25°C, 100 g, min	--	--	~60

*Properties are based on Huntsman test methods. Copies are available upon request

Processing

Mix Ratio

Product	Parts by weight	Parts by volume
Araldite [®] 8579 Resin	100	100
Hardener 8579	40	40

Pretreatment

The strength and durability of a bonded joint are dependent on proper treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent such as acetone, iso-propanol (for plastics) or other proprietary degreasing agents in order to remove all traces of oil, grease and dirt. Low-grade alcohol, gasoline, or paint thinners should never be used. The strongest and most durable joints are obtained by either mechanically abrading or chemically etching (“pickling”) the degreased surfaces. Abrading should be followed by a second degreasing treatment.

Application of adhesive

The resin/hardener mix may be applied manually or robotically to the pretreated and dry joint surfaces. Huntsman's technical support group can assist the user in the selection of a suitable application method as well as suggest a variety of reputable companies that manufacture and service adhesive dispensing equipment. A layer of adhesive 0.002 to 0.004 in (0.05 to 0.10 mm) thick will normally impart the greatest lap shear strength to the joint. Huntsman stresses that proper adhesive joint design is also critical for a durable bond. The joint components should be assembled and secured in a fixed position as soon as the adhesive has been applied. For more detailed explanations regarding surface preparation and pretreatment, adhesive joint design, and the dual syringe dispensing system, visit www.araldite2000plus.com.

Equipment Maintenance

All tools should be cleaned with hot water and soap before adhesives residues have had time to cure. The removal of cured residues is a difficult and time-consuming operation. If solvents such as acetone are used for cleaning, operatives should take the appropriate precautions and, in addition, avoid skin and eye contact.

Cure times to reach minimum shear strength (estimated)

Temperature, °F	50	59	73	104	140	176	210
Cure time							
hours	48	36	24	16	1	-	-
minutes	-	-	-	-	-	15	10
Lap shear strength at 77°F, psi	1,450	1,595	1,885	2,030	2,175	2,320	2,610

Typical Physical Properties

Unless otherwise stated, the data were determined with typical production batches using standard test methods. They are typical values only, and do not constitute a product specification.

Unless a different specification is given, the figures below were all determined by testing standard specimens made by lap-jointing 4.5 x 1 x 0.063 in (114 x 25 x 1.6 mm) strips of aluminum alloy. The joint area was 0.5 x 1 in (12.5 x 25 mm) in each case. Samples were cured for 48 hours at 77°F (25°C) and tested at 25°C, unless noted otherwise.

Property	Test Method	Value
Lap shear strength, metal-metal, cured 16 hours at 40°C, psi (MPa)	--	
Aluminum		2,030 (14)
Steel 37/11		2,175 (15)
Stainless steel V4A		2,900 (20)
Galvanized steel		2,320 (16)
Copper		2,320 (16)
Brass		2,175 (15)
Average lap shear strength, psi (MPa)	--	
Test temperature, °F (°C)		
-4 (-20)		2,100 (15)
68 (20)		2,300 (16)
104 (40)		2,500 (17)
140 (60)		2,700 (19)
212 (100)		1,900 (13)
248 (120)		1,200 (8)
Lap shear strength, after immersion 90 days in media, psi (MPa)	--	
Standard - as prepared		2,300 (16)
Acetone (30 days)		2,300 (16)
Gasoline		2,350 (16)
Ethyl Acetate (30 days)		2,800 (19)
Acetic Acid (10%)		2,000 (14)
Methanol		2,500 (17)
Lubricating Oil (HD ₃ O)		2,500 (17)
Kerosene		2,600 (18)
Trichloroethylene		2,400 (17)
Water - 68°F (20°C)		2,700 (19)
Water - 194°F (90°C)		2,600 (18)
Lap shear strength, exposure to 104°F (40°C) / 92% RH, psi (MPa)	--	
0 days		2,300 (16)
30 days		3,000 (21)

Lap shear strength, effect of heat aging, psi (MPa) Aging temperature, °F (°C) 77 (25), 0 days 77 (25), 1 year 176 (80), 90 days 176 (80), 1 year 212 (100), 90 days 302 (150), 90 days	--	2,300 (16) 2,500 (17) 2,700 (19) 2,700 (19) 2,700 (19) 2,500 (17)
Glass transition temperature (DMA), T _g , °F (°C) Cure 24 hours at 25°C Post Cure at 120°C for 2 hours	Huntsman	183 (84) 241 (116)
Coefficient of thermal expansion, C ⁻¹ Cure 24 hours at 77°F (25°C) 5 min at 176°F (80°C) + 24 hours at RT	ISO 11359-2	71 x 10 ⁻⁶ 37 x 10 ⁻⁶
Water absorption, eight day average, % Cure 24 hours at 77°F (25°C) 5 min at 176°F (80°C) + 24 hours at RT	ISO 294-3	0.63 0.51
Tensile stress, psi (MPa) Cure 24 hours at 77°F (25°C) 5 min at 176°F (80°C) + 24 hours at RT	ASTM D638	3,433 (24) 4,571 (32)
Tensile strain, % Cure 24 hours at 77°F (25°C) 5 min at 176°F (80°C) + 24 hours at RT	ASTM D638	0.5 0.5
Tensile modulus, psi (GPa) Cure 24 hours at 77°F (25°C) 5 min at 176°F (80°C) + 24 hours at RT	ASTM D638	1,111,346 (8) 1,269,485 (9)
Shrinkage, % Cure 24 hours at 77°F (25°C) 5 min at 176°F (80°C) + 24 hours at RT	--	0.04 0.28

Storage

Araldite® 8579 / Hardener 8579 should be stored in a dry place, in the original sealed containers, at temperatures between 2°C and 40°C (36°F and 104°F). Under these storage conditions, the products have a shelf life of **3 years** (from date of manufacture). The product should not be exposed to direct sunlight.

Care must be taken to avoid exposing both the resin and the hardener to moisture and air. The performance of the hardener component (hence adhesive) deteriorates if it is exposed to moisture and air over extended period of time. It is therefore, recommended to blanket the Hardener 8579 with dry nitrogen prior to tightly resealing the container after each use.

Precautionary Statement

Huntsman Advanced Materials Americas LLC maintains up-to-date Safety Data Sheets (SDS) 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 SDS as mentioned above.

KEEP OUT OF REACH OF CHILDREN

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