

Advanced Materials

**Araldite® AV 8504 Resin /
TDT 177-27 Hardener Adhesive**

Aerospace Adhesives

Technical Data Sheet

FEATURES	Sag Resistant Fast Curing User friendly mix ratio Suitable for panel pin bonding
APPLICATION	Panel pin bonding
DESCRIPTION	Araldite® AV 8504 Resin / TDT 177-27 Hardener epoxy adhesive is a two-component system which provides good sag resistance, high bond strength and toughness. It can be cured at room temperature or elevated temperatures. Araldite® AV 8504 Resin / TDT 177-27 Hardener epoxy adhesive provides good adhesion properties to a wide variety of substrates and resilient bondlines once fully cured.

TYPICAL PROPERTIES

Test Item (Test Method)	Araldite® AV 8504 Resin	Hardener 177-27	Mixed
Color (visual)	Translucent white paste	Thick black paste	Black thixotropic paste
Specific Gravity (ASTM D-792)	1.19	1.10	1.17
Sag Resistance, in (cm) @ 77°F (25°C) (ASTMD-2730)	Pass 1.5 (3.8)	Pass 1.5 (3.8)	-
Gel Time (150g), minutes @77°F(25°C) (ASTM D-2741)	-	-	15

PROCESSING

Mix ratio	Parts by weight	Parts by volume
Araldite® AV 8504 Resin	100	100
Hardener 177-27	50	50

Pretreatment

The strength and durability of a bonded joint are dependant 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 or other appropriate degreasing agent in order to remove all traces of oil, grease and dirt. 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.

Equipment maintenance

The removal of cured adhesive residues being a tedious and time-consuming operation, all tools and equipment should preferably be cleaned with hot soapy water before adhesives residues have had time to cure. If organic solvents such as acetone have to be used for cleaning, the operators should take all the appropriate precautions and wear some suitable personal protective equipment to prevent any contact with skin and eyes.

Recommended cure cycle

Temperature	Minimum cure time
77°F (25°C)	15 hours
140°F(60°C)	30 minutes
212°F(100°C)	10 minutes

TYPICAL CURED PROPERTIES

Tested @ 77°F (25°C) unless otherwise noted.

Not for specification purposes

Property	Test Method	Test Values
Hardness, Shore D	ASTM D-2240	80
Glass Transition Temperature, °F (°C)	ASTM E-1545	167 (75)
Coefficient of Thermal Expansion (in/in/°F)	ASTM E-831	5.40 x 10 ⁻⁵
Lap Shear Strength @ 77°F (25°C), psi (MPa)	ASTM D-1002	1850 (12.7)

Effect of Cure Time/Temperature

Cure Temp. °F (°C)	Cure Time	Lap Shear Strength psi (Mpa)
68 (20)	8 hrs	850 (5.9)
	15 hrs	1,420 (9.8)
	24 hrs	1,700 (11.7)
140 (60)	15 min	1,280 (8.8)
	30 min	1,850 (12.7)
212 (100)	10 min	1,700 (11.7)
	15 min	2,130 (14.7)

Effect of Test Temperature

Cure Cycle	Test Temp. °F(°C)	Lap Shear Strength
30 min @ 140°F (60°C)	-4 (-20)	1,560 (11)
	68 (20)	1,850 (12.7)
	140 (60)	1,280 (8.8)
	212 (100)	570 (3.9)

PACKAGING

Araldite® AV 8504 Resin / TDT 177-27 Hardener Adhesive is available in 50 ml and 200 ml twin cartridges. Individual components are also available in 5- gallon bulk containers.

STORAGE

When supplied under Huntsman standard certification and stored in a dry location in their original sealed containers at a temperature within 36°F to 104°F (2° to 40°C), Araldite® AV 8504 and TDT 177-27 Hardener have a shelf-life of 18 months. (expiration date may differ based on customer specification). Tightly reseal containers after each use. Do not expose the components to direct sunlight.

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Huntsman Advanced Materials Americas 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.

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Huntsman Advanced Materials
10003 Woodloch Forest Drive
The Woodlands, Texas 77380

Tel: 888-564-9318
Fax: 281-719-4047
www.huntsman.com/advanced_materials