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Advanced Materials

Araldite® AW 8680 Resin
Hardener HW 5542 Adhesive

RAPID, HIGH-STRENGHT POLYURETHANE ADHESIVE

DESCRIPTION :

Araldite® AW 8680 Resin / Hardener HW 5542 polyurethane adhesive is a two-part, rapid-curing system that is specifically formulated for bonding plastics including polycarbonate, ABS, nylon, and Metton®[1] with minimal substrate preparation. Araldite® AW 8680 Resin / Hardener HW 5542 polyurethane adhesive has also been used successfully for bonding materials with differing CTEs, e.g., nylon to stainless steel. Once cured, it features good environmental stability and impact resistance.

APPLICATIONS :

- Polycarbonate
- ABS
- Nylon
- Metton
- Vulcanized rubber
- Primed metals

ADVANTAGES :

- Excellent flexibility
- Convenient mix ratio
- Bonds a wide variety of materials
- Rapid cure time

TYPICAL PROPERTIES :

		Test Values(1)	
Property	**Test Method**	**Resin**	**Hardener**
Color/Appearance	Visual	White Viscous liquid	Red viscous liquid
Specific Gravity	ASTM D-792	1.10	1.30
Viscosity (cP) @ 77 °F (25 °C)	ASTM D-2393	50,000	20,000

[1] Metton is a registered trademark of Metton America, Inc.

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TYPICAL MIXED PROPERTIES :

Property	Test Method	Test Values[1]
Reaction Ratio (by weight)		80R/100H
Reaction Ratio (by volume)		100R/100H
Pot Life, minutes @ 77 °F (25 °C), 4 fl. oz. mass	ASTM D-2471	3
Mixed viscosity (cP) at 77 °F (25 °C)	ASTM D-2393	50,000

[1] Tested @ 77 °F (25 °C)

RECOMMENDED CURE SCHEDULES :

Temperature	Handling Strength	Minimum Cure Time
77 °F (25 °C)	1 hour	6 hours
140 °F (60 °C)	30 minutes	60 minutes
212 °F (100 °C)	5 minutes	10 minutes

TYPICAL CURED PROPERTIES :

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.

Property	Test Method	Test Values[1]
Lap Shear Strength, psi (Mpa)	ASTM D-1002	
Tested on Various Substrates		
Cured 20 min @ 212 °F (100 °C)		
Substrate		
Aluminum		1450 (10)
Metton®		800 (5.5)
Hardness, Shore D	ASTM D-2240	85
Ultimate Tensile Strength, psi (MPa)	ASTM D-638	2100 (14.5)
Elongation, %	ASTM D-638	250
Tg per DMA, °F (°C)	ASTM D-4065	86 (30)
Coefficient of Thermal Expansion (in/in/°C)	ASTM E-831	13.5×10^{-5} [2] 23×10^{-5} [3]

[1] Tested @ 77 °F (25 °C)
[2] Below Tg
[3] Above Tg

CAUTION :

Huntsman Advances Materials Americas Inc. maintains up-to-date Material Safety Data Sheet (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 800-367-8793 or emailing your request to adhesives_group@huntsman.com

To protect against any potential health risks presented by our products, the use of proper personal protective equipment (PPE) is recommended. Eye and skin protection is normally advised. Respiratory protection may be needed if mechanical ventilation is not available or is insufficient to remove vapors. For detailed PPE recommendations and exposure control options consult the product MSDS or a Huntsman EHS representative.

FIRST AID :

Eyes and skin : Flush eyes with water for 15 minutes. Contact a physician if irritation persists. Wash skin thoroughly with soap and water. Remove and wash contaminated clothing before reuse.
Inhalation : Remove subject to fresh air.
Swallowing : Dilute by giving water to drink and contact a physician promptly. Never give anything to drink to an unconscious person.

KEEP OUT OF REACH OF CHILDREN

FOR PROFESSIONAL AND INDUSTRIAL USE ONLY

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