

## Advanced Materials

# Arathane<sup>®</sup> AW 5540 Resin Hardener HW 5541 or Hardener HW 5542 Adhesive

### POLYURETHANE ADHESIVE

- Varied work lives
- Sag resistance
- Flexible

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### DESCRIPTION :

Arathane<sup>®</sup> AW 5540 Resin with Hardener HW 5541 or Hardener HW 5542 polyurethane adhesive is a versatile system designed for use with automatic mixing and dispensing equipment. Arathane<sup>®</sup> AW 5540 Resin with Hardener HW 5541 polyurethane adhesive produces a work life of 10 to 15 minutes. Arathane<sup>®</sup> AW 5540 Resin with Hardener HW 5542 polyurethane adhesive has a 2 to 3-minute work life. Once cured, the adhesives exhibit identical physical properties and are well suited for use on SMC, fiberglass-reinforced plastics, cured plastics and metals.

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### APPLICATIONS :

- SMC
- Fiberglass-reinforced plastics
- Cured plastics
- Metal

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### ADVANTAGES :

- 1:1 mix ratio by volume
- Easy to pump
- Color coded
- Thixotropic and non sagging (1/4-in. (6mm) bead
- Excellent adhesion
- Fast curing
- Good moisture resistance
- Formulated without asbestos, MOCA (44' methylene bis [2-chloroaniline]), or TDI (toluene diisocyanate)

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**TYPICAL PROPERTIES :**

<u>Property</u>	<u>Test Method</u>	<u>Test Values<sup>(1)</sup></u>	
		<u>Resin</u>	<u>Hardener</u>
Color/Appearance	Visual	Dark Brown liquid	Red liquid
Specific Gravity @ 73 °F (25 °C)	ASTM D-792	1.4	1.3
Viscosity (cP) @ 77 °F (25 °C)	ASTM D-2393	60,000	20,000

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**TYPICAL MIXED PROPERTIES :**

<u>Property</u>	<u>Test Method</u>	<u>Test Values<sup>(1)</sup></u>
Color	Visual	Dark Red
Reaction Ratio (by weight)		100R/95H
Reaction Ratio (by volume)		100R/100H
Sag Resistance, in (mm), Horizontal, Vertical		1/4 (6) 1/8 (3)
Pot Life, minutes @ 77 °F (25 °C), With HW 5541 With HW 5542	ASTM D-2471	15 3

<sup>(1)</sup> Tested @ 77 °F (25 °C)

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**RECOMMENDED CURE SCHEDULES :**

<u>Temperature</u>	<u>Minimum Cure Time</u>	
	<u>AW 5540 / HW 5541 System</u>	<u>AW 5540 / HW 5542 System</u>
68 °F (20 °C)	16 hours	6 hours
140 °F (60 °C)	2 hours	1 hour
212 °F (100 °C)	10 minutes	10 minutes



**Property****Lap Shear Strength vs. Time****Arathane® AW 5540 Resin/Hardener HW 5541 polyurethane adhesive**

At 77 °F (25 °C), psi (MPa)

Substrate : Alclad 2024 T-3 Aluminum, Etched per ASTM D-2651 (Methode A)

Bond line Overlap : 0.5 in. (12.5 mm)

Bond line Thickness : 0.030 in (0.8 mm)

<b><u>Time</u></b>	<b><u>Strength</u></b>
2 hours	14 (0.1)
4 hours	103 (0.7)
8 hours	146 (1)
24 hours (1 day)	1,035 (7.1)
48 hours (2 days)	1,266 (8.7)
120 hours (5 days)	1,286 (8.7)
168 hours (7 days)	1,300 (9)
240 hours (10 days)	1,338 (9.2)
336 hours (14 days)	1,312 (9)

**Property****Lap Shear Strength vs. Time****Arathane® AW 5540 Resin/Hardener HW 5542 polyurethane adhesive**

At 77 °F (25 °C), psi (MPa)

Substrate : Elpo Coated Steel

Bond line Overlap : 0.5 in. (12.5 mm)

Bond line Thickness : 0.030 in (0.8 mm)

<b><u>Time</u></b>	<b><u>Strength</u></b>
2 hours	320 (2.2)
4 hours	879 (6)
8 hours	894 (6.2)
24 hours (1 day)	1,820 (12.5)
48 hours (2 days)	1,347 (9.3)
72 hours (3 days)	1,466 (10.1)
168 hours (7 days)	1,424 (9.8)

**Property**

Elongation at break, %  
Tensile Strength @ 77 °F (25 °C), psi (MPa)  
Hardness (Shore D)

**Test Method**

ASTM D-638  
ASTM D-638  
ASTM D-2240

**Test Values<sup>(1)</sup>**

80  
2,500 (17.2)  
65

<sup>(1)</sup> Tested @ 77 °F (25 °C)

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**STORAGE:**

Arathane® AW 5540 Resin with Hardener HW 5541 or Hardener HW 5542 polyurethane 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 1 year. 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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