Vantico Inc.
Adhesives & Tooling

4917 Dawn Avenue
East Lansing, MI 48823
517.351.5900

5121 San Fernando Road West
Los Angeles, CA 90039
818.247.6210

Customer Service Hotline: 800.367.8793
Customer Service Faxline: 517.351.6255
Technical Inquiries: 800.423.2460
Faxback Line: 888.440.2422

vantico

Product Data

ARALDITE® 2026

(XD 4700/XD 4710)

CLEAR POLYURETHANE ADHESIVE

DESCRIPTION:

Araldite 2026 is a two component, room temperature curing, clear transparent polyurethane adhesive for bonding of selected thermoplastics, thermoset composites and bonding of plastics to metal and glass.

APPLICATIONS:

- Thermoplastics
- Composites
- Metals
- Glass

ADVANTAGES:

- Transparent – water clear
- Flexible
- Room temperature curing
- Bonds well to most thermoplastics metals and glass

TYPICAL PROPERTIES:

Property	Test Method	Test Values[1] Resin	Hardener
Color/appearance	Visual	Transparent liquid	Transparent liquid
Specific Gravity	ASTM D-792	1.10	1.10
Viscosity (cP)	ASTM D-2393	15,000	9,000

TYPICAL MIXED PROPERTIES:

Property	Test Method	Test Values[1]
Reaction Ratio (by weight)		100R/100H
Reaction Ratio (by volume)		100R/100H
Pot Life (minutes) (4.fl. oz. mass)	ASTM D-2471	3-4
Mixed viscosity (cP)	ASTM D-2393	10,000

[1]Tested @ 77°F (25°C)

RECOMMENDED CURE SCHEDULES:

Temperature	Handling Strength	Minimum Cure Time
50ºF (10ºC)	4 hours	60 hours
59ºF (15ºC)	2.5 hours	15 hours
77ºF (25ºC)	1 hour	8 hours
104ºF (40ºC)	15 minutes	4 hours
140ºF (60ºC)	6 minutes	30 minutes
212ºF (100ºC)	2 minutes	12 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 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 x 1 x 0.06 inch strips of aluminum. The joint area was 0.5 x 1 inch in each case.

Property	**Test Method**
Lap Shear Strength (psi)	ASTM D-1002

Tested on Metal Substrates
(Cured 16 hours @ 104ºF (40ºC)

Metal	**Substrate Thickness (mm)**	**Test Values[1]**
Aluminum	1.0	3050
Carbon Steel	1.0	2325
Stainless Steel	1.0	3350
Galvanized Steel[2]	1.5	1150
Copper	1.5	3475
Brass	1.5	2600

Tested on Plastic Substrates
(Cured 16 hours @ 104ºF (40ºC)

Plastic	**Test Values[1]**
SMC	1150
ABS	875
Polycarbonate	875
Acrylic	725
GRP	1150
GRE	3050
Nylon	450
Glass	1025

Effect of Test Temperature
(Load applied 10 minutes after specimens reach test temperature.)

Cure Cycle	**Test Temp.**	
7 days @ 77ºF (25ºC)	-58ºF (-50ºC)	2050
	-22ºF (-30ºC)	2250
	-4ºF (-20ºC)	2600
	32ºF (0ºC)	3325
	68ºF (20ºC)	2900
	104ºF (40ºC)	1150
	140ºF (60ºC)	600
	176ºF (80ºC)	450
	212ºF (100ºC)	300
24 hours @ 77ºF (25ºC) + 30 minutes @ 176ºF (80ºC)	-58ºF (50ºC)	2600
	-22ºF (-30ºC)	2750
	-4ºF (-20ºC)	2850
	32ºF (0ºC)	3625
	68ºF (20ºC)	2900
	104ºF (40ºC)	1450
	140ºF (60ºC)	650
	176ºF (80ºC)	450
	212ºF (100ºC)	300

[1]Tested @ 77°F (25°C)

Property
Lap Shear Strength on aluminum (psi)
Effect of Immersion
(Cure cycle 16 hours @ 104º (40ºC). Immersion for 90 days in media listed.)

Media	**Test Values**[1]
Standard - As prepared	2900
Gasoline	2475
Ethyl Acetate	1825
Acetic Acid 10% - 30 day immersion	1825
Xylene	2325
Lubricating Oil - HD30	2900
Paraffin	2550
Water @ 68°F (20°C)	1150
Water @ 68°F (20°C) – 30 day immersion	2325
Water @ 140°F (60°C)	600
Water @ 194°F (90°C) – 30 day immersion	875

Property
Lap Shear Strength (psi)
Effect of Tropical Exposure
(104º (40ºC)/92% R.H.)

On Aluminum

Cure Cycle	**Exposure Time**	**Test Values** [1]
16 hrs @ 104º (40ºC)	0 days	3050
	30 days	1200
	60 days	900
	90 days	900

On Polycarbonate

Cure Cycle	**Exposure Time**	**Test Values** [1]
16 hrs @ 104º (40ºC)	0 days	900
	30 days	725
	60 days	725
	90 days	425

[1]Tested @ 77°F (25°C)

	Test Method
Lap Shear Strength (psi)	ASTM D-1002

Effect of Heat Aging
(Cured 16 hours @ 104º (40ºC).

Aging Temperature	Exposure Time	Test Values[(1)]
158º (70ºC)	0 days	3050
	30 days	3625
	60 days	3625
	90 days	3775

[1]Tested @ 77°F (25°C)
[2]Surface degreased only, not roughened.

Property	Test Method	Test Values[(1)]
Elongation (%)	ASTM D-638	50
Tensile strength	ISO R527	2600
Roller peel test (pli)	ISO 4578	45
Glass transition temperature, °F (°C)	ASTM D-4065	68 (20)
Thermal cycling – 100 cycles of 6 hour duration from -22ºF to 158ºF (psi)		2600

STORAGE HANDLING INFORMATION

Araldite 2026/A Resin and Araldite 2026/B Hardener
Store in tightly closed containers at room temperature in cool, ventilated area. Keep containers closed to prevent moisture absorption and contamination.

Work in a well ventilated area and use clean, dry tools for mixing and applying. For two component system, combine the resin and hardener according to mix ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65°F (18°C) when mixing.

SHELF LIFE:

Provided this material is stored under the recommended storage conditions in their original containers, it will remain in useable condition for one year from date of shipping.

PACKAGING:

This product is available in the following package sizes:

Dual Syringes - 50 ml (DS-50)
- 200 ml (DS-200)

SAFETY HANDLING PRECAUTIONS:

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

Araldite 2026/A Resin
Caution! In accord with good industrial practice, handle with due care. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.
Araldite 2026/B Hardener
Warning! Causes irritation if inhaled and can cause skin irritation, eye irritation, allergic respiratory reaction, and allergic skin reaction. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

FIRST AID: In case of contact:

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

Eyes: Immediately flush with water for at least 15 minutes. Call a physician.

Ingestion: If conscious, give plenty of water to drink. Do not induce vomiting. Call a physician.

Inhalation: Remove to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

Other: Referral to physician is recommended if there is any question about the seriousness of any injury.

PRECAUTIONARY NOTE:

Thermosetting systems generate heat when curing. The amount of heat and the period of time in which heat is released varies significantly between systems. Additionally, ambient or compound temperature and amount of material mixed can also be factors in the temperature profile of a mixed system.

In some cases, the thermosetting reaction can be vigorous, generating heat sufficient to cause decomposition of the system with subsequent liberation of large volumes of acrid smoke.

A good rule of thumb is never mix more material than can be applied during the stated pot life or gel time. Also take care when using materials in applications other than stated on the Product Data Sheet.

IMPORTANT:

The following supercedes Buyer's documents. **SELLER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller be liable for incidental, consequential, or indirect damages for alleged negligence, breach of warranty, strict liability, tort, or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results are based on controlled or lab work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.