

TECHNICAL DATA SHEET

AEROPASTE® 1009

PASTE ADHESIVE

AEROPASTE® 1009

AeroPaste® 1009 is a 250°F – 350°F (121°C – 177°C) curing one-part paste adhesive with superior bonding performance. This adhesive provides high strength and toughness with excellent hot/wet performance. AeroPaste® 1009 is thixotropic, slump resistant, and easy to use in manual or automated processes.

AeroPaste® 1009 is designed for rapid assembly of metal and composite structures.

Features and Benefits

- High strength and good toughness
- Excellent hot/wet property retention
- Good bondline thickness tolerance
- Can be cured between 250°F – 350°F (121°C - 177°C)
- Service temperature of 285°F(140°C) dry and 250°F(121°C) hot/wet
- 1K-paste with high performance, no pre-mix required
- Thixotropic, slump resistant, and easy to use (manual or automation)
- 30 day out time at ambient RT
- Designed for rapid assembly of metal and composite structures

CHARACTERISTICS

Table 1 | Physical Properties

Property	Value	Test Method
Tg onset, °F (°C)	Dry: 288°F (142°C) Wet ¹ : 248°F (120°C)	ASTM E1545
Viscosity at 85°F (30°C), P	838 poise	ASTM D4473
Minimum Viscosity, P	28 poise, at 230°F (110°C)	ASTM D4473
Vertical Slump Uncured, 75°F (24°C) ²	No Slump (with 0.375 inch thick paste beads)	Internal test method
Density	1.2 gram/cc	ASTM D1875
Shelf Life	12 month when stored at -18°C /0°F	
Shop Life	30 days at ambient RT	

¹ Wet = After 14 days water immersion at 160°F (71°C)

² Maximum slump after 30 minutes at ambient room temperature

Table 2 | Product Availability

Property	Description
Color	Blue
Packaging Sizes	1 Quart (0.95 L) Can 1 Gallon (3.8 L) Can 6 oz (0.18 L) Semco Tube

AEROPASTE® 1009 PASTE ADHESIVE



TECHNICAL DATA SHEET

AEROPASTE[®] 1009

PASTE ADHESIVE

PROPERTIES

Table 3 | AeroPaste[®] 1009 Mechanical Properties*

Property	Test Temperature	Value	Substrate	Test Method
Single Lap Shear, psi (MPa)	-67°F (-55°C) 75°F (24°C) 250°F (121°C)	4770 (33) 5370 (37) 4060 (28)	2024-T3 Bare Aluminum Surface Prep: FPL/PAA Primer: BR [®] 6747-1	ASTM D1002
Floating Roller Peel, lb/in (N/25 mm)	-67°F (-55°C) 75°F (24°C) 250°F (121°C)	20.0 (89) 35.1 (156) 37.3 (166)	2024-T3 Bare Aluminum Surface Prep: FPL/PAA Primer: BR [®] 6747-1	ASTM D3167
Composite bonding Single Lap Shear, psi (MPa)	-67°F (-55°C) 75°F (24°C) 185°F (85°C) 250°F (121°C)	4830 (33) 5958 (41) 4971 (34) 3723 (26)	Secondary Bonded Pre-Cured CYCOM [®] 977-2 Tape Surface Prep: Polyester dry Peel Ply	ASTM D1002
Composite bonding G1c Fracture Toughness, in-lb/in ² (J/m ²)	75°F (24°C)	9.7 (1693)	Secondary Bonded Pre-Cured CYCOM [®] 977-2 Tape Surface Prep: FM [®] 3500 EZP Peel Ply	ASTM D5528

*AeroPaste[®] 1009 press-cure cycle: Heat to 250°F (121°C) at ramp 3°F/min (1.7°C/min), hold at 250°F (121°C) for 90 minutes under pressure 5 psi to 20 psi (0.04 MPa – 0.14 MPa)

*Adhesive bondline thickness is 10 mils (0.25 mm) controlled by 10 mil glass beads

Table 4 | AeroPaste[®] 1009 Hot/Wet Mechanical Properties*

Property	Test Temperature	Conditioning	Value	Test Method
Single Lap Shear, psi (MPa)	75°F (24°C)	None (Dry, baseline)	5370 (37.0)	ASTM D1002
		14 Days at 160°F (71°C), 95%RH	5510 (38.0)	
		28 Days at 160°F (71°C), 95%RH	5510 (38.0)	
		42 Days at 160°F (71°C), 95%RH	5510 (38.0)	
		84 Days at 160°F (71°C), 95%RH	5540 (38.2)	
	180°F (82°C)	None (Dry, baseline)	5080 (35.0)	
		14 Days at 160°F (71°C), 95%RH	4640 (32.0)	
		28 Days at 160°F (71°C), 95%RH	4350 (30.0)	
		42 Days at 160°F (71°C), 95%RH	4210 (29.0)	
		84 Days at 160°F (71°C), 95%RH	3510 (24.2)	

*Substrate: 2024-T3 Bare Aluminum

*Surface Preparation: FPL/PAA treated metal. BR[®] 6747-1 primed/

*AeroPaste[®] 1009 press-cure cycle: Heat to 250°F (121°C) at ramp 3°F/min (1.7°C/min), hold at 250°F (121°C) for 90 minutes under pressure of 20 psi (0.14 MPa).

*Adhesive bondline thickness is 10 mils (0.25 mm) controlled by 10 mil glass beads

AEROPASTE[®] 1009 PASTE ADHESIVE


TECHNICAL DATA SHEET

AEROPASTE® 1009

PASTE ADHESIVE

Table 5 | AeroPaste® 1009 Mechanical Properties after Various Fluid Exposure*

Property	Test Temperature	Conditioning	Value	Test Method
Single Lap Shear, psi (MPa)	75°F (24°C)	Dry (as cured, baseline)	5365 (37)	ASTM D1002
		1000 Hours at 167°F (75°C), 85%RH	5510 (38)	
		3 Day Soak in 180°F (82°C) Water	5597 (38.6)	
		7 Day Soak in 167°F (75°C) JP-4 Jet Fuel	5510 (38)	
		7 Day Soak in 160°F (70°C) Jet A/AI Fuel	5365 (37)	
		7 Day Soak in 160°F (70°C) Skydrol Fluid	5220 (36)	
		7 Day Soak in 160°F (70°C) Deicing Fluid	5365 (37)	
		1 Day Soak in 104°F (40°C) Kerosene	5365 (37)	
		1000 Hours in 95°F (35°C), 5% Salt Fog	5365 (37)	

*Substrate: 2024-T3 Bare Aluminum

*Surface Prep: FPL/PAA

*Primer: BR® 127

*AeroPaste® 1009 press-cure cycle: Heat to 250°F (121°C) at ramp 3°F/min (1.7°C/min), hold at 250°F (121°C) for 90 minutes under pressure of 20 psi (0.14 MPa).

*Adhesive bondline thickness is 10 mils (0.25 mm) controlled by 10 mil glass beads.

PROCESSING

AeroPaste® 1009 is compatible with various solvent-based and water-based primers. The following 121°C (250°F) curing primers from Solvay Composite Materials are recommended for metal bond applications using AeroPaste® 1009:

- BR® 6747-1 (chromated) water-based corrosion inhibiting primer
- BR® 6747-1NC (non-chromated) water-based corrosion inhibiting primer
- BR® 127 (chromated) solvent -based corrosion inhibiting primer
- BR® 179NC (non-chromated) solvent -based corrosion inhibiting primer

Surface Preparation

Bonding surfaces should be clean, dry and properly prepared depending on the type of substrate material. Consult your Solvay Technical Service representative for information on surface preparation.

Bonding Procedure

Metal must be properly prepared before application of the adhesive.

Primed assemblies, which have been properly dried and wrapped with a protective covering such as kraft paper, may be stored at 75°F (24°C) for several weeks without fear of contamination or degradation of the final bond.

Applying paste adhesive uniformly to cover the bonding area. Use proper spacer or glass beads to control the bondline thickness. After assembly of the details, apply either vacuum or pressure and cure, using the recommended cure cycle below.

AEROPASTE® 1009 PASTE ADHESIVE



TECHNICAL DATA SHEET
AEROPASTE® 1009
PASTE ADHESIVE

Recommended Cure Cycle

Cure Cycle 1

Apply contact pressure of 5 psi - 20 psi (0.04 MPa – 0.14 MPa).
Heat from 75°F (24°C) to 250°F (121°C) at 2°F - 5°F (1°C - 2°C)/minute.
Hold at 250°F (121°C) for 90 minutes.
Cool under pressure below 140°F (60°C) at 2°F - 5°F (1°C - 2°C)/minute.

Alternative Cure Cycle 2

Apply contact pressure of 5 psi - 20 psi (0.04 MPa – 0.14 MPa).
Heat from 75°F (24°C) to 300°F (149°C) at 2°F - 5°F (1°C - 2°C)/minute.
Hold at 300°F (149°C) for 60 minutes.
Cool under pressure below 140°F (60°C) at 2°F - 5°F (1°C - 2°C)/minute.

Clean Up

It is important to remove excess adhesive from the work area and application equipment before it hardens. Excess uncured adhesive may be removed using most standard industrial solvents such as acetone and MEK.

HEALTH & SAFETY

Please refer to the product SDS for safe handling, personal protective equipment recommendations and disposal considerations.

DISCLAIMER: The data and information provided in this document have been obtained from carefully controlled samples and are considered to be representative of the product described. Solvay does not express or imply any guarantee or warranty of any kind including, but not limited to, the accuracy, the completeness or the relevance of the data and information set out herein. Because the properties of this product can be significantly affected by the fabrication and testing techniques employed, and since Solvay does not control the conditions under which its products are tested and used, Solvay cannot guarantee the properties provided will be obtained with other processes and equipment. No guarantee or warranty is provided if the product is adapted for a specific use or purpose. Solvay declines any liability with respect to the use made by any third party of the data and information contained herein. Solvay has the right to change any data or information when deemed appropriate. All trademarks are the property of their respective owners. ©2019, Solvay. All rights reserved.

Solvay

Composite Materials HQ
4500 McGinnis Ferry Rd
Alpharetta, GA 30005-3914 USA

PDS XXXXXXXXX 27 June 2016

