LORD® 7800 Fast Cure Urethane Adhesive

Technical Data Sheet

LORD® 7800 adhesive is an equal-mix, two-component urethane adhesive system used to bond composites, SMC and plastics with little surface preparation. This adhesive will also bond coated metals, such as powder-coated, primed and E-coat.

LORD 7800 adhesive system offers a range of working times by shifting between LORD 7800 curatives, accommodating a wide variety of process requirements while retaining the same mechanical and adhesion properties. LORD 7800 adhesive is qualified under GMW 16506 Exterior Lighting Structural Adhesives for automotive and truck headlamp assembly.

Features and Benefits:

Rapid Cure Strength – provides rapid, outstanding cure strength development, allowing for faster manufacturing and processing.

Consistent Cure Speeds – low exotherm cure (rate of cure less affected by bondline thickness).

Low Tooling Temperature – allows accelerated cure with low heat up to 220°F (104°C), eliminating quality issues from cold spots in tooling experienced with other adhesives.

Enhanced Regulatory Profile – free of heavy metals.

Environmentally Recommended – does not contain ozone depleting chemicals.

Environmentally Resistant – resists weathering, humidity and salt spray.

Non-Sag – remains in position when applied on vertical or overhead surfaces, allowing for greater process flexibility.

Application:

Surface Preparation – Surfaces should be free of grease, dirt and other contaminants. For plastics, clean the surface with a dry rag wipe or a rag dampened with solvent. Composites may require light abrasion to remove mold releases, then wiped clean to remove dust or applied with peel-ply to expose a clean surface. Painted surfaces should be wiped clean with a lint-free cloth prior to adhesive application. Verify adhesion to the surface or consult with Parker LORD Customer Service for assistance.

Mixing – Mix LORD 7800A resin with the appropriate curative at a 1:1 ratio, by volume. Handheld cartridges will automatically dispense the correct volumetric ratio of each component. Once mixed, the adhesive cures rapidly.

Applying – Apply adhesive using handheld cartridges or automatic meter/mix/dispense equipment.

- Handheld Cartridges (pneumatic applicator gun recommended)
  1. Load the cartridge into the applicator gun and remove the end caps.
  2. Level the plungers by expelling a small amount of adhesive to ensure both sides are level.
  3. Attach mixing tip and expel a mixer's length of adhesive.
  4. Apply adhesive to substrate and mate the parts within the working time of the adhesive. Clamp in position until adhesive reaches handling strength.
- Meter/Mix/Dispense Equipment
  Contact your Parker LORD representative if assistance is needed using this equipment.

For optimum adhesion, bondline thickness of LORD 7800 adhesive should be 10-40 mil (254-1016 micron).

Typical Properties*

	7800A Resin	7800C Curative	7800D Curative
Appearance	Black Liquid	Tan Liquid	Tan Liquid
Viscosity, cP @ 77°F (25°C)	8000 - 25,000	33,000 - 60,000	33,000 - 60,000
Density lb/gal (kg/m^3)	 10.7 - 11.85 (1282 - 1420)	 10.0 - 10.7 (1198 - 1282)	 10.0 - 10.7 (1198 - 1282)
Flash Point, °F (°C) Closed Cup	>200 (>93)	>200 (>93)	>200 (>93)

*Data is typical and not to be used for specification purposes.

Curing – LORD 7800 adhesive will cure to full strength in 24 hours or less at 75°F (24°C), depending on the curative used.

Cleanup – Clean equipment and tools prior to the adhesive cure with organic solvents such as acetone or MEK. Do not use alcohol. Once adhesive is cured, heat the adhesive to 300°F (149°C) or above to soften the adhesive. This allows the parts to be separated and the adhesive to be more easily removed. Some success may be achieved with commercial adhesive strippers.

Shelf Life/Storage:

Shelf life of each component is six months when stored in a clean, dry environment at 65-85°F (18-30°C) in original, unopened container.

After opening, protect adhesive from excessive exposure to moisture by installing desiccant cartridges and/or using dry nitrogen as an inert cover.

Cautionary Information:

Before using this or any Parker LORD product, refer to the Safety Data Sheet (SDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Typical Properties* of Resin Mixed with Curative

	7800 A/C	7800 A/D
Mix Ratio by Volume, Resin to Curative	1:1	1:1
Solids Content by Weight, %	100	100
Working Time, minutes @ 75°F (24°C)	2-4.5	4-8
Time to Handling Strength, minutes @ 75°F (24°C)	12	25

*Data is typical and not to be used for specification purposes.

Typical Cured Properties*

Hardness Shore D	60
Tensile Strength at Break, psi (MPa) ASTM D638, modified	3000 (20.7)
Elongation, % ASTM D638, modified	130
Young's Modulus, psi (MPa) ASTM D638, modified	25,000 (172)
Glass Transition Temperature (Tg), °F (°C) ASTM E1640-99, by DMA	117 (47)

*Data is typical and not to be used for specification purposes.

Bond Performance**

Substrates	E-coated Steel	Carbon Fiber Reinforce Plastic (CFRP)	Sheet Molded Composite (SMC)
Lap Shear @ Room Temperature, psi (MPa)	3380 (23.3)	1553 (10.7)	778 (5.4)
Failure Mode	C/CF	FT/A	SB
Lap Shear @ 180°F (82°C), psi (MPa)	1634 (11.3)	265 (1.8)	293 (2.0)
Failure Mode	C/CF	A	A
Lap Shear @ -30°F (-34°C), psi (MPa)	3573 (24.6)	400 (2.7)	—
Failure Mode	C/CF	FT/A	—
Lap Shear after 14 days @ 150°F (65°C), 85% RH, psi (MPa)	3045(21.0)	627 (4.3)	693 (4.8)
Failure Mode	C/CF	A	FT/SB
Lap Shear after 500 hours Salt Spray Exposure, psi (MPa)	2157 (14.9)	1482 (10.2)	1908 (13.2)
Failure Mode	C/A	C/A	C/A
Lap Shear after 500 hours Water Immersion @ 150°F (65°C), psi (MPa)	3454 (23.8)	1705 (11.7)	765 (5.3)
Failure Mode	C/CF	FT/A	FT

Substrate	Surface Treatment
E-coated Steel, 0.032" thick	Dry Rag Wipe
CRFP - 0/90, 3 plies, 0.002" thick	Dry Rag Wipe
SMC, polyester, 0.13" thick	Dry Rag Wipe

Bonded Parameters	Bond Area	Film Thickness	Cure	Mix Ratio
Metal Lap Shears (ASTM D1002)	1.0"x0.5"	0.010"	24 hr @ RT	1:1 by Volume
Composite Lap Shears (ASTM D3167)	1.0"x1.0"	0.020"	24 hr @ RT	1:1 by Volume

Failure Mode Definition	Abbreviation
Adhesive Failure	A
Coating Failure	CF
Cohesive Failure	C
Fiber Tear	FT
Stock Break	SB

**Data is typical and not to be used for specification purposes. Cured Properties and Bond Performance data are the same regardless of the LORD 7800 curative used.

OD DS4368 03/20 Rev.2

Parker LORD
Engineered Materials Group

111 LORD Drive
Cary, NC 27511-7923
USA

phone +1 877 ASK LORD (275 5673)

www.lord.com