



## LORD TECHNICAL DATA

# LORD® 204 Acrylic Adhesive with LORD Accelerator 4, 17 or 19

### Description

LORD® 204 acrylic adhesive when cured with LORD Accelerator 4, 17 or 19 creates an adhesive system that will bond a wide variety of prepared or unprepared metals and plastics. LORD 204 acrylic adhesive in combination with the recommended accelerator replaces welding, brazing, riveting and other mechanical fastening methods.

LORD 204 acrylic adhesive can be cured with either LORD Accelerator 4, LORD Accelerator 17 or LORD Accelerator 19. LORD Accelerator 4 is a no-mix accelerator applied to the substrate before the acrylic adhesive. LORD Accelerators 17 and 19 must be mixed into the acrylic adhesive prior to application. LORD Accelerator 19 is available in off-white or black. For further detailed information on LORD Accelerator 4, LORD Accelerator 17 and LORD Accelerator 19, refer to the applicable data sheet.

### Features and Benefits

**Bonds Unprepared Metals** – requires little or no substrate preparation.

**Versatile** – bonds a wide variety of substrates such as metals, ceramics and plastics; insensitive to minor deviations from correct mix ratio.

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

**Temperature Resistant** – performs at temperatures from -40°F to +300°F (-40°C to +149°C).

**Environmentally Resistant** – resists dilute acids, alkalis, solvents, greases, oils and moisture; provides excellent resistance to indirect UV exposure, salt spray and weathering.

### Typical Properties\*

Appearance	Off-white Paste
Viscosity, cP @ 77°F (25°C) Brookfield HAT Spindle 7, 20 rpm	100,000 - 300,000
Density	
lb/gal	8.7 - 9.3
(kg/m³)	(1042 - 1114)
Flash Point (Closed Cup), °F (°C)	66 (19)

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

## Application

**Surface Preparation** – Remove grease, loose contamination or poorly adhering oxides from metal surfaces. Normal amounts of mill oils and drawing compounds usually do not present a problem in adhesion. Most plastics require a simple cleaning before bonding. Some may require abrading for optimum performance.

### Mixing

- No-Mix Accelerator  
LORD 204 acrylic adhesive and LORD Accelerator 4 are not mixed prior to application.
- Mix-In Accelerator  
Mix LORD 204 acrylic adhesive with the proper amount of LORD Accelerator 17 or 19. Handheld cartridges will automatically dispense the correct volumetric ratio of each component. Even color distribution visually indicates a thorough mix. Once mixed, the acrylic adhesive cures rapidly.

### Applying

- No-Mix Accelerator  
Apply LORD Accelerator 4 to one or both substrate surfaces. Allow accelerator to dry. For further details on the use of LORD Accelerator 4, refer to the LORD Accelerator 4 data sheet.  
Once accelerator is dry, apply adhesive using a handheld cartridge or automatic dispense equipment. Mate the two surfaces and slide into correct position within the working time of the adhesive.

- Mix-In Accelerator  
Apply mixed adhesive using handheld cartridges or automatic meter/mix/dispense equipment.

#### Handheld Cartridges

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 LORD representative if assistance is needed using this equipment. When using such equipment, all wetted parts must be made of stainless steel and hoses should be Teflon®-lined high pressure hose.

**Curing** – Cure begins immediately once adhesive and accelerator are mixed. Handling strength is achieved within 20-30 minutes. Complete cure will take 24 hours at room temperature. Mating surfaces should be fixtured as soon as possible after adhesive application.

*Teflon is a registered trademark of E.I. duPont de Nemours and Company.*

## Typical Properties\* of Adhesive Mixed with Recommended Accelerator

	A4	A17	A19	A19 Black
Mix Ratio by Volume, Adhesive to Accelerator	No-Mix	10:1	10:5	10:5
Solids Content, %	100	100	100	100
Working Time, min @ 75°F (24°C)	Unlimited**	6-8	4-6	4-6
Time to Handling Strength, min @ 70°F (21°C)	20-30	26-28	22-26	22-26
Mixed Appearance	—	Tan Paste	Tan Paste	Grey Paste
Cured Appearance	—	Tan to Green	Tan to Green	Black

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

\*\*One-sided LORD Accelerator 4 application.



## Typical Cured Properties<sup>†</sup> – LORD 204 Adhesive/LORD Accelerator 19

Tensile Strength at Break, psi (MPa) ASTM D638, modified	2810 (19.4)
Elongation, % ASTM D638, modified	4.9
Young's Modulus, psi (MPa) ASTM D638, modified	140,826 (971.0)
Glass Transition Temperature, °F (°C) ASTM E1640-99, by DMA	—

## Bond Performance<sup>†</sup> – LORD 204 Adhesive/LORD Accelerator 19

Substrates	Aluminum to Aluminum	Galvanized Steel to Galvanized Steel	Powder Coated Steel to Powder Coated Steel	ABS to ABS
Lap Shear @ Room Temperature, psi (MPa) Failure Mode	3553 (24.5) C/A	2730 (18.8) C/A	2640 (18.2) A	542 (3.7) SB
Lap Shear @ Hot Strength [180°F (82°C)], psi (MPa) Failure Mode	1920 (13.2) C/TLC	1750 (12.1) C	930 (6.4) A	181 (1.2) SB
Lap Shear after 500 hours Salt Spray Exposure, psi (MPa) Test after 24 hours Failure Mode	2840 (19.6) TLC	2310 (15.9) C	3010 (20.8) CF/A	— —
Lap Shear after 14 days @ 100°F (38°C), 100% RH, psi (MPa) Failure Mode	3000 (20.7) TLC	2670 (18.4) CF/A	2290 (15.8) A	— —
Lap Shear @ -30°F (-34°C), psi (MPa) Failure Mode	1570 (10.8) A	2420 (16.7) A	1880 (13.0) CF/A	680 (4.7) SB
T-Peel, pli (N/mm) Failure Mode	29 (5.1) C	47 (8.2) C	37 (6.5) C/TLC	— —

### Substrate

Aluminum, 0.032" thick 6061T6  
Galvanized Steel, 0.030" thick electrogalvanized  
Powder Coated Steel, 0.035" thick, polyester on cold rolled steel  
Acrylonitrile Butadiene Styrene (ABS), 0.125" thick hair cell ABS

### Surface Treatment

Dry Rag Wipe  
Dry Rag Wipe  
Dry Rag Wipe  
Dry Rag Wipe

### Bonded Parameters

Metal Lap Shears (ASTM D1002)  
ABS Lap Shears (ASTM D3163)  
T-Peel (ASTM D1876 modified)

### Bond Area

1.0"x0.5"  
1.0"x1.0"  
1.0"x3.0"

### Film Thickness

0.010"  
0.010"  
0.010"

### Cure

24 hr @ RT  
24 hr @ RT  
72 hr @ RT

### Mix Ratio

4:1 by Volume  
4:1 by Volume  
4:1 by Volume

### Failure Mode Definition

Adhesive Failure  
Cohesive Failure  
Coating Failure  
Stock Break  
Thin Layer Cohesive Failure

### Abbreviation

A  
C  
CF  
SB  
TLC

<sup>†</sup> Bond performance data was obtained using LORD 204 adhesive/Accelerator 19. Please contact LORD Corporation regarding the use and/or performance of using other accelerator combinations (+1 877 ASK LORD).



## Shelf Life/Storage

Shelf life is six months when stored below 80°F (27°C) in original, unopened container. Storage temperatures of 40-50°F (4-10°C) are recommended. If stored cold, allow product to return to room temperature before using.

## Cautionary Information

Before using this or any 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.

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

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