PRODUCT INFORMATION

LORD Engineered Adhesives

506

Acrylic Adhesive for Thermoplastics and Thermoset Plastics

Description

Lord® 506 is a general purpose, semi-flexible, heat resistant acrylic adhesive. Lord 506 acrylic adhesive bonds a wide variety of thermoplastics and thermoset plastics.

Features and Benefits

Good Resilience - accommodates shock and sudden stress loading.

Versatile - bonds a wide variety of substrates including ABS, acrylic, polycarbonate, FRP, prepared metals, urethane, phenolic, polysulfone, and vinyl.

Proven Environmental and Chemical Resistance - resists dilute acids, alkalis, solvents, greases, oils, moisture, and weathering. Performs at temperatures from -40°C to 149°C (-40°F to 300°F). Excellent UV exposure resistance.

Non-Sag Properties - will not sag when applied to a vertical surface.

Fast Cure - cures quickly at room temperature.

Table 1: Typical Properties* of Lord 506 Acrylic Adhesive

	Lord 506	Accelerator 4	Accelerator 17	Accelerator 19
Appearance	Off-white paste	Clear amber to slightly hazy liquid	Off-white to yellow liquid	Off-white paste
Viscosity, cP				
Brookfield @ 25°C (77°F)	40,000 - 60,000 (Spindle 3 at 5 rpm HBF)	10 (Spindle 1 at 30 rpm LVT)	10,000 - 100,000 (Spindle 4 at 12 rpm LVT)	150,000 - 450,000 (T-bar C @ 10 rpm)
Density				
kg/m³	995 - 1055	1222 - 1282	1150 - 1246	1426 - 1546
lb/gal	8.3 - 8.8	10.2 - 10.7	9.6 - 10.4	11.9 - 12.9
Solvents	None	Methylene Chloride/ MIBK/Trichloroethylene	None	None
Flash Point, closed cup	12°C (53°F)	>93°C (>200°F)	>93°C (>200°F)	>93°C (>200°F)
Working Time - Mix System @ 24°C (75°F)	4 - 6 Minutes	—	—	—
Handleable Bonds @ 24°C (75°F)	8 - 12 Minutes	—	—	—
Full Properties	24 Hours	—	—	—
Mix Ratio by volume	10 Parts	No-Mix	1 Part	5 Parts
Shelf Life from date of shipment @ 24°C (75°F) unopened container	6 Months	6 Months	6 Months	6 Months

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

Surface Preparation

The following substrate preparations are suggested for materials to be bonded with Lord acrylic adhesives:

Aluminum — Etching with chromic acid, grit blasting or abrading with medium grit emery paper in conjunction with degreasing step.

Other Metals — Degrease, abrade substrate, and degrease again; or utilize chemical treatments recommended for specific metals.

Most Thermoplastics — (Acrylic, ABS, polycarbonate, etc.). Should be cleaned with isopropyl alcohol.

Thermoset Plastics — (Polyester, epoxies, phenolics, etc.). Should be cleaned with a solvent (such as MEK) and mechanically abraded.

In all cases, substrates to be bonded must be free

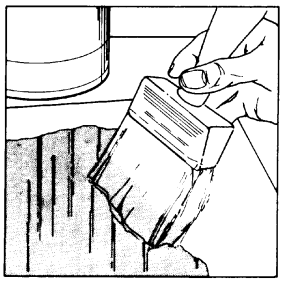
of grease, oil, mold release agents and other contaminants.

No-Mix System — Application may be made by spraying, rolling, or brushing Lord Accelerator 4 onto one or both substrates. Optimum bond line thickness is 127 - 154 microns (5 - 10 mils). If the bond line is under 635 microns (25 mils) thick, application to one substrate is usually sufficient. For bond lines of 635 - 1524 microns (25 - 60 mils), both substrates should be coated. Acrylic adhesive may be applied as soon as the accelerator is dry usually one to three minutes at 24°C (75°F) or up to several weeks thereafter. Parts stored after coating should be kept in clean, dry area without exposure to ultraviolet light or temperatures in excess of 24°C (75°F).

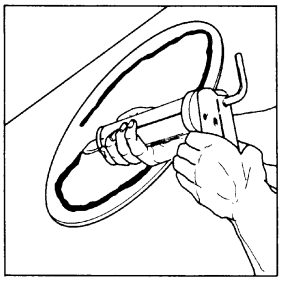
Mix-In System — Thoroughly mix Lord 506 adhesive and Lord Mix-In accelerator at the ratio specified in Table 1. Mix until uniform in color and consistency. Working time of the mixed system is approximately four to six minutes at 24°C (75°F). A handleable bond will develop in 8 to 12 minutes.

Cure — Acrylic adhesive cure will begin on contact with the accelerator. Although there is a safe working time of four to six minutes, it is suggested that parts be joined immediately after the acrylic adhesive is applied.

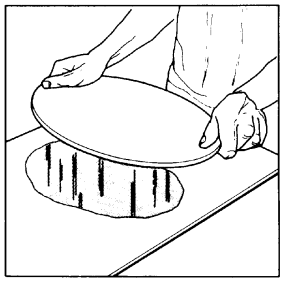
No-Mix System



1. Apply accelerator

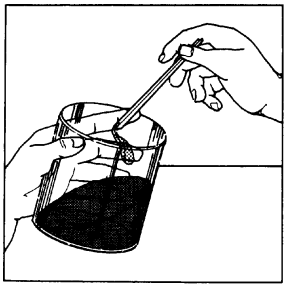


2. Apply acrylic adhesive

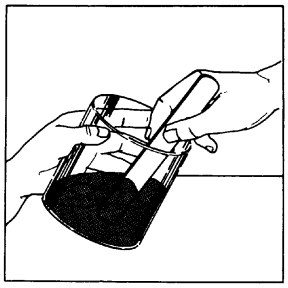


3. Assemble components

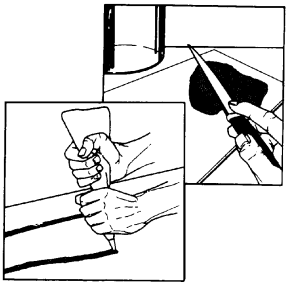
Mix-In System



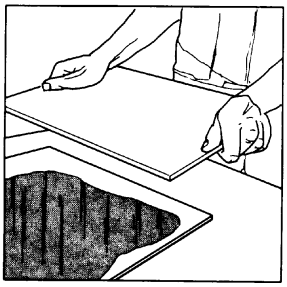
1. Pour accelerator into container containing acrylic adhesive.



2. Mix accelerator and acrylic adhesive.



3. Apply accelerator-acrylic adhesive mixture.



4. Assemble components.

Table 2: Typical Performance of Lord 506/Accelerator 4

Material	Lap Shear (psi)
2024T3 Alclad Aluminum (Aluminum oxide blasted)	4300 AF
Grit Blasted CRS	4300 AF
Polycarbonate	1400 SB
Acrylic (MEK Wipe)	825 SB
Cellulose Acetate Butyrate	400 SB
FRP (Grit Blasted)	1400 SB
Urethane (Abraded)	145 SB
ABS (IPA Wipe)	850 SB

*AF — Adhesive Failure SB — Stock Break; psi-pound per square inch. Tested according to ASTM D1002

Storage

Ship and store Lord acrylic adhesives at lower than 27°C (80°F). Temperatures greater than 32°C (90°F) shorten the stability of Lord acrylic adhesive and accelerators. For maximum shelf life, store at 4°C -10°C (40°F - 50°F).

Cautionary Information

Before using this or any Lord product, refer to the Material Safety Data Sheet (MSDS) 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 bulletin 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 Service Department.

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