LORD® 7450 Urethane Adhesive

Technical Data Sheet

LORD® 7450 adhesive is a two-component urethane adhesive system designed for applications where the cured material will be exposed to cryogenic temperature environments. LORD 7450 adhesive provides a tough elastomeric polymer for use in diverse technologies, such as aerospace, liquefied gas production and food processing.

LORD 7450 adhesive can be used in a variety of applications. When used as an adhesive, this system forms strong, flexible bonds between adherents. Diverse materials such as aluminum, quartz, stainless steel, various foams, reinforced plastic laminates, gold, glass, thermoplastics, silver, plastic films, wood and other metals have been bonded together using LORD 7450 adhesive. LORD 7450 adhesive is used as a sealant to repair existing, unwanted openings, and to form gaskets, whether "in place" or in molds, which are subsequently bonded in position. LORD 7450 adhesive can also used as a protective coating on surfaces that may be adversely effected by the environment.

Features and Benefits:

Versatile – can be used as an adhesive, sealant or protective coating.

Room Temperature Cure – develops high strength bond in 72 hours at room temperature.

Temperature Resistant – performs at temperatures from -423°F to +180°F (-253°C to +82°C).

Durable – provides outstanding resistance to liquefied gases such as nitrogen and hydrogen.

Application:

Surface Preparation – Remove soil, grease, oil, fingerprints, dust, mold release agents, rust and other contaminants from the surfaces to be bonded by solvent degreasing or alkaline cleaning. If needed, lightly sand or abrade the surface.

Mixing – Prior to use, confirm LORD 7450-A resin is clear, light amber liquid. If material is clear, warm LORD 7450-A resin to 122°F (50°C) before mixing with LORD 7450-B hardener.

If material appears cloudy or opaque, a natural gel may have formed during storage, and the material will need warmed to 140°F (60°C) and held at temperature until consistency is clear.

Heat LORD 7450-B hardener at 293-311°F (145-155°C); temperature not to exceed 324°F (162°C). Mix resin with heated hardener at a mix ratio of 100 parts resin to 16 parts hardener, by weight.

Applying – Application methods are dependent on the intended use of LORD 7450 adhesive.

- Adhesive
  Apply approximately 5 mil (127 micron) of LORD 7450 adhesive to each substrate surface by brush, roll coat or trowel methods. Assemble prepared surfaces and apply sufficient pressure to produce bondline thickness of 3-5 mil (76.2-127 micron).

Typical Properties*

	7450-A Resin	7450-B Curative	Mixed
Appearance	Clear Liquid	White Powder	Amber Liquid
Viscosity, cP	21,000 - 31,000	Solid	17,000
Density lb/gal (kg/m^3)	 9.11 (1091.6)	 10.15 (1216.2)	 – –
Flash Point, °C (°F)	⩾201 (⩾93)	⩾201 (⩾93)	500 (260)
Gel Time, hours @ 75°°F (24°C)	–	–	8
Working Life, hours	–	–	≈1

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

- Sealant
  Apply adhesive by brush to thickness of up to 40 mil (1016 micron) in joints, holes or cracks in the horizontal plain. In the vertical plain, multiple applications of 5-10 mil (127-254 micron) thickness are suggested.
- Coating
  Apply adhesive by brush, roll coat methods to desired thickness. Multiple coating applications are acceptable. It is not necessary to cure material completely between multiple coats.

Curing – Adhesive system will gel in approximately 8 hours at 75°F (24°C). LORD 7450 adhesive will obtain adequate properties after curing for 72 hours at 74°F (24°C). Cure rate can be accelerated when adhesive is cured at elevated temperatures. Suggested cure schedules are: 4 hours at 158°F (70°C); 3 hours at 212°F (100°C); 1 hour at 293°F (145°C); or 30 minutes at 320°F (160°C).

Shelf Life/Storage:

Shelf life of each component is six months when stored in a clean, dry environment at ambient temperatures [77°F (25°C)] in original, unopened container.

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 Cured Properties*

Coefficient of Linear Thermal Expansion, ppm/°C	133.2
Hardness Shore A	85
Tensile Shear Strength, psi (MPa)	
@ -423°F (-253°C)	7000 (48.3)
@ -320°F (-195°C)	5800 (40.0)
@ Room Temperature	2200 (15.2)
@ 180°F (82°C)	600 (4.14)
Elongation at Break, % @ -320°F (-195°C)	1.2
Volume Resistivity, ohm-cm	1×10^8
Dielectric Strength, V/mil	4.2
Outgassing Cured 4 days @ 77°F (25°C)	
Total Mass Loss (TML), %	0.85
Collected Volatile Condensable Material (CVCM), %	0.09

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