

CoolTherm® UR-3000 Thermally Conductive Urethane Gap Filler

Technical Data Sheet

CoolTherm® UR-3000 gap filler is a two-component thermally conductive urethane system designed to provide excellent thermal conductivity for electronic applications, while retaining the desirable properties associated with urethanes.

Features and Benefits:

Low Stress – exhibits low shrinkage and stress on components as it cures.

Durable – composed of a condensation-curing urethane polymer that will not depolymerize when heated in confined spaces.

Environmentally Resistant – provides excellent thermal shock resistance.

UL Rated – provides excellent flame retardancy; meets requirements of UL 94 V-0 standards.

Application:

Mixing – Mix CoolTherm UR-3000 resin with CoolTherm UR-3000 hardener at a 1:1 ratio, by volume. Handheld cartridges or automatic meter/mix/dispense equipment should be used to avoid any air entrapment in the material. Manual mixing is not recommended.

Applying – Apply material 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 material to ensure both sides are level.
 3. Attach mixing tip and expel a mixer's length of material.
 4. Apply material to substrate and mate the parts within the working time of the gap filler. Clamp in position until material reaches handling strength.
- **Meter/Mix/Dispense Equipment**

Contact your Parker Lord representative if assistance is needed with selecting and using equipment.

Curing – Allow material to cure for 80 minutes at room temperature (25°C) or for 60 minutes at 100°C. This time-at-temperature profile refers to the time the material should be allowed to cure once it reaches the target temperature. Allowance should be made for oven ramp rates, parts with large thermal mass and other circumstances that may delay material reaching the target temperature.

Typical Properties*

	UR-3000 Resin	UR-3000 Hardener	Mixed
Appearance	Blue Paste	White Paste	Light Blue Paste
Viscosity, cP @ 25°C 2.4/sec Shear Rate	140,000	140,000	140,000
Specific Gravity	2.4	2.7	2.5
Working Time**, minutes @ 25°C 0.25/sec Shear Rate	–	–	14

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

**Time to double viscosity.

Typical Cured Properties†	
Thermal Conductivity, W/m·K Hot Disc Transient Method, ISO 22007-2	3.2
Hardness Shore A, ASTM D 2240	92
Lap Shear Strength, MPa (psi) Bare Al, ASTM D 1002	2.5 (362.6)
180° Peel Strength, gf/cm PET, ASTM D 903	850
Volume Resistivity, ohm-cm ASTM D 257	1 x 10 ¹³
Dielectric Strength, kV/mm (V/mil) ASTM D 149	15 (381)

†Data is typical and not to be used for specification purposes. Cure schedule of 60 minutes in 100°C oven.

Shelf Life/Storage:

Shelf life is six months for CoolTherm UR-3000 resin and four months for CoolTherm UR-3000 hardener when stored upon receipt at 28°C or lower in original, unopened container. Cartridges should be stored tip down.

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.

Values stated in this document 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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