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PC520 Structural Epoxy Adhesive

TECHNICAL DATA SHEET 933

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DESCRIPTION

PC 520 is a low temperature curable 1 part structural epoxy adhesive. Its high strength and durability make the product particularly useful for demanding bonding applications requiring very high performance properties. The product has very good adhesion to many metals, ceramics and thermosetting plastics. PC 520 can be cured at temperatures lower than typical single part epoxies. The product has been formulated to maintain high performance properties above its cure temperature.

FEATURES

- High Performance Structural Adhesive
- High Shear and Impact Strength
- Excellent Adhesion
- High Durability
- Low Temperature Cure

TYPICAL UNCURED PROPERTIES

	PC520
Color	Gray
Viscosity, K cps	Paste, ~ 200

CURING

PC 520 can be cured using a variety of heat cycles. Typical ones include:

Glue Line Temperature °C	Time (Minutes) at Glue Line Temperature For Full Cure
100	60
125	45
150	30

Actual time to cure will depend on several factors, which will effect the time for the glue line to reach temperature. These include:

- Mass of the part to be heated- larger parts will require longer time for the glue line to reach temperature.
- Thermal conductivity of the part being heated- non-metals will require longer curing times to transfer heat to the glue line.
- Size and efficiency of the curing oven-larger ovens will require longer time to transfer heat to the glue line.

Because of the high reactivity of PC 520, material cured above 125°C should be under 2 mm thickness to prevent porosity due to exotherm from curing.

TYPICAL CURED PROPERTIES

(Typical properties values approximate)

Appearance	Gray, hard solid
Durometer	80 D
Temperature Range of Use	-60°C through 150°C
CTE	50 ppm
Tg	135°C
Lap Shear Strength (to 2024 T3-Al)	>20 MPa

Under low stress conditions or for short exposure times, the upper temperature exposure will be higher.

USAGE

Because of the high reactivity of PC 520 the product must be stored frozen to maximize its shelf life. Prior to use, PC 520 should be thawed at room temperature. Typically a 30 cc syringe of PC 520 will reach ambient temperature in 1-2 hours after removal from the freezer.

When thawed the product will have a pot life of approximately 12 hours @ 25°C.

PC 520 is best applied through a 14 gauge or larger dispenser tip onto the surface to be bonded or sealed. Sufficient product should be applied to provide full coverage to the bond area.

STORAGE AND HANDLING

Storage	<-40°C
Shelf life	12 months @ -40°C

All values are considered typical based on tests believed to be accurate. Polysciences, Inc. may change the data as appropriate.

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