

Technical Data Sheet

Chemtools® Pty Ltd | Ph: 1300 738 250 (+61 2 9833 9866) | Unit 2, 14 – 16 Lee Holm Road ST MARYS NSW 2760
Safety Data Sheets, product photos, and other information can be obtained by visiting www.chemtools.com.au



Rapidstick™ PCT-6000 Polyurethane Potting Compound

PART NUMBER	COLOUR	AVAILABLE SIZE*
PCT-6000BK-400G	Black	400g 1:1 Dual Cartridge
PCT-6000BK-1KG	Black	1Kg (contains 500g Part A and 500g Part B)

*Available sizes may change without notice.

DESCRIPTION

Rapidstick™ PCT-6000 Polyurethane Potting Compound is a two-component thermoset plastic offering good impact and chemical resistance with excellent resistance to harsh, environmental conditions. It can be used on dissimilar materials and is ideal for delicate components, including ferrites, as well as larger components with high thermal expansion rates. The moisture-proof, elastomeric compound retains a high level of primerless adhesion with maximum reliability after cure, setting to a soft, flexible, and rubbery state, with continued resistance to abrasion.

PCT-6000 consists of a base resin with an isocyanate agent, which, upon mixing, produces an exothermic reaction to promote room temperature curing. It bonds extremely well to most substrates, insulating electronic parts such as printed circuit boards, transformers, coils, resistors, capacitors, solenoids, and surface mount components. Sanding can be achieved after cure if required.

Recommended bonding surfaces include, but are not limited to:

Aluminium	Stainless Steel	ABS	PVC	Polyurethane	Composites
Wood	Glass	Concrete	Thermoplastics	Thermosetting Plastics	

SURFACE PREPARATION

Where possible, clean the surface by solvent-wiping any deposits of heavy grease, oil, dirt, or other contaminants. Cleaning may also be performed with industrial cleaning equipment such as vapor phase degreasers or hot aqueous baths. If working with metal, abrade or roughen the surface to significantly increase the microscopic bond area and ensure bond strength.

For electronic applications, surface preparation is crucial to ensure proper adhesion and protection of the components. It is recommended that the general guidelines below are followed prior to application:

- Clean the surface thoroughly with flux remover or solvent such as isopropyl alcohol to remove any dirt, dust, oil, or other contaminants that may affect the adhesion
- Ensure that the electronic components are fully dry and free of any moisture. Moisture on the components can affect the curing process and the strength of the bond

It is important to follow the steps above for surface preparation, as different types of potting compounds may have different requirements for electronic applications. It is equally as important to ensure that the electronic components are compatible with the potting compound being used.

PRE-APPLICATION MIXING

1:1 Cartridge

No pre-mixing is required.

2-Part Kit

1. In a clean mixing container, dispense and measure equal amounts of Part A and Part B.
2. Mix the two components together thoroughly using a mixing tool such as a paint stirrer or a spatula, scraping down the sides and along the bottom of the container to ensure all material is combined evenly.
3. Continue mixing until both parts are fully combined and completely homogeneous with no streaks.

Off-Ratio Mixing: Rapidstick™ PCT-6000 is designed in such a way that off-ratio mixing between 0.8:1 and 1.2:1 will not affect the final properties of the bond performance*.

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*Aluminium / Aluminium. According to ASTM D1002, results show that there are only minor changes in the lap shear strength and curing properties of the adhesive when mixed off-ratio.

APPLICATION

1:1 Cartridge

1. Open the cartridge tip and attach the mixing nozzle, or attach to a pneumatic dispensing system.
2. Burp the cartridge by squeezing out some material until dispensed uniformly with no air bubbles present.
3. Apply into the area to be potted. Be sure to work quickly, as the compound will begin to cure and harden within minutes.

2-Part Kit

1. Once fully mixed following the steps under **Pre-Application Mixing**, pour or apply to the desired area.
2. Be sure to work quickly, as the compound will begin to cure and harden within minutes.
3. Allow the mixture to fully cure for 24 hours before applying any additional layers, or using the finished product.

COVERAGE

CARTRIDGE TYPE	POLYURETHANE ADHESIVE COVERAGE CHART						BOND LINE COVERAGE ↓
	BEAD SIZE (ROUND) VS APPROX. BOND LINE COVERAGE PER CARTRIDGE						
1:1 MIX RATIO	1/8 inch 3.175 mm	1/4 inch 6.35 mm	3/8 inch 9.525 mm	1/2 inch 12.70 mm	5/8 inch 15.875 mm		
50ML	12,649.2	3,149.6	1,397	787.4	508		mm
	126.50	31.50	13.97	7.87	5.08		cm
	1.26						M
200ML	55,575.2	13,868.4	6,197.6	3,454.4	2,209.8		mm
	555.76	138.68	61.98	34.55	22.10		cm
	5.56	1.39					M
400ML	101,015.8	25,273	11,268	6,299.2	4,038.6		mm
	1,010.16	252.73	11.27	62.99	40.39		cm
	10.10	2.53					M

TECHNICAL DATA

Colour

- Part A
- Part B
- Mixed

Beige
Black
Black

Viscosity (@ 25°C Brookfield)

- Part A
- Part B
- Mixed

30 – 60,000 cps
70 – 140,000 cps
High Viscosity Paste

Mix Ratio (by Volume)

1:1

Mix Ratio (by Weight)

1:1

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Working Time	4 – 6 minutes
Fixture Time	12 - 15 minutes
Functional Cure	20 – 30 minutes
Full Cure	24 hours
Service Temperature	-40°C to +121°C

CURED ADHESIVE PROPERTIES

T-Peel Strength	65 - 75 Lbs per Linear Inch	ASTM D1876
Tensile Elongation	200%	ASTM D638
Shore Hardness	65 - 70D	ASTM D2240
Dielectric Strength	350 volts/mil	ASTM D149
Cure Shrinkage	0.0014 in./in.	ASTM D2566
Tear Shrinkage	400 Lbs per Linear Inch	ASTM D624
Tensile Strength	2200 psi	ASTM D638

LAP SHEAR STRENGTH DATA (ASTM D1002) AFTER 7 DAYS @ 25°C

Result: Lap Shear Strength figures are lower for the plastic surfaces due to substrate failure which means substrate is failing before the adhesive bond.

Substrates	Lap Shear Strength & Failure Mode
Steel / Steel	2,050 psi
Aluminium / Aluminium	2,225 psi
Glass / Glass	4,100 psi
SMC / SMC	1,200 psi
ABS / ABS	1,250 psi
Concrete / Concrete	1,940 psi
Galvanized Metal / Metal	2,840 psi
GBS / GBS	2,750 psi

FIRST AID & SAFETY PRECAUTIONS

Always refer to Safety Data Sheet/s before use. Use proper Personal Protection Equipment. Do not get in eyes, on skin, or on clothing. Use with adequate ventilation. Avoid breathing fumes. Keep away from heat, sparks, open flames, and hot surfaces. This product may produce adverse health conditions, ranging from minor skin irritation to serious systemic effects. It should not be used, stored, or transported until the handling precautions and recommendations as stated in the Safety Data Sheet/s for this product have been fully understood by all persons who will work with the material.

STORAGE & TRANSPORT

Refer to Safety Data Sheet/s for recommendations. As a general precaution, keep containers tightly closed, protect from sunlight, and do not expose to temperatures exceeding 50°C. Containers should be secured and stored upright during transit.

DISCLAIMER

Every effort has been made to ensure the information provided in this document is accurate at the date of publication. Chemtools® Pty Ltd expressly recommends that the user make his/her own assessment to determine the suitability of the product for its intended purpose prior to application. Chemtools® Pty Ltd shall not be responsible for loss, damage, or injury, resulting from the reliance upon, or failure to adhere to, any recommendations or information contained herein; nor from abnormal use of the material; nor from any hazard inherent in the nature of the material.