

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™ 8-420 Methacrylate Structural Adhesive

PART NUMBER	AVAILABLE SIZE*
8-420-50	50ml 10:1 Dual Cartridge
8-420-490	490ml 10:1 Dual Cartridge

*Available colours and/or sizes may change without notice.

DESCRIPTION

Chemtools® Rapidstick™ 8-420 Methacrylate Structural Adhesive is a versatile and convenient 10:1 dual component, 100% reactive, low shrinkage, high elongation formula, used for bonding an expansive array of metals, thermoplastics, thermosets, and composite assemblies, without the need for surface primers or conditioners.

8-420 offers an extremely strong, flexible bond, with excellent peel and shear resistance, high fatigue endurance, and high impact strength - at both low and elevated temperatures. Its non-sagging and thixotropic formulation ensures that bonding can be undertaken quickly and from multiple angles within a working time of 3 to 4 minutes, achieving 80% ultimate strength in as little as 18 minutes.

This innovative new generation high grade blend of low-odour, non-flammable, and non-carcinogenic monomers further extends the progression into our Responsible Chemistry program.

8-420 is commonly used for:

- Bonding locators to ACM without read-through or witness marks
- Bonding mild steel frames to FRP, assuring high vibration and impact resistance
- Bonding fasteners to GRP and FRP moulded parts
- Bonding and laminating composite panels
- Composite and metal fabrication for seating construction

COMPATIBLE SUBSTRATES

Compatible substrates include, but are not limited to:

Aluminium	UPVC	Polycarbonate	Acrylic	Fibreglass	PBT	RIM
ABS	FRT	Polyurethane	Epoxy	Zinc Coatings (Primed)	Terracotta	
FRP	Polyesters	Gelcoats	Styrene	Stainless Steel	Carbon Steel	
Mild Steel	GRP	Granite	Urethanes	Epoxy Laminates	Vinyl Esters	
Marble	PPO	Nylon	Galvanised Steel	Thermoset Plastics	Wood	

DIRECTIONS

Place the dual cartridge into a mixing gun, following manufacturer instructions. Remove the tip cap from the front of the cartridge and install the preferred 10:1 static mixing nozzle.

Dispense sufficient adhesive and apply to one surface. Assemble components carefully, clamping if required. Remove any excess adhesive prior to cure using a suitable cleaner.

Allow the adhesive sufficient time to achieve handling strength before moving or unclamping components. The adhesive will remain slightly tacky on open surfaces for 24 hours unless speed cured at 80°C for 20 minutes.

ABOUT THE CURING CYCLE: Once both components are mixed, the working time becomes the period whereby the adhesive remains fluid and is easily transferrable between two or more surfaces. Temperature, volume, and substrate have a direct effect on the length of this period, as the material cures by an exothermic reaction. Higher temperatures and larger volumes speed the reaction, causing a reduction in open and cure time. Lower temperatures and smaller volumes slow the reaction time, extending both the open time, and ultimate full cure time.

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COVERAGE GUIDE

CARTRIDGE TYPE	MMA 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	1,126.8	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

ADHESIVE PROPERTIES (UNCURED)

Viscosity (Brookfield T Bar)	250,000 – 300,000 Thixotropic
Mix Ratio (by Volume)	10:1
Cure System	Non-Peroxide
Working Time	3 – 4 minutes
Fixture Time	7 – 10 minutes
Cure Time at 80% Strength	18 minutes
Shelf Life	12 months from the date of manufacture

ADHESIVE PROPERTIES (CURED)

Gap Fill	3 mm
Temperature Range	-55°C to +120°C
Shore D Hardness	60
Tensile Strength at Break (ISO 527 1A)	10.9 Nmm ²
% Elongation at Break (ISO 527 1A)	104%
% Elongation SAF* Method	>200%
UV Stability	Excellent

LAP SHEAR STRENGTH PERFORMANCE OF CURED MATERIAL (ASTM D1002)

TESTED SUBSTRATE	AVERAGE OVER 16 TESTS	STRUCTURAL NOTES
Aluminium (unprepared)	14.36 Nmm ²	
Polycarbonate	5.5 Nmm ²	Substrate Failure
HIPS	5.2 Nmm ²	Substrate Failure
Stainless Steel	15.33 Nmm ²	
Mild Steel	18.37 Nmm ²	
GRP & FRP (Results were the same)	5.8 Nmm ²	Substrate Failure
ABS	4.77 Nmm ²	
Nylon	4.96 Nmm ²	

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SHELF LIFE

12 months from the date of manufacture in accordance with the following conditions:

Store continuously between 13°C and 23°C. Long term exposure above 23°C will reduce the shelf life of these materials. Prolonged exposure of activators, including cartridges which contain activators, above 37°C quickly diminishes the product's reactivity and should be avoided. Shelf life can be extended by refrigeration (8°C - 12°C). Do not freeze.

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. Store in a cool, dry place at room temperature (5 – 40°C). Do not return any unused material to its original container. 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.