



TECHNICAL DATA SHEET

A NEW FORCE IN CHEMICAL MANUFACTURING

AEROSOLS | WELDING CHEMICALS | ADHESIVES & THREADLOCKERS | ANTI-SEIZE & GREASES | CLEANING CHEMICALS & SOLVENTS | ELECTRICAL & ELECTRONICS

Issued: May 2020

Rapidstick™ 8-420 Structural Adhesive

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

PRODUCT 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
ABS	FRT	Polyurethane	Epoxy	Zinc Coatings (Primed)	RIM
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



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DIRECTIONS (READ LABEL BEFORE USE)

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.

TECHNICAL DATA

LIQUID PROPERTIES:

Resin	Low Odour Methacrylate
Viscosity (Brookfield T Bar)	250,000 to 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

CURED PROPERTIES:

Gap Fill	3 mm
Temperature Range	-55°C to +120°C
Shore Hardness	60 Shore D
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



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TECHNICAL DATA (CONT'D)

LAP SHEAR 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	5.8 Nmm ²	Substrate Failure
ABS	4.77 Nmm ²	
Nylon	4.96 Nmm ²	
FRP	5.8 Nmm ²	Substrate Failure

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



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FIRST AID & SAFETY PRECAUTIONS

Please refer to Safety Data Sheet (SDS) before use. Use with adequate ventilation and avoid breathing fumes. Avoid contact with eyes and skin. 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 (SDS) for this product have been fully understood by all persons who will work with the material.

STORAGE

Keep out of reach of children. Store in a sealed container in a cool, dry place (between 8°C - 27°C). Do not return any unused material to its original container.

Containers must be secured and stored upright during transit.

DISCLAIMER

Chemtools® has made every effort to ensure the information provided in this Technical Data Sheet is accurate at the time of publication. Chemtools® 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 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.

FURTHER INFORMATION

Please visit Chemtools® online at www.chemtools.com.au for product photos, marketing materials, Technical Data Sheets, Safety Data Sheets, contact details, and other company/business related information.