



PRODUCT DESCRIPTION

Extreme 400 Series are 4:1 meter-mix, methyl methacrylate-based, structural adhesives formulated to bond engineered thermoplastics, thermosets, composites, and metal elements together in any combination. They have excellent adhesion to as-received metal surfaces, thermoplastics such as PVC, ABS, polycarbonate and acrylic, and composites such as SMC, FRP, plus other reinforced plastic materials and hard woods.

Extreme 400 Series forms tough, strong bonds without surface preparation, primers, or chemical wipes to all surfaces. **Extreme 400 Series** have good durability, environmental resistance and excellent solvent resistance to many common industrial lubricants, water, high humidity, UV energy and weathering. **Extreme 400 Series** are made medium viscosity for easy dispensing and non-sag, and are formulated for 5 minute mixer tube life while fixturing on all surfaces in 20 minutes or less. The bonds have high tensile strength while maintaining good peel and impact properties on all surfaces. **Extreme 400 Series** cures tack free on the fillets within 12 minutes and can be sanded or machined in 30 minutes. The clear formulation provides transparent bond lines on both polycarbonate and acrylic in thin sections and shadow-free fillets for back lit signs.

PROCESS & PERFORMANCE BENEFITS

Primerless	Room Temperature Cure
As received bonding	Convenient 4:1 mix ratio
UV yellowing resistant	medium viscosity and highly thixotropic
Bonds diverse substrates	High tensile and toughened impact

UNCURED PROPERTIES

	<u>Part A</u>	<u>Part B</u>	
Viscosity, cps Spindle TB, 2.5rpm).	.180,000	120,000	static
Viscosity, cps Spindle TB, 20 rpm	50,000	45,000	dispense
Density (lbs/gal).....	8.07	8.35	
Color.....	.Clear or White	amber	
Flash Point (LCC).....	51°F	51°F	
Mix Ratio (wt & volume).....	4 : 1		

CURING PROPERTIES*

Mixed Viscosity, cps (#TE 2.5rpm).....	150,000
Mixed Density (lbs/gal).....	8.12
Working Time.....	5 – 6 minutes
Fixture Time.....	<20 minutes

* Curing properties are highly dependent on the specific application and the materials being bonded. The ranges used here are based on representative examples of typical applications.



CURED PROPERTIES

Color	clear or white
Hardness.....	60 D
Elongation.....	40 % estimated
Operating Temp.....	-40° - 225°F

BOND PERFORMANCE (FULL STRENGTH AFTER 72 HOURS CURE.)

TENSILE SHEAR (ASTM D1002)

Fiberglass/Fiberglass	Stock Failure	ABS/ABS.....	Stock Failure
Steel/Steel.....	4900 psi	Alum/Aluminum.....	4500psi
PVC to PVC.....	stock failure,	PVC to aluminum.....	stock failure
Nylon to Nylon.....	750psi	Polycarb to Polycarb ...	688psi stock failure
Acrylic to Acrylic.....	635psi stock failure		

All above surfaces are as received condition with no surface preparation. Q Panel substrates PEEL STRENGTH Steel, abraded (ASTM D1876).....>50pli with 5 mil shims,

IMPACT STRENGTH (GMC Auto Side Impact test*)

Steel/Steel.....	>20 ft-lbs/in ²
Alum/Aluminum.....	> 18 ft-lbs/in ²

*GMC test uses a 1kg hammer to produce a maximum impact of 28ft-lbs /In²

CHEMICAL RESISTANCE

Extreme 400 Series exhibit good resistance to commonly encountered service environments including weathering and chemicals. Resistance to specific chemicals must be tested by end-user to ensure the adhesive is compatible to substrate and environment.

PACKAGING & SHELF LIFE

Extreme 400 Series should be stored in a cool place when not used for an extended period of time. Do not freeze. Shelf life of this product is 12 months @ 23°C.

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