Technical Data

CornerSealant Adhesive

DESCRIPTION Tower Industries CornerSealant Adhesive is a two-part methacrylate adhesive designed for structural bonding of composite assemblies. Combined at a 10:1 ratio, CornerSealant has a working time of 8 to 12 minutes and achieves approximately 75% of ultimate strength in 25 to 30 minutes at 74°F (23°C). CornerSealant requires virtually no surface preparation and is supplied in ready-to-use 380mL cartridges to be dispensed as a non-sagging gel.

CHARACTERISTICS	**Room-Temperature Cure**	
	Working Time[2]	8-12 minutes
	Fixture Time[3]	25-30 minutes
	Operating Temperature[7]	-67°F - 250°F (-55°C - 121°C)
	Gap Filling	0.30 in. to 0.375 in. (0.75mm to 10mm)
	Mixed Density	7.80 lbs/gal (0.94 g/cc)
	Flash Point	51°F (11°C)

CHEMICAL RESISTANCE	**Excellent Resistance to:**	**Susceptible to:**
	Acids & Bases (3-10pH)	Polar Solvents
	Salt Solutions	Strong Acids & Bases
		Hydrocarbons (including Gasoline & Diesel Fuel)

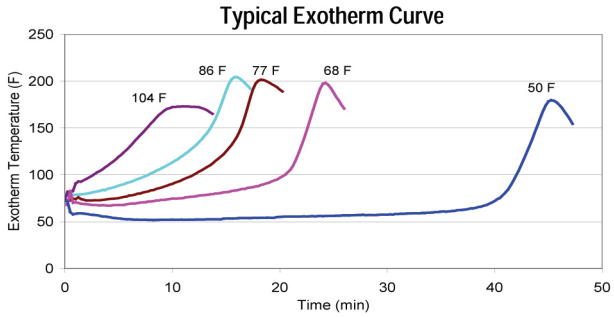
PHYSICAL PROPERTIES		**Adhesive**	**Activator**
(uncured)	Viscosity, cp (x's 1000)	135-175	40-60
Room Temperature	Density, lb/gal (g/cc)	7.70 (0.96)	8.65 (1.04)
	Mix Ratio by Volume	10.0	1.0
	Mix Ratio by Weight	8.9	1.0
	Mixer Recommendation:	Cartridge, 380mL	MC 10:24

MECHANICAL PROPERTIES	**Tensile (ASTM D638)**	
(cured)		
Room Temperature	Strength, psi (Mpa)	2,000 – 2,500 (13.8 – 17.2)
	Modulus, psi (Mpa)	30,000 – 40,000 (207 – 276)
	Strain to Failure (%)	100 – 140

RECOMMENDED FOR:			
	ABS	PVC	Styrenics
	Acrylics	Polyesters (including DCPD modified)	Urethanes (general)
	FRP		Vinyl Esters
	Gelcoats[6]		

LAP SHEAR (ASTM D1002)	Cohesive Strength, psi (Mpa)	1,500 – 2,000 (10.3 – 13.8) at 0.03 in. gap

TYPICAL EXOTHERM CURVE
for CornerSealant Adhesive in a 10gm Mass at Various Ambient Temperatures



HANDLING & APPLICATION

CornerSealant Adhesive is flammable. Contents include Methacrylate Ester. Keep container(s) closed after use. Wear gloves and safety glasses to avoid skin and eye contact. Wash with soap and water after skin contact. In case of eye contact, flush with water for 15 minutes and get medical attention. Harmful if swallowed. Keep out of reach of children. Keep away from heat, sparks, and open flames. Reference the Material Safety Data Sheet for more complete safety information.

PLEASE NOTE: Because of the rapid curing features of this product, large amounts of heat are generated when large masses of material are mixed at one time. The heat generated by the exotherm resulting from the mixing of large masses of adhesive can result in the release of entrapped air, steam, and volatile gases. To help prevent this, use only enough material as needed for use within the working time for the product and confine gap thickness to no more than 0.375" (10mm). Questions relative to handling and applications should be directed to Tower Industries at 330-837-2216.

DISPENSING ADHESIVE

CornerSealant Adhesive may be applied manually using the pre-measured 380mL cartridges and the accompanying static mixing tips. Hand-held guns with which to dispense the adhesive are also available. To assure maximum bond strength, the surfaces must be mated within the specified working time. Use sufficient material to ensure the joint is completely filled when parts are mated and clamped. All adhesive application, part positioning, and fixturing should occur *before* the working time of the mix has expired. After indicated working time, the parts must remain undisturbed until the fixture time is reached. Clean up is easiest *before* the adhesive has cured. Cleaners and degreasers containing Citrus terpene or N-methyl pyrolidone (NMP) may be used for best results. If the adhesive is already cured, careful scraping followed by a solvent wipe may be the most effective method of clean up.

EFFECT OF TEMPERATURE

Application of CornerSealant Adhesive at temperatures between 65°F (18°C) and 80°F (26°C) will ensure proper cure. Temperatures below 65°F (18°C) will slow cure speed; above 80°F (26°C) will increase cure speed. The viscosities of the Adhesive and the Activator are affected by temperature. To ensure consistent dispensing, adhesive and activator temperatures should be reasonably constant throughout the year.

STORAGE AND SHELF LIFE

Shelf life of CornerSealant Adhesive is 10 months from the date of manufacture.
Shelf life is based on continuous storage between 54°F (12°C) and 74°F (23°C). Long-term exposure above 74°F (23°C) will reduce the shelf-life of this material. Prolonged exposure to temperatures of 98°F (37°C) and above quickly diminishes the reactivity of the product and should be avoided.
This product should never be frozen.

NOTES

1. *Tower Industries strongly recommends that all substrates be tested with the selected adhesive in the anticipated service conditions to determine suitability.*
2. *Working Time: The time elapsed between the moment that Part A (adhesive) and Part B (activator) of the adhesive system are combined and thoroughly mixed and the time when the adhesive is no longer usable. Times presented were tested at 74°F (23°C).*
3. *Fixture Time: Varies with bond gap and ambient temperature. At 74°F (23°C), CornerSealant Adhesive reaches lap shear values of approximately 500 and 1000 psi in 18 and 20 minutes, respectively, at a 0.030 in. (1.0mm) gap.*
4. *Resistance to chemical exposure varies greatly based on several parameters, including temperature, concentration, bondline thickness, and duration of exposure. The listed chemical resistance guidelines assume long-term exposures at ambient conditions.*
5. *In a typical bond line, exotherm temperatures will be lower than the temperatures shown.*
6. *Urethane-modified super-weathering gelcoats may require an alternate adhesive. As with all substrates, these gelcoats should be tested with the selected adhesive system to determine suitability.*
7. *All adhesives soften with temperature and should be evaluated at expected conditions.*
8. *All information on this data sheet is based on laboratory testing and is not intended for design purposes. Tower Industries makes no representations or warranties of any kind concerning this data. Due to variance of storage, handling, and application of these materials, Tower Industries cannot accept liability for the results obtained.*