

Threadlocker T70

Technical Data Sheet

GENERAL INFORMATION:

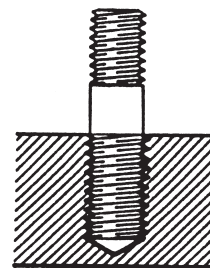
SAF-T-LOK anaerobic adhesive/sealants are a specialized series of single component, solvent free compounds that are individually formulated for locking, sealing, retaining and bonding metal parts and assemblies.

Stable in the presence of air, these products cure when placed between two mating parts where metal is present and oxygen is excluded. They form a resilient, vibration-proof, polymer shim between the parts. **SAF-T-LOK** products provide the user with additional performance characteristics, including not only fluid sealing, but resistance to corrosion or galvanic attack of the mated parts, as well as solvent resistance. Furthermore, after curing **SAF-T-LOK T70** provides permanent assembly.

PRODUCT DESCRIPTION:

SAF-T-LOK T70 is a high strength locking and sealing grade, developed for stud locking, and similar permanent applications. This product satisfies the requirements of MIL spec. S-46163 Type I Grade K as well as ASTM D5363-AN0221.

SAT-T-LOK T70 studlocking sealant grade was developed for use where specific viscosities are needed and high strength threadlocking is required. This product satisfies many application requirements by providing high strength. Selection of the proper product thickness assures the sealing of parts as well as the most reliable reproducible threadlocking strength possible.



BENEFITS:

IMPROVED EQUIPMENT RELIABILITY

Improves reliability by providing more holding power under vibration than lock screws and lock washers etc.

Offers precision torque for the exact degree of holding required.

Also provides substantial cost savings over mechanical locking methods.

APPLICATION EASE

No mixing (one part adhesive), wide variety of application methods designed to suit your specific needs.

Low odor product for a safe work place, and easy clean-up after the job is completed.

PHYSICAL CHARACTERISTICS:

T70

Uncured

MIL-S-46163	Type I: Grade K
Resin	Dimethacrylate
Color (Fluorescent)	Red
Viscosity (Thixotropic) Brookfield LVT	520 cps. @ 12 rpm
Specific Gravity	1.10 gm/cc
Flash Point	>300°F (>100°C)
Temperature Range	-65° to 350°F (-54°F to 177°C)
Toxicity	Low
Corrosivity	None
Storage Stability	12 mo. @ <80°F
Gap Filling	.002 - .008 in.
Thread Filling	1/4" to 3/4"
Chemical Resistance	Excellent

Cured

Steel

Cadmium

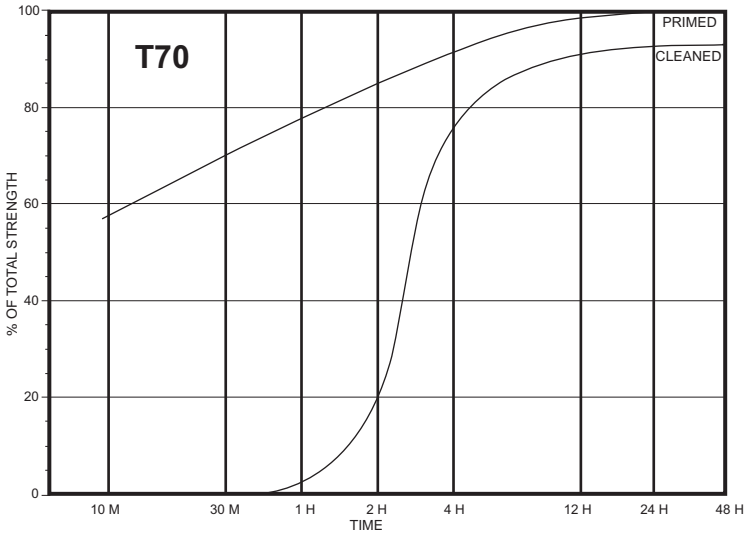
Zinc

Aluminum

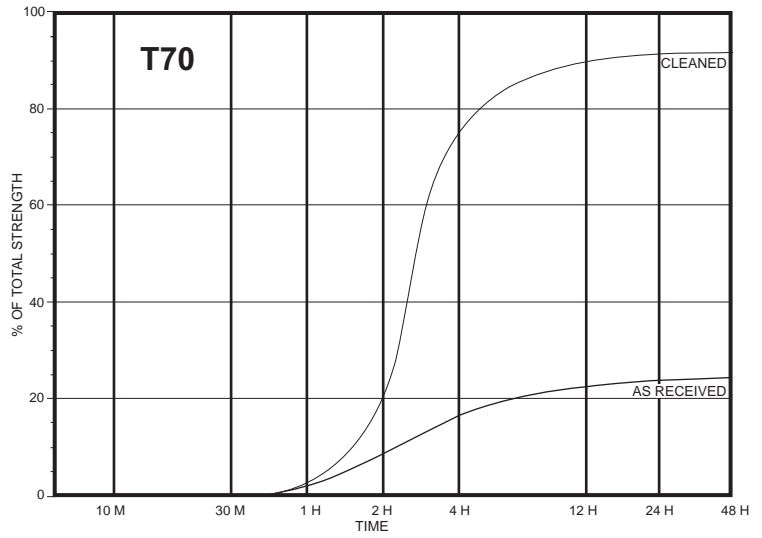
Shear Strength (psi)	3500			
Locking Torque: (24 hrs. @ 70°F on 3/8" x 16, Class 2)	*Strength reduction up to 50% on "As Received" fastener			
	Free Spinning (per MIL-S-46163) Cleaned			
	Breakaway	300 in.lbs. 33.9 Nm	100 in.lbs. 11.3 Nm	90 in. lbs. 10.2 Nm
	Prevailing	285 in.lbs. 32.2 Nm	220 in.lbs. 24.9 Nm	200 in.lbs. 22.6 Nm
	Pre-torque (220 in.lbs.) "As Received"			
	Breakaway	275 in.lbs. 31.1 Nm	230 in.lbs. 26.0 Nm	230 in.lbs. 26.0 Nm
Cure Speed: (@70°F on 3/8" x 16, Class 2) Free Spinning	As Received			
	Fixture	60 min	30 min	30 min
	Full	8 hrs	6 hrs	12 hrs
	Cleaned	See Rate of cure plots on following page		
	Primed			
	See Rate of cure plots on following page			
	Fixture	<5 min	<5 min	<5 min
	Full	2 hr	30 min	1 hr
Heat Aging (1000 Hours at 300°F per MIL-S-46163)	Breakaway			
		420 in.lbs. 47.5 Nm		
	Prevailing			
		489 in.lbs. 55.2 Nm		
Hot Strength (2 Hours at 300°F per Mil-S-46163)	Breakaway			
		266 in. lbs. 30.0 Nm		
	Prevailing			
		294 in.lbs. 33.2 Nm		

FACTORS AFFECTING CURE RATE AND STRENGTH

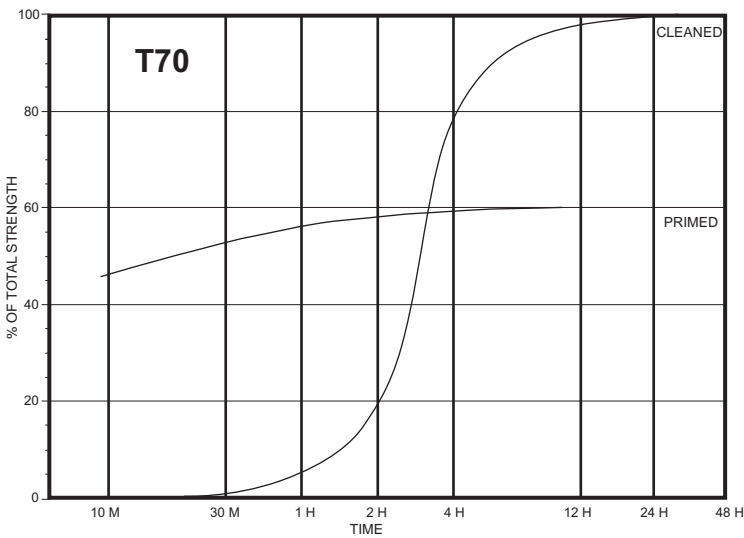
Graph I: Rate of cure on Grade 5 Steel 3/8 x 16 UNC Fasteners



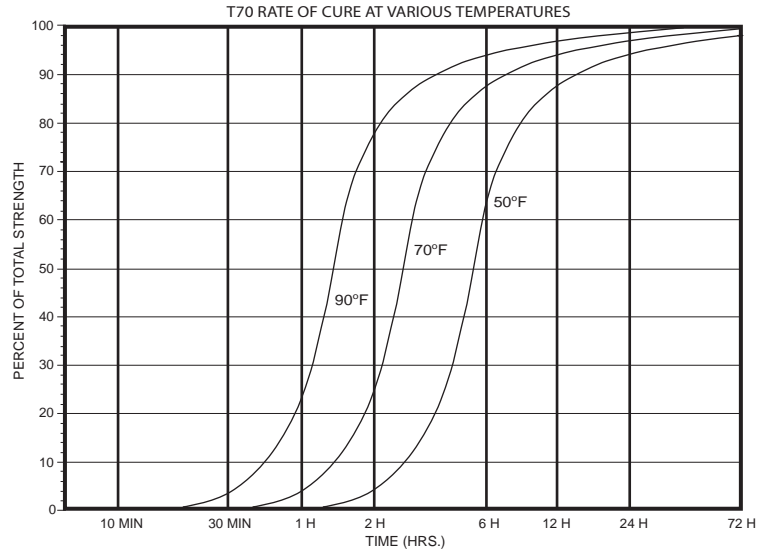
Graph IV: Rate of cure vs. oily "As Received steel fasteners



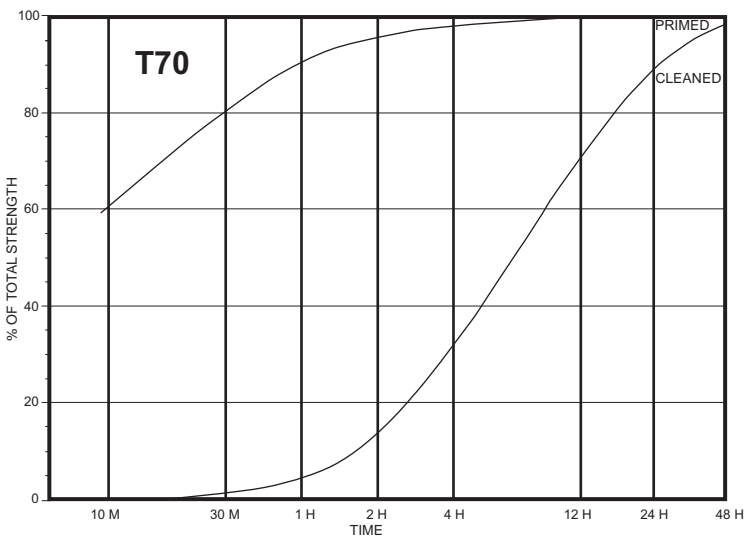
Graph II: Rate of cure on Cadmium plated 3/8 x 16 UNC Fasteners



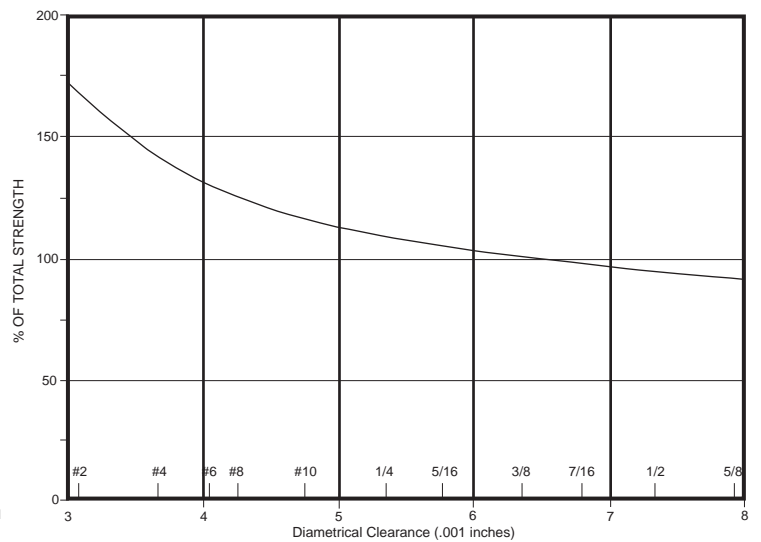
Graph V: Rate of cure various temperatures



Graph III: Rate of cure on Zinc plated 3/8 x 16 UNC Fasteners



Graph VI: Percent of reported strength vs. fastener diameter



TORQUE TENSION RELATION:

SAF-T-LOK threadlockers generally increase bolt tension. That is for a given torque on a bolt a greater tension will result with the use of the threadlocker, due to the lubricating qualities of the liquid. They also provide a more consistent relationship between tension and torque than is provided by “as received” fastener. Tension in the fastener can be controlled by regulating the applied torque. The relationship between tension and torque can be expressed as follows:

$$T = CDF$$

- T = Torque (Nm)
- C = Constant for specific nuts and bolts used
- D = Bolt diameter (m)
- F = Tension or clamping force (N)

“C” values for various metals follow:

Steel	.16	Phosphate	.14	Cadmium	.14
Zinc	.18	Stainless	.22	Aluminum	.17

If tension of a bolt is critical, testing with the precise method and fastener should be considered.

SOLVENT RESISTANCE:

Fastener or piping connections to which T70 has been applied and allowed to cure were immersed in various fluids at elevated temperatures. A reduction in strength frequently occurs. As a general guide the following percent of strength was obtained after 30 days at 188°F or (87°C):

Air Reference @ 188°	100 %
Motor oil (% of Ref)	137
Water (% of Ref)	153
Glycol / Water (% of Ref)	100
Transmission fluid (% of Ref)	126
Gasoline (% of Ref)	50
Skydrol (% of Ref)	70

IMPORTANT NOTICE: All statements and technical data contained herein are based on tests we believe to be reliable, but the accuracy of completeness thereof is not guaranteed. It is recommended that the buyer test this product to determine its suitability for his application before use. **SAF-T-LOK International Corporation** is not responsible for loss, claim or damages resulting from use of its products.