Technical Data Sheet

H.B. Fuller | Engineering Adhesives

77TL

77TL is a high strength anaerobic adhesive for locking and sealing thread connections and fitted parts. High viscosity allows larger tolerances assembling. Highly resistant to heat, corrosion, vibrations, water, gases, oils, hydrocarbons and many chemicals.

Technology / Base	Dimethacrylate Ester
Type of Product	Threadlocking Adhesive and Sealant
Components	One Component
Curing	Anaerobic with Secondary Heat Cure
Appearance / Color	Red
Consistency	Viscous Liquid

Features and Benefits

- Fluorescent UV Indicator
- Highly Resistant to Heat, Corrosion, Vibrations, Water, Gases, Oils, Hydrocarbons, and Many Chemicals
- High Strength
- Medium Viscosity

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Physical Property	Value	Condition/Method
Uncured Material Characteristics		
Viscosity	6000 to 8000 cPs	Brookfield at 25°C, Spindle 4, 20 rpm
Specific Gravity	1.12	
Flash Point	> 93°C	
Shelf Life	12 months unopened	
Storage Condition	8 to 28°C	
Gap Fill		
Set Time on Steel	15	
Full Cure Conditions	15 to 72 hours at 25°C	
Cured Material Properties		
Coefficient of Thermal Expansion	80 ppm/K	ASTM D696
Thermal Conductivity	0.1 W/mK	ASTM C177
Specific Heat	0.3 kJ/kgK	
Breakaway Torque	23 to 40 N-m	ISO 10964
Breakloose Torque	28 to 48 N-m	DIN 54454
Service Temperature	-55ºC to 150ºC	

Cure Speed At Various Temperatures			% of Room Temperature Strength
	25%	**50%**	**100%**
5°C	4 hrs	6 hrs	24 to 72 hrs
40°C	12 min	20 min	2 hrs

Cure Speed On Various Substrates			% of Room Temperature Strength
	25%	**50%**	**100%**
Steel	1 hr	2 hrs	15 to 72 hrs
Brass	3 hrs	5 hrs	20 to 72 hrs
Zn Dichromate	1 hr	2 hrs	15 to 72 hrs

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Physical Property		Value	Condition/Method
Heat Aging Testing			
3000 hrs at 120°C		60%	Room Temperature Strength
3000 hrs at 150°C		15%	Room Temperature Strength
Chemical Resistance Testing			
	Test Temperature	% of Room Temperature Strength	Condition
50% Water/50% Glycol	87°C	90%	1000 hours measured at room conditions
Unleaded Gasoline	22°C	100%	1000 hours measured at room conditions
Motor Oil	125°C	100%	1000 hours measured at room conditions
Brake Fluid	22°C	100%	1000 hours measured at room conditions
Acetone	22°C	95%	1000 hours measured at room conditions

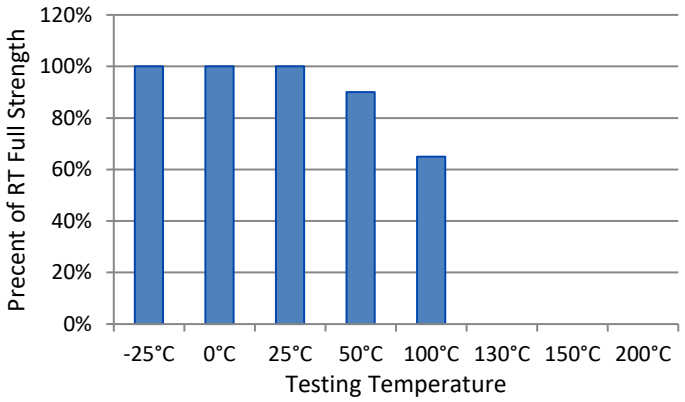
General Instructions

Surfaces to be bonded should be clean and dry and free of grease. Product should be applied in enough quantity to fill all engaged threads or gap. The product performs best in thin bond gaps. Very large gaps may create gaps that will affect the cure speed and overall strength. Good contact is essential. It is recommended to confirm compatibility of the product with all substrates prior to use. This product is not recommended for use with strong oxidizing materials. Where aqueous washing systems are used to clean the surfaces before bonding, these aqueous washes can affect the cure and performance of the adhesive. This product is not normally recommended for use on plastics, users must check compatibility of the product with such substrates.

Specifications

ASTM D-5363 AN 0211

Hot Strength (%RT strength, tested at temperature)



Storage

Products should be stored unopened in a cool, dry place out of direct sunlight. Products may be refrigerated for improved shelf life, but should be brought back to room temperature before use.

Curing Performance

The rate of cure will depend on environmental conditions and the substrates used. The gap of the bond line will affect set speed. Smaller gaps tend to increase set speed. Activators may be applied to further improve set speed, but may also impair overall adhesive performance.

Safety and Disposal

For complete safety and handling information, please refer to the appropriate Safety Data Sheets prior to using this product.

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