Product 268
High Strength Threadlocker Stick

April 2003

PRODUCT DESCRIPTION

LOCTITE® Product 268 High Strength Threadlocker Stick is a high strength version of anaerobic threadlocking material. It is supplied as a wax-like semi-solid, conveniently packaged in a self-feeding stick applicator. As with liquid anaerobic products, this material develops its cured properties in the absence of air when confined between close fitting metal surfaces. It achieves consistent strength and can be used on a variety of metal substrates. It is particularly well suited for applications where a liquid product may be too fluid to stay on a part or be difficult to apply. It stores easily and allows for direct contact to a threaded part during application to ensure even coverage.

TYPICAL APPLICATIONS

Prevents loosening and leakage of threaded fasteners. Particularly suitable for heavy duty OEM or repair applications such as on heavy machinery, transmissions, or construction equipment where resistance to extreme vibration and shock are required. Disassembly of parts assembled with this product is accomplished with heating the bonded area to >450°F. The unique semi-solid form allows the material to remain on parts until fully assembled.

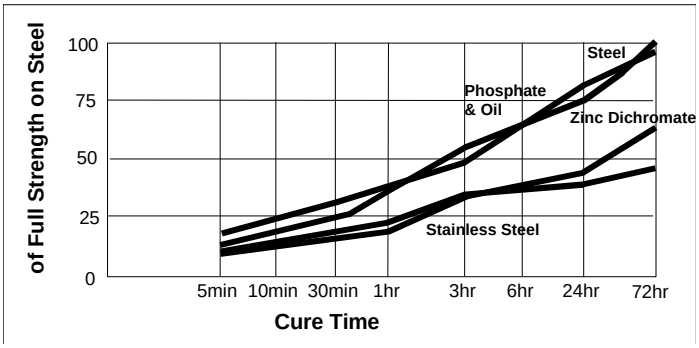
PROPERTIES OF UNCURED MATERIAL

	Typical Value
Chemical Type	Dimethacrylate Ester
Appearance	Red, Wax Consistency Semi-Solid, Fluorescent
Specific Gravity @ 25°C	1.07
Viscosity @ 25°C, mPa.s (cP)	Wax like Semi-Solid
Melting Point, °C (by DSC)	>100°C

TYPICAL CURING PERFORMANCE

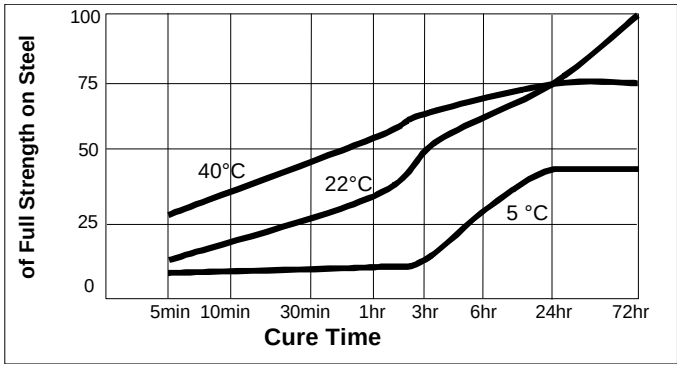
Cure speed vs. substrate

The rate of cure will depend on the substrate used. The graph below shows the break loose strength developed with time on 3/8 x 16 steel nuts and bolts compared to different materials and tested according to DIN 54454. All samples pre-torqued to 5 N.m. Product applied to bolts only.



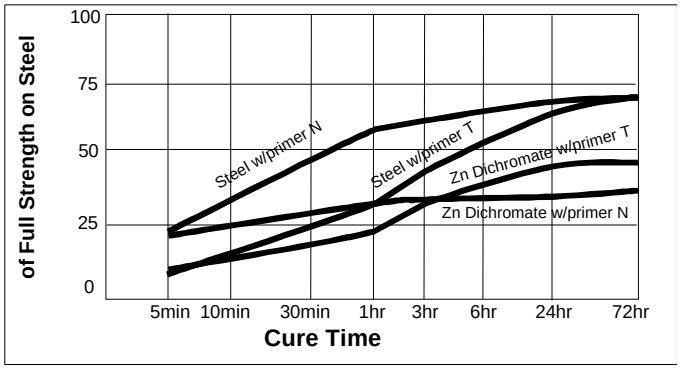
Cure speed vs. temperature

The rate of cure will depend on the ambient temperature. The graph below shows the break loose strength developed with time at different temperatures on 3/8 x 16 steel nuts and bolts and tested according to DIN 54454. All samples pre-torqued to 5 N.m. Product applied to bolts only.



Cure speed vs. activator

Where cure speed is unacceptably long, or large gaps are present, applying activator to the surface will improve cure speed. The graph below shows break loose strength developed with time using ACTIVATOR N and T on 3/8 x 16 Zinc Dichromate steel nuts & bolts and tested according to DIN 54454. All samples pre-torqued to 5 N.m. Product applied to bolts, Primer to nuts.



PERFORMANCE OF CURED MATERIAL

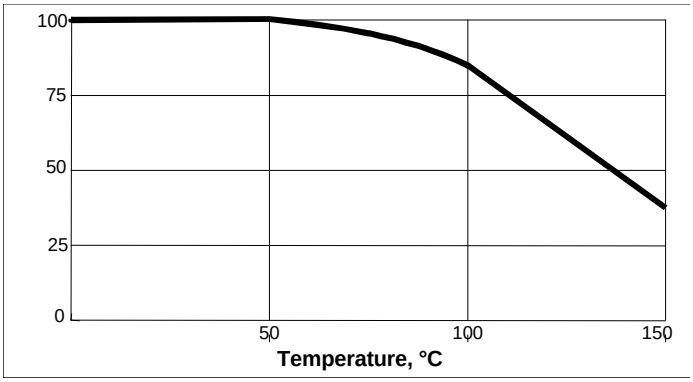
(After 72 hr at 22°C on degreased 3/8 x 16 steel nuts & bolts)		Typical Value	Range
Breakloose Torque, DIN 54454 (5), N.m		40.8	25 – 50
	(lb.in)	(360)	(220 – 440)
Typical Prevail Torque, DIN 54454, N.m		3.8	-
	(lb.in)	(33)	-
(After 72 hr at 22°C on degreased 3/8 x 16 steel nuts & bolts)			
Breakaway Torque, DIN 54454	N.m	23	14 – 29
(Unseated fastener)	(lb.in)	(202)	(125 – 257)
Typical Prevail (Unseated fastener)	N.m	34	-
	(lb.in)	(4)	-
(3/8 x 16 phosphate and oil bolt and std lubricity nut – as received)			
		Control (no product)	With Product
Lubricity, K-Factor, 5,000 lbs tension		0.18	0.21
6,000 lbs tension		0.19	0.21

TYPICAL ENVIRONMENTAL RESISTANCE

Test Procedure : Breakloose Torque, DIN 54454
Substrate: 3/8 x 16 Steel Nuts & Bolts (degreased)
Cure procedure: 72 hours at room temperature
All samples pre-torqued to 5 N.m. Product applied only to bolts.

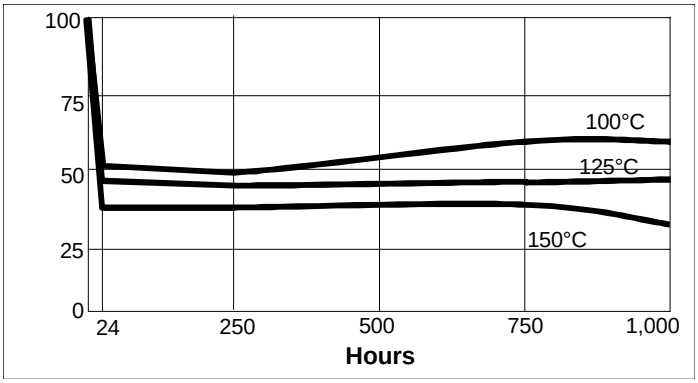
Hot Strength

Tested at temperature.



Heat Aging

Aged at temperature indicated and tested at 22°C.



Chemical / Solvent Resistance

Aged under conditions indicated and tested at 22°C.

Solvent	Temp.	% Initial Strength retained at 500 hr	1000 hr
Motor Oil	125°C	32	29
Auto Trans. Fluid	87°C	56	56
Gasoline, Unleaded	22°C	99	101
Brake Fluid	22°C	108	111
Water/Glycol (50%/50%)	87°C	52	43
Ethanol	22°C	102	80
IPA	22°C	109	101
Acetone	22°C	83	82

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Where aqueous washing systems are used to clean the surfaces before bonding, it is important to check for compatibility of the washing solution with the adhesive. In some cases these aqueous washes can affect the cure and performance of the adhesive.

This product is not normally recommended for use on plastics (particularly thermoplastic materials where stress cracking of the plastic could result). Users are recommended to confirm compatibility of the product with such substrates.

Directions for use

For best performance surfaces should be clean and free of grease. Product should be applied to the bolt in sufficient quantity to fill all engaged threads. This product performs best in thin bond gaps, (0.05mm). Very large thread sizes may create large gaps which will affect cure speed and strength. This product is designed to give controlled friction, (torque/tension ratio), during assembly. In critical tightening applications this ratio should be confirmed.

Storage

Product shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8°C to 28°C (46°F to 82°F) unless otherwise labeled. Optimal storage is at the lower half of this temperature range. To prevent contamination of unused product, do not return any material to its original container. For further specific shelf life information, contact your local Technical Service Center.

Data Ranges

The data contained herein may be reported as a typical value and/or range. Values are based on actual test data and are verified on a periodic basis.

Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Loctite Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Loctite Corporation's products. Henkel Loctite Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Loctite Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

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