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Technical Data Sheet Product 515

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PRODUCT DESCRIPTION

LOCTITE® Product 515 is a ready to use, one component, gel-like anaerobic flange sealant that cures at room temperature when it is isolated from air contact.

TYPICAL APPLICATIONS

Seals close fitting joints between rigid metal faces and flanges and will flex with minor flange movements. Provides resistance to low pressures immediately after assembly of flanges. Typically used as a form-in-place gaskets for pumps, thermostats, compressors, transmission housings and axle covers.

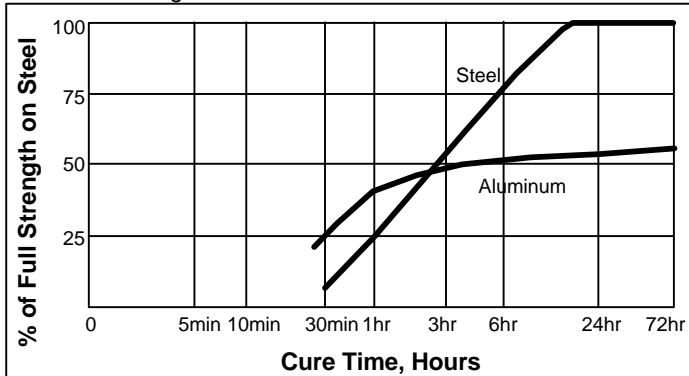
PROPERTIES OF UNCURED MATERIAL

	Value	Typical	Range
Chemical Type	Methacrylate Ester		
Appearance	Dark Purple Fluorescent Gel		
Specific Gravity @ 25°C	1.1		
Viscosity @ 25°C, Pa.s (cP)			
Brookfield HB			
Spindle TC @ 0.5 rpm	1,200,000		700,000 to 1,700,000
@ 5.0 rpm	262,500		150,000 to 375,00
Flash Point (TCC), °C	>93		

TYPICAL CURING PERFORMANCE

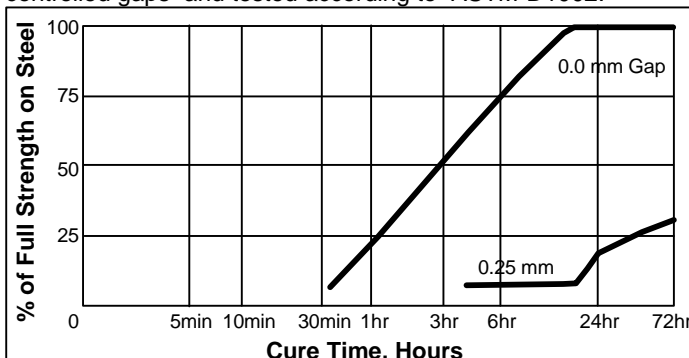
Cure speed vs. substrate

The rate of cure will depend on substrate used. The graph below shows the shear strength developed with time on grit blasted steel lap shears compared to different materials and tested according to ASTM-D1002.



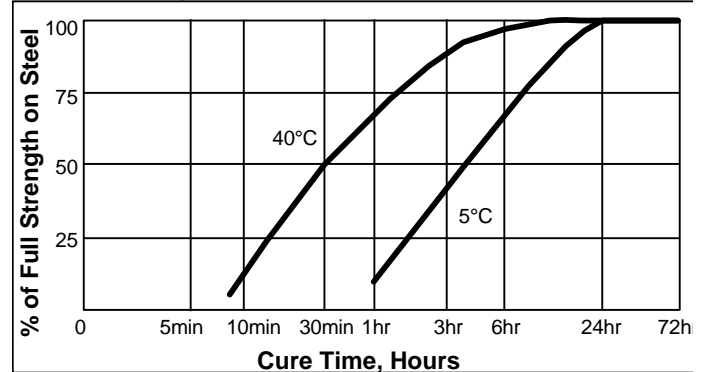
Cure speed vs. bond gap

The rate of cure will depend on the bondline gap. The following graph shows the shear strength developed with time on grit blasted steel lap shears compared to different controlled gaps and tested according to ASTM-D1002.



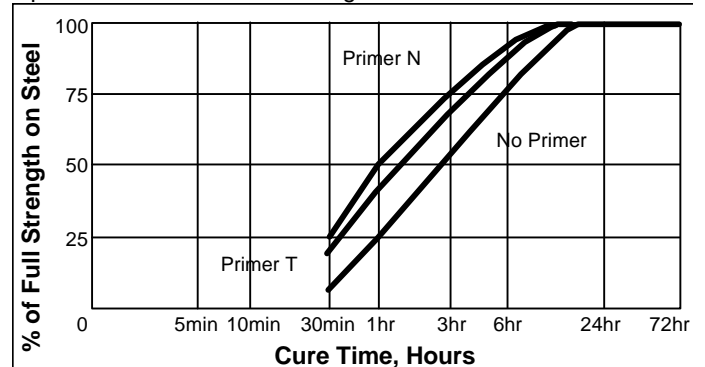
Cure speed vs. temperature

The rate of cure will depend on the ambient temperature. The graph below shows the shear strength developed with time on grit blasted steel lap shears at different temperatures and tested according to ASTM-D1002.



Cure speed vs. primer

Where cure speed is unacceptably long, or large gaps are present, applying activator to the surface will improve cure speed. The graph below shows the shear strength developed with time using Primer N and Primer T on grit blasted steel lap shears and tested according to ASTM-D1002.



TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Coefficient of thermal expansion, ASTM D696, K ⁻¹	80 x 10 ⁻⁶
Coefficient of thermal conductivity, ASTM C177, W.m ⁻¹ K ⁻¹	0.1
Specific Heat, kJ.kg ⁻¹ K ⁻¹	0.3

PERFORMANCE OF CURED MATERIAL

(After 24 hr at 22°C, on grit blasted mild steel)

	Value	Typical	Range
Shear Strength, ASTM D1002, N/mm ²	6		3 to 9
(psi)	(870)		(435 to 1305)
Tensile Strength, DIN 53288, N/mm ²	14		7 to 21
(psi)	(2030)		(1015 to 3045)

NOT FOR PRODUCT SPECIFICATIONS.

THE TECHNICAL DATA CONTAINED HEREIN ARE INTENDED AS REFERENCE ONLY.

PLEASE CONTACT LOCTITE CORPORATION QUALITY DEPARTMENT FOR ASSISTANCE AND RECOMMENDATIONS ON SPECIFICATIONS FOR THIS PRODUCT.
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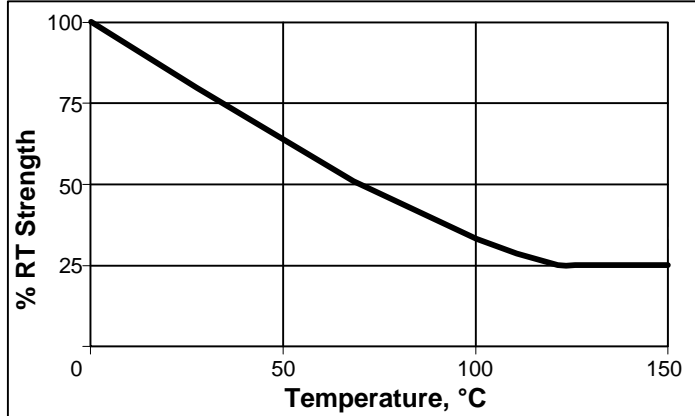
TYPICAL ENVIRONMENTAL RESISTANCE

The following tests refer to the effect of environment on strength. This is not a measure of sealing performance.

Test Procedure : Shear Strength, ASTM D1002
 Substrate: Grit Blasted Mild Steel Laps
 Cure procedure: 1 week at 22°C

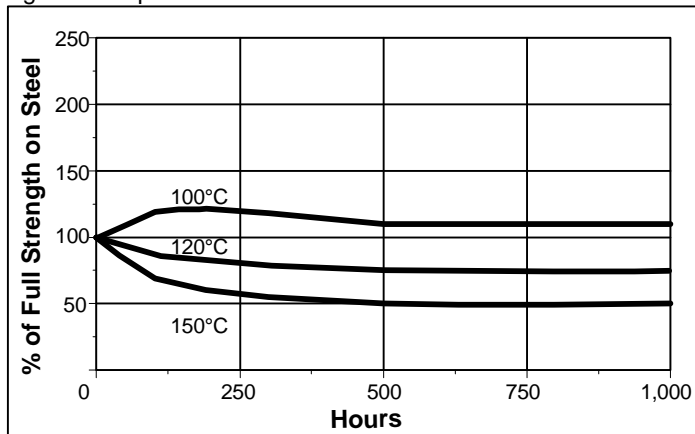
Hot Strength

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		
		100 hr	500 hr	1000 hr
Motor Oil	125°C		160	165
Gasoline	22°C		20	15
Water/Glycol (50%/50%)	87°C		80	80

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). It is recommended to confirm compatibility of the product with such substrates.

Directions for use

For best performance surfaces should be clean and free of grease. The product is designed for close fitting flanged parts with gaps up to 0.25 mm. Apply manually as a continuous bead or by screen printing to one surface of the flanges. Low pressures (<0.5 bar) may be used when testing to confirm a complete seal immediately after assembly and before curing. Flanges should be tightened as soon as possible after assembly to avoid shimming.

Storage

Products shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8° to 28°C (46° to 82°F) unless otherwise labeled. To prevent contamination of unused product, do not return any material to its original container. For 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 (based on the mean value ±2 standard deviations). 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, 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 Loctite Corporation's products. 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 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.