



Research, Development & Engineering

Tallaght Business Park,
Dublin, Ireland

PRELIMINARY

Technical Data Sheet Product 5208

Worldwide Version, May 2000.

PRODUCT DESCRIPTION

LOCTITE® Product 5208 is a single component, flexible, anaerobic sealant which cures rapidly, develops medium strength, and maintains flexibility after exposure to high temperatures. The product cures when confined in the absence of air between close fitting metal surfaces.

TYPICAL APPLICATIONS

Seals close fitting joints between rigid metal faces and flanges. Provides resistance to low pressures immediately after assembly of flanges. Typically used as a form-in-place gasket on rigid flanged connections e.g. gearbox and engine casings, etc.

PROPERTIES OF UNCURED MATERIAL

	Value	Typical Range
Chemical Type	Dimethacrylate Ester	
Appearance	Red Fluorescent Liquid	
Specific Gravity @ 25°C	1.16	
Viscosity @ 25°C, mPa.s (cP)		
Brookfield RVT (Helipath)		
Spindle 6 @ 2.5 rpm	50,000	35,000 to 66,000
@ 20 rpm	26,000	13,000 to 39,000
DIN 54453		
D = 36 s ⁻¹ after t=180secs	20,000	13,000 to 28,000
Flash Point (TCC), °C	>100°C	

Instant Seal

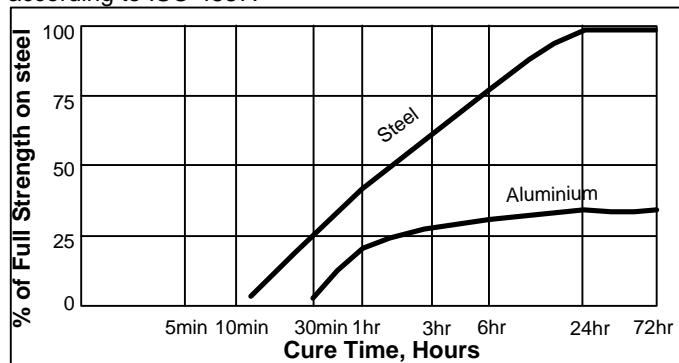
Anaerobic sealants have the ability to resist low on-line test pressures while uncured. This test was performed with uncured product immediately after assembly of glass plate and a 10mm wide, annular, zinc dichromate flange.

Induced Gap, mm	Pressure Resistance, MPa
0.0	0.05
0.125	0.01

TYPICAL CURING PERFORMANCE

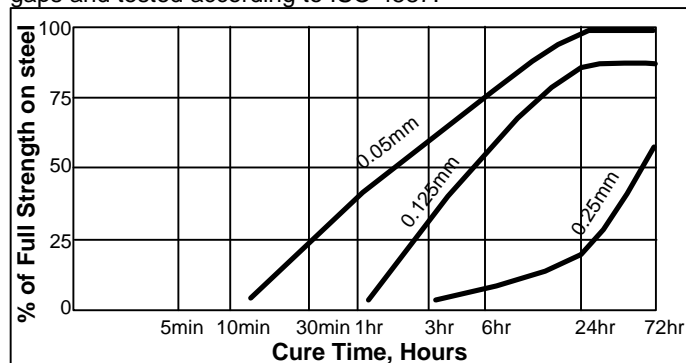
Cure speed vs. substrate

The rate of cure depends 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 ISO 4587.



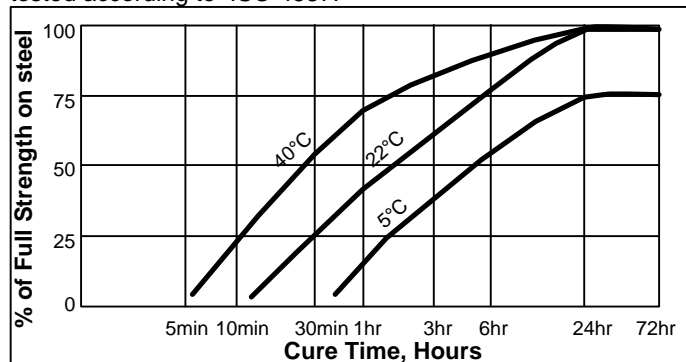
Cure speed vs. bond gap

The rate of cure depends on the bondline gap. The graph below shows a comparison of the shear strength developed with time on grit blasted steel lap shears at different controlled gaps and tested according to ISO 4587.



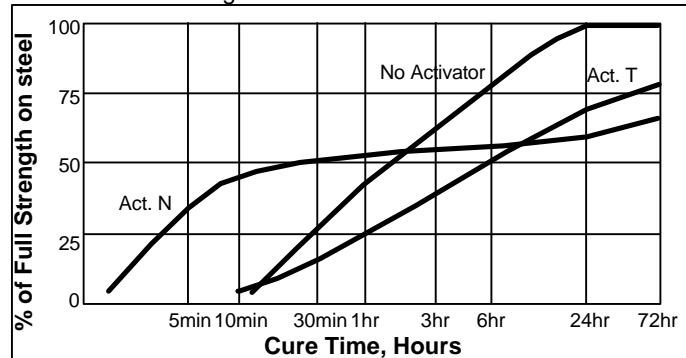
Cure speed vs. temperature

The rate of cure depends 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 ISO 4587.



Cure speed vs. activator

Where cure speed is unacceptably long, or large gaps are present, activator on the surface will improve cure speed. The graph below shows the shear strength developed with time using ACTIVATOR N and T on grit blasted steel lap shears and tested according to ISO 4587.



TYPICAL PROPERTIES OF CURED MATERIAL Physical Properties

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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A Henkel Company

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

Unleaded Petrol	22°C	120	110	85
Automatic Transmission Fluid	150°C	40	100	140

PERFORMANCE OF CURED MATERIAL

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

	Value	Typical Range
Shear Strength, ISO 4587, DIN EN 1465, MPa	6.0	3 to 9
(psi)	900	(400 to 1300)
Tensile Strength, DIN EN 26922, MPa	6.7	4 to 9
(psi)	1000	(600 to 1300)

Sealing Capability

Product is applied to an annular shaped flange of 50mm inner diameter and 70mm external diameter and cured for 1 week. Hydraulic fluid pressure is applied to determine the burst pressure.

Substrate	Induced Gap	Burst Pressure
Mild Steel	none	34.8 MPa
Mild Steel	0.1mm	13.4 MPa
Aluminium	none	29.5 MPa
Aluminium	0.1mm	10.2 MPa

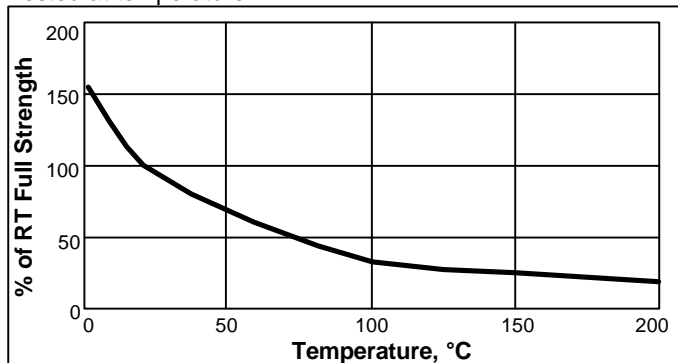
TYPICAL ENVIRONMENTAL RESISTANCE

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

Test Procedure :	Shear Strength, ISO 4587
Substrate:	Grit Blasted Mild Steel Lapshears
Cure procedure:	1 week at 22°C

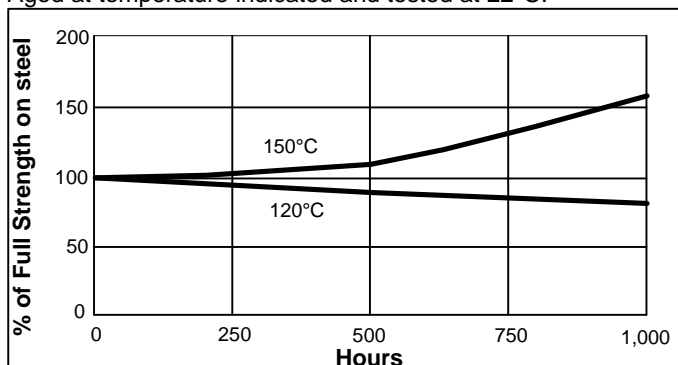
Hot Strength

Tested at temperature.



Heat Ageing

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
Air	22°C	100	100	100
Motor Oil	150°C	50	110	160
Water/Glycol (50%/50%)	87°C	15	50	40

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 oxidising 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. Some residues from aqueous washes can affect the cure and performance of the product.

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. The product is designed for close fitting flanged parts. Product should be applied manually as a continuous bead or by screen printing to one surface of the flanges. Low pressures may be used to confirm a complete seal immediately after assembly and before the product is cured. Flanges should be tightened as soon as possible after assembly to avoid shimming.

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 labelled. 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 Centre.

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, 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 licence 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.