Technical Data Sheet

LOCTITE® 620

April 2022

PRODUCT DESCRIPTION

LOCTITE® 620 provides the following product characteristics:

Technology	Acrylic
Chemical Type	Methacrylate ester
Appearance (uncured)	Green liquid
Viscosity	High
Cure	Anaerobic
Secondary Cure	Activator
Application	Retaining
Strength	Medium to High

LOCTITE® 620 is designed for the bonding of cylindrical fitting parts, particularly where bond gaps can approach 0.2 mm and where maximum strength at room temperature is required. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration. LOCTITE® 620 provides robust curing performance. The product offers higher temperature performance and makes it particularly suited for retaining higher temperature assemblies such as locating pins in radiator assemblies and bearings in auto transmissions. Typical applications include locking bushings and sleeves into housings and on shafts.

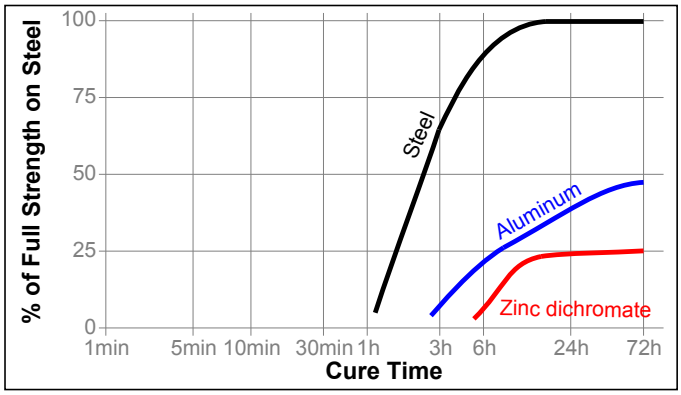
TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 23 °C	1.16
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 5, speed 20 rpm	8,500
Viscosity, EN 12092 - MV, 25 °C, after 180 s, mPa·s (cP):	
Shear rate 129 s^{-1}	1,800

TYPICAL CURING PERFORMANCE

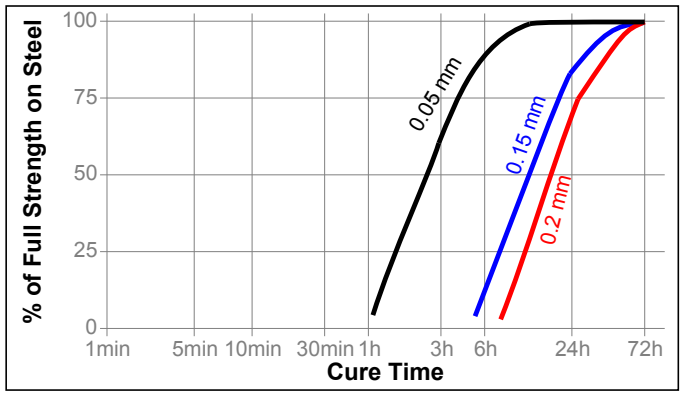
Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the shear strength developed with time on steel pins and collars compared to different materials and tested according to ISO 10123.



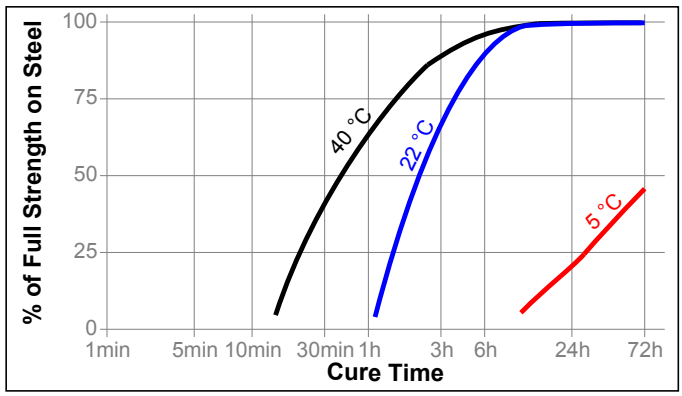
Cure Speed vs. Bond Gap

The rate of cure will depend on the bondline gap. The following graph shows shear strength developed with time on steel pins and collars at different controlled gaps and tested according to ISO 10123.



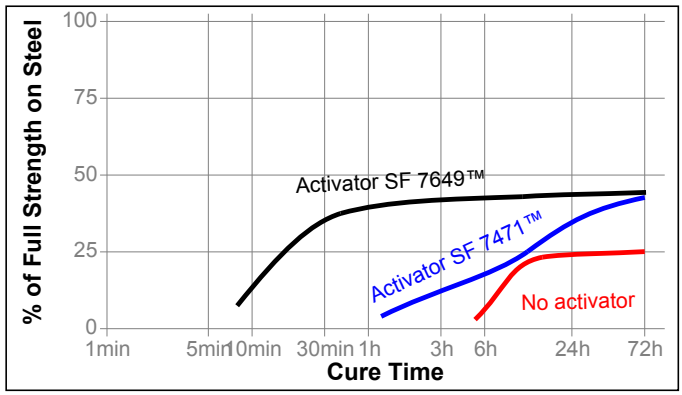
Cure Speed vs. Temperature

The rate of cure will depend on the temperature. The graph below shows the shear strength developed with time at different temperatures on steel pins and collars and tested according to ISO 10123.



Cure Speed vs. Activator

The graph below shows the shear strength developed with time on zinc dichromate steel pins and collars using Activator SF 7471™ and SF 7649™ and tested according to ISO 10123



TYPICAL PERFORMANCE OF CURED MATERIAL

Physical Properties

Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}	80×10^{-6}
Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	0.1
Specific Heat, kJ/(kg·K)	0.3
Elongation, at break ISO 37, %	<1

Adhesive Properties

Cured for 24 hours @ 23°C

Compressive Shear Strength, ISO 10123:

Steel pins and collars	N/mm²	17
	(psi)	(2,500)

Cured for 24 hours @ 23°C, followed by 24 hours @ 177°C, tested @ 23°C

Compressive Shear Strength, ISO 10123:

Steel pins and collars	N/mm²	24
	(psi)	(3,500)

TYPICAL ENVIRONMENTAL RESISTANCE

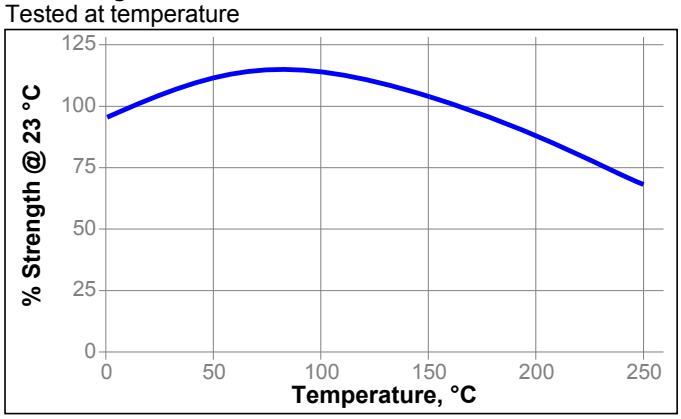
Cured for 1 week @ 23 °C

Compressive Shear Strength, ISO 10123:

Steel pins and collars

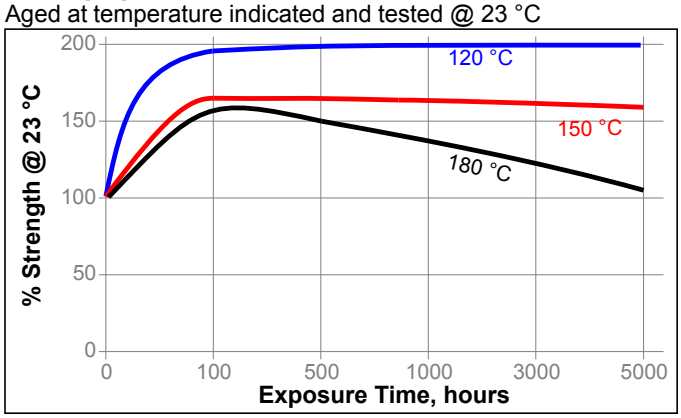
Hot Strength

Tested at temperature



Heat Aging

Aged at temperature indicated and tested @ 23 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 23 °C.

		% of initial strength		
Environment	**°C**	**100 h**	**500 h**	**1000 h**
Motor oil	125	100	100	100
Unleaded Petrol	22	95	95	95
Brake fluid	22	100	100	100
Water/glycol 50/50	87	95	80	80
Ethanol	22	100	100	75
Acetone	22	95	95	95

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 Safety Data Sheet (SDS).

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 Assembly

1. For best results, clean all surfaces (external and internal) with a LOCTITE® cleaning solvent and allow to dry
2. To accelerate cure speed or where large gaps are present, use activator and allow to dry
3. **For Slip Fitted Assemblies**, apply adhesive around the leading edge of the male part and the inside of the female part and use a rotating motion during assembly to ensure good coverage
4. **For Press Fitted Assemblies**, apply adhesive thoroughly to both bond surfaces and assemble at high press on rates
5. **For Shrink Fitted Assemblies,** the adhesive should be coated onto the part to produce a smooth, even film of material. If heating the female part for assembly, coat the male part. If the male part is to be cooled for assembly, coat the female part. If both heating and cooling is to be done, apply material to cooled part. Avoid condensation on cooled parts
6. Parts should not be disturbed until sufficient handling strength is achieved

For Disassembly

1. Remove with standard hand tools
2. Apply localized heat to the assembly to approximately 300°C. Disassemble while hot
3. If this temperature is not possible, heat as much as possible and use mechanical aids

Clean-up

1. Cured product can be removed with a combination of soaking in a LOCTITE® solvent and mechanical abrasion such as a wire brush

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties. Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Henkel representative.

Product Specification

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and Certificate

Please contact a Henkel representative for related approval or certificate of this product.

Data Ranges

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

Temperature/Humidity Ranges: 23 °C / 50% RH = 23±2 °C / 50 ±5% RH

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

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