Technical Data Sheet

LOCTITE® 6300™

November 2024

Product description

LOCTITE® 6300™ provides the following product characteristics:

Technology	Acrylic
Chemical type	Dimethacrylate ester
Appearance (uncured)	Green liquid[LMS]
Fluorescence	Positive under UV light[LMS]
Components	One component – requires no mixing
Viscosity	Low
Cure	Anaerobic
Secondary Cure	Activator
Application	Retaining
Strength	High

LOCTITE® 6300™ is designed for the bonding of cylindrical fitting parts. The product cures when confined in the absence of air between closefitting metal surfaces to prevent loosening and leakage from shock and vibration. The product is label free. Typical applications include holding gears and sprockets onto gearbox shafts and rotors on electric motor shafts.

LOCTITE® 6300™ is part of the Health and Safety anaerobic range. There are no risk or safety phrases associated with either the formulation or its ingredients.

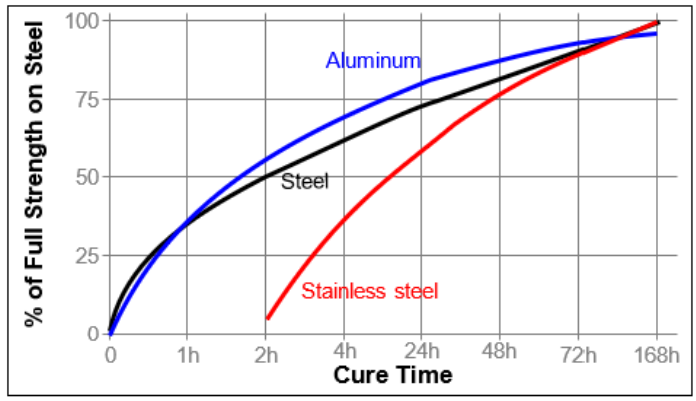
Typical properties of uncured material

Specific gravity @ 25°C	1.1
Viscosity, Brookfield - RVT, 25, °C, , mPa·s (cP): Spindle 2, speed 20 rpm	350
Viscosity, cone and plate, after 300 s, 25°C, mPa·s (cP): Shear rate 129s^{-1}	200 to 550[LMS]
Flash point - see SDS	

Typical curing performance

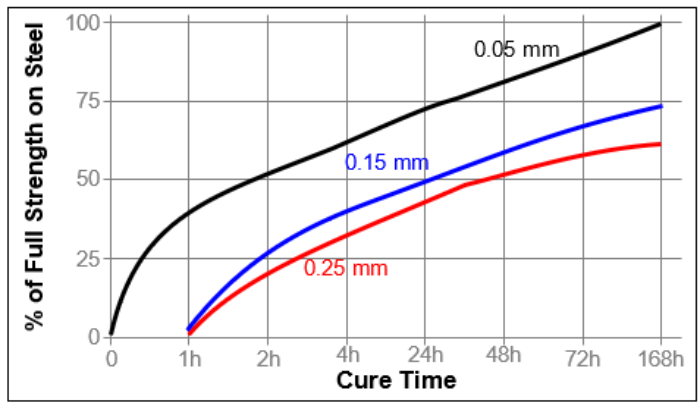
Cure Speed vs. Substrate

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.

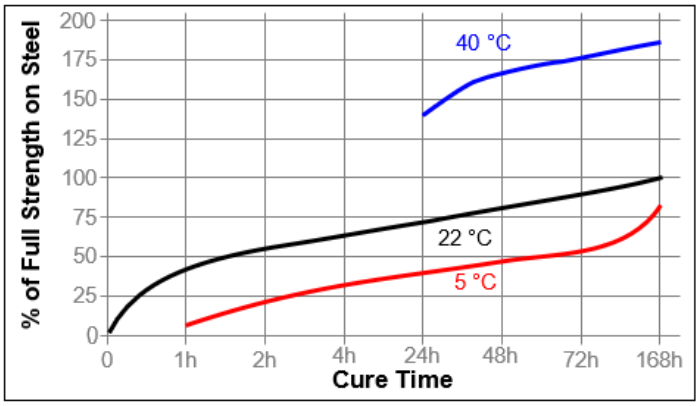


Cure Speed vs. Bond Gap

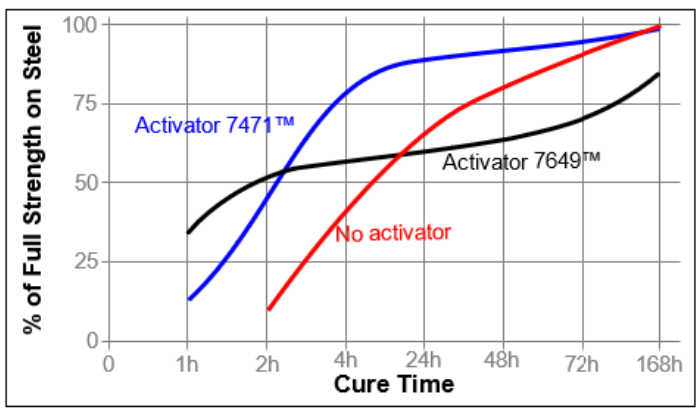
The rate of cure will depend on the bondline gap. The following graph shows shear strength developed with time on steel pins and collars at different controlled gaps and tested according to ISO 10123.



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
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 on stainless steel pins and collars using Activator 7471™ or 7649™ and tested according to ISO 10123.



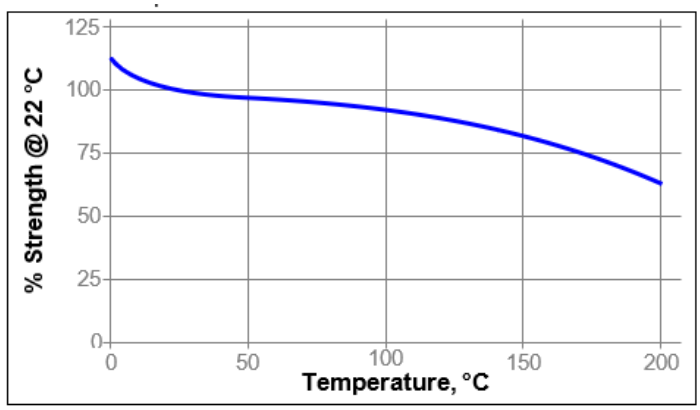
Typical performance of cured material

Adhesive Properties
Cured for 72 hours @ 22°C
Compressive Shear Strength, ISO 10123:

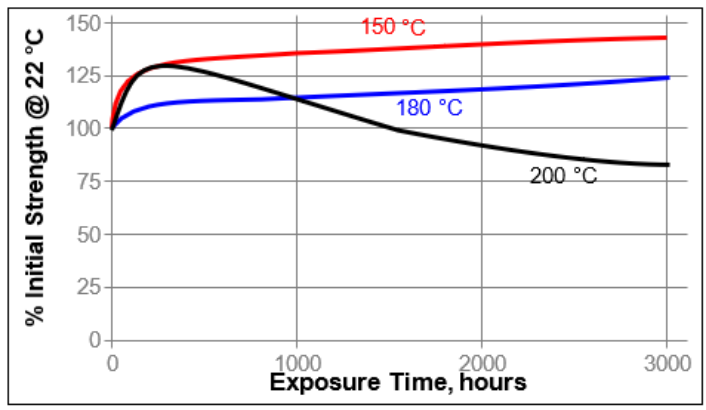
Steel pins and collars	N/mm² (psi)	≥15 (≥2,180)

Typical environmental resistance
Cured for 1 week @ 22°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 @ 22°C.

		% of initial strength			
Environment	**°C**	**100 h**	**500 h**	**1000 h**	**3000 h**
Motor oil (MIL-L-46152)	125	110	120	125	95
Unleaded petrol	22	90	110	100	85
Brake fluid	22	90	95	85	95
Water/glycol 50/50	87	100	140	115	105
Ethanol	22	95	95	75	80
Acetone	22	85	100	95	90
DEF (AdBlue®)	22	85	100	80	75

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. If the material is an inactive metal or the cure speed is too slow, spray with Activator 7471™ or 7649™ and allow to dry.
3. **For Slip Fitted Assemblies,** apply adhesive around the leading edge of the pin and the inside of the collar 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 pin, the collar should then be heated to create sufficient clearance for free assembly.
6. Parts should not be disturbed until sufficient handling strength is achieved.
7. Remove any excess uncured product with cleaner LOCTITE® SF 7063™ (or similar grade), if required.

For disassembly
1. Apply localized heat to the assembly to approximately 250°C. Disassemble while hot.

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

Loctite Material Specification LMS
LMS dated August 17, 2011. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

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 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.

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

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