Technical Data Sheet

LOCTITE® AA 312™

Known as LOCTITE® 312™
July 2018

PRODUCT DESCRIPTION

LOCTITE® AA 312™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Modified acrylic ester
Appearance (uncured)	Clear amber liquid[LMS]
Components	One component - requires no mixing
Viscosity	Medium
Cure	Anaerobic with activator
Cure Benefit	Room temperature cure
Application	Bonding

LOCTITE® AA 312™ typical applications include bonding dissimilar materials such as metals, glass or ceramics and where fast fixturing is required between close fitting parts. The product cures when confined between close fitting parts with the aid of Activator 736™ or 734™ .

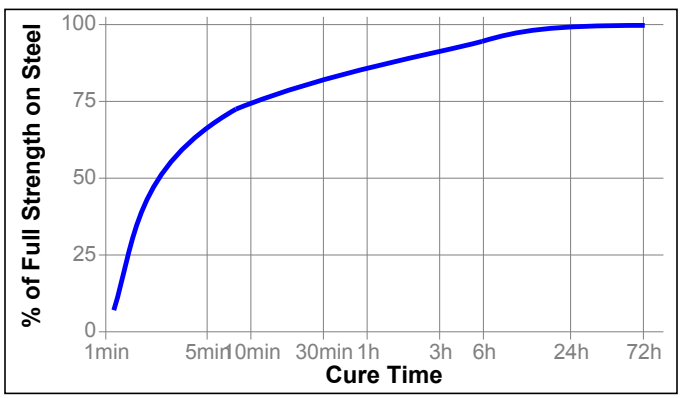
TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.1
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 2, speed 20 rpm	850 to 1,200[LMS]

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 grit blasted steel lap shears and tested according to ISO 4587. (Activator 736™ or 734™ applied to one surface).



Cure Speed vs. Bond Gap

Performance of this adhesive is adversly affected by increased gap and therefore is not recommended in such applications.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}	100×10^{-6}
Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	0.1
Specific Heat, kJ/(kg·K)	0.3

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

After 2 minutes @ 22 °C, Activator 736™ or 734™ on 2 sides.
Lap Shear Strength, ISO 4587:

Steel (grit blasted)	N/mm²	≥9.8[LMS]
	(psi)	(≥1,421)

After 1 hour @ 22 °C, Activator 736™ or 734™ on 2 sides.
Lap Shear Strength, ISO 4587:

Steel (grit blasted)	N/mm²	≥13.8[LMS]
	(psi)	(≥2,000)

After 24 hours @ 22 °C, Activator 736™ or 734™ on 2 sides.
Lap Shear Strength, ISO 4587:

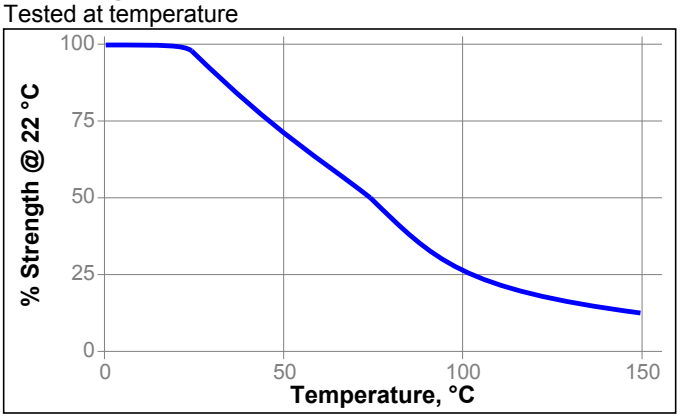
Steel (grit blasted)	N/mm²	≥17.2[LMS]
	(psi)	(≥2,490)

TYPICAL ENVIRONMENTAL RESISTANCE

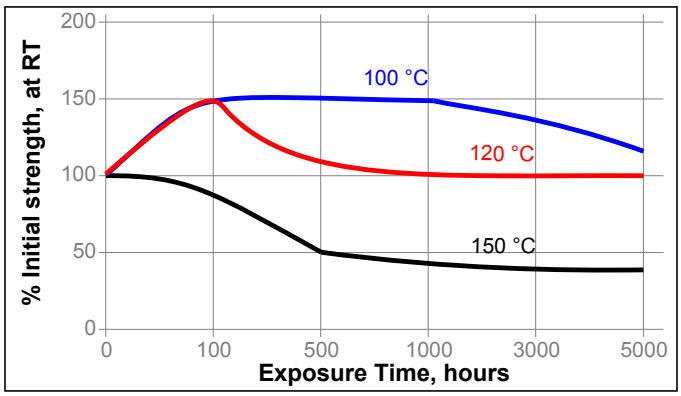
Cured for 1 week @ 22 °C, Activator 736™ or 734™ on 1 side.
Lap Shear Strength, ISO 4587:
Steel (grit blasted)

Hot Strength

Tested at temperature



Heat Aging
Aged at temperature indicated and tested @ 22 °C



Chemical/Solvent Resistance
Aged under conditions indicated and tested @ 22 °C.

		% of initial strength
Environment	**°C**	**720 h**
Acetone	22	15
Trichlorethylene	22	40
Aircraft fuel (JP-4)	93	60
Water	93	60
Water/glycol 50/50	93	10
Humidity, 100% RH	82	60

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:

1. For best performance bond surfaces should be clean and free from grease.
2. To ensure a fast and reliable cure, Activator 736™ or 734™ should be applied to one of the bond surfaces and the adhesive to the other surface. Parts should be assembled within 15 minutes.
3. Where bond gaps are large (up to a maximum of 0.125 mm (0.005")), or faster cure speed is required, Activator 736™ or 734™ should be applied to both surfaces. Parts should be assembled immediately (within 1 minute).
4. Excess adhesive can be wiped away with organic solvent.
5. Bond should be held clamped until adhesive has fixtured.
6. Product should be allowed to develop full strength before subjecting to any service loads (typically 24 to 72 hours after assembly, depending on bond gap, materials and ambient conditions).

Loctite Material Specification[LMS]
LMS dated November 4, 2002. 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 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 Technical Service Center or Customer Service 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

Note:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
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