Technical Data Sheet

LOCTITE® 3874

July 2025

Product description

LOCTITE® 3874 provides the following product characteristics:

Technology	Acrylic
Chemical type	Acrylic ester
Appearance (uncured)	Light grey opaque fluid, No visible bubbles. Slight separation of filler acceptable[LMS]
Components	One component - requires no mixing
Viscosity	High, thixotropic
Cure	Activator
Application	Bonding

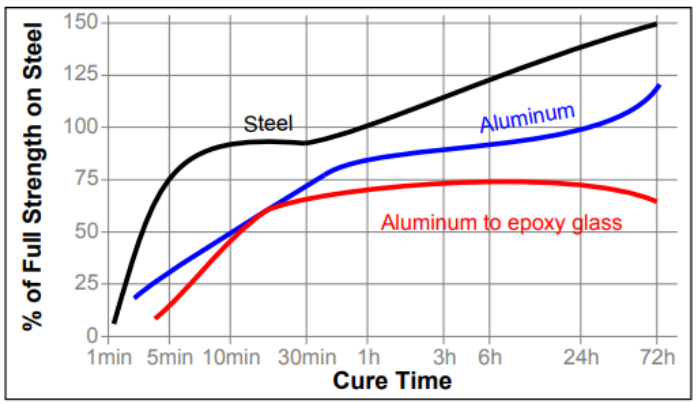
LOCTITE® 3874 is a thermally conductive adhesive. When used with Activator 7387™, it cures rapidly to form a high strength, high modulus, thermoset acrylic polymer. Typical applications include bonding heat sinks to heat dissipating components such as BGAs in electronics applications. The thixotropic nature of LOCTITE® 3874 reduces the migration of liquid product after application to the substrate.

Typical properties of uncured material

Specific gravity @ 25°C	2.08
Flash point - see SDS	
Viscosity, Brookfield - HBT, 25 °C, mPa·s (cP):	
Spindle TB, speed 0.5 rpm, helipath	800,000 to 1,800,000[LMS]
Spindle TB, speed 5.0 rpm, helipath	200,000 to 450,000[LMS]

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 7387™ applied to one surface)



Typical properties of cured material

Cured for 24 hours @ 70°C, followed by 7 days @ 22°C

Physical properties

Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}:	$76x10^{-6}$
Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	1.25
Glass transition temperature, °C	49
Shore Hardness, ISO 868, Durometer D	72
Elongation, at break, ISO 37, %	3.2

Initial @ 22°C

Electrical properties

Volume resistivity, IEC 60093, Ω·cm	$4.3x10^{14}$
Surface resistivity, IEC 60093, Ω	$3.8x10^{14}$
Dielectric breakdown strength, IEC 60243-1, kV/mm	23.6

After 1 week @ 85°C / 85% RH

Electrical properties

Volume resistivity, IEC 60093, Ω·cm	$1.5×10^{14}$
Surface resistivity, IEC 60093, Ω	$2.6×10^{13}$
Dielectric breakdown strength, IEC 60243-1, kV/mm	3.5

Typical performance of cured material

Adhesive properties

After 24 hours @ 22°C, Activator 7387™ on 1 side

Lap Shear Strength, ISO 4587:

Steel	N/mm^2 (psi)	≥11.7[LMS] (≥1,695)
Aluminum	N/mm^2 (psi)	≥ 7[LMS] (≥1,015)

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).

Direction of use

1. For best performance bond surfaces should be clean and free from grease.
2. Use applicator to apply the activator to the surface to be bonded.
3. After the solvent evaporates, the active ingredients will appear wet, and will remain active for up to 2 hours after application. Contamination of the surface before bonding should be prevented.
4. Apply adhesive to the unactivated surface.
5. Where bond gaps are large (up to a maximum of 0.5 mm), or faster cure speed is required, Activator 7387 should be applied to both surfaces. Parts should be assembled immediately (within 1 minute).
6. Secure the assembly, and wait for the adhesive to fixture (approximately 5 minutes) before any further handling. Full cure occurs in 4 - 24 hours.
7. The amount of adhesive applied to the part or heat sink should be limited to the amount necessary to fill the bond and just enough to give a small fillet.
8. The dispensing or application of the adhesive should be done as to minimize air entrapment within the bondline.

Loctite material specification[LMS]

LMS dated March 07, 2003. 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: 2°C to 8°C. Storage below 2°C or greater than 8°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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