Technical data sheet

Product:	248
Manufacturer:	HENKEL KGAA
Product group:	KLEBSTOFF
Article group:	ANAEROB
Download:	14.09.2025

LOCTITE 248

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Technical Data Sheet

LOCTITE® 248™

September 2022

PRODUCT DESCRIPTION

LOCTITE® 248™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Dimethacrylate ester
Appearance (uncured)	Blue, wax consistency
Appearance (form)	Stick
Fluorescence	Positive under UV light
Components	One component - requires no mixing
Cure	Anaerobic
Application	Threadlocking
Strength	Medium

LOCTITE® 248™ is a medium strength anaerobic threadlocking material. It is supplied as a wax-like semi-solid, conveniently packaged in a self-feeding stick applicator. As with liquid anaerobic products, this material develops its cured properties in the absence of air when confined between close fitting metal surfaces. It achieves consistent strength and can be used on a variety of metal substrates. It not only works on active metals (e.g. brass, copper) but also on passive substances such as stainless steel and plated surfaces. It is particularly well suited for applications where a liquid product may be too fluid to stay on a part or be difficult to apply. It stores easily and allows for direct contact to a threaded part during application to ensure even coverage.

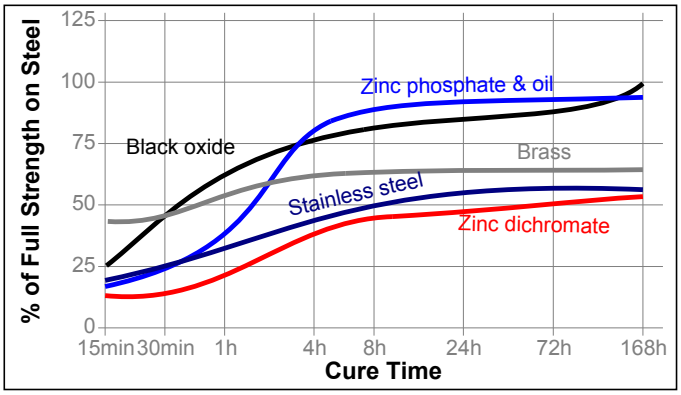
TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ °C	1.03
Unworked Penetration, ISO 2137, 1/10 mm	90 to 140
Melting Point, °C	>65

TYPICAL CURING PERFORMANCE

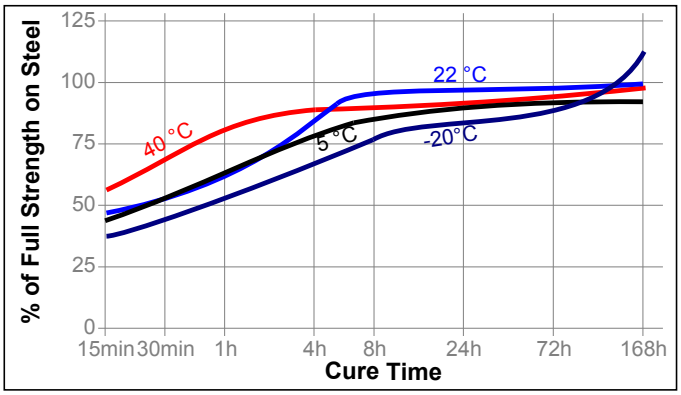
Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the breakloose strength developed with time on M10 black oxide steel bolts and mild steel nuts compared to different materials and tested according to ISO 10964. All samples pre-torqued to 5 N·m. Product applied to bolts only.



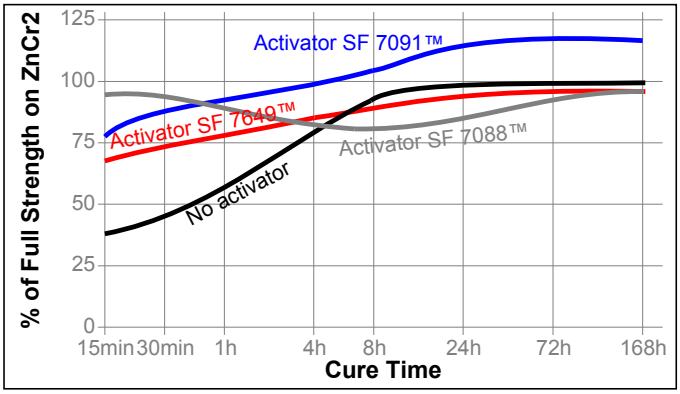
Cure Speed vs. Temperature

The rate of cure will depend on the temperature. The graph below shows the breakloose strength developed with time at different temperatures on 3/8 x 16 degreased steel nuts & bolts and tested according to ISO 10964. All samples pre-torqued to 5 N·m. Product applied to bolts only.



Cure Speed vs. Activator

Where cure speed is unacceptably long due to large gaps, applying activator to the surface may improve cure speed. However, this can reduce ultimate strength of the bond and therefore testing is recommended to confirm effect. The graph below shows the breakloose strength developed with time using Activator SF 7471™ or SF 7649™ on 3/8 x 16 zinc dichromate nuts and bolts and tested according to ISO 10964. All samples pre-torqued to 5 N·m. Product applied to bolts, activator to nuts.



TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 1 hour @ 25 °C

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:

3/8 x 16 steel nuts (grade 2) and bolts (grade 5) (degreased)	N·m	≥7
	(lb.in)	(≥62)

Cured for 4 hours @ 25°C

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:

3/8 x 16 stainless steel nuts and bolts	N·m	≥6
	(lb.in.)	(≥53)

Cured for 24 hours @ 25 °C

Breakaway Torque, ISO 10964, Unseated:

3/8 x 16 steel nuts (grade 2) and bolts (grade 5) (degreased)	N·m	13
	(lb.in)	(120)
M10 black oxide bolts and steel nuts (degreased)	N·m	23
	(lb.in)	(200)
3/8 x 16 stainless steel nuts and bolts (degreased)	N·m	12
	(lb.in)	(110)

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:

3/8 x 16 steel nuts (grade 2) and bolts (grade 5) (degreased)	N·m	8 to 32
	(lb.in)	(70 to 285)
M10 black oxide steel nuts and bolts (degreased)	N·m	25
	(lb.in)	(225)
3/8 x 16 stainless steel nuts and bolts	N·m	18
	(lb.in)	(160)

Cured for 168 hours @ 22°C

Breakaway Torque, ISO 10964, Unseated,
Oil Tolerance: M10 black oxide steel bolts and mild steel nuts degreased and then reoiled in noted oil type. Data presented as a % of unoiled control.

Emulsion Oil: Aquasafe 21	61
Solvent-Based oil: SafeCoat DW 30X	96

TYPICAL ENVIRONMENTAL RESISTANCE

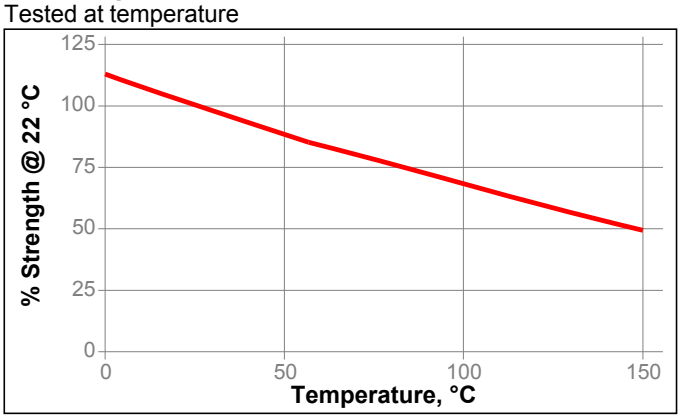
Cured for 72 hours @ 22 °C

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:

3/8 x 16 zinc phosphate & oil nuts and bolts

Hot Strength

Tested at temperature

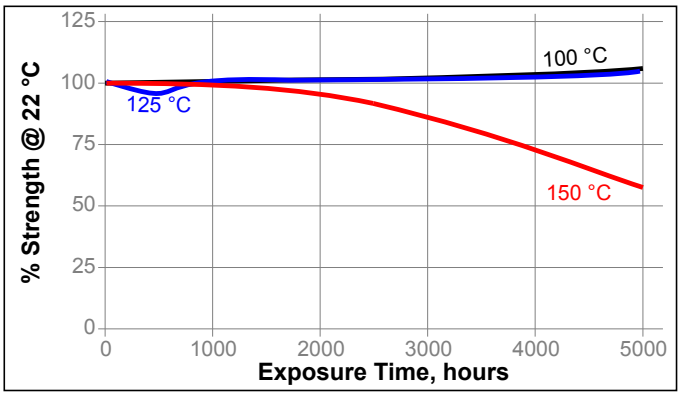


Cold Strength

This product has been tested to -75°C (-100 F). This product may work below this temperature, but has not been tested.

Heat Aging

Aged at temperature indicated and tested @ 23 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 168°C

		% of initial strength	
Environment	**°C**	**1000 h**	**5000 h**
Motor oil (MIL-L-46152)	125	90	90
Gasoline	22	85	65
Brake fluid	22	100	100
Water/glycol 50/50	87	95	110
Ethanol	22	80	75
Acetone	22	85	75
B100 Bio-Diesel	22	100	105
E85 Ethanol fuel	22	80	70
DEF (AdBlue®)	22	95	105
Sodium Hydroxide, 20%	22	90	75
Phosphoric Acid, 10%	22	125	140

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. Advance only enough product to use at the time of application.
3. Remove any skin that may have formed on the top of the stick.
4. Apply sufficient product to fill the threads in the area where the nut will be engaged on the bolt.
5. Recap product after use.
6. Assemble and tighten as required.

For Disassembly

1. Remove with standard hand tools.
2. In rare instances where hand tools do not work because of excessive engagement length, apply localized heat to nut or bolt to approximately 250 °C. Disassemble while hot.

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.

Loctite Material Specification[LMS]

LMS dated July 24, 2013. 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 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

Disclaimer

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Reference 1.3