LOCTITE® 204™

December 2008

PRODUCT DESCRIPTION

LOCTITE® 204™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Methacrylate ester
Appearance (uncured)	Creamy pink dispersion[LMS]
Viscosity	High
Cure	Anaerobic
Application	Threadlocking, Sealing
Strength	High
Toxicity	Low

LOCTITE® 204™ is a dry-to-the-touch, preapplied film for threaded fasteners. It remains inert on the fastener until assembly of the threads releases a quick curing resin. The resin fills all the voids in the threads and cures to securely lock and seal the assembly. LOCTITE® 204™ prevents loosening through vibration to provide locking and sealing of threaded assemblies. Typical applications include locking carburetor screws, transmission nuts, head bolts, truck axle bolts and tower bolts and also for sealing transmission bolts and pipe plugs and fittings. This product is typically used in applications with an operating range of -54 °C to +150 °C.

NOTE: LOCTITE® 204™ is not recommended for use on copper or brass surfaces.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Flash Point - See MSDS

Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):

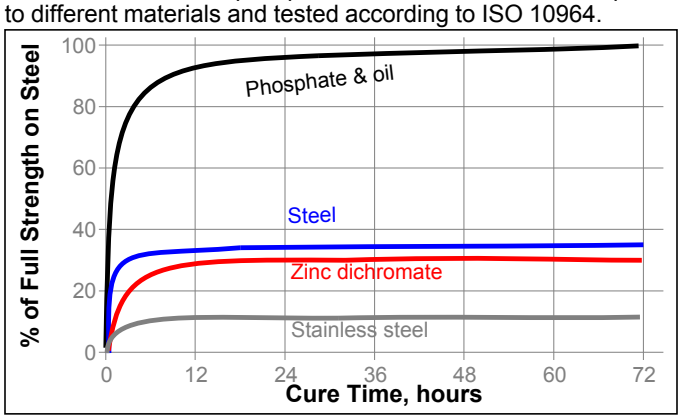
Spindle 5, speed 2 rpm	75,000 to 100,000[LMS]

TYPICAL CURING PERFORMANCE

On Part Life, years	4
Cure Time, hours	72
Fixture Time, minutes	10

Cure Speed vs. Substrate

The graph below shows the breakaway strength developed with time on 3/8 x 16 phosphate and oil nuts & bolts compared to different materials and tested according to ISO 10964.



TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

After 72 hours @ 22 °C

Breakaway Torque, ISO 10964:

3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m	≥24.9[LMS]
	(lb.in.)	(≥220)

Prevail Torque, ISO 10964:

3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m	≥24.9[LMS]
	(lb.in.)	(≥220)

After 72 hours @ 22 °C followed by 1 hour @ 149 °C, tested @ 22 °C

Breakaway Torque, ISO 10964:

3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m	≥26[LMS]
	(lb.in.)	(≥230)

Prevail Torque, ISO 10964:

3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m	≥26.0[LMS]
	(lb.in.)	(≥230)

After 72 hours @ 22 °C followed by 3 hours @ 149 °C, tested @ 135 °C

Breakaway Torque, ISO 10964:

3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m	≥12.4[LMS]
	(lb.in.)	(≥109)

Prevail Torque, ISO 10964:

3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m	≥14.1[LMS]
	(lb.in.)	(≥124)

TYPICAL ENVIRONMENTAL RESISTANCE

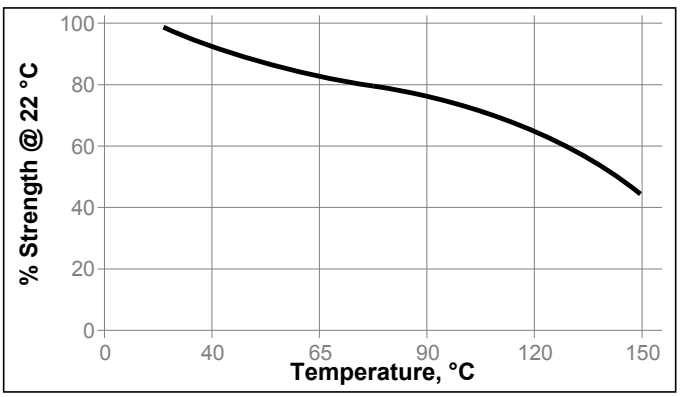
Cured for 72 hours @ 22 °C

Breakaway Torque, ISO 10964:

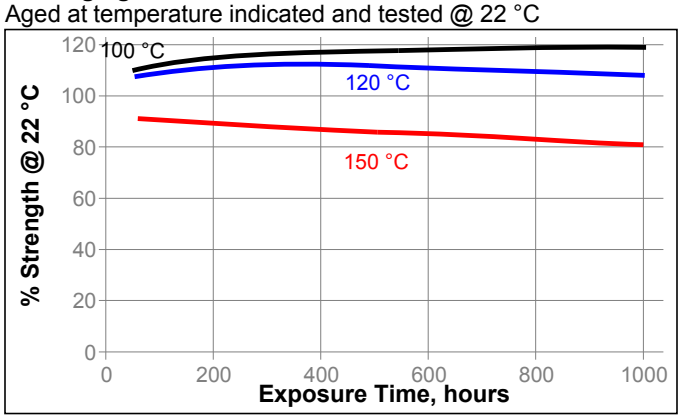
3/8 x 16 phosphate and oil nuts and bolts

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**	**100 h**	**500 h**	**1000 h**
Motor oil	125	117	96	86
Motor oil	87	125	112	105
ATF	125	100	100	100
Unleaded gasoline	22	102	113	119
Brake fluid	22	101	105	114
Ethanol	22	102	112	112
1,1,1 Trichloroethane	22	104	116	112
Water/glycol 50/50	87	119	112	108

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 Material Safety Data Sheet (MSDS).

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:

LOCTITE® 204™ is applied to threaded parts by authorized process centers who have automatic fastener cleaning, feeding, coating, rust proofing and drying equipment. Quantities can be handled promptly with minimum turnaround time. Sample fittings should be sent to the nearest authorized process center where they will coat your parts and return them to you for evaluation. SAMPLE TESTS ARE RECOMMENDED TO OBTAIN DESIRED RESULTS ON YOUR PARTS. Contact the nearest Loctite Sales Representative for the authorized process center nearest to you.

Loctite Material Specification[LMS]

LMS dated November 29, 1999. 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

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Reference 0.1