

LOCTITE® DRI 200 ECO™

Known as LOCTITE® 200™
June 2015

PRODUCT DESCRIPTION

LOCTITE® DRI 200 ECO™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Methacrylate ester
Appearance (uncured)	Opaque cream yellow solution ^{LMS}
Viscosity	Medium
Cure	Anaerobic
Application	Threadlocking, Sealing
Strength	High

LOCTITE® DRI 200 ECO™ 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® DRI 200 ECO™ 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. This product is 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® DRI 200 ECO™ is not recommended for use on copper or brass surfaces.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):
Spindle 5, speed 2 rpm 75,000 to 100,000^{LMS}

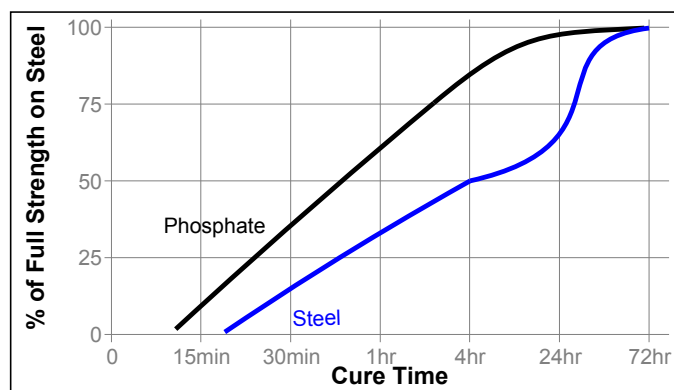
Flash Point - See SDS

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 steel nuts & bolts compared to different materials and tested according to ISO 10964.



TYPICAL PERFORMANCE OF CURED MATERIAL Adhesive Properties

Cured for 72 hours @ 22 °C

Breakaway Torque, ISO 10964:

3/8 x 16 phosphate and oil nuts and bolts	N·m	≥17 ^{LMS}
	(lb.in.)	(≥150.4)

Prevail Torque, ISO 10964:

3/8 x 16 phosphate and oil nuts and bolts	N·m	≥10.7 ^{LMS}
	(lb.in.)	(≥94.7)

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

Breakaway Torque, ISO 10964:

3/8 x 16 phosphate and oil nuts and bolts	N·m	≥19.2 ^{LMS}
	(lb.in.)	(≥169.9)

Prevail Torque, ISO 10964:

3/8 x 16 phosphate and oil nuts and bolts	N·m	≥10.7 ^{LMS}
	(lb.in.)	(≥94.7)

Cured for 72 hours @ 22 °C followed by 3 hours @ 135 °C, tested @ 135 °C

Breakaway Torque, ISO 10964:

3/8 x 16 phosphate and oil nuts and bolts	N·m	≥10.2 ^{LMS}
	(lb.in.)	(≥90.2)

Prevail Torque, ISO 10964:

3/8 x 16 phosphate and oil nuts and bolts	N·m	≥5.6 ^{LMS}
	(lb.in.)	(≥49.5)

TYPICAL ENVIRONMENTAL RESISTANCE

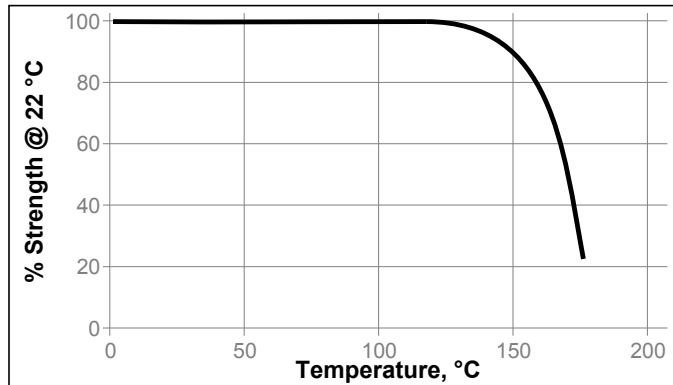
Cured for 72 hours @ 22 °C

Breakaway Torque, ISO 10964:

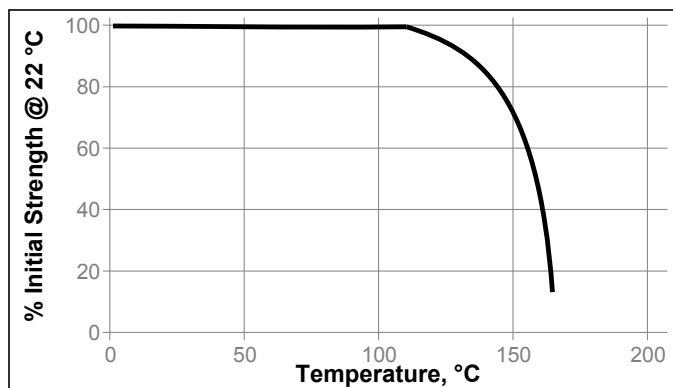
3/8 x 16 phosphate and oil nuts and bolts

Hot Strength

Tested at temperature

**Heat Aging**

Heat aged for 2000 hours, tested at temperature

**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C

Environment	°C	% of initial strength		
		100 h	500 h	1000 h
Motor oil	125	117	96	86
Motor oil	87	125	112	105
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 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:

LOCTITE® DRI 200 ECO™ 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 April 21, 2000. 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

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

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. 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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 1.1

Henkel Americas
+860.571.5100

Henkel Europe
+49.89.320800.1800

Henkel Asia Pacific
+86.21.2891.8859

For the most direct access to local sales and technical support visit: www.henkel.com/industrial