

## PRODUCT DESCRIPTION

LOCTITE<sup>®</sup> DRI 2250-W<sup>™</sup> provides the following product characteristics:

<b>Technology</b>	Acrylic
<b>Chemical Type</b>	Methacrylate ester
<b>Components</b>	Two-component
<b>Appearance - Part A</b>	Blue, Homogenous, Viscous liquid
<b>Appearance - Part B</b>	Yellow, Homogenous, Viscous liquid
<b>Viscosity</b>	Low
<b>Cure</b>	Anaerobic
<b>Cured Thermal Stability</b>	≤200 °C
<b>Application</b>	Threadlocking
<b>Specific Benefits</b>	<ul style="list-style-type: none"> <li>Flow coatable</li> <li>Can be diluted with DI/RO water to adjust viscosity for ease of application</li> </ul>

LOCTITE<sup>®</sup> DRI 2250-W<sup>™</sup> is a medium to high strength pre-applied threadlocker with good adhesion to a variety of fastener finishes, specially designed to meet automotive specification requirements. It is suitable for use on plain and passivated metal surfaces. This product has good hot strength and heat aging capabilities up to 220°C as well as good solvent resistance properties. The pre-applied film is dry-to-the-touch and remains an inert coating until assembly. During assembly microcapsules, which are contained within the coating, are crushed thereby releasing an active ingredient which initiates the curing process. LOCTITE<sup>®</sup> DRI 2250-W<sup>™</sup> prevents loosening of threaded fasteners. When cured, this product will also act as a thread sealant. It is particularly suitable in situations where threaded parts are required to be ready for immediate use in an adhesive joint in a high volume production environment where it may not be possible to apply a liquid product on line.

LOCTITE<sup>®</sup> DRI 2250-W<sup>™</sup> is a two component product. When using the first combination (Part A + Part B), the resultant coating is green in color.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

### Part A:

Flash Point - See SDS

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

Spindle 4, speed 20 rpm 2,500 to  
7,500

pH 8 to 10

### Part B:

Flash Point - See SDS

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

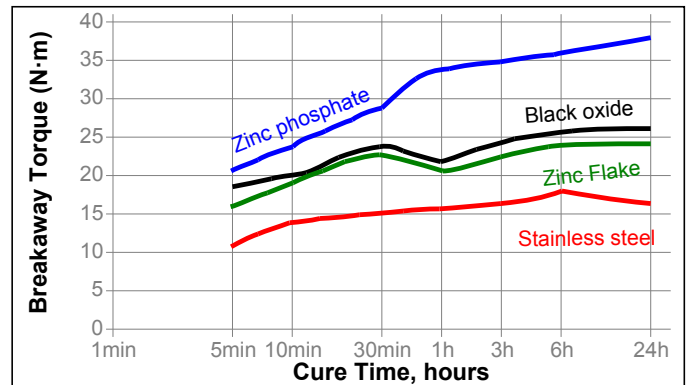
Spindle 5, speed 20 rpm 7,000 to  
12,000

## TYPICAL CURING PERFORMANCE

On Part Life, years 1 to 4  
(depending on the storage conditions of coated fasteners)

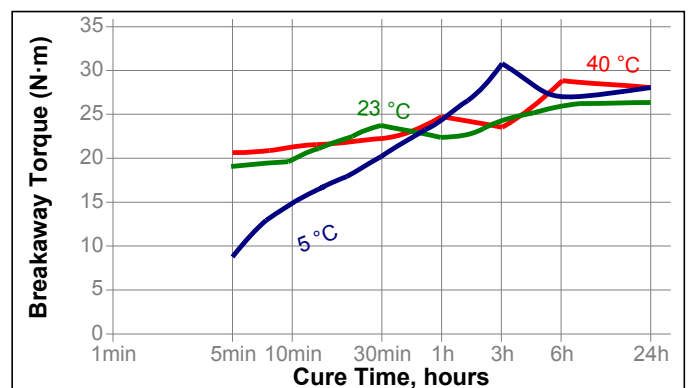
### Cure Speed vs. Substrate

The graph below shows the breakaway strength developed with time on M10 x 1.5 bolts of various substrates and tested at room temperature according to ASTM D5649.



### Cure Speed vs. Temperature

The rate of cure will depend on the ambient temperature. The graph below shows the breakaway strength developed with time at different temperatures on M10 X 1.5 black oxide bolts and steel nuts and tested according to ASTM D5649.



**TYPICAL PERFORMANCE OF CURED MATERIAL**

**Adhesive Properties**

After 24 hours @ 22°C

Breakaway Torque, ASTM D 5649:

M10 X 1.5 steel bolts N·m ≥50  
(lb.in.) (≥442)

After 72 hours @ 22°C

Breakaway Torque, ASTM D 5649:

M10 x 1.5 steel bolts with Zinc plated nuts N·m ≥50  
(lb.in.) (≥442)

Breakloose Torque, ASTM D 5649, input torque = 50 Nm:

M10x 1.5 Zinc Phosphate, zinc plated nuts N·m ≥40  
(lb.in.) (≥354)

M10 x 1.5 Zinc Flake, zinc plated nuts N·m ≥35  
(lb.in.) (≥310)

M10 x 1.5 Stainless Steel, zinc plated nuts N·m ≥45  
(lb.in.) (398)

**Total Coefficient of Friction (DIN 16047):**

These values are only valid for tested combinations of fasteners. Friction coefficients are based on :

- Surface finish
- Surface roughness
- Fitting quality of bearing surface
- Lubrication
- Assembly conditions (e.g. screw-in speed)
- Design (e.g. dimensions, geometry of threads)

M10 x 1.5 Zinc phosphate, zinc plated nuts 0.11

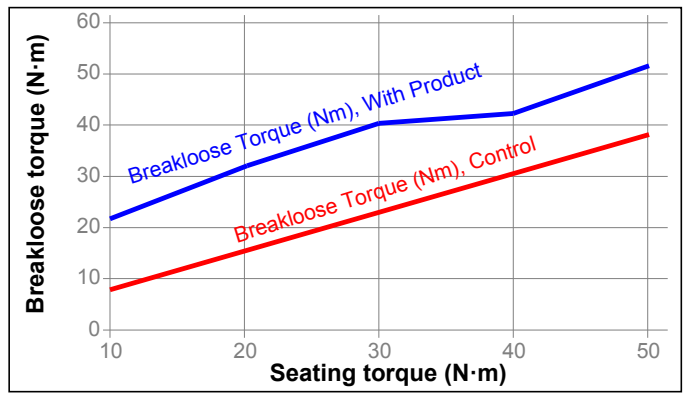
M10 x 1.5 Non-Electrolytically applied zinc rich coating, zinc plated nuts 0.11

M10 x 1.5 Zinc plating and friction modifying topcoat, zinc plated nuts 0.14

M10 x 1.5 Zinc plating with no topcoat, zinc plated nuts 0.15

**Torque Augmentation**

Breakloose torque of an uncoated fastener will normally be 15 to 30% less than the on-torque. The effect of LOCTITE® DRI 2250-W™ on the breakloose torque with black oxide fasteners is shown in the graph below.



**TYPICAL ENVIRONMENTAL RESISTANCE**

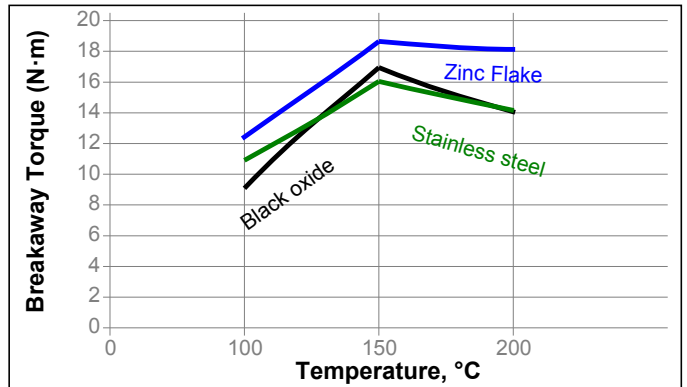
After 24 hours @ 22°C

Breakaway Torque, ASTM D 5649:

M10 x 1.5 (unseated)

**Hot Strength**

Tested at temperature



**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22°C.

Breakaway Torque, ASTM D 5649:

M10 X 1.5 black oxide bolts and steel nuts (unseated)

Environment	°C	% of initial strength		
		168 h	500 h	1000 h
Motor oil	120	37	33	32
Motor oil	150	18	19	19
Unleaded gasoline	22	82	78	77
Brake fluid	90	85	82	62
Water/glycol 50/50	120	32	30	27
Transmission fluid	120	34	37	36
Transmission fluid	150	18	17	19
Gear oil	120	40	34	39
DEF (AdBlue®)	22	85	94	104



## 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).**

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. Loctite DRI 2250-W is usually applied to threaded parts by authorized process centers who have automatic fastener cleaning, feeding, coating, rust proofing and drying equipment.
2. Quantities can be handled promptly with minimum turnaround time.
3. Sample parts should be sent to the authorized process center of your choice where they can coat them for your evaluation.
4. For ease of processing by the authorized process centers, the viscosity of this product can be adjusted by adding de-ionized/RO water to make it flow-coatable.
5. **SAMPLE TESTS ARE RECOMMENDED TO OBTAIN THE DESIRED RESULTS ON YOUR PARTS.**
6. Contact your nearest Henkel sales representative or our website for the authorized process center nearest to you.

## Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Store coated fasteners between 4 to 38° C (40 to 100°F) with low relative humidity (Dew Point below 62). Coated fasteners stored outside the recommended conditions may have an impact on the coatings performance. Coated fasteners which are more than one year from the date of adhesive application, as well as fasteners exposed to conditions outside of the recommended storage conditions should be checked for performance prior to use. 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

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

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## Reference 1.0