



276 Threadlocker High Strength Fast Fixture



PRODUCT DESCRIPTION

LOCTITE® 276™ provides the following product characteristics:

| | |
|-----------------------------|------------------------------------|
| Technology | Acrylic |
| Chemical Type | Dimethacrylate ester |
| Appearance (uncured) | Green liquid ^{LMS} |
| Fluorescence | Positive under UV light |
| Components | One component - requires no mixing |
| Viscosity | Low |
| Cure | Anaerobic |
| Secondary Cure | Activator |
| Application | Threadlocking |
| Strength | High |

LOCTITE® 276™ is designed for the permanent locking and sealing of threaded fasteners. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration. LOCTITE® 276™ is particularly suited for fast cure thereby reducing the need for activators, and/or for use on less active substrates such as coated or plated surfaces.

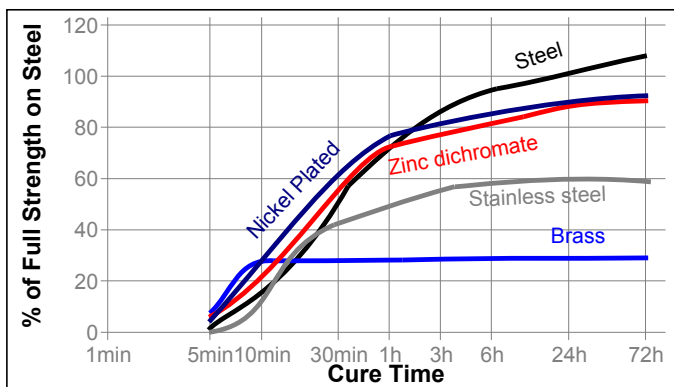
TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---|---------------------------|
| Specific Gravity @ 25 °C | 1.05 |
| Flash Point - See SDS | |
| Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP): | |
| Spindle 2, speed 20 rpm, | 380 to 620 ^{LMS} |

TYPICAL CURING PERFORMANCE

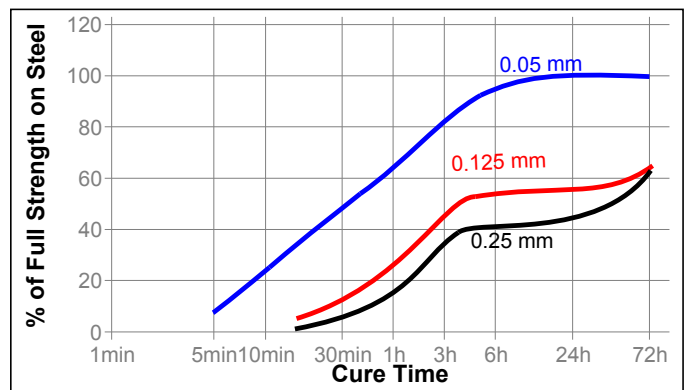
Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the breakaway strength developed with time on M10 steel nuts and bolts compared to different materials and tested at room temperature according to ISO 10964.



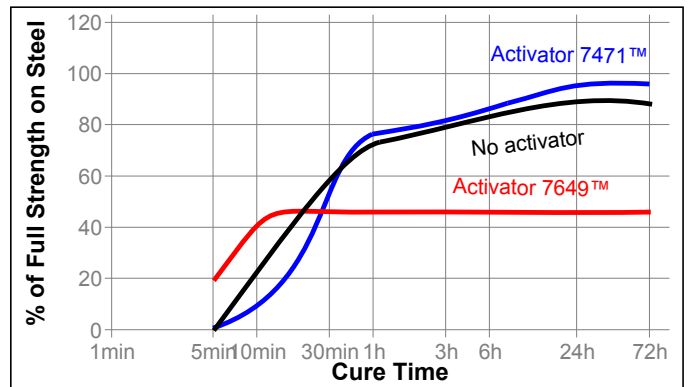
Cure Speed vs. Bond Gap

The rate of cure will depend on the bondline gap. The following graph shows shear strength developed with time on steel pins and collars at different controlled gaps and tested according to ISO 10123.



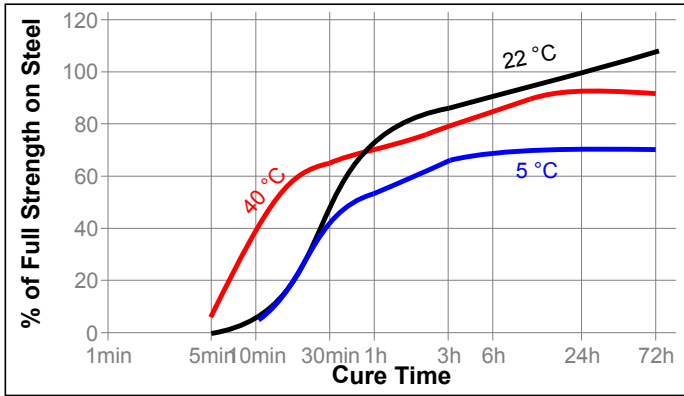
Cure Speed vs. Activator

Where cure speed is unacceptably long, or large gaps are present, applying activator to the surface will improve cure speed. The graph below shows the breakaway strength developed with time on M10 zinc dichromate steel nuts and bolts using Activator 7471™ or 7649™ and tested according to ISO 10964.



Cure Speed vs. Temperature

The rate of cure will depend on the temperature. The graph below shows the breakaway strength developed with time at different temperatures on M10 steel nuts and bolts and tested according to ISO 10123.



TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K⁻¹:
 Below T_g 47×10⁻⁶
 Above T_g 143×10⁻⁶
 Glass Transition Temperature (T_g) by TMA, °C 104

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

After 24 hours @ 22 °C

Breakaway Torque, ISO 10964:
 M10 steel nuts and bolts (unseated) N·m 60 (lb.in.) (530)
 Prevail Torque, ISO 10964:
 M10 steel nuts and bolts (unseated) N·m 41 (lb.in.) (360)
 Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:
 M10 steel nuts and bolts (seated) N·m 55 (lb.in.) (490)
 Compressive Shear Strength, ISO 10123:
 Steel pins and collars (degreased) N/mm² ≥20^{LMS} (psi) (≥2,900)

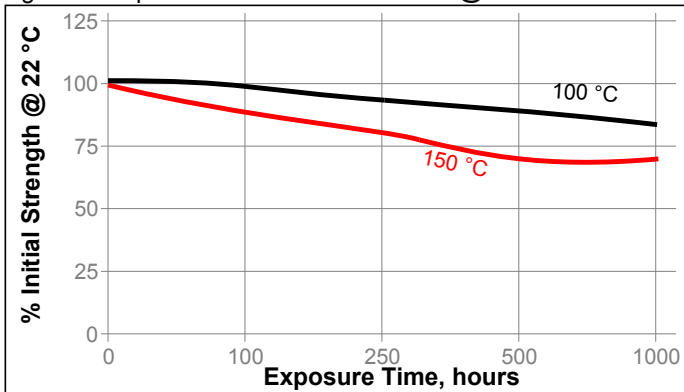
TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 1 week @ 22 °C

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:
 M10 zinc phosphate steel nuts and bolts

Heat Aging

Aged at temperature indicated and tested @ 22 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22°C.

| Environment | °C | % of initial strength | | |
|---------------------|-----|-----------------------|-------|--------|
| | | 100 h | 500 h | 1000 h |
| Acetone | 22 | 85 | 80 | 80 |
| Brake fluid | 22 | 95 | 95 | 95 |
| Ethanol | 22 | 95 | 85 | 90 |
| Motor oil | 125 | 90 | 100 | 90 |
| Gasoline (unleaded) | 22 | 100 | 95 | 95 |
| Water/glycol 50/50 | 87 | 90 | 85 | 90 |

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

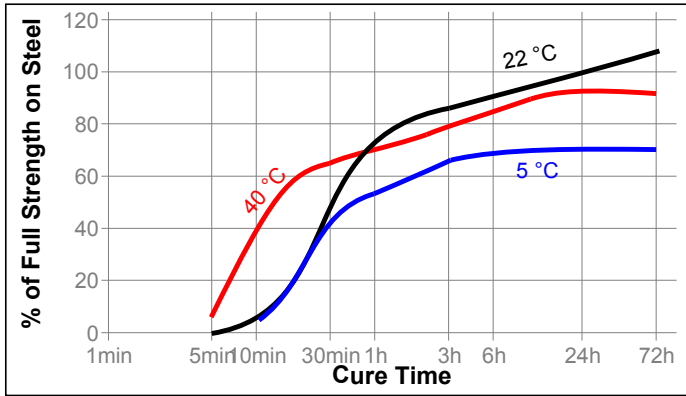
1. For best results, clean all surfaces (external and internal) with a LOCTITE® cleaning solvent and allow to dry.
2. If the cure speed is too slow, spray all threads with Activator 7471™ or 7649™ and allow to dry.
3. To prevent the product from clogging in the nozzle, do not allow the tip to touch metal surfaces during application.
4. **For Thru Holes**, apply several drops of the product onto the bolt at the nut engagement area.
5. **For Blind Holes**, apply several drops of the product down the internal threads to the bottom of the hole.
6. **For Sealing Applications**, apply a 360° bead of product to the leading threads of the male fitting, leaving the first thread free. Force the material into the threads to thoroughly fill the voids. For bigger threads and voids, adjust product amount accordingly and apply a 360° bead of product on the female threads also.
7. Assemble and tighten as required.

For Disassembly

1. Apply localized heat to nut or bolt to approximately 250 °C. Disassemble while hot.

For Cleanup

1. Cured product can be removed with a combination of soaking in a Loctite solvent and mechanical abrasion such as a wire brush.



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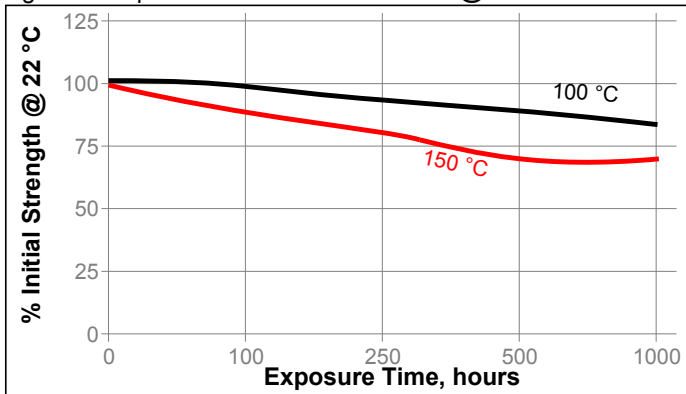
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