



PRODUCT DESCRIPTION

LOCTITE[®] 5651 provides the following product characteristics:

| | |
|-----------------------------|----------------------------------|
| Technology | Acrylic |
| Chemical Type | Methacrylate Ester |
| Appearance (uncured) | White to off-white paste |
| Components | One component-requires no mixing |
| Viscosity | Medium |
| Cure | Anaerobic |
| Secondary Cure | Activator |
| Application | Thread Sealing |
| Strength | Low |

LOCTITE[®] 5651 is designed for the locking and sealing of metal pipes and fittings. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration.

Pressure Resistance

LOCTITE[®] 5651 was successfully tested for pressure resistance and sealability to 20 MPa or 3 MPa by instant sealing.

3/4 inch steel pipe tees and plugs were assembled and torqued to 60 N-m and allowed to cure for 72 hours prior to testing at 20 MPa water pressure.

3/4 inch steel pipe tees and plugs were assembled and torqued to 60 N-m and allowed to cure for 5 minutes prior to testing at 3 MPa water pressure.

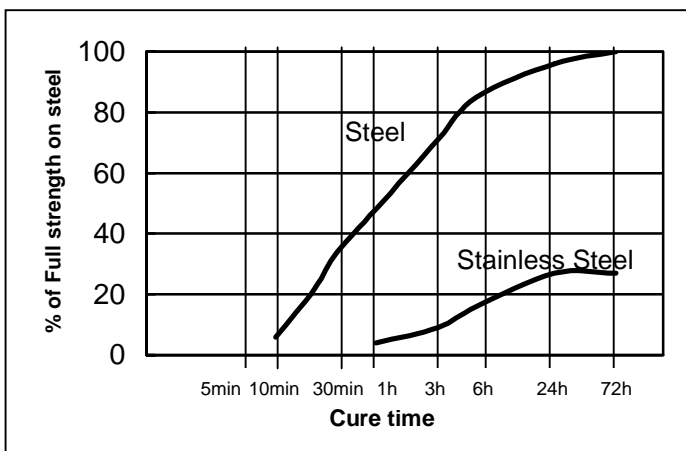
PROPERTIES OF UNCURED MATERIAL

| | Typical Value |
|--------------------------------|---------------|
| Specific Gravity @ 25 °C | 1.17 |
| Flash Point – See MSDS | |
| Viscosity, @ 25 °C, mPa·s (cP) | |
| Brookfield RVT | |
| Spindle 6 @ 2.5 rpm | 100,000 |

TYPICAL CURING PERFORMANCE

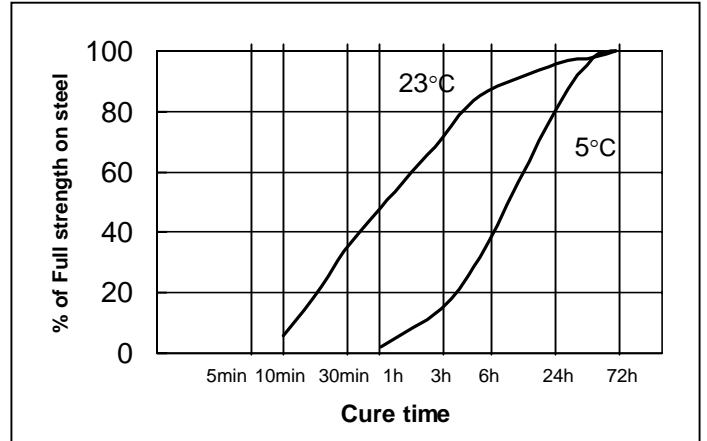
Cure speed vs. substrate

The rate of cure will depend on substrate used. The graph below shows the breakaway torque strength developed with time on M10 mild steel nuts & bolts compared to stainless steel and tested according to ISO 10964.



Cure speed vs. temperature

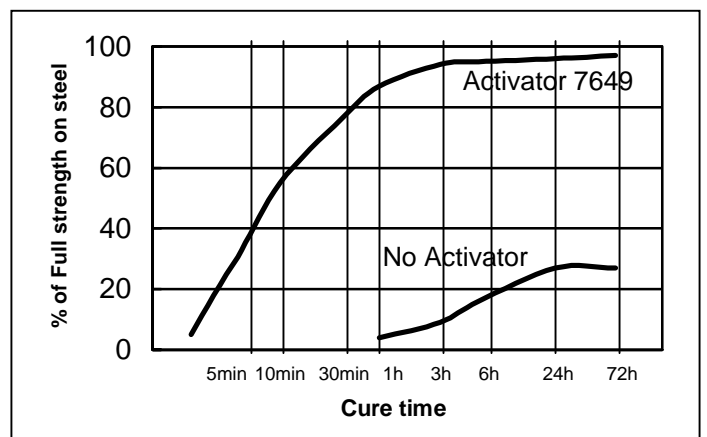
The rate of cure will depend on the temperature. The graph below shows the breakaway torque strength developed with time on M10 mild steel nuts & bolts and tested.



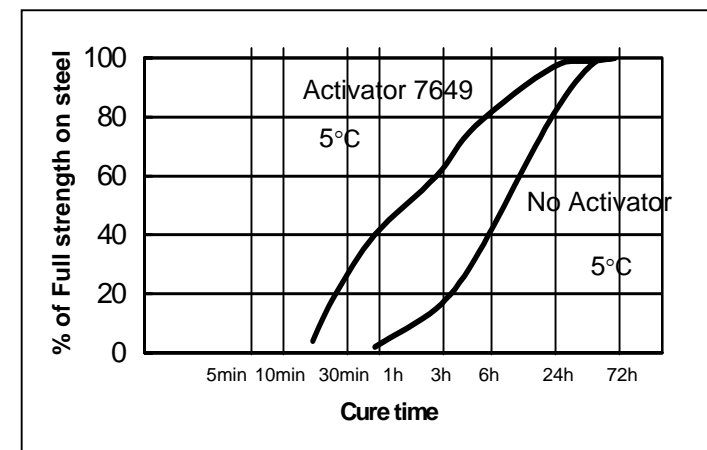
Cure speed vs. activator

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 torque strength developed with time at 23 °C on M10 stainless steel nuts & bolts and tested.



The graph below shows the breakaway torque strength developed with time at 5 °C on M10 mild steel nuts & bolts and tested.



TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

| | |
|--|-----------------------|
| Coefficient of Thermal Expansion, ASTM D696, K ⁻¹ | 80 x 10 ⁻⁶ |
| Coefficient of Thermal Conductivity, ASTM C117, W/(m·K) | 0.10 |
| Specific Heat, kJ/(kg·K) | 0.30 |

PERFORMANCE OF CURED MATERIAL

(After 72 hrs at 23 °C on M10 mild steel nuts & bolts)

| | |
|----------------------------------|--------------------|
| Breakaway torque, ISO 10964, N·m | Typical Value 9 |
|----------------------------------|--------------------|

TYPICAL ENVIRONMENTAL RESISTANCE

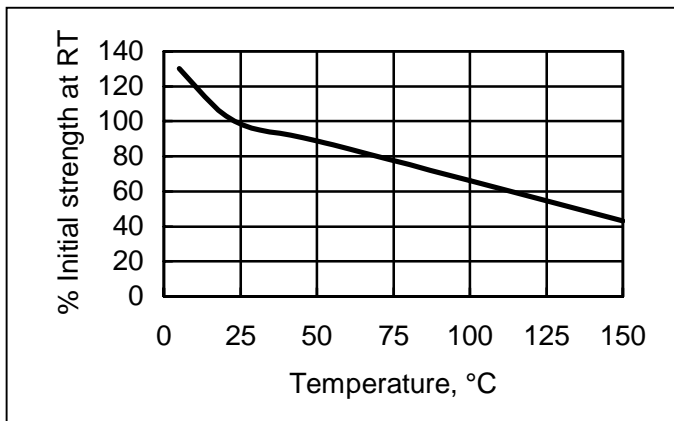
Test Procedure : Breakloose torque on fasteners seated to 5N·m, ISO 10964

Substrate: M10 degreased steel fasteners

Cure procedure: 72 hours at 23 °C

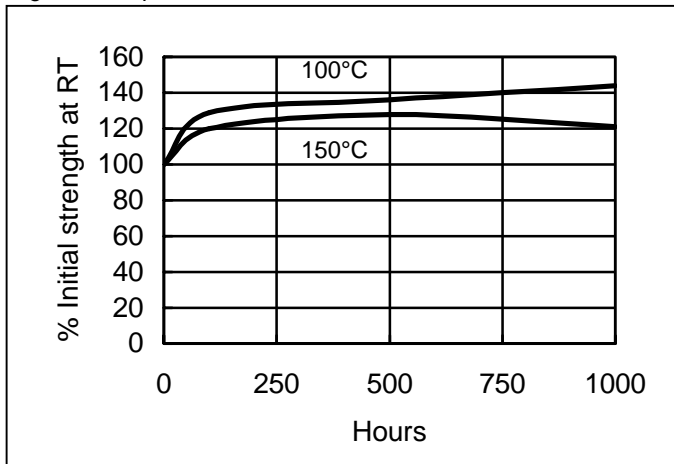
Hot Strength

Tested at temperature.



Heat Aging

Aged at temperature indicated and tested at 23 °C



Chemical / Solvent Resistance

Aged under conditions indicated and tested at 23 °C

| Solvent | Temp. | % Initial Strength retained after 30 days |
|--------------------|-------|---|
| Isopropyl alcohol | 23 °C | 100 |
| Acetone | 23 °C | 57 |
| Distilled water | 87 °C | 100 |
| LLC (Water/Glycol) | 87 °C | 100 |

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).

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.

Note

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