Technical Data Sheet

# LOCTITE® GRD CV™

Known as LOCTITE® 083™
November 2014

## PRODUCT DESCRIPTION

LOCTITE® GRD CV™ provides the following product characteristics:

| | |
|---|---|
| **Technology** | Acrylic |
| Chemical Type | Dimethacrylate ester |
| Appearance (uncured) | Blue liquid[LMS] |
| Fluorescence | Positive under UV light[LMS] |
| Components | One component - requires no mixing |
| Viscosity | Medium |
| **Cure** | Anaerobic |
| **Application** | Threadlocking |
| Strength | Medium |

LOCTITE® GRD CV™ is used to lock and seal fine threaded nuts, bolts and studs in a wide variety of applications where removal with hand tools is necessary.

### Mil-S-22473E

LOCTITE® GRD CV™ is tested to the lot requirements of Military Specification Mil-S-22473E. **Note:** This is a regional approval. Please contact your local Technical Service Center for more information and clarification.

### ASTM D5363

Each lot of adhesive produced in North America is tested to the general requirements defined in paragraphs 5.1.1 and 5.1.2 and to the Detail Requirements defined in section 5.2.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

| | |
|---|---|
| Specific Gravity @ 25 °C | 1.05 |
| Flash Point - See SDS | |
| Viscosity, Cannon Fenske, ISO 3104, mPa·s (cP) | 100 to 250[LMS] |

## TYPICAL PROPERTIES OF CURED MATERIAL

| | |
|---|---|
| **Physical Properties**: | |
| Coefficient of Thermal Expansion, ISO 11359-2, $K^{-1}$ | $100\times10^{-6}$ |
| Coefficient of Thermal Conductivity, ISO 8302, W/(m·K) | 0.1 |
| Specific Heat, kJ/(kg·K) | 0.3 |
| **Electrical Properties**: | |
| Dielectric Breakdown Strength, IEC 60243-1, kV/mm | 9.8 |

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Adhesive Properties

After 6 hours @ 22 °C

Prevail Torque, ISO 10964:

| | | |
|---|---|---|
| 3/8 x 24 steel nuts (grade 2) and bolts (grade 2) | N·m (lb.in.) | 2.3 to 11.3[LMS] (20 to 100) |

After 24 hours @ 22 °C

Breakaway Torque, ISO 10964:

| | | |
|---|---|---|
| 3/8 x 24 steel nuts (grade 2) and bolts (grade 2) | N·m (lb.in.) | 8 (70) |

Prevail Torque, ISO 10964:

| | | |
|---|---|---|
| 3/8 x 24 steel nuts (grade 2) and bolts (grade 2) | N·m (lb.in.) | 4.5 to 11.3[LMS] (40 to 100) |

## TYPICAL ENVIRONMENTAL RESISTANCE

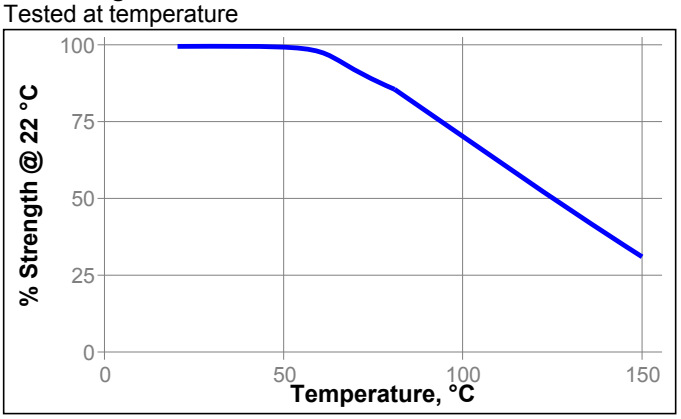
Cured for 72 hours @ 22 °C

Breakaway Torque, ISO 10964:

3/8 x 24 steel nuts (grade 2) and bolts (grade 2)

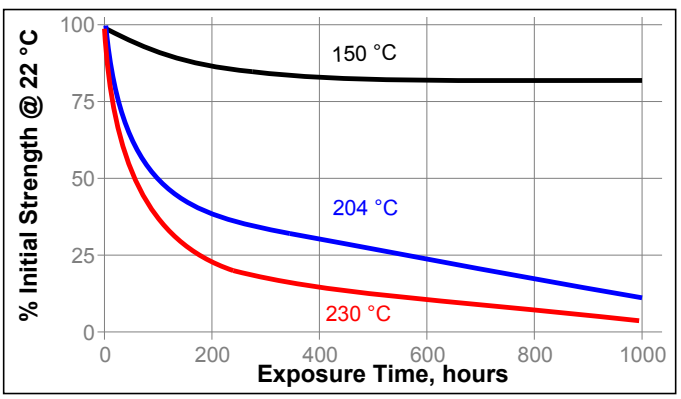
### Hot Strength

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** | **300 h** |
| Motor oil (MIL-L-46152) | 93 | 100 |
| Phosphate ester | 93 | 100 |
| Water | 93 | 110 |
| Ethylene glycol | 93 | 110 |
| Ethanol | 22 | 115 |
| Acetone | 22 | 115 |

## 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 material is an inactive metal or the cure speed is too slow, spray all threads with Activator 7471™ or 7649™ and allow to dry.
3. Shake the product thoroughly before use.
4. To prevent the product from clogging in the nozzle, do not allow the tip to touch metal surfaces during application.
5. **For Thru Holes**, apply several drops of the product onto the bolt at the nut engagement area.
6. **For Blind Holes**, apply several drops of the product down the internal threads to the bottom of the hole.
7. **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 thouroughly fill the voids. For bigger threads and voids, adjust product amount accordingly and apply a 360° bead of product on the female threads also.
8. Assemble and tighten as required.

**For Disassembly**

1. Remove with standard hand tools.
2. In rare instances where hand tools do not work because of excessive engagement length, 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.

**Loctite Material Specification[LMS]**
LMS dated August 23, 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:**
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.
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Reference 1.3

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