LOCTITE® 620 is designed for the bonding of cylindrical fitting parts. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration. Typical applications include locating pins in radiator assemblies, sleeves into pump housings and bearings in auto transmissions. Particularly suitable for applications where temperature resistance up to 200°C is required.

TYPICAL PROPERTIES OF UNCURED MATERIAL

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity @ 25 °C</td>
<td>1.16</td>
</tr>
<tr>
<td>Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):</td>
<td>5,000 to 12,000 mPa·s (cP)</td>
</tr>
<tr>
<td>Viscosity, EN 12092 - MV, 25 °C, after 180 s, mPa·s (cP):</td>
<td>1,200 to 2,400 mPa·s (cP)</td>
</tr>
<tr>
<td>Flash Point - See SDS</td>
<td></td>
</tr>
</tbody>
</table>

TYPICAL CURING PERFORMANCE

Cure Speed vs. Substrate
The rate of cure will depend on the substrate used. The graph below shows the shear strength developed with time on steel pins and collars compared to different materials and tested according to ISO 10123.

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. Temperature
The rate of cure will depend on the temperature. The graph below shows the shear strength developed with time at different temperatures on steel pins and collars 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 shear strength developed with time on zinc dichromate steel pins and collars using Activator 7471™ and 7649™ and tested according to ISO 10123.
**TYPICAL PROPERTIES OF CURED MATERIAL**

**Physical Properties:**

- Coefficient of Thermal Expansion, ISO 11359-2, K:\(^{-1}\): 80×10\(^{-6}\)
- Coefficient of Thermal Conductivity, ISO 8302, W/(m·K): 0.1
- Specific Heat, kJ/(kg·K): 0.3
- Elongation, at break, ISO 37, %: <1

**TYPICAL PERFORMANCE OF CURED MATERIAL**

**Adhesive Properties**

<table>
<thead>
<tr>
<th>After 24 hours @ 22 °C</th>
<th>Compressive Shear Strength, ISO 10123:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Steel pins and collars N/mm(^2) (\geq 17.2)(^{1395}) (psi) (2,495)</td>
</tr>
</tbody>
</table>

Cured for 24 hours @ 22 °C, followed by 24 hours @ 177 °C, tested @ 22 °C

<table>
<thead>
<tr>
<th>Compressive Shear Strength, ISO 10123:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel pins and collars N/mm(^2) (\geq 24.1)(^{1395}) (psi) (3,495)</td>
</tr>
</tbody>
</table>

**TYPICAL ENVIRONMENTAL RESISTANCE**

Cured for 1 week @ 22 °C

<table>
<thead>
<tr>
<th>Compressive Shear Strength, ISO 10123:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel pins and collars</td>
</tr>
</tbody>
</table>

**Heat Aging**

Aged at temperature indicated and tested @ 22 °C

<table>
<thead>
<tr>
<th>% Initial Strength @ 22 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 °C</td>
</tr>
<tr>
<td>180 °C</td>
</tr>
</tbody>
</table>

**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C.

<table>
<thead>
<tr>
<th>Environment °C</th>
<th>100 h</th>
<th>500 h</th>
<th>1000 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor oil (MIL-L-46152) 125</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Unleaded Petrol 22</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Brake fluid 22</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Water/glycol 50/50 87</td>
<td>95</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Ethanol 22</td>
<td>100</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td>Acetone 22</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
</tbody>
</table>

**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 with Activator 7471™ or 7649™ and allow to dry.
3. Shake the product thoroughly before use.
4. **For Slip Fitted Assemblies**, apply adhesive around the leading edge of the pin and the inside of the collar and use a rotating motion during assembly to ensure good coverage.
5. **For Press Fitted Assemblies**, apply adhesive thoroughly to both bond surfaces and assemble at high press on rates.
6. **For Shrink Fitted Assemblies** the adhesive should be coated onto the pin, the collar should then be heated to create sufficient clearance for free assembly.
7. Parts should not be disturbed until sufficient handling strength is achieved.

**For Disassembly**

1. Apply localized heat to the assembly to approximately 250 °C. Disassemble while hot.

**For Cleanup**

1. Cured product can be removed by soaking in a Loctite® solvent, e.g. Loctite® 7200 and mechanical removal with a soft scraper. Avoid formation of dust and aerosols. Complete the cleaning process by wiping with a soft cloth dampened with Loctite® Cleaner, e.g. Loctite® 7063 or Loctite® ODC-free cleaner.

**Loctite Material Specification:**

LMS dated August 20, 1997. 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:**

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**Reference 0.6**

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