



# LOCTITE<sup>®</sup> 358<sup>™</sup>

November 2004

## PRODUCT DESCRIPTION

LOCTITE<sup>®</sup> 358<sup>™</sup> provides the following product characteristics:

|                             |                                    |
|-----------------------------|------------------------------------|
| <b>Technology</b>           | Acrylic                            |
| <b>Chemical Type</b>        | Urethane methacrylate ester        |
| <b>Appearance (uncured)</b> | Amber liquid <sup>LMS</sup>        |
| <b>Components</b>           | One component - requires no mixing |
| <b>Viscosity</b>            | Medium                             |
| <b>Cure</b>                 | Ultraviolet (UV) light             |
| <b>Cure Benefit</b>         | Production - high speed curing     |
| <b>Application</b>          | Bonding                            |
| <b>Maximum Gap</b>          | 0.5 mm                             |

LOCTITE<sup>®</sup> 358<sup>™</sup> bonds and seals glass to glass and glass to metal, as in decorative glassware, jewelry, etc.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

|  |                               |
|--|-------------------------------|
| Specific Gravity @ 25 °C                             | 1.09                          |
| Vapor pressure, mbar                                 | <3                            |
| Flash Point - See MSDS                               |                               |
| Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):      |                               |
| Spindle 3, speed 20 rpm                              | 2,000 to 3,000 <sup>LMS</sup> |
| Viscosity, EN 12092, 25 °C, after 180 s, mPa·s (cP): |                               |
| Shear rate 36 s <sup>-1</sup>                        | 1,750 to 3,500                |

## TYPICAL CURING PERFORMANCE

LOCTITE<sup>®</sup> 358<sup>™</sup> cures when exposed to UV radiation of 365 nm. To obtain a full cure on surfaces exposed to air, radiation at 250nm is also required. Both of these wavelengths are emitted by medium pressure mercury vapor lamps as incorporated, for example, in the LOCTITE<sup>®</sup> UVALOC 1000.

### Tack Free Time

Tack Free Time is the time required to achieve a tack free surface.

|                                 |    |
|---------------------------------|----|
| Tack Free Time, seconds:        |    |
| 100 mW/cm <sup>2</sup> @ 365 nm | 17 |

### Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.09 N/mm<sup>2</sup>.

|  |                   |
|--|-------------------|
| UV Fixture Time, Glass microscope slides, seconds: |                   |
| 6 mW/cm <sup>2</sup> @ 365 nm                      | ≤7 <sup>LMS</sup> |

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical Properties

|   |                      |
|---|----------------------|
| Coefficient of Thermal Expansion, ASTM D 696, K <sup>-1</sup> | 100×10 <sup>-6</sup> |
| Coefficient of Thermal Conductivity, ASTM C 177, W/(m·K)      | 0.1                  |
| UV Depth of Cure, mm:   |                      |
| 100 mW/cm <sup>2</sup> @ 365 nm for 17 seconds                | 1.7                  |
| 100 mW/cm <sup>2</sup> @ 365 nm for 68 seconds                | 2.8                  |

## Electrical Properties

|  |                    |
|--|--------------------|
| Surface Resistivity, IEC 60093, Ω·cm                 | 2×10 <sup>15</sup> |
| Dielectric Breakdown Strength, ASTM D 149, kV/mm     | 50                 |
| Dielectric Constant / Dissipation Factor, IEC 60250: |                    |
| 100 Hz   | 3.4 / 0.03         |
| 1,000 Hz   | 3.4 / 0.03         |
| 10,000 Hz  | 3.4 / 0.03         |

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Adhesive Properties

Cured @ 10 mW/cm<sup>2</sup> @ 365 nm for 15 seconds using a black light

|                             |  |
|-----------------------------|--|
| Tensile Strength, ISO 6922: |  |
| Steel pin to Glass          | N/mm <sup>2</sup> ≥10 <sup>LMS</sup><br>(psi) (≥1,450) |

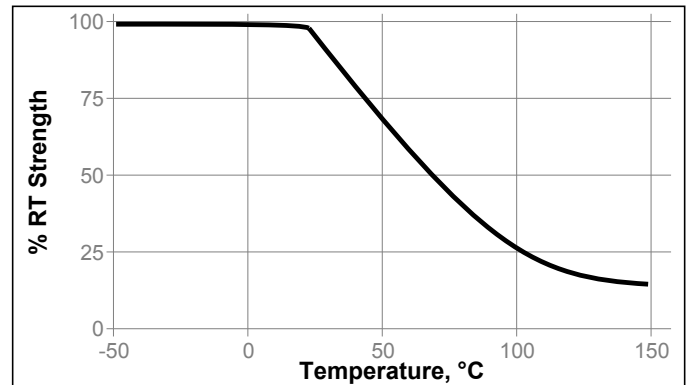
## TYPICAL ENVIRONMENTAL RESISTANCE

Cured @ 100 mW/cm<sup>2</sup> @ 365 nm for 20 seconds plus 1 week @ 22°C

|                                   |  |
|-----------------------------------|--|
| Tensile Strength, ISO 6922:       |  |
| Steel pin (grit blasted) to Glass |  |

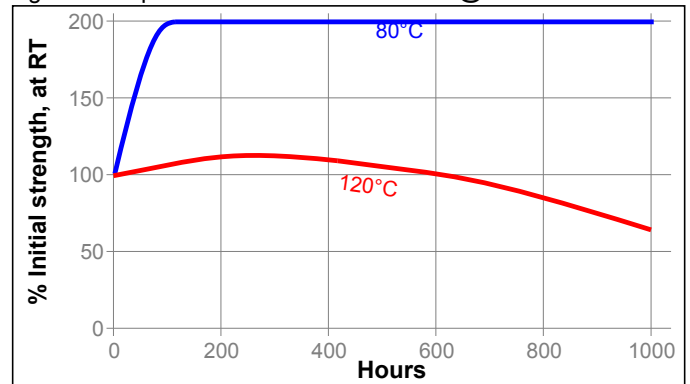
## Hot Strength

Tested at temperature



## Heat Aging

Aged at temperature indicated and tested @ 22 °C



**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C.

| Environment                   | °C | % of initial strength |       |        |
|-------------------------------|----|-----------------------|-------|--------|
|                               |    | 100 h                 | 500 h | 1000 h |
| Heat/humidity 90% RH          | 40 | 50                    | 35    | 25     |
| Gasoline                      | 22 | 100                   | 100   | 85     |
| 1,1,1 Trichloroethane         | 22 | 100                   | 100   | 100    |
| Freon TA                      | 22 | 100                   | 100   | 100    |
| Industrial methylated spirits | 22 | 100                   | 100   | 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).**

**Directions for use**

1. This product is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling.
2. The product should be dispensed from applicators with black feedlines.
3. For best performance bond surfaces should be clean and free from grease.
4. Cure rate is dependent on lamp intensity, distance from light source, depth of cure needed or bondline gap and light transmittance of the substrate through which the radiation must pass.
5. Recommended intensity for cure in bondline situation is 5 mW/cm<sup>2</sup> minimum (measured at the bondline) with an exposure time of 4-5 times the fixture time at the same intensity.
6. For dry curing of exposed surfaces, higher intensity UV is required (100mW/cm<sup>2</sup>).
7. Cooling should be provided for temperature sensitive substrates such as thermoplastics.
8. Plastic grades should be checked for risk of stress cracking when exposed to liquid adhesive.
9. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
10. Bonds should be allowed to cool before subjecting to any service loads.

**Loctite Material Specification<sup>LMS</sup>**

LMS dated June 17, 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  
 N x 0.225 = lb  
 N/mm x 5.71 = lb/in  
 N/mm<sup>2</sup> x 145 = psi  
 MPa x 145 = psi  
 N·m x 8.851 = lb·in  
 N·mm x 0.142 = oz·in  
 mPa·s = cP

**Note**

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