INTRODUCTION
LOCTITE EA 9359.3 AERO is two-component structural adhesive which exhibits high peel and high tensile lap shear strength. It contains 5 mil/0.13 mm glass beads for bondline thickness control. This adhesive has excellent resistance to water, salt spray and most organic fluids. A variety of substrates such as metals, thermoplastics and composites may be bonded using LOCTITE EA 9359.3 AERO. LOCTITE EA 9359.3 AERO is offered in a two to one cartridge with static mixer.

FEATURES
- Easy Mix
- Good Environmental Resistance
- Non Sag
- High Shear Strength
- Bondline Thickness Control
- High Peel Strength
- Available in 2:1 Dual Cartridge with Static Mixer

Uncured Properties

<table>
<thead>
<tr>
<th></th>
<th>Part A</th>
<th>Part B</th>
<th>Mixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Yellow</td>
<td>Blue</td>
<td>Green</td>
</tr>
<tr>
<td>Viscosity @ 77°F</td>
<td>2,000</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Brookfield, HBT</td>
<td>Spdl 7 @ 20 rpm</td>
<td>Spdl 6 @ 20 rpm</td>
<td></td>
</tr>
<tr>
<td>Viscosity @ 25°C</td>
<td>200 Pa·S</td>
<td>100 Pa·S</td>
<td></td>
</tr>
<tr>
<td>Brookfield, HBT</td>
<td>Spdl 7 @ 2.1 rad/s</td>
<td>Spdl 6 @ 2.1 rad/s</td>
<td></td>
</tr>
<tr>
<td>Density (g/ml)</td>
<td>1.16</td>
<td>1.01</td>
<td>1.12</td>
</tr>
<tr>
<td>Shelf life@ 77°F/25°C</td>
<td>1 year</td>
<td>1 year</td>
<td></td>
</tr>
</tbody>
</table>

This material will normally be shipped at ambient conditions, which will not alter our standard warranty, provided that the material is placed into its intended storage upon receipt. Premium shipment is available upon request.

Mix Ratio

<table>
<thead>
<tr>
<th></th>
<th>Part A</th>
<th>Part B</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Weight</td>
<td>100</td>
<td>44</td>
</tr>
<tr>
<td>By Volume</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Volume measurement is not recommended for structural applications unless special precautions are taken to assure proper ratios.
Pot Life
100 gram mass 60 minutes @ 77°F/25°C
200 gram mass 50 minutes @ 77°F/25°C
450 gram mass 40 minutes @ 77°F/25°C
Method - ASTM D2471 in water bath

Peak Exotherm (450 gram mass) is >300°F/149°C @ 40 minutes.

Handling
Mixing - This product requires mixing two components together just prior to application to the parts to be bonded. Complete mixing is necessary. The temperature of the separate components prior to mixing is not critical, but should be close to room temperature (77°F/25°C).

Application
Mixing - Combine Part A and Part B in the correct ratio and mix thoroughly. THIS IS IMPORTANT! Heat buildup during or after mixing is normal. Do not mix quantities greater than 450 grams as dangerous heat buildup can occur causing uncontrolled decomposition of the mixed adhesive. TOXIC FUMES CAN OCCUR, RESULTING IN PERSONAL INJURY. Mixing smaller quantities will minimize the heat buildup.

Applying - Bonding surfaces should be clean, dry and properly prepared. For optimum surface preparation consult the LOCTITE Surface Preparation Guide. The bonded parts should be held in contact until the adhesive is set. Handling strength for this adhesive will occur in 24 hours (>77°F/25°C), after which the support tooling or pressure used during cure may be removed. Since full bond strength has not yet been attained, load application should be small at this time.

Curing - This adhesive may be cured for 5 to 7 days @ 77°F/25°C to achieve normal performance. Accelerated cures up to 200°F/93°C (for small masses only) may be used as an alternative. For example, 1 hour @ 180°F/82°C will give complete cure.

Cleanup - It is important to remove excess adhesive from the work area and application equipment before it hardens. Denatured alcohol and many common industrial solvents are suitable for removing uncured adhesive. Consult your supplier’s information pertaining to the safe and proper use of solvents.

Bond Strength Performance
Tensile Lap Shear Strength
Tensile lap shear strength tested per ASTM D1002 after curing for 7 days @ 77°F/25°C. Adherends are 2024-T3 AlClad aluminum, phosphoric acid anodized per ASTM D3933.

<table>
<thead>
<tr>
<th>Test Temperature, °F/°C</th>
<th>psi</th>
<th>MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>-67/-55</td>
<td>4,000</td>
<td>27.6</td>
</tr>
<tr>
<td>77/25</td>
<td>4,500</td>
<td>31.0</td>
</tr>
<tr>
<td>180/82</td>
<td>2,000</td>
<td>13.8</td>
</tr>
<tr>
<td>200/93</td>
<td>1,000</td>
<td>6.9</td>
</tr>
</tbody>
</table>
Peel Strength
T-Peel strength tested per ASTM D1876 after curing for 7 days @ 77°F/25°C. Adherends are 2024-T3 AlClad aluminum, phosphoric acid anodized per ASTM D3933.

<table>
<thead>
<tr>
<th>Test Temperature, °F/°C</th>
<th>Lb/in</th>
<th>N/25 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>77/25</td>
<td>60</td>
<td>267</td>
</tr>
</tbody>
</table>

Service Temperature
Service temperature is defined as that temperature at which this adhesive still retains 1000 psi (6.9 MPa) using test method ASTM D1002 and is approximately 200°F/93°C.

Bulk Resin Properties
Tensile Properties - tested using 0.125 inch/3.18 mm castings per ASTM D638. Adhesive cure 5 days @ 77°F/25°C and 1 hour @ 200°F/93°C.

- Tensile Modulus @ 77°F/25°C: 310 ksi / 2136 MPa
- Elongation at Break @ 77°F/25°C: 7.7%
- Shear Modulus, dry @ 77°F/25°C (by RDS): 149 ksi / 1027 MPa
- Shear Modulus, wet @ 77°F/25°C (by RDS): 89 ksi / 613 MPa

- $T_g$ (Tan Delta by DMTA) @ 77°F/25°C cure: 134°F/51°C / 150°F/66°C
- $T_g$ (Tan Delta by DMTA) @ 200°F/93°C cure: 185°F/85°C / 149°F/65°C

Wet exposure: 30 days @ 160°F/71°C, 95% RH

Thermal Conductivity - Tested per ASTM E1461
- Specific Heat, J/g: 0.93
- Conductivity, W/mK: 0.24

Compressive Properties - tested using 0.5 inch x 1 inch (12.7 x 25.4 mm) right cylinders @ 77°F/25°C per ASTM D695.

- Compressive Strength cured @ 77°F/25°C: 7,700 psi / 53.0 MPa
- Compressive Strength cured @ 200°F/93°C: 21,000 psi / 145 MPa

Handling Precautions
Do not handle or use until the Material Safety Data Sheet has been read and understood.
For industrial use only.

DISPOSAL INFORMATION
Dispose of spent remover and paint residue per local, state and regional regulations. Refer to HENKEL TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional disposal information.
PRECAUTIONARY INFORMATION

General:
As with most epoxy based systems, use this product with adequate ventilation. Do not get in eyes or on skin. Avoid breathing the vapors. Wash thoroughly with soap and water after handling. Empty containers retain product residue and vapors so obey all precautions when handling empty containers.

PART A
CAUTION! This material may cause eye and skin irritation or allergic dermatitis. It contains epoxy resins.

PART B
WARNING! This material causes eye and skin irritation or allergic dermatitis. It contains amines.

Before using this product refer to container label and HENKEL TECHNOLOGIES MATERIAL SAFETY DATA SHEET for additional precautionary, handling and first aid information.

Note
The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user’s responsibility to determine suitability for the user’s purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation’s products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits. The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

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