**AFINITICA® ADHESIVE WELDING**

**PRODUCT DESCRIPTION**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Technology</td>
<td>Cyanoacrylate</td>
</tr>
<tr>
<td>Chemical Type</td>
<td>Ethyl Cyanoacrylate</td>
</tr>
<tr>
<td>Appearance (uncured comp. A)</td>
<td>Transparent gel</td>
</tr>
<tr>
<td>Appearance (uncured comp. B)</td>
<td>Transparent gel</td>
</tr>
<tr>
<td>Components</td>
<td>Two-part – requires mixing</td>
</tr>
<tr>
<td>Viscosity</td>
<td>High, thixotropic gel</td>
</tr>
<tr>
<td>Cure</td>
<td>By mixing</td>
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AFINITICA® Adhesive Welding is a gap filling instant adhesive with excellent bonding properties to a very broad range of materials and surfaces. This two-component formulation has longer open (on-part) and working (in-mixer) times than traditional epoxy two-component formulations. Working times up to 90 minutes, open times up to 30 minutes, gap filling up to 5 mm, instant adhesion to plastics, wood and metals (including aluminium) and to porous and irregular surfaces, make this product the adhesive of choice for professional and DIY users. The gel consistency facilitates working in any orientation whilst the static mixing nozzle ensures uniformity and precise application for exceptional user convenience.

**TYPICAL PROPERTIES OF UNCURED MATERIAL**

**PART A:**
- Specific gravity, 25 °C, g/cm³: 1.15
- Viscosity, Brookfield, 25 °C, mPa·s (cP): Spindle 14, speed 1.5 rpm 100,000 to 190,000

**PART B:**
- Specific gravity, 25 °C, g/cm³: 1.25
- Viscosity, Brookfield, 25 °C, mPa·s (cP): Spindle 14, speed 1.5 rpm 80,000 to 110,000

**MIXED A and B:**
- Open time at 25 °C: 20 – 65 minutes
- Working time at 25 °C (in the statix mixer): 35 – 70 minutes (up to 120 minutes)
- Glass Transition Temperature (T_g, °C): 83.7
- Shore D Hardness: 60

**TYPICAL CURING PERFORMANCE**

Under normal conditions, the atmospheric moisture initiates the curing process. Although full functional strength is developed in a relatively short time, curing continues for at least 24 hours before full chemical resistance is developed.

**FIXTURE TIMES**

Fixture time is the time at which an adhesive bond (250 mm²) is capable of supporting a 3 kg load for 10 seconds. The fixture time will depend on the substrate. The table below shows the fixture time for different substrates using lap shears.

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Time (s)</th>
</tr>
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<tbody>
<tr>
<td>Pine Wood</td>
<td>45 – 120</td>
</tr>
<tr>
<td>Beech Wood</td>
<td>15 – 150</td>
</tr>
<tr>
<td>ABS</td>
<td>45 – 75</td>
</tr>
<tr>
<td>Polycarbonate</td>
<td>45 – 90</td>
</tr>
<tr>
<td>Aluminium A5754</td>
<td>60 – 150</td>
</tr>
<tr>
<td>Mild steel</td>
<td>10 – 90</td>
</tr>
</tbody>
</table>

**CURE SPEED vs. SUBSTRATE**

The rate and strength of cure will depend on the substrate used. The graph below shows the tensile shear strength developed with time on different materials and tested according to ISO 4587.

**TENSILE SHEAR STRENGTH vs. BOND GAP**

The rate and strength of cure will depend on the bondline thickness. The following graph shows the tensile shear strength developed as a function of time on Grit Blasted Mild Steel, Pine Wood and Polycarbonate lap shears as a function of bondline thickness and tested according to test method ISO 4587.
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): Part A SDS242901 and part B SDS242902.

**Directions for use:**

1) Before applying the glue, make sure the gluing surface is clean, dry and free of grease.

2) To assemble the syringe, first introduce the plunger, then exchange the cap with a mixer. Discard the first few drops.

3) Apply the material on one of the two surfaces and assemble the two parts within 15 minutes.

4) After uniting the substrates, 15-30 seconds are available for repositioning depending on the substrate. Press the two parts together firmly for around 30 seconds. After releasing the pressure, wait 10 minutes before good handling strength and 24h for full strength.

5) Make use of the syringe or discard product at least every 30 minutes to avoid the product from polymerizing inside the mixer, if you do not want to replace the mixer.

6) After use, discard the mixer and replace the cap. Store the syringe in a cool and dry environment.

7) Optimal Storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties.

8) Product shelf-life: 12 months

**Conversions:**

\[(°C \times 1.8) + 32 = °F\]

\[kV/mm \times 25.4 = V/mil\]

\[mm / 25.4 = in\]

\[μm / 25.4 = mil\]

\[N / mm \times 5.71 = lb/in\]

\[N/mm^2 \times 145 = psi\]

\[MPa \times 145 = psi\]

\[N \times m \times 8.851 = lb\cdot in\]

\[N \cdot mm \times 0.142 = oz\cdot in\]

\[mPa\cdot s = cP\]

**NOTE**

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