ALW-29S
Small Diameter Aluminum Wedge Bonding Wire

Wide Range of Diameters and Levels of Hardness
AFW supplies ALW-29-S bonding wire in a range of hardness for each diameter. This allows us to meet distinct elongation and breaking load properties that are best suited to your equipment capabilities and the looping requirements of your application.

Compatibility with Al Insures Bond Reliability
A major advantage to the use of ALW-29S bonding wire, particularly in fine-pitch applications, is the compatibility of the wire’s chemical composition with aluminum metallization. This allows for room-temperature bonding at low energy levels. This feature is key to the formation of high-integrity bonds and the prevention of damage to sensitive devices. The electrical and thermal conductivity properties of ALW-29S are considered excellent for a wide range of applications.

Recommended Technical Data of ALW-29S

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Microns</th>
<th>Mils</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALW-29S (hard)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elongation (%)</td>
<td>1 – 4</td>
<td>1 – 4</td>
</tr>
<tr>
<td>Breaking Load (g)</td>
<td>7.5 – 8.0</td>
<td>17.0 – 19.0</td>
</tr>
<tr>
<td>ALW-29S (medium)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elongation (%)</td>
<td>1 – 4</td>
<td>1 – 4</td>
</tr>
<tr>
<td>Breaking Load (g)</td>
<td>7.0 – 7.5</td>
<td>15.0 – 17.0</td>
</tr>
<tr>
<td>ALW-29S (soft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elongation (%)</td>
<td>1 – 4</td>
<td>1 – 4</td>
</tr>
<tr>
<td>Breaking Load (g)</td>
<td>6.0 – 7.0</td>
<td>13.0 – 15.0</td>
</tr>
</tbody>
</table>

Fusing Current (Amp) | 0.3 | 0.5 | 0.7 | 1.0 | 1.4 | 1.8

For other diameters, please contact Heraeus Bonding Wires sales representative.
The data given here is valid. We reserve the right to make technical alterations.

### Chemical Composition
- **Aluminum**: 98.95 – 99.05%
- **Silicon**: 0.95 – 1.05%

### Physical Properties
- **Density**: 2.69 g/cm³
- **Melting Point**: 620°C / 1148°F
- **Electrical Resistivity @20°C**: 3.0 µΩ·cm
- **Thermal Conductivity @20°C**: 195 W/m·K
- **Electrical Conductivity @20°C**: 57% IACS
- **Shelf Life**: 6 months

### Aluminium Wire Map

<table>
<thead>
<tr>
<th>Corrosion Resistance Wire</th>
<th>Standard Aluminum Wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALW29C</td>
<td>ALW49C</td>
</tr>
<tr>
<td>ALW49C</td>
<td>ALW49P</td>
</tr>
</tbody>
</table>

**Wire Specifications**

**Chemical Composition**
- Aluminum: 98.95 – 99.05%
- Silicon: 0.95 – 1.05%

**Physical Properties**
- Density: 2.69 g/cm³
- Melting Point: 620°C / 1148°F
- Electrical Resistivity @20°C: 3.0 µΩ·cm
- Thermal Conductivity @20°C: 195 W/m·K
- Electrical Conductivity @20°C: 57% IACS
- Shelf Life: 6 months

**Corrosion Resistant Test Conditions**
- **Temperature**: 121°C
- **Pressure**: 2 Atmospheres (Saturated Steam)
- **Time**: 48 Hrs.
- **Wire Condition**: Bare

* 48 hour “pressure cooker” exposure of bare wire is essentially equivalent to about 1000 hours in a typical plastic package.


**Aluminium Wire Map**

- **Chip on Board - Discrete Device (Small Signal Package)**
- **Chip on Board - Discrete Device (Plastic Package)**
- **Hybrid Package - Hermetic Package - High Power Device**
- **Hybrid Package - Power Device**

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