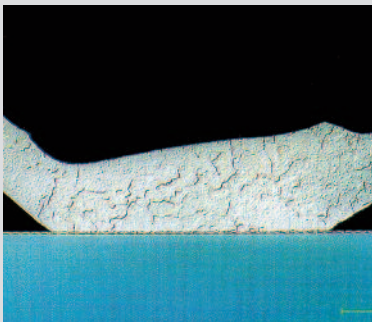


## ALW-49P

### Large Diameter Aluminum Wedge Bonding Wire



#### Excellent Thermal and Electrical Conductivity

ALW-49P wire has excellent thermal and electrical conductivity and can be used on all heavy wire wedge bonding equipment.

While normally supplied in an annealed state, Heraeus can also supply ALW-49P aluminum wedge bonding wire to meet mechanical specifications best suited to your equipment and the looping requirements of your application. Various spool colors are available that enable customization of wire diameter and spool color. Larger traverse dimension on spool allows for 2X wire length resulting in higher UPH.



#### ALW-49P Benefits

- Larger diameters suitable for power packages and discrete devices
- 3 mil – 20 mil thickness range prevents sag or deflection during molding
- Chemical and metallurgical behavior compatible with aluminum metallization
- Bondable at temperature and energy levels low enough to avoid damage to sensitive devices
- Enhanced corrosion resistance designed for non-hermetically sealed packages



#### ALW-49P Mechanical Properties and Fusing Content

Diameter	Microns	125	150	200	250	300	380	500
	Mils	5	6	8	10	12	15	20
<b>ALW-49P</b>								
Elongation (%)		5 – 15	5 – 15	8 – 20	10 – 25	10 – 25	10 – 25	10 – 25
Breaking Load (g)		100 – 150	130 – 190	200 – 350	300 – 450	500 – 750	700 – 1000	1200 – 2000
Fusing Current (Amp)		5.4	6.9	10.6	15.2	19.9	27.9	42.7

## Wire Specifications

### Chemical Composition

Aluminum	99.99%
Total Impurities:	0.01%

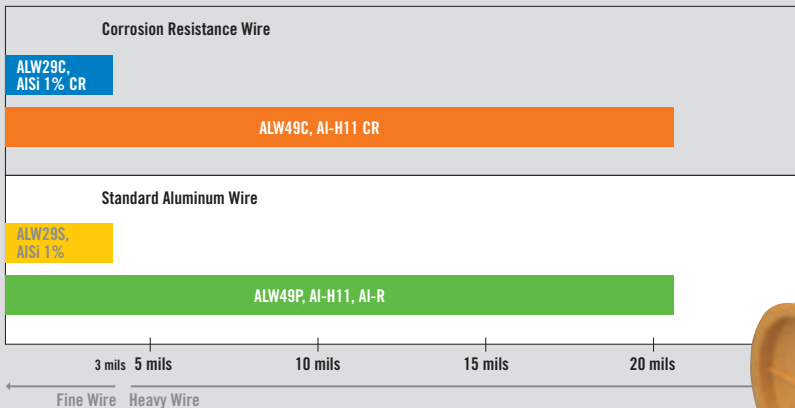
### Physical Properties

Density	2.70 g/cm <sup>3</sup>
Melting Point	660°C / 1220°F
Electrical Resistivity @20°C	2.7 μW/cm
Thermal Conductivity @20°C	230 W/m.K
Electrical Conductivity @20°C	64% IACS

## High Reliability of Aluminum Wedge Bonding

The superior compatibility of aluminum wire with aluminum metallization allows for high integrity bonding at room temperatures using low ultrasonic energy to reduce the risk of damage to sensitive devices.

## Aluminum 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

## Typical Wire Bonding Results

- Bond Shear Strength: Minimum – tensile strength of the wire.
- Wire Pull Strength: Minimum – 50% of the tensile strength of the wire.



## W. C. Heraeus GmbH

Contact Materials Division  
 Business Unit Bonding Wire  
 Heraeusstr. 12-14  
 63450 Hanau, Germany  
 Phone: +49 6181.35-5591  
 Fax: +49 6181.35-5179  
 bonding.wires@heraeus.com  
 www.heraeus-contactmaterials.com