

Technical Data Sheet

BONDING WIRE

Product Type: Aluminum Wire

Product Name: AIW-29S / AIW-29S CR

Chemical Composition

AIW-29S is an Al based alloy with nominal 1% Si content
 Al 99.0 %
 Si 1% ± 0.15
 Total content of impurities: 100 wt.-ppm max

AIW-29S CR is an Al based alloy with nominal 1% Si content
 Al 99.0 %
 Si 1% ± 0.15
 Ni 50 ppm nominal (corrosion resistant)

Technical Parameters (*)

Diameter (mil / μm)	Elongation (%)	Breaking Load (g)	Spool Type	Maximum Length/Spool m (ft)
0.7 / 18	1 - 4	7.5 – 8.0	2"x1" / 2"x2"	500 (1500)**
0.7 / 18	1 - 4	7.0 – 7.5	2"x1" / 2"x2"	500 (1500)**
0.7 / 18	1 - 4	6.0 – 7.0	2"x1" / 2"x2"	500 (1500)**
1.0 / 25	1 - 4	17.0 – 19.0	2"x1" / 2"x2"	500 (1500)**
1.0 / 25	1 - 4	15.0 – 17.0	2"x1" / 2"x2"	500 (1500)**
1.0 / 25	1 - 4	13.0 – 15.0	2"x1" / 2"x2"	500 (1500)**
1.25 / 32	1 - 4	24.0 – 27.0	2"x1" / 2"x2"	500 (1500)**
1.25 / 32	1 - 4	21.0 – 24.0	2"x1" / 2"x2"	500 (1500)**
1.25 / 32	1 - 4	19.0 – 21.0	2"x1" / 2"x2"	500 (1500)**
1.5 / 38	1 - 4	35.0 – 38.0	2"x1" / 2"x2"	300 (1000)**
1.5 / 38	1 - 4	30.0 – 34.0	2"x1" / 2"x2"	300 (1000)**
1.5 / 38	1 - 4	25.0 – 30.0	2"x1" / 2"x2"	300 (1000)**
2.0 / 50	1 - 4	55.0 – 65.0	2"x1" / 2"x2"	200 (600)**
2.0 / 50	1 - 4	45.0 – 55.0	2"x1" / 2"x2"	200 (600)**
2.0 / 50	1 - 4	39.0 – 45.0	2"x1" / 2"x2"	200 (600)**
3.0 / 76	1 - 4	120.0 – 140.0	2"x1" / 2"x2"	100 (300)**
3.0 / 76	1 - 4	110.0 – 120.0	2"x1" / 2"x2"	100 (300)**
3.0 / 76	1 - 4	100.0 – 110.0	2"x1" / 2"x2"	100 (300)**

Testing criteria for breaking load and elongation:
 Testing velocity: 10 mm/min - Test length of sample: 100mm

(*) Technical parameters: The above parameters are standard values. Customized specification is possible after clarification with Heraeus technical staff. Further intermediate dimensions possible by clarification with Heraeus technical staff.

(**) Length per spool suggestion only. Deviations by clarification with Heraeus technical staff.

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Material Characteristics

Melting point	°C	600 - 655
Modulus of rigidity	kN/mm ²	27
Thermal conductivity at 20 °C	W/m*K	195
Linear expansion coefficient (20 – 30 °C)	10 ⁻⁶ *K ⁻¹	25
Rel. electr. conductivity (IACS, 20 °C, annealed)	%	57.5
Resistance at ø 25 µm (20 °C)	Ω/m	57.1
Temp. coefficient of elec. resistance (0 – 100 °C)	10 ⁻³ *K ⁻¹	3.95



Mode of Delivery

Wire regularly spooled on metal spools of type Al DN 2"x1" or 2"x2". Per spool only one single wire length. Start and end of wire get marked by adhesive tapes of different colours. Regular length per spool depending on diameter or per separately to be fixed agreement. Mode of spooling: multiple layers. Alternative spool types by discussion with HERAEUS technical representative.

Surface

The wire surface is free from pollution, fingerprints and foreign substances. Inclusions, notches, big grooves and bends are not allowed. Slight rolling marks are permissible. Test at 12 x magnification.

Spool Dimensions

Spool Type	Colour	Wire Mat.	Dimension (mm)	
 2x2" Al-DN Anodized	Blue	Au	Inner Diameter	48.8 ^{+/-0.2}
	Green	AlSi	Outer Diameter	50.3 ^{+/-0.2}
	Yellow	Cu		
	Purple	Ag	Width over windings	50.3
	Red	Pd		
	Brown	Coated Wire	Overall Width	47.0
 2x1" Al-DN Anodized	Blue	Au	Inner Diameter	48.8 ^{+/-0.2}
	Green	AlSi	Outer Diameter	50.3 ^{+/-0.2}
	Purple	Cu		
	Silver	Ag	Width over windings	50.3
	Red	Pd		
	Brown	Coated Wire	Overall Width	27.9

Alternative spool types by discussion with HERAEUS technical representative.

Packing

Spools are single packed and arrested in a suitable, dust-safe polymer box, preventing wire and spool from damages and pollution.

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Markings

Each single packed unit gets marked with a label carrying the following information:

- a) Wire type
- b) Specified diameter
- c) Length per spool
- d) Specified elongation
- e) Specified breaking load
- f) Lot no.
- g) Exp. date (6 month from time of mfg. date or as defined on the product label)
- h) Supplier name
- i) Description of wire start (tape colour)

Certificate of Quality

A Certificate of Quality gets supplied enclosed to each lot, providing the following information at minimum:

- Product identification (name, material, lot no., order no., customer name, mfg. & exp. date)
- Specification / tolerances / spool data
- Quality inspection test data / results

Additional Specifications Details

Customer specifications can become valid in addition to this technical data sheet in case they have been set in place by mutual agreement

Heraeus Electronics
Heraeus Deutschland GmbH & Co. KG
Heraeusstraße 12 – 14
63450 Hanau, Germany
www.heraeus-electronics.com

Americas
Phone +1 610 825 6050
electronics.americas@heraeus.com

China
Phone +86 21 3357 5457
electronics.china@heraeus.com

Asia Pacific
Phone +65 6571 7677
electronics.apac@heraeus.com

Europe, Middle East and Africa
Phone +49 6181 35 3069, +49 6181 35 3627
electronics.emea@heraeus.com

