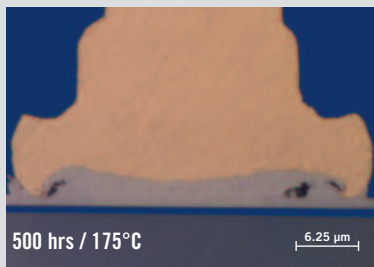
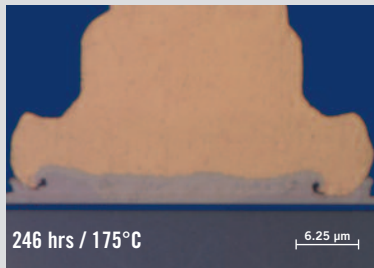
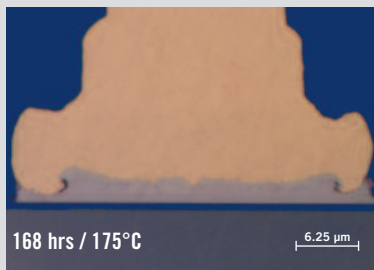
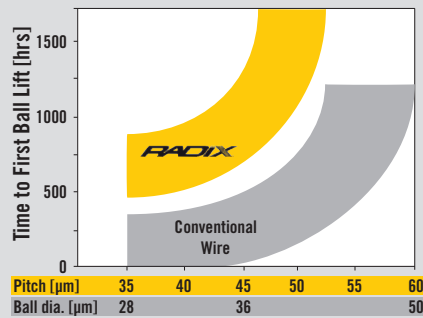




3N Gold Wire for Excellent Ball Bond Reliability



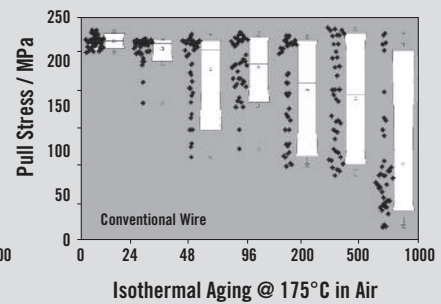
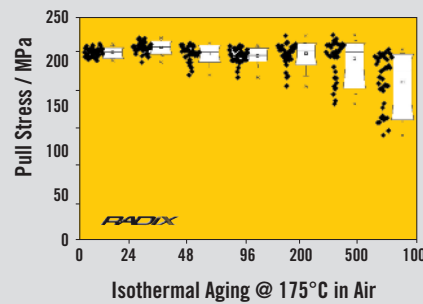
First Bond Reliability



Ultimate Intermetallic Stability for Enhanced Reliability

- Optimised composition for ultimate intermetallic stability
- Superior reliability on a wide range of aluminum bond pad composition and thickness
- Applicable in a wide range of diameters including use in high-power applications
- Low hardness FAB (free-air-ball) allows bonding on sensitive bond structures
- Uncompromised low electrical resistivity

Reliability Comparison



Bonding Condition: Metallization: 0.5% Cu, 99.5% Al · Bond pad pitch: 35 μm · Bonded ball diameter: 28 μm Wire diameter: 15 μm
 Bonding temperature: 170°C · Capillary: K&S M14CJ-2010-Z33-KSS Atlas

Mechanical Properties

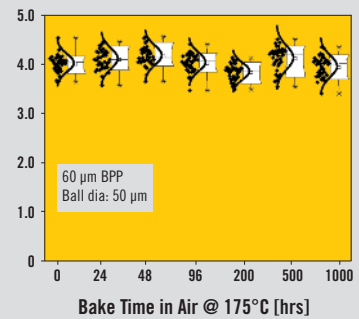
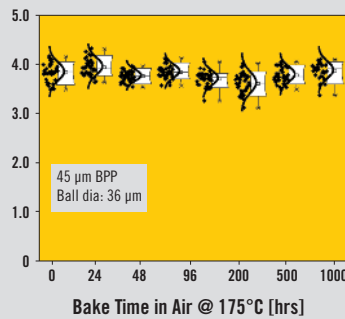
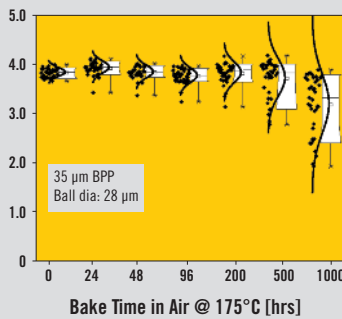
Diameter	Microns	15	17	20	23	25	28	30	33	38	50
	Mils	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	2.0
Recommended Specs for Ball Bonding											
Elongation (%)		2 – 6	2 – 6	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	2 – 7	4 – 12
Breaking Load (g)		> 2.0	> 3.0	> 4.5	> 6.0	> 8.0	> 10	> 12	> 15	> 20	> 35

For other diameters, please contact your local representative.

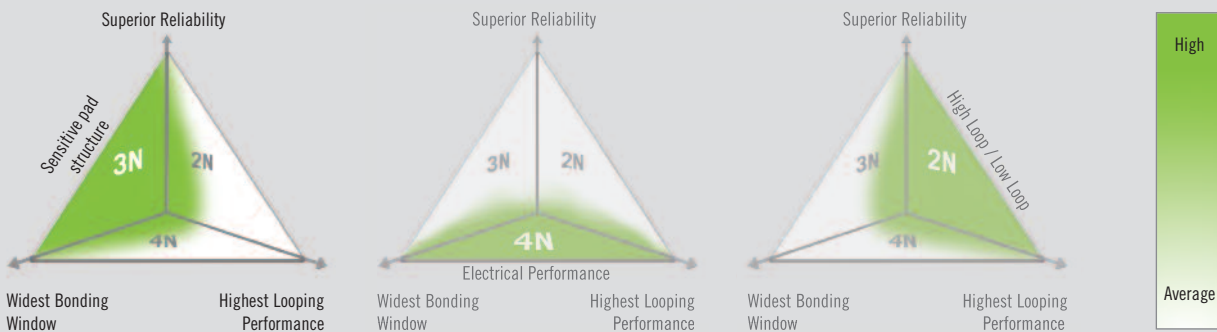
Characteristics (for 25 µm diameter wire)

Non-Gold Elements	< 0.1%
Breaking Load @ Room Temperature	> 8 g
Breaking Load @ 250°C / 20 sec.	> 7 g
Elastic Modulus	> 75 GPa
Heat Affected Zone (HAZ)	~ 100 µm (for 50 µm ball diameter)
Neck Strength	~ 7 g (at 50 µm ball diameter)
Melting Point	1063°C
Density	19.32 g/cm ³
Heat Conductivity	3.17 W/cm-K
Electrical Resistivity	2.3 µOhm-cm
Coeff. of Linear Expansion (0 – 100°C)	14.2 ppm / K
Fusing Current for 30 µm, dia 10 mm length (in air)	0.5 A
FAB Hardness (HV 0.01/5)	45 ~ 55

High Reliability



Gold Wire Segmentation by Properties



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