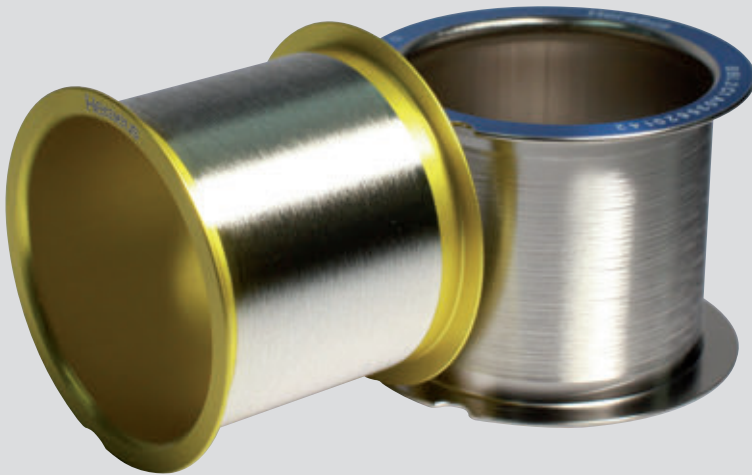


## AgUltra

### Silver Alloy Wire for LED Device and IC Packaging



#### AgUltra Benefits & Features

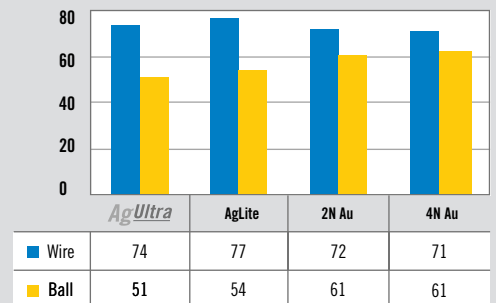
- A cost-effective alternative to gold wires
- Good reflectivity surface
- Good bondability with both N<sub>2</sub> and forming gas
- Good mechanical properties
- Good reliability performance
- Good electrical properties

#### Recommended Technical Data of AgUltra

Diameter	Microns (µm)	15	18	20	23	25	30	38	50
	Mils	0.6	0.7	0.8	0.9	1.0	1.2	1.5	2.0
Elongation (%)		2-8	2-8	2-8	2-8	3-8	3-8	3-10	3-10
Breaking Load (g)		> 2	> 3	> 4	> 6	> 8	> 12	> 20	> 30

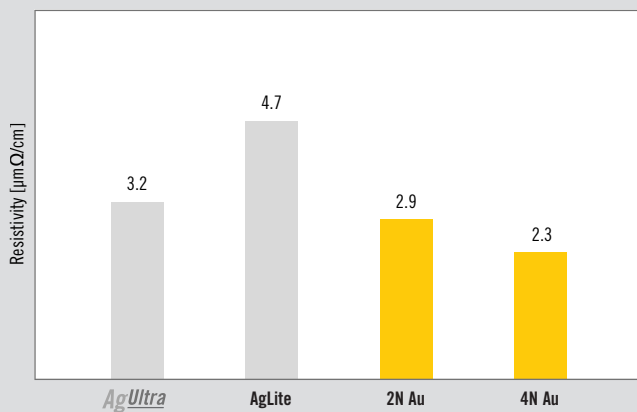
For other diameters, please contact Heraeus Bonding Wires sales representative.

#### Vickers Hardness

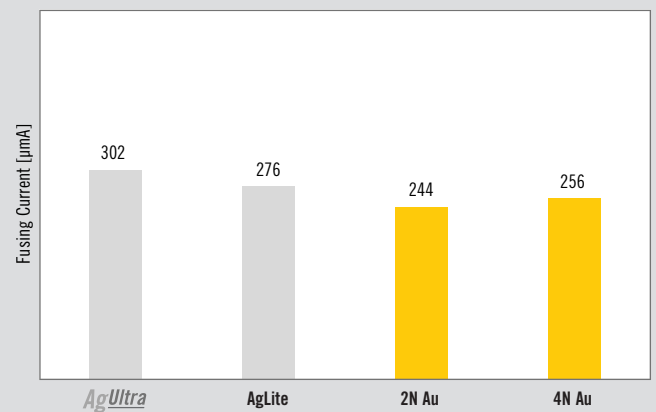


Tester: Mitutoyo HM-200, Test load: 1.0 gf  
Holding time: 10 sec,  
Number of measured sample: 5

#### Electrical Resistivity



#### Fusing Current

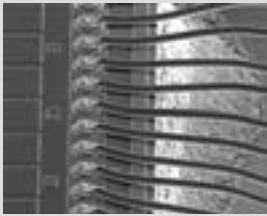


Fusing time: 300 ms, Length: 10 mm, Tension: 0.5 gf

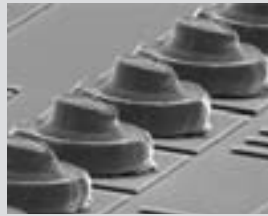
## Physical Properties

		0.6	0.7	0.8	0.9	1.0	1.2	1.5	2.0
Diameter	Mils	0.6	0.7	0.8	0.9	1.0	1.2	1.5	2.0
Grain Size (µm)	FAB	3 ~ 7	3 ~ 7	3 ~ 7	3 ~ 7	3 ~ 7	3 ~ 7	3 ~ 7	3 ~ 7
	Wire	1 ~ 3	1 ~ 3	1 ~ 3	1 ~ 3	1 ~ 3	1 ~ 3	1 ~ 3	1 ~ 3
Hardness (Hv)	FAB	45 ~ 55	45 ~ 55	45 ~ 55	45 ~ 55	45 ~ 55	45 ~ 55	45 ~ 55	45 ~ 55
	Wire	70 ~ 80	70 ~ 80	70 ~ 80	70 ~ 80	70 ~ 80	70 ~ 80	70 ~ 80	70 ~ 80
HAZ length (µm)		Max 115	Max 125	Max 135	Max 145	Max 155	Max 165	Max 180	Max 200
Fusing Current (mA, Length = 10 mm)		274	302	324	362	391	471	637	953
Resistivity (µΩcm) @ 20 °C		3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Recrystallization temp. (°C)		400 ~ 480	400 ~ 480	400 ~ 480	400 ~ 480	400 ~ 480	400 ~ 480	400 ~ 480	400 ~ 480
Melting Point (°C)		1004	1004	1004	1004	1004	1004	1004	1004

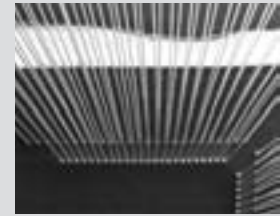
## SSB Bonding



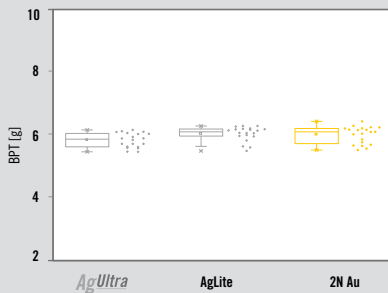
## Stub Bump



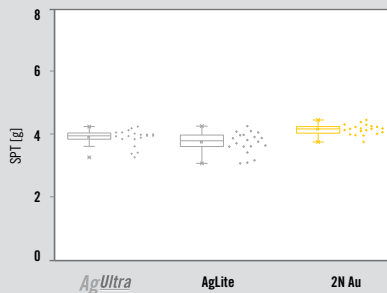
## Multi-tier Bonding



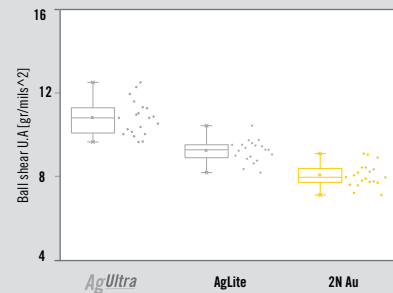
## Ball Pull Test (BPT)



## Stitch Pull Test (SPT)



## Ball Shear Test (BST)



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