Heraeus

Ag<u>Ultra-HR</u>

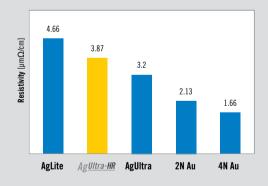
Silver Alloy Wire for Improved Reliability for IC Packaging



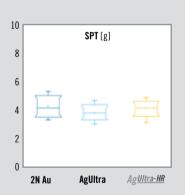
AgUltra-HR Benefits & Features

- Improved reliability for IC packaging
- Improved BST and SPT at time zero
- Improved BST and SPT for HAST

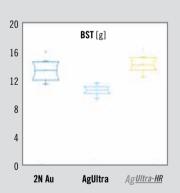
Electrical Resistivity



Stitch Pull Test (SPT)

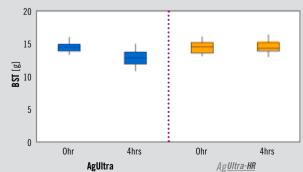


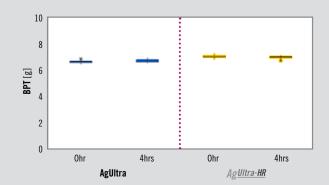
Ball Shear Test (BST)



Corrosion Test Results

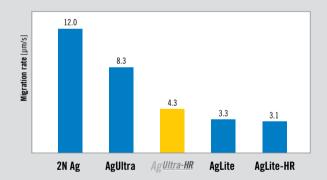
Temperature: 130 °C, Humidity: 85 % RH, Pressure: 2.7 kg/cm², Time: 4 hours

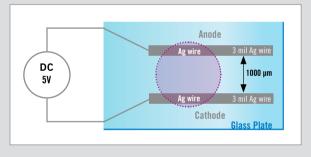




Recommended Technical Data of <i>Ag<u>Ultra-HR</u></i>							
For other diameters, please contact Heraeus Bonding Wires sales representative.							
Diameter (Mils)		0.7	0.8	0.9	1.0	1.2	1.5
Elongation (%)		3 ~ 12	3 ~ 12	3 ~ 12	3 ~ 12	3 ~ 12	3 ~ 12
Breaking Load (g)		> 3	> 4	> 6	> 8	> 12	> 20
Grain Size (um)	Free Air Ball	2 ~ 7	2 ~ 7	2 ~ 7	2 ~ 7	2 ~ 7	2 ~ 7
	HAZ	2 ~ 7	2 ~ 7	2 ~ 7	2 ~ 7	2 ~ 7	2 ~ 7
	Wire	1 ~ 4	1 ~ 4	1 ~ 4	1 ~ 4	1 ~ 4	1 ~ 4
Hardness (Hv)	Free Air Ball	58 ~ 68	58 ~ 68	58 ~ 68	58 ~ 68	58 ~ 68	58 ~ 68
	HAZ	58 ~ 68	58 ~ 68	58 ~ 68	58 ~ 68	58 ~ 68	58 ~ 68
	Wire	70 ~ 80	70 ~ 80	70 ~ 80	70 ~ 80	70 ~ 80	70 ~ 80
Density (g/cm³)		10.60	10.60	10.60	10.60	10.60	10.60
Fusing Current (mA)		299	331	366	406	498	680
Resistivity (μΩ cm) @ 20 °C		3.87	3.87	3.87	3.87	3.87	3.87
Melting Point (°C)		1005	1005	1005	1005	1005	1005
Thermal conductivity (W*m-1*K-1) @ 25 °C		202	202	202	202	202	202

Migration Results



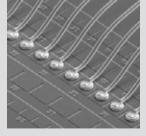


Different Bonding Profiles



Heraeus Electronics

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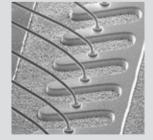


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The descriptions and engineering data shown here have been compiled by Heraeus using commonly-accepted procedures, in conjunction with modern testing equipment, and have been compiled as according to the latest factual knowledge in our possession. The information was up-to date on the date this document was printed (latest versions can always be supplied upon request). Although the data is considered accurate, we cannot guarantee accuracy, the results obtained from its use, or any patent infringement resulting from its use (unless this is contractually and explicitly agreed in writing, in advance). The data is supplied on the condition that the user shall conduct tests to determine materials suitability for particular application.