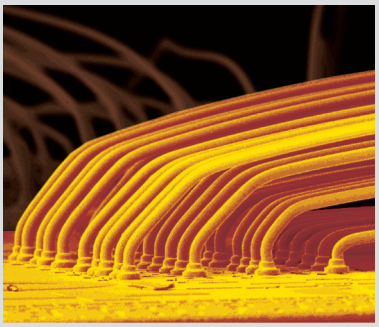
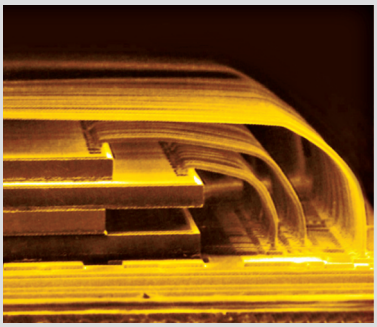
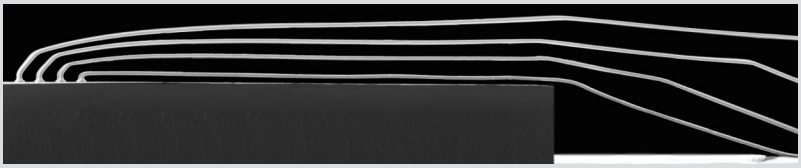
Heraeus

Formax™

Gold Wire for Stacked Die and Multi-tier Applications







Formax Benefits

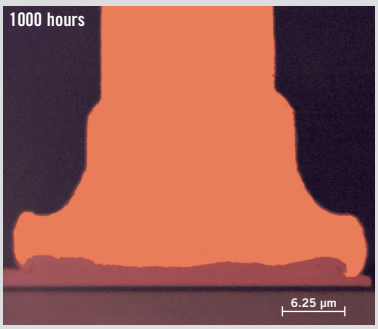
- Engineered and specifically designed for stacked die and multi-tier applications
- Highly accurate and consistent loop profiles support high wire bond yields
- Improved loop linearity and stability achieves higher moulding yields
- Versatile looping capabilities
- Robust 1st and 2nd bondability provides for consistently higher bond test results
- Proven intermetallic stability based on 3N gold composition

Recommended Technical Data of Formax

Diameter	**Microns**	15	18	20	23	25
	Mils	0.6	0.7	0.8	0.9	1.0
Recommended Specs for Ball Bonding						
Elongation (%)		2 – 5	2 – 6	2 – 6	2 – 7	2 – 7
Breaking Load (g)		2 – 7	4 – 8	6 – 10	7 – 12	9 – 15

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

High Reliability



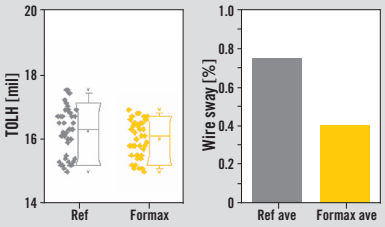
Highly reliable intermetallic growth.
Cross section of molded device after aging @175°C.

Formax Characteristics for 25 µm diameter

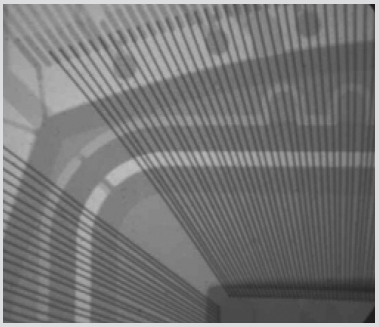
Non-Gold Elements	< 200 ppm
Elastic Modulus	~ 90 GPa
Heat Affected Zone (HAZ)	40 – 170 µm
Melting Point	1063 °C
Density	19.3 g/cm^3
Heat Conductivity	3.17 W/cm·K
Electrical Resistivity	2.3 µΩ-cm
Coeff. of Linear Expansion (20 – 100°C)	14.2 ppm/K
Fusing Current for 25 µm, dia 10 mm length (in air)	0.37 A
FAB Hardness	57 – 68 HV (0.01 N/5 s)

Loop Height Consistency & Wire Sway

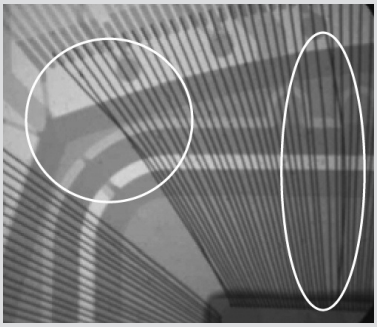
(High Loop)



16 mil loop height / 275 mil span
1 mil (25 µm) wire diameter



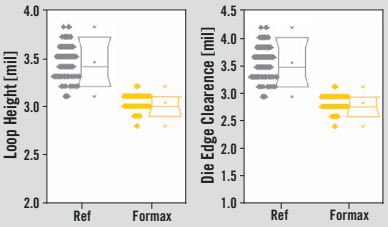
Formax accurate loops



Standard wire

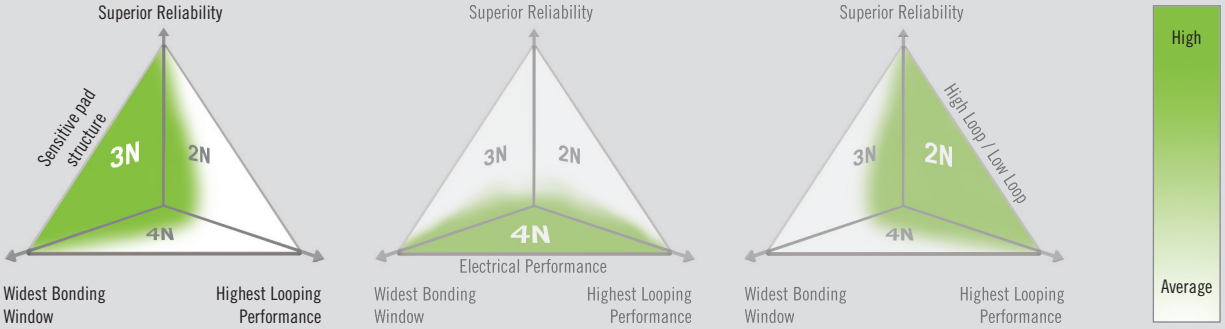
Loop Height Consistency & Die-edge Clearance

(Low Loop)



3 mil loop height / 200 mil span
1 mil (25 µm) wire diameter

Gold Wire Segmentation by Properties



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