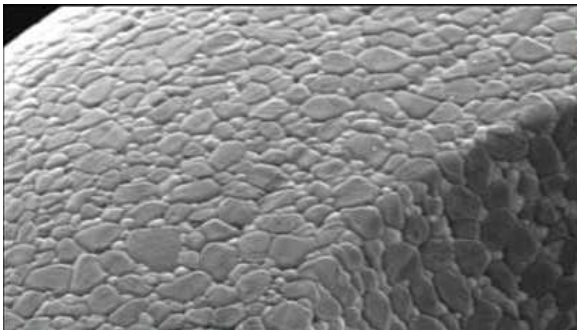


NEW Capillary for Longer Tool Life & Performance - CZRy

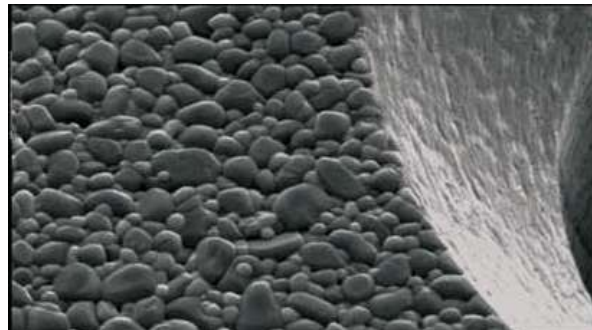


CoorsTek /Gaiser tools is proud to introduce a NEW GatorGrip **CZRy™** material maintaining the superior tip finish that is extra tough & rough like the skin of a reptile, & provide extra durability for extended tool life beyond current expectations.

Challenges faced by package designs & process engineers on qualifying a copper bonding capillaries are typically, tool life, narrow process window, speed & ease of optimization, mean time between assistance (MTBA); in addition to the mechanical set ups like vibrations from loose lead fingers during bonding process, as the case is with QFN packages



GatorGrip Armour-Plate



GatorGrip Aggressor

FEATURES & BENEFITS of CZRy™

- 1. Tip Finish** - armoured with a rough & tough finish like the hide of a reptile. As its predecessor CZ9, CZRy™ is offered in two different finishes to cater to the needs of different applications.
- 2. Physical Properties** - combines higher Hardness and Bending Strength properties for increased wear resistance and strong mechanical resistance to bond process stresses.
- 3. Chemical Properties** - increases grain boundary resistance to failures through increased density and optimized chemical composition & translate to longer tool life. Denser surface finish makes it less prone to built-up and accumulation of foreign debris.
- 4. Mechanical Bonding Performance** - Grain size designed to increase the mechanical coupling between the capillary & the copper wire. Granular finish provides a good anchoring of the wire to prevent micro-sliding and greatly improves stitch strength, short-tailing and adhesion with better Cu remains after stitch pull.
- 5. Ultrasonic Bonding Performance** - The ceramic blend of **CZRy™** produces an acoustically stable tool without the need for high ultrasonic power. Process optimization is made easy with <Plug & Play> advantage

Material	CZRy™
Type	Zirconia Toughened Alumina
Avg grain size ,alumina	0.9um
Hardness	2284 HV
Density	4.40gm/cc
Bending strength	1250 MPa
Young Modulus	359 GPa
Ultrasonics efficiency	82.5%

CZRy RF- Major Benefits

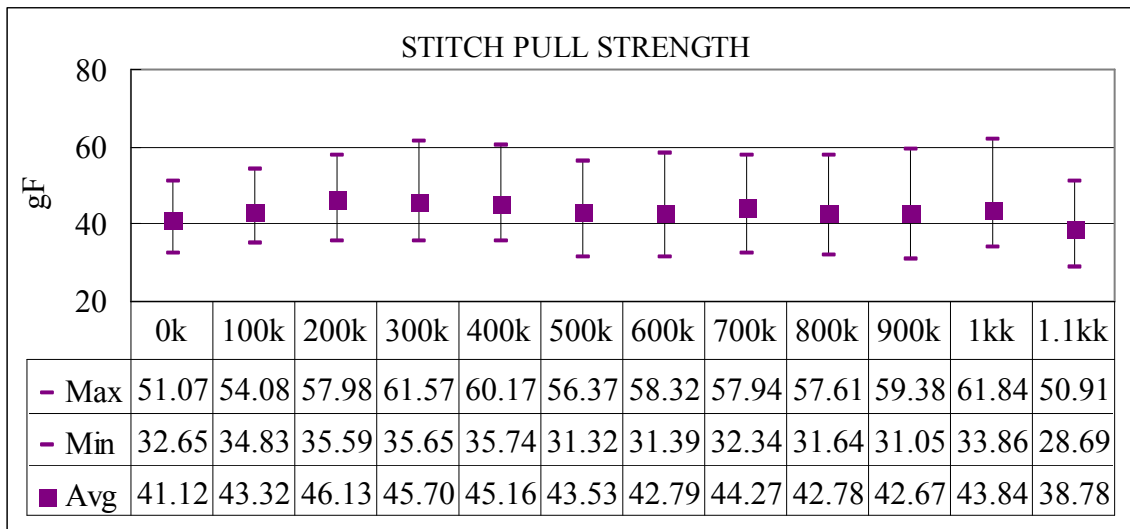
- Improved cost of ownerships (Yield & MTBA) thanks to a longer capillary life span and better workability at the wire bonding process
- Stable response quality thanks to the proven mature Granular Process technology
- Ease of user for any copper wire type

Wire Bonding Test Results

BONDING TEST

- APPLICATION: 2mil Bare Cu wire on hi-density QFN NiPd frame
- GAISER PART #: 1551-25-437GG 90(6.5-8D-15)20D CZRy

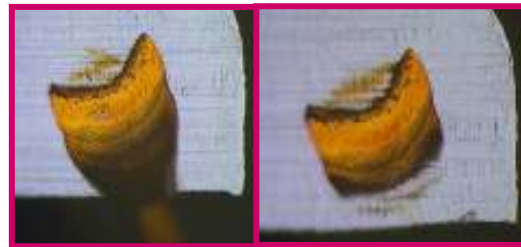
CZRy has displayed exceptional wear resistance & achieve 1.1kk bonds on this heavy Cu wire hard wearing application on NiPd frame. Consistent quality performance was achieved throughout the 1.1kk bonds tool life.



Initial conditions



After 1.1kk bonds



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