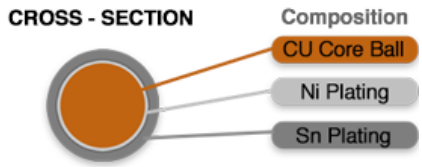
Copper Core+ Ni/Sn - Plated Spheres

EasySpheres Copper Core+ plated Solder Balls are manufactured and designed to support optimized ball-attach applications of ball grid array (BGA) and chip scale package (CSP) components. Copper core solder balls (CUEZPL-XX) from EasySpheres are non-collapsible spheres used in applications where high density I/O packaging or POP process demand reliable and repeatable interconnection.

Copper Core |Ni / Sn - Plated Spheres

EasySpheres implements an additive plating process in which the solid copper core remains oxidation free by plating with an unalloyed nickel flash barrier. This process is completed with a pure tin over-plate to ensure proper ball reflow wetting to most common tin-plated substrates.



With a final melting point of 1080 degrees C, our spheres maintain true height standoff properties under repeated reflow processes. Our solder balls are compliant to J-STD-006 and are QR coded for lot conformance traceability and shipping accuracy.

Product Quality

All EasySpheres conform to rigorous quality inspection requirements to include, sphere size and tolerance uniformity, sphericity, alloy purity (per IPC JST006C), manufacturing date to shelf viability and storage history. Our quality initiatives include full product lot traceability for all products sold worldwide. Certificates of Conformance are shipped with every product sold at EasySpheres. We maintain that our spheres conform to all specified manufacturing standards of IPC JSTD006C and comply to ROHS, Reach and Conflict Free Mineral Directives.

CU | Ni / Sn Alloy Composition

Alloy Specifications			
Alloy	Temperature	Density	Composition
Cu	1083 C	8.93	CU Content > 99.9%
Ni	1455 C	8.9	Ni Content > 99.9%
Sn	183 C	7.29	Sn Content >99.9%

Dimensional Tolerances for bare Cu Core

Size Range in µm	Dimensional Tolerance	Sphericity Deviation	Illuminance
300 µm to 490 µm	± 15 µm	< 1.5%	> 270 Lux
500 µm to 900µm	± 25 µm	< 1.5%	> 270 Lux

Product Availability

EasySpheres CUEZPL-XX solder spheres are sold in MOQ of 10,000 spheres and we can accommodate 100 of millions of spheres as you require. Our hybrid manufacturing process guarantees six sigma CPK values with tight dimensional tolerances.

Copper Core +

Core Dimensions Measured in (µm)				Plated | Finished Diameter				
*Nominal CU Core Diameter	(Ni) Barrier Thickness	(Sn) Plate Thickness	Radius	Microns	MM	Inches	Diameter Tolerances	**Part Number**
250µm	2µm	23µm	150	300	0.30	0.012	± 25µm	CUEZPL-12
300µm	2µm	23µm	175	350	0.35	0.014	± 25µm	CUEZPL-14
350µm	2µm	23µm	200	400	0.40	0.016	± 25µm	CUEZPL-16
400µm	2µm	23µm	225	450	0.45	0.018	± 25µm	CUEZPL-18
450µm	2µm	23µm	250	500	0.50	0.020	± 25µm	CUEZPL-20
500µm	2µm	23µm	275	550	0.55	0.022	± 30µm	CUEZPL-22
550µm	2µm	23µm	300	600	0.60	0.024	± 30µm	CUEZPL-24
600µm	2µm	23µm	325	650	0.65	0.026	± 30µm	CUEZPL-26
700µm	2µm	23µm	375	750	0.75	0.030	± 30µm	CUEZPL-30

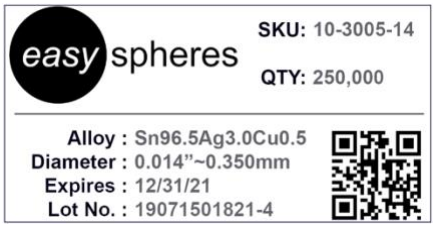
* Nominal Cu Core dimension determines minimum standoff height.

ROHS Compliance

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2011/65/EU for the stated banned substances. (Applies only if plating is a lead-free alloy)

Product Packaging

EasySpheres stores and packages all spheres in anti-static, polypropylene Jars with color coded screw top lids. Each jar holds a moisture desiccant barrier to protect against relative humidity fluctuations. Product labels include: Part Number, Quantity per Jar, Alloy, Diameter for inches and mm Date of Expiry and Lot Code Number and scannable QR code.



Storage | Handling and Shelf Life

Shelf life is 1 year from date of purchase. Refrigeration is not recommended and does not extend shelf life. The container should remain unopened and not agitated when stored. Normal fluctuations in room temperature will not affect shelf life. Avoid contamination of spheres from contact with foreign objects such as fingers or moisture.

Reflow Profile | Placement

Follow the reflow profile as recommended by the flux or solder paste manufacturer. This product is used in world-wide semiconductor packaging processes, which is most commonly applied in automatic ball placement machines.

Health and Safety

This product, during handling or use, may be hazardous to health or the environment. Read the corresponding Safety Data Sheet and adhere to all safety procedures specified before using this product.