

[Document Name] ABSTRACT

[Abstract]

The present invention provides a pure copper alloy connecting wire having a wide process window in ultrasonic bonding, by forming an organic carbon layer thin enough not to reduce a copper oxide layer formed by atmospheric oxygen on the wire surface while the oxide layer remains as unsaturated copper oxide (Cu_{2-x}O). The wire is characterized in that the composition thereof includes not lower than 40 ppm by mass and lower than 100 ppm by mass (hereinafter, abbreviated as "40 to 100 ppm by mass") of at least one base metal of titanium (Ti), zirconium (Zr), zinc (Zn), and tin (Sn) and the balance copper (Cu) at purity of 99.990 to 99.996% by mass, the cross-sectional structure of the wire has a drawn surface with the diameter reduced through a diamond die and, on all over the wire surface, an organic carbon layer with total organic carbon (TOC value) of 50 to 3,000 $\mu\text{g}/\text{m}^2$, a copper oxide layer of 2 to 20 nm thick formed of copper oxide (Cu_{2-x}O) containing unsaturated oxygen forms as the outermost layer of the wire, and base metal underneath the copper oxide layer remains without receiving internal oxidation.

[SELECTED DRAWING] None