

Abstract

A solder ball is provided which suppresses interfacial peeling in a bonding interface of a solder ball, which suppresses fusion defects which develop between the solder ball and solder paste, and which can be used both with Ni electrodes plated with Au or the like and Cu electrodes having a water-soluble preflux applied atop Cu. The present invention is a lead-free solder ball for electrodes of BGAs or CSPs consisting of 1.6 - 2.9 mass % of Ag, 0.7 - 0.8 mass % of Cu, 0.05 - 0.08 mass % of Ni, and a remainder of Sn. It has excellent resistance to thermal fatigue and excellent resistance to drop impacts regardless of the type of electrodes of a printed circuit board to which it is bonded, which are Cu electrodes or Ni electrodes having Au plating or Au/Pd plating as surface treatment. At least one element selected from Fe, Co, and Pt in a total amount of 0.003 - 0.1 mass % or at least one element selected from Bi, In, Sb, P, and Ge in a total amount of 0.003 - 0.1 mass % may be added to this composition.