Claims

1. A method for producing a copper powder, the method comprising the steps of:

heating a molten metal consisting of copper and unavoidable impurities to a temperature which is higher than the melting point of copper by 350 to 700 °C; and

rapidly cooling and solidifying the heated molten metal by spraying water onto the heated molten metal in a non-oxidizing atmosphere while the heated molten metal is allowed to drop.

2. A method for producing a copper powder as set forth in claim 1, wherein the heating of said molten metal is carried out in a non-oxidizing atmosphere.

3. A method for producing a copper powder as set forth in claim 1, wherein said water is pure water or alkaline water.

4. A method for producing a copper powder as set forth in claim 1, wherein said water is sprayed onto the heated molten metal at a water pressure of 60 to 180 MPa.

5. A copper powder which has an average particle diameter of 1 to 10 μm and a crystallite diameter $Dx_{(200)}$ of not less than 40 nm on (200) plane thereof, the copper powder consisting of 0.7 % by weight or less of oxygen and the balance being copper and unavoidable impurities.

6. A copper powder as set forth in claim 5, which has a circularity coefficient of 0.80 to 0.94.

7. A copper powder as set forth in claim 5, wherein a ratio

of the content of oxygen to a BET specific surface area of said copper powder is 2.0 wt%·g/m^2 or less.

8. A copper powder as set forth in claim 5, which has a crystallite diameter $Dx_{(111)}$ of not less than 130 nm on (111) plane thereof.

9. A copper powder as set forth in claim 5, which has a temperature of not lower than 580 ℃ at a shrinkage percentage of 1.0 % in a thermomechanical analysis thereof.

10. A conductive paste wherein a copper powder as set forth in claim 5 is dispersed in an organic component.

11. A conductive paste as set forth in claim 10, which is a baked type conductive paste.

12. A method for producing a conductive film, the method comprising the steps of:

applying a baked type conductive paste as set forth in claim 11 on a substrate; and

thereafter, firing the paste to produce a conductive film.