CLAIMS

1. A copper bonding wire for semiconductor devices, wherein a density of crystal grain boundary on a surface of the wire is 0.6 (μm/μm^2) or more and 1.6 (μm/μm^2) or less.

2. The copper bonding wire according to claim 1, wherein the density of crystal grain boundary on the surface of the wire is calculated by dividing a total length (μm) of a crystal grain boundary by a measurement area (μm^2), where the crystal grain boundary is defined as a boundary at which an orientation difference between adjacent measurement points is 15° or more when measuring by using an EBSD method at measurement point intervals of 0.06 μm or more and 0.6 μm or less.

3. The copper bonding wire according to claim 2, wherein the density of crystal grain boundary on the surface of the wire is measured under the condition that a center of width of a measuring surface is aligned with a center of width of the wire in a direction perpendicular to a longitudinal axis of the wire, the width of the measuring surface is 20% or more and 40% or less of a diameter of the wire, and a length of the measuring surface is five times the width of the measuring surface.

4. The copper bonding wire according to any one of claims 1 to 3, comprising copper having a purity of 99.9% by mass or more.

5. The copper bonding wire according to any one of claims 1 to 4, wherein the diameter of the wire is 15 μm or more and 300 μm or less.

6. The copper bonding wire according to any one of claims 1 to 5, wherein a breaking strength of the wire is 145 MPa or more.

7. The copper bonding wire according to any one of claims 1 to 6, wherein the content of copper in the wire is 99.99% by mass or more.

8. A semiconductor device comprising the copper bonding wire according to any one of claims 1 to 7.