a solder layer provided outside the core and being a solder alloy containing only Sn and at least any one element of Ag, Cu, Sb, Ni, Co, Ge, Ga, Fe, Al, In, Cd, Zn, Pb, Au, P, S, Si, Ti, Mg, Pd, and Pt; and

a Sn layer provided outside the solder layer,

wherein

the solder layer has a thickness of 1 μm or more on one side,

the Sn layer has a thickness of 0.1 μm or more on one side, and

a thickness of the Sn layer is 0.215% or more and 36% or less of the thickness of the solder layer.

[0014]

In the core material according to an embodiment of the present invention, the solder layer may be a (Sn-Ag-Cu)-based solder.

[0015]

The core material, according to an embodiment of the present invention, may further comprise a base plating layer made of any one of Ni, Co, Ni—Co, Ni—P and Ni—B between the core and the solder layer.

[0016]

In the core material according to an embodiment of the present invention, Cu ball or Cu column may be used as the core.

[0017]

An electronic component according to another aspect of the present invention comprises a solder bump comprising any one of the above core materials.

[0018]

A method for forming bump electrode according to another aspect the present invention comprises steps of:

mounting any one of the above core materials on an electrode;

forming a bump electrode by heating the mounted core material.

[0019]

According to embodiments of the present invention, a core material and so on that is unlikely to be determined to be defective in a visual inspection and can prevent the oxide film thickness from increasing and suppress a bonding defect can be provided.

BRIEF DESCRIPTION OF DRAWINGS

[0020]

Fig. 1 is a cross-sectional view illustrating an example of a Cu core ball according to an embodiment of the present invention.

Fig. 2 is a cross-sectional view illustrating another example of a Cu core ball according to an embodiment of the present invention.

EMBODIMENT FOR CARRYING OUT INVENTION

[0021]

Hereinafter, preferred embodiments of the present

What is claimed is:

1. A core material comprising:

a core;

a solder layer provided outside the core and being a solder alloy containing only Sn and at least any one element of Ag, Cu, Sb, Ni, Co, Ge, Ga, Fe, Al, In, Cd, Zn, Pb, Au, P, S, Si, Ti, Mg, Pd, and Pt; and

a Sn layer provided outside the solder layer,

wherein

the solder layer has a thickness of 1 μm or more on one side,

the Sn layer has a thickness of 0.1 μm or more on one side, and

a thickness of the Sn layer is 0.215% or more and 36% or less of the thickness of the solder layer.

2. The core material according to claim 1, wherein the solder layer is a (Sn-Ag-Cu)-based solder.

3. The core material according to claim 1 or 2, further comprising a base plating layer made of any one of Ni, Co, Ni—Co, Ni—P and Ni—B between the core and the solder layer.

4. The core material according to any one of claims 1 to 3, wherein Cu ball or Cu column is used as the core.

5. An electronic component comprising a solder bump

comprising the core material according to any one of claims 1 to 4.

6. A method for forming bump electrode comprising steps of:

mounting the core material according to any one of claims 1 to 4 on an electrode;

forming a bump electrode by heating the mounted core material.