CLAIMS

1. A solder alloy having an alloy composition consisting of, by mass%,

Ag: 0.8 to 1.5%,

Cu: 0.1 to 1.0%,

Ni: 0.01 to 0.10%, and

P: 0.006% to 0.009%, with the balance being Sn.

2. The solder alloy according to claim 1, wherein the alloy composition satisfies the following relations (1) and (2):

$2.0 \leq Ag \times Cu \times Ni/P \leq 25$ Relation (1)

$0.500 \leq Sn \times P \leq 0.778$ Relation (2)

wherein Ag, Cu, Ni, P, and Sn in the relations (1) and (2) each represent the contents (mass%) thereof in the alloy composition.

3. The solder alloy according to claim 1 or 2, wherein the alloy composition satisfies the following relation (3):

$221 \leq (Ag + Cu + Ni)/P \leq 309$ Relation (3)

wherein Ag, Cu, Ni, and P in the relation (3) each represent the contents (mass%) thereof in the alloy composition.

4. A solder alloy having an alloy composition consisting of, by mass%,

Ag: 0.8 to 1.5%,

Cu: 0.1 to 1.0%,

Ni: 0.01 to 0.10%, and

P: 0.005% to 0.009%, with the balance being Sn,

wherein the alloy composition satisfies the following relations (1) ~~and~~ to (~~2~~3):

$2.0 \leq Ag \times Cu \times Ni/P \leq 25$ Relation (1)

$0.500 \leq Sn \times P \leq 0.778$ Relation (2)

$221 \leq (Ag + Cu + Ni)/P \leq 309$ Relation (3)

wherein Ag, Cu, Ni, P, and Sn in the relations (1) ~~and~~ to (~~2~~3) each represent the contents (mass%) thereof in the alloy composition.

~~5. The solder alloy according to claim 4,~~

~~wherein the alloy composition satisfies the following relation (3):~~

~~$221 \leq (Ag + Cu + Ni)/P \leq 309$ Relation (3)~~

~~wherein Ag, Cu, Ni, and P in the relation (3) each represent the contents (mass%) thereof in the alloy composition.~~

~~6~~5. A solder ball comprising the solder alloy according to any one of claims 1 to ~~5~~4.

~~7~~6. A solder joint comprising the solder alloy according to any one of claims 1 to ~~5~~4.