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) to (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) to (3) each represent the contents (mass%) thereof in the alloy composition.

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

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