

CLAIMS

1. An Al wiring material containing one or more selected from the group consisting of Er, Yb and Gd so as to satisfy

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$$0.001 \leq x_1 \leq 0.6$$

where x_1 is a total content thereof [% by mass],
with the balance comprising Al,

wherein the Al wiring material contains at least Er or Yb as one or more selected from the group consisting of Er,
10 Yb and Gd,

wherein the Al wiring material is a bonding wire or a bonding ribbon.

2. An Al wiring material containing one or more selected from the group consisting of Er, Yb and Gd so as to satisfy

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$$0.001 \leq x_1 \leq 0.6$$

where x_1 is a total content thereof [% by mass],

and further containing one or more selected from the group consisting of Sc and Zr so as to satisfy

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$$0.005 \leq x_2 \leq 0.6$$

where x_2 is a total content thereof [% by mass],
with the balance comprising Al,

wherein the Al wiring material is a bonding wire or a bonding ribbon.

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3. The Al wiring material according to claim 1, further containing one or more selected from the group consisting of Sc and Zr so as to satisfy

$$0.005 \leq x_2 \leq 0.6$$

30 where x_2 is a total content thereof [% by mass].

4. The Al wiring material according to any one of claims 1 to 3, further containing one or more selected from the group consisting of Si, Fe, Ni, Ce, Y and Zn so as to satisfy

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$$0.001 \leq x_3 \leq 1$$

where x_3 is a total content thereof [% by mass].

5. The Al wiring material according to any one of claims 1 to 4, wherein the Al wiring material contains at least Yb
10 or Gd as one or more selected from the group consisting of Er, Yb and Gd.

6. The Al wiring material according to any one of claims 1 to 5, wherein the Al wiring material contains two or more
15 selected from the group consisting of Er, Yb and Gd.

7. The Al wiring material according to any one of claims 2 to 6, wherein the Al wiring material contains at least Zr
20 as one or more selected from the group consisting of Sc and Zr.

8. The Al wiring material according to any one of claims 1 to 7, satisfying $0.02 \leq x_1 \leq 0.6$.

25 9. The Al wiring material according to any one of claims 4 to 8, satisfying $0.001 \leq x_3 \leq 0.8$.

10. The Al wiring material according to any one of claims 1 to 9, wherein a content of Al in the balance is 98% by
30 mass or more.

11. The Al wiring material according to any one of claims 1 to 10, wherein a content of Al in the balance is 99.5% by mass or more.

5 12. The Al wiring material according to any one of claims 1 to 11, wherein a content of Al in the balance is 99.9% by mass or more.

13. The Al wiring material according to any one of claims
10 1 to 12, wherein the Al wiring material is a bonding wire.

14. The Al wiring material according to any one of claims 1 to 13,

in a case where the Al wiring material is the Al
15 bonding wire, the diameter is 50 to 600 μm , and

in a case where the Al wiring material is the Al bonding ribbon, with respect to dimensions ($w \times t$) of a rectangular or substantially rectangular cross-section thereof, t is 50 to 600 μm .

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15. A semiconductor device comprising the Al wiring material according to any one of claims 1 to 14.