Claims

1. A sputtering target comprising:

aluminum; and

a rare earth element,

the sputtering target having a fluorine content of 100 ppm or less,

wherein the sputtering target having the rare earth elements content of 10 to 75 atomic%,

wherein the rare earth element is scandium.

2. The sputtering target according to claim 1, wherein the sputtering target having a chlorine content of 100 ppm or less.

3. The sputtering target according to claim 1 or 2, wherein the sputtering target having an oxygen content of 500 ppm or less.

4. The sputtering target according to any one of claims 1 to 3, wherein an intermetallic compound including the aluminum and the rare earth element is present in the sputtering target.

5. The sputtering target according to claim 4, wherein the intermetallic compound comprises one, two, three, or four kinds of intermetallic compounds being present in the sputtering target.

6. The sputtering target according to any one of claims 1 to 5, wherein at least one nitride of at least one element selected from the aluminum and the rare earth element is present in the sputtering target.

7. The sputtering target according to any one of claims 1 to 6, wherein the sputtering target having

a structure in which a material containing the aluminum and the rare earth element is present in an aluminum matrix, or

a structure including at least a composite phase including a phase consisting of the rare earth element and an inevitable impurity as metal species in an aluminum matrix.