CLAIMS

1. A Ti-Nb alloy sputtering target, wherein Nb is contained at 0.1 to 30 at%, the remainder is Ti and unavoidable impurities, an oxygen content is 400 wtppm or less, and a variation in the oxygen content is within 20%.
2. A Ti-Nb alloy sputtering target, wherein Nb is contained at 0.1 to 30 at%, the remainder is Ti and unavoidable impurities, an oxygen content is 400 wtppm or less, a Vicker's hardness is 400 Hv or less, and a variation in the Vicker's hardness is within 10%.
3. A Ti-Nb alloy sputtering target, wherein Nb is contained at 0.1 to 30 at%, the remainder is Ti and unavoidable impurities, an oxygen content is 400 wtppm or less, and a surface roughness Ra is 1.0 μm or less.
4. The Ti-Nb alloy sputtering target according to any one of claims 1, 2 and 3, wherein a purity is 4N or higher.
5. The Ti-Nb alloy sputtering target according to any one of claims 1, 2, 3 and 4, wherein a relative density is 99.9% or higher.
6. A method of producing a Ti-Nb alloy sputtering target, the method comprising the steps of: preparing a Ti material having a thickness from 1 mm to 5 mm and an equal side length from 10 mm to 50 mm and a Nb material having a thickness from 0.5 mm to 2 mm and a width from 2 mm to 50 mm; placing the Ti material in a vacuum melting furnace to be melted; adding the Nb material to alloy Ti-Nb; casting a resulting alloy molten metal in a water-cooled copper crucible to prepare an ingot; and subjecting an obtained Ti-Nb alloy ingot to plastic working into a target shape.
7. The method for producing a Ti-Nb alloy sputtering target according to claim 6, wherein the Ti material is placed in the vacuum melting furnace and melted, and the Nb material is thereafter added multiple times.