CLAIMS

[Claim 1]. An inorganic fiber,

wherein a total amount Q of a transition metal compound and SO_3 is 2.5% by mass or greater,

wherein the total amount of the transition metal compound is less than 2.0% by mass,

wherein an amount of SO_3 is 0.5% by weight to 6.1% by weight,

a molar basicity P expressed by a molar ratio (mol% (CaO + MgO)/mol% (SiO_2 + Al_2O_3)) of the sum of CaO and MgO to the sum of SiO_2 and Al_2O_3 is 0.6 or greater, and

Expression (1): $-3.3 \times P + 5.1 \leq Q$ (1) is satisfied.

[Claim 2]. The inorganic fiber according to claim 1,

wherein the transition metal compound is at least one kind of compound selected from the group consisting of Fe, Mn, Cu, Ni, Co, Zr, V, Nb, Mo, W, and Y.

[Claim 3]. The inorganic fiber according to claim 1 or 2,

wherein a heating shrinkage rate at 1110°C is 14% or less.

[Claim 4]. The inorganic fiber according to any one of claims 1 to 3, the inorganic fiber having a composition containing:

25% by weight to 45% by weight of SiO_2;

5% by weight to 25% by weight of Al_2O_3;

15% by weight to 50% by weight of CaO;

3% by weight to 20% by weight of MgO;

0.1% by weight to 14% by weight of transition metal compound; and

0.5% by weight to 6.1% by weight of SO_3.

[Claim 5]. The inorganic fiber according to claim 4, further containing:

0% by weight to 10% by weight of Na_2O; and

0% by weight to 10% by weight of K_2O.

[Claim 6]. The inorganic fiber according to claim 5,

wherein the inorganic fiber contains at least one or more kinds selected from the group consisting of P_2O_5, Li_2O, Na_2O, and K_2O, and

a total amount of P_2O_5, Li_2O, Na_2O, and K_2O is 3% by weight to 10% by weight.

[Claim 7]. The inorganic fiber according to any one of claims 1 to 6,

the inorganic fiber is at least one or more kinds selected from the group consisting of rock wool, stone wool, slag wool, mineral wool, glass wool, and mineral glass wool.

[Claim 8]. An inorganic fiber product, comprising:

the inorganic fiber according to any one of claims 1 to 7.

[Claim 9]. The inorganic fiber product according to claim 8,

wherein the inorganic fiber product is a heat insulating material or a refractory material.

[Claim 10]. A method of manufacturing an inorganic fiber product, comprising:

molding the inorganic fiber according to any one of

claims 1 to 7.

[Claim 11]. A composition for manufacturing an inorganic fiber,

wherein a total amount Q of a transition metal compound and SO_3 is 2.5% by mass or greater,

wherein the total amount of the transition metal compound is less than 2.0% by mass,

wherein an amount of SO_3 is 0.5% by weight to 6.1% by weight,

a molar basicity P expressed by a molar ratio (mol% (CaO + MgO)/mol% (SiO_2 + Al_2O_3)) of the sum of CaO and MgO to the sum of SiO_2 and Al_2O_3 is 0.6 or greater, and

Expression (1): $-3.3 \times P + 5.1 \leq Q$ (1) is satisfied.

[Claim 12]. A method of manufacturing an inorganic fiber, comprising:

melting the composition for manufacturing an inorganic fiber according to claim 11; and

making the resultant melt into a fiber to obtain an inorganic fiber.