Claims

[Claim 1]

An alloy composition comprising:

a Mo-Cr-based dendritic structure; and

a Ni-Al-based interdendritic structure that fills a periphery of the Mo-Cr-based dendritic structure, wherein

when Mo+Cr+Ni+Al = 100 at.% holds,

Ni+Al = 15 to 50 at.%, and Mo+Cr = 50 to 85 at.% hold;

wherein a percentage of an area of the dendritic structure, which the Mo-Cr-based dendritic structure occupies in the whole of the structures, is 50 to 85%.

[Claim 2]

An alloy composition comprising:

a Mo-Cr-based dendritic structure; and

a Ni-Al-based interdendritic structure that fills a periphery of the Mo-Cr-based dendritic structure, wherein

when Mo+Cr+Ni+Al = 100 at.% holds,

Ni+Al = 40 to 70 at.%, and Mo+Cr = 30 to 60 at.% hold;

wherein a percentage of an area of the dendritic structure, which the Mo-Cr-based dendritic structure occupies in the whole of the structures, is 50 to 65%.

[Claim 3]

The alloy composition according to claim 1 or claim 2, wherein Ni+Al = 40 to 50 at.%, and Mo+Cr = 50 to 60 at.% hold.

[Claim 4]

The alloy composition according to any one of claims 1 to 3, wherein

a region where a Cr/Mo ratio is different exists in the Mo-Cr-based dendritic structure.

[Claim 5]

The alloy composition according to claim 4, wherein

the Cr/Mo ratio in the Mo-Cr-based dendritic structure is high in an edge portion of a dendrite as compared with that in a middle portion of a dendritic structure.

[Claim 6]

The alloy composition according to any one of claims 1 to 5, wherein

a maximum arm width of the Mo-Cr-based dendritic structure is 50 μm or smaller.

[Claim 7]

The alloy composition according to any one of claims 1 to 6, wherein

the maximum arm width of the Mo-Cr-based dendritic structure is 10 μm or smaller.

[Claim 8]

The alloy composition according to any one of claims 1 to 7, wherein

a Rockwell hardness is HRC 45 or higher.

[Claim 9]

A method of producing the alloy composition according to any one of claims 1 to 6 and 8, comprising:

melting a raw material powder that contains one or both of an elemental metal powder of Mo, Cr, Ni or Al, and an alloy powder including two or more metals selected from Mo, Cr, Ni and Al and solidifying the melt to produce the alloy composition.

[Claim 10]

A method of producing the alloy composition according to any one of claims 1 to 5, 7 and 8, comprising:

additively manufacturing the alloy composition while melting a raw material powder that contains one or both of an elemental metal powder of Mo, Cr, Ni or Al, and an alloy powder including two or more metals selected from Mo, Cr, Ni and Al and solidifying the melt.

[Claim 11]

A die using the alloy composition according to any one of claims 1 to 8 for a repairing material.