Claims

[Claim 1]

A weld metal having excellent resistance to hydrogen embrittlement comprising:

C of 0.02% to 0.12% (by mass%, the same holds true for each chemical composition described below);

Si of 0.18% to 2.00%;

Mn of 0.90% to 2.5%;

Ni of 1.0% to 3.5%;

Cr of 0.3% to 2.0%;

Al of 0.030% or less (excluding 0%);

N of 0.015% or less (excluding 0%); and

O of 0.050% or less (excluding 0%);

wherein the remainder consists of iron and inevitable impurities; the weld metal comprises 2500 particles/$mm^2$ or more of retained austenite particles having a circle-equivalent diameter of 0.15 μm or more;

a volume fraction of a retained austenite phase is 4.3% or more relative to the entire structures; and

a content ratio of Cr and Mn, [Cr]/[Mn], is 0.20 or more.

[Claim 2]

The weld metal according to claim1, further comprising at least one of Mo of 0.95% or less (excluding 0%), Ti of less than 0.040% (excluding 0%); V of 0.60% or less (excluding 0%), and Cu of 1.0% or less (excluding 0%).

[Claim 3]

The weld metal according to claim1 or 2, further comprising Zr of 0.10% or less (excluding 0%).

[Claim 4]

The weld metal according to any one of claims 1 to 3, further comprising B of 0.0050% or less (excluding 0%).