1. Standards

AISI 316L
DIN 1.4404
AFNOR X2 Cr Ni Mo 17 12 2

2. Properties and uses

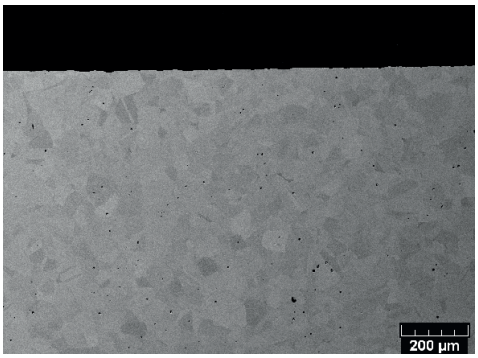
Austenitic stainless steel made from gas atomised powder with a maximum size of 22 microns. This alloy is stable and very resistant to corrosion and can be mirror polished. The material exhibits a slight magnetism and is dedicated to all cosmetic and medical uses (implants excluded). This alloy can be plated, welded and PVD coated.

3. Composition

(1) Combustion analysis (2) ICP analysis

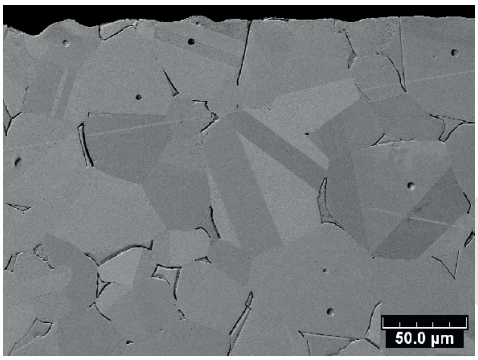
%C(1)	< 0.03
%Mn(2)	< 2
%P(2)	< 0.01
%S(1)	< 0.005
%Si(2)	< 1
%Cr(2)	16-19
%Ni(2)	9-13
%Mo(2)	1.5-3
%N(2)	< 0.003
%O(2)	< 0.05
%Fe	Compl.

4. Characteristics without heat treatment



SEM micrograph without etching

Full austenitic structure with small areas of delta ferrite located in grain boundaries (maximum 4%)
Inter-granular porosities Ø <5 m
No intra-granular porosities
No segregation. Very low interstitial inclusions limited to some globular manganese sulphur (GB) or sulfer (US) (1 à 2 m).



SEM micrograph with etching

Garin size G=6 (50 m) (1)

(1) according to NF A 04-102

5. Physical and chemical properties

No corrosion (1) after a 96 hour salt spray test
No corrosion (2) after a 96 hour artificial sweat test
Nickel leaking rate inferior to 0.1 g/cm2/week (3)

Theoretical density : 7.96
Minimum density : 7.85
Average density : 7.92

(1) according to NF 41-002 (2) according to NF S 80-772
(3) according to pr EN 1811, point b of the European directive 94/27/CE

6. Mechanical properties

Traction(1) :

R_m 550 MPa
$R_{p0,2}$ 180 MPa
A% 50 %

Surface hardness : 120-140 HV_1
Roughness(2) : 1 < Ra < 2 m

(2) Outside injection zone

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