Stainless alloy **SGS-X23-24**

The SGS-X23-24 stainless alloy is a "duplex" alloy which is part of the austenoferritic stainless steels. Its resistance to corrosion is at least equivalent to the common austenitic steels and its mechanical properties as well as its resistance to abrasion are slightly superior.

Designations

SEVA designation: **SGS-X23-24**

Standard designation:

AFNOR	X3CrNiMoN27-5-2
DIN	1.4460
AISI	329

Chemical Analysis (in%)

Standardized: (NF EN 10088)

Fe	C	Cr	Ni	Si
Bal.	0,1 maxi.	23 - 27	4,5 - 7	1 maxi.

Mn	Mo	N
2 maxi.	1,3 - 1,8	< 0,2

Mechanical properties

Hardness: 230 HB.

Tensile test at room temperature:

Rp0,2 (MPa)	Rm (MPa)	A%
450	650	18

Applications

Areas of use

- Paper Industry
- Petrochemical industry
- Dyeing industry
- Transformation industries implying relatively strong chemical, mechanical and abrasive stress

Maximum temperature of use

300°C.

Types of parts produced

- Bodies
- Wheels
- Pump shafts
- Valves
- Miscellaneous parts

Standard structure

Approximately 50 % austenite and 50 % ferrite.

Stainless alloy **SGS-X23-24**

Physical Properties

Density: 7,5

Approximate melting range: 1350 - 1450°C

Chemical properties

The main characteristic of the SGS-X23-24 alloy is a better pitting resistance than common austenitic steels (304, 316L).

It is also extremely resistant to stress corrosion, particularly in the presence of anions Cl^- or de H_2S.

Thanks to its hardness, this steel can be used for applications that require good resistance to corrosion and to abrasion.

Other properties

Magnetism: Magnetic Transformation industries implying relatively strong chemical, mechanical and abrasive stress

Thermal conductivity: 25 $W.m^{-1}.K^{-1}$

Production

SEVA produces the **SGS-X23-24** alloy in an electric induction furnace, under an Argon gas protective atmosphere.

Cast in a sand mold.

Heat treatment: **Mechanical reinforcement by carbide precipitation.**

Other properties

	Compatibility	Remarks
Machining	●●●●○	Cutting speed: ~ 70 - 80 m/min (with carbide tools M type)
Polishing	●●●●○	
Welding	●●●○○	Electrode or TIG
Hot isostatic pressing (HIP)	●●●●○	
Forging	●●●●●	

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