

Typical chemical composition (%)

C	Cr	Ni	Si	Mn	Mo	N	Fe
0.1 max.	23 - 27	4.5 - 7	1 max.	2 max.	1.3 - 1.8	< 0.2	Matrix

Normalized designation

AISI	DIN
329	1.4460

Microstructure

Approximately 50 % austenite and 50 % ferrite.

Elaboration

The SGS-X23-24 alloy is melted in an induction furnace with an argon shroud. It is cast in sand moulds or ceramic shells.

Heat treatment

Solution annealing at 1,140°C.

Mechanical properties

Rp 0.2 (MPa)	Rm (MPa)	A (%)
450	650	18

Hardness

230 HB.

Resistance to corrosion and to abrasion

The main characteristics of the SGS-X23-24 alloy is better pitting resistance than common austenitic steels (304, 316L). It is also extremely resistant to stress corrosion, particularly in the presence of anions Cl⁻ ou de H₂S. Thanks to its hardness, this steel can be used for applications that require good resistance to corrosion and to abrasion.

Use at high temperature

Because of possible structural modifications, using this alloy at a temperature higher than 300°C is not advised.

Machinability

Cutting speed : 70 - 80 m/min (with M-type carbide tooling).

Weldability

Weldable by TIG or electrode.

Physical properties

Magnetic.

Fields of use

Processing industries where chemical, mechanical and abrasive stresses are quite harsh. Bodies, wheels and pump shafts ; gates and miscellaneous parts for paper, petrochemical and dyeing industries.

The SGS-X23-24 alloy is an austenoferritic stainless steel. 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.

Contact

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