

Alloy is an “duplex” **SGS-X23-24**

The **SGS-X23-24 alloy** is an “duplex” alloy which make is part of 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 (en%)

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

Maximum temperature of use

300°C.

Types of parts produced

- Bodies
- Wheels
- Pump shafts
- Gates
- Pellaneous parts



Standard structure

Approximately 50 % austenite and 50 % ferrite.



Physical Properties

Density: 7,5

Approximate melting range: 1350 - 1450°C



Chemical properties

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.



Other properties

Magnetism: Magnetic

Thermal conductivity: 25 W.m⁻¹.K⁻¹



Production

SEVA produces the **SGS-X23-24** alloy in an electric induction furnace, with an argon shroud.

Cast in a sand mold.

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



Other properties

| | Compatibilité | Remarques |
|------------------------------|---------------|--|
| 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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