SGS-75 alloy

The alliage SGS-75 nickel-chromium based alloy is particularly efficient in its resistance to seizure in contact with stainless steels. Its stainless and self-lubricating properties allow it to be used for the production of moving parts in contact with stainless steels, without lubrication, with reduced operating clearances.

Designations

DSEVA designation : **SGS-75**

Standard designation:
ASTM A494M grade CY5SnBiM

Chemical Analysis (en%)

Ni	C	Cr	Mo	Si	Mn	Fe	Bi	Sn
Bal.	0,05 maxi.	11 - 14	2 - 3,5	0,05 maxi.	1,5 maxi.	2 maxi.	3 - 5	3 - 5

Mechanical properties

Hardness: 145 HB

Tensile test at room temperature:

Rm (MPa)	Rp0,2 (MPa)	A (%)
300	220	5

Flexural modulus (Young): 185 GPa

Applications

Areas of use

- Chemistry
- Pharmacy
- Food industry
- Nuclear

Maximum temperature of use

140°C

Types of parts produced

hemical, pharmaceutical and food industries: applications involving dry friction with stainless steels such as 316 L:

- Rotating or static parts of pumps: rotors, pistons etc.
- Filling systems: rotary valves, dosing sprues etc.

Nuclear industry: bearings and other components for handling systems in hostile environments. Wide range of standard parts available on request: round bars (cylinders) and bushings (hollow bars).

Standard structure

The microstructure of the SGS-75 alloy consists of an austenitic matrix rich in nickel, chromium and molybdenum.
The secondary phase rich in tin and bismuth gives the alloy tribological properties.

Physical Properties

Density at 20 °C: 8,5

Approximate melting range: 140°C - 1470°C

Chemical properties

	Compatibility	Remarks
Oxidization resistance	●●●●●	Results available to ascertain compatibility at contact with food products depending on environment, temperature and time of exposure.
Inertia	●●●●○	

Other properties

Magnetism: Non-magnetic

Production

SEVA produces the SGS-75 alloy in an electric induction furnace.

Cast in a sand mold.

Heat treatment: **none.**

Compatible processes

	Compatibility	Remarks
Machining	●●●●○	Cutting speed: Vc ~ 70 - 80 m/min
Welding	○○○○○	
Surface treatment	○○○○○	

The information in this document is an average and not a guaranteed maximum or minimum value. The applications indicated for the grades described are for guidance only to assist the reader in his or her personal evaluation and are not warranties, expressed or implied, of suitability for any specific purpose. Saint-Gobain SEVA's liability shall in no case be extended to the choice of product or to the consequences of this choice.

SEVA SAINT-GOBAIN

www.saint-gobain-seva.com

Saint-Gobain SEVA

43 rue du Pont de Fer - BP 10176

71105 Chalon-sur-Saône cedex

France

Tél. : + 33 3 85 47 25 88

+ 33 3 85 47 28 06

at-seva@saint-gobain.com

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