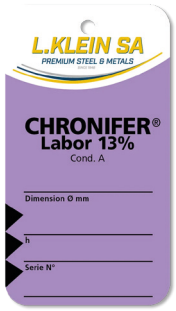
L.KLEIN SA
PREMIUM STEEL & METALS
SINCE 1946



CHRONIFER® LABOR 13%

martensitic stainless steel

Distinctive feature and main attributes

Chronifer Labor 13% is a rather non-corroding, free cutting chromium steel, excelled by a fine machinability due to a high sulphur content. Its resistance to water and steam is achieved by tempering, hardening and quenching. Condition T above 3 mm in bars (26 – 32 HRC) can be tempered because of its low carbon content unless the final part has been polished properly (without pores).

Use and application range

This material is deployed in screws, nuts and bolts as well as food industry and installations.

Norms

Material No.	~ 1.4005; Condition A
ISO	X12CrS13
DIN	X12CrS13
AFNOR	X12CrS13 (former Z 11 CF 13)
AISI	AISI ~ 416
EN	X12CrS13
JIS	~ SUS 416

Chemical composition (% wt)

C	Si	Mn	P	S	Cr	Mo	Fe
0.08 – 0.15	max. 1.00	max. 1.50	max. 0.04	max. 0.035	12.00 – 14.00	max. 0.60	balance

Execution, delivery conditions, standard sizes and availability

Execution in 3 m round bars as well as in coils
Standard size in stock: see product range
Other sizes on request

Tolerance

- Ø < 2.00 mm, cold drawn, polished; ISO h8
- Ø ≥ 2.00 mm, cold drawn, ground, polished; ISO h8

Tighter tolerances (up to +/- 0.002 mm) on request

Mechanical properties

At delivery status:
- **Tensile strength (Rm):** 880 – 990 MPa (26 – 32 HRc), size depending
- **Hardness after tempering:** ~ 38 – 42 HRc

Heat treatment

Precipitation hardening after tempering in oil (with the carbon content on lower limit):
- **Tempering in oil:** 950 – 1'000°C
- **Soft annealing:** 750 – 800°C, cooling in the air, during 2 – 4 h results in a Rm of 490 – 690 MPa / mm²

Cutting rates

V_c ~ 45 – 60 m / min, short-chipping, value depending on the lubrication oil, cutting tools and shape of parts.
Cutting oil: e.g. INOX of Motorex

Modifications will not be adjusted automatically. Last update 05 / 2024

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