Technical Data Sheet
UGI® HT605

Chemical analysis (%)

C	If	Mn	Ni	Cr	Co	W	Fe	D	S
0.05 – 0.15	≤ 0.4	1 - 2	9 - 11	19 - 21	Bal.	14 - 16	< 3	≤ 0.04	≤ 0.03

14-04-2014 – REV01

General presentation

UGI® HT605 is a non-magnetic cobalt - chromium - nickel - tungsten alloy with high resistance to oxidation and corrosion, associated with high mechanical performance characteristics at high temperatures (up to 980°C). The high mechanical performance characteristics of this grade are obtained via work hardening and can be slightly increased via age hardening.

Classification

Non-magnetic cobalt - chromium - tungsten - nickel alloy

Designation

Material No.

Europe EN	USA UNS	Japan SUS
2.4964	R30605	

Standards

ISO 5832-5
ASTM F90
AMS 5759, AMS 5796
NACE MR0175

Mechanical properties

Temperature	Tensile strength	Yield strength	Elongation	Young's modulus
T	Rp 0.2%	Rm	A	E
(°C)	(MPa)	(MPa)	(%)	(GPa)
20	> 310	> 860	30	225
250				214
500				188

Depending on the dimensions, it is possible to increase these characteristics via work hardening.

Physical properties

Temperature	Density	Melting range	Conductivity	Expansion coefficient	Electrical resistivity
(°C)	(kg/cm^3)	(°C)	(W/m^{-1}.k^{-1})	5K^{-1})	(µΩ.mm)
20	9.13	1330 - 1410	9.4		0.88
Between 0 and 100				12.3,10^{-6}	

Swiss Steel Group

Production sites: Ugitech SA
www.swisssteel-group.com

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Corrosion resistance

UGI® HT605 has excellence corrosion resistance at the high temperatures found in aircraft engines. Resistance to oxidation is good when maintained intermittently at up to 870°C and continuously at up to 1090°C. This grade is highly-resistant to flaking and oxidation under extreme conditions.

Medium	Resistance level	Medium	Resistance level
Acetic acid	Good	Salt spray (NaCl)	**Excellent**
Sulphuric acid	Moderate	Nitric acid	Good
Seawater	Moderate	Phosphoric acid	Moderate
Humidity	**Excellent**	Sodium hydroxide	Good

Machinability

HT605 alloy is machinable using conventional techniques. However, we recommend high-speed steel tools (M40 type) or carbide tools (C1, C2 or C3 type) used on rigid equipment.

HT605 alloy is more difficult to machine than austenitic stainless steels (302, 304, 321, and 347 types). Generally, we suggest reducing the feed rates, cutting speeds and pass depths.

Please contact our technical assistance team for further information.

Available products

Product	Form	Finish	Tolerance	Dimensions (mm)
Cold-rolled bar	round	drawn	ISO 9 – 10	⦸ 1.8 - 14
		ground	ISO 6 – 7 – 8 – 9	⦸ 1.0 - 14
Drawn wire	round	bright		⦸ 0.2 – 1.0
		matt		⦸ 1.0 - 14

Others on demand.

Applications

- Heart valves and vascular endoprostheses (stents)
- Endoscopic tubes and wire guides
- Cerclage cables
- Turbocompressor parts
- Turbine blades
- Springs
- Solder wire for hardfacing

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