

Technical Data Sheet

UGI[®] 4114

Chemical composition (%)

C	Si	Mn	Ni	Cr	Mo	P	S	N
≤0.08	≤1.0	≤1,0	≤0,75	17.5 - 18.5	1.5 – 2.5	≤0.04	0.15 – 0.25	≤0.07

12-02-2018 – REV 02

General presentation

Resulphurized ferritic stainless steel with molybdenum, with pitting corrosion resistance similar to that of UGIMA[®] 4305 depending on environments and with good machinability and good ferromagnetic properties.

Classification

Resulphurized ferritic stainless steel with molybdenum

Designation

Material No.

Europe - EN	USA - UNS	Japan - SUS
1.4114 X6CrMo19-2	S 18200	

Other material name

USA (ASTM A582)	France (AFNOR)	Germany (DIN)	UK (BS)	Sweden (S S)
XM-34		1.4114		

Micro structure

Ferritic supplied in the annealed (softened) condition: micro structure composed of ferrite, chromium carbides and MnS inclusions.

Mechanical properties

Tensile data on drawn bar

Temperature	Tensile strength	Yield strength	Elongation
(°C)	Rm (MPa)	Rp0.2% (MPa)	A (%)
20	550 – 800	500 min	10 min

Tensile data on turned bar

Temperature	Tensile strength	Yield strength	Elongation
(°C)	Rm (MPa)	Rp0.2% (MPa)	A (%)
20	500 - 750	300 min	20 min



Swiss Steel Group

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

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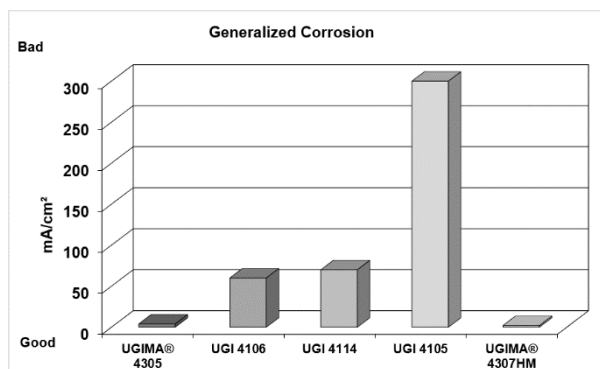
Physical properties

Magnetic ferritic stainless steel.

Temperature	Density	Elastic modulus	Thermal conductivity	Expansion coefficient (between 20°C and T°)	Electrical resistivity
(°C)	(kg/dm ³)	(GPa)	(W/m.°C)	(10 ⁻⁶ /°C)	(μΩ.mm)
20	7.8	220	15	-	610
100				11.1	

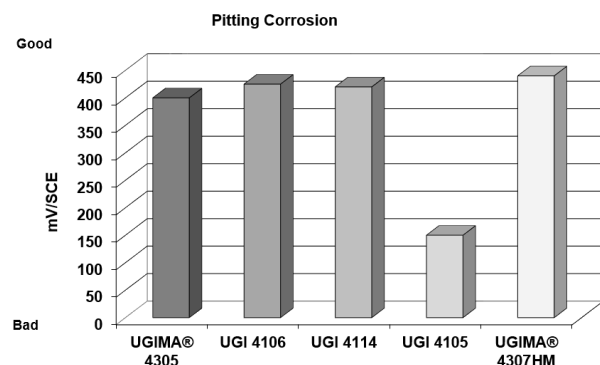
Corrosion resistance

- Generalized corrosion in 2M sulphuric acid and at ambient temperature.
- Good resistance to generalized corrosion in sulphuric acid, better than that of UGI® 4105.



Localized corrosion

- Pitting corrosion in a 0.02M NaCl environment, neutral pH and at ambient temperature.
- Similar to that of UGIMA® 4305 and UGIMA® 4307HM.



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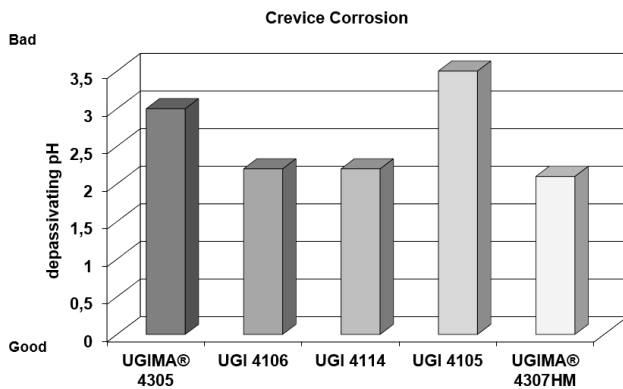
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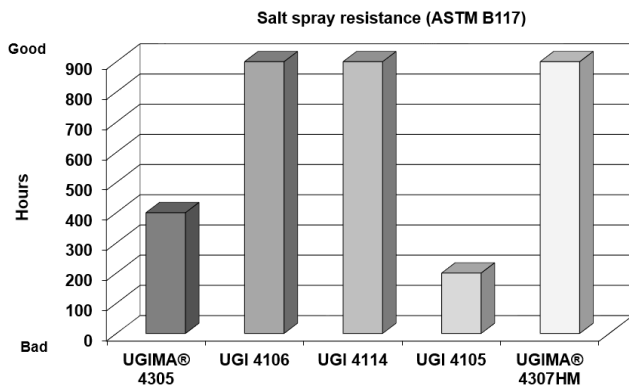
Crevice corrosion in a 2M NaCl environment and at ambient temperature.

- Better than that of UGIMA[®] 4305 or UGI[®] 4105.



Neutral salt spray corrosion (5% NaCl 35°C) - ASTM standard B117.

- Better than that of UGIMA[®] 4305 or UGI[®] 4105, similar to that of UGIMA[®]



4307HM

Magnetic properties

Metallurgical condition	Hc (A/m)	Permeability μ_r	Br (T)	J max (T)
Drawn bar	> 600	< 500	0.6 – 0.8	1.57
Drawn bar with magnetic annealing	300 - 400	900 – 1100	0.8 – 1.0	1.57
Turned bar with magnetic annealing	300 - 400	900 – 1100	0.8 – 1.0	1.57

Hot transformation

- Forging



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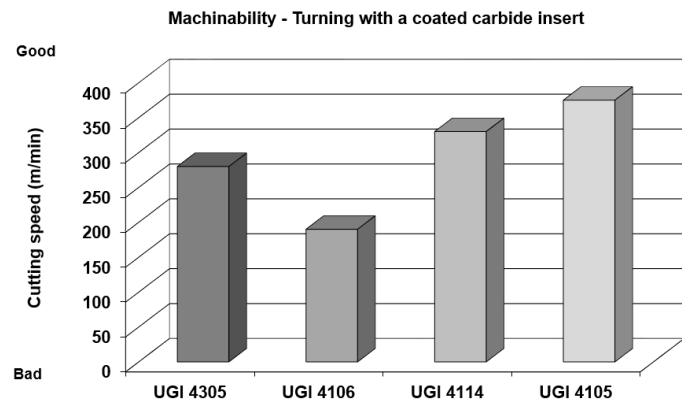
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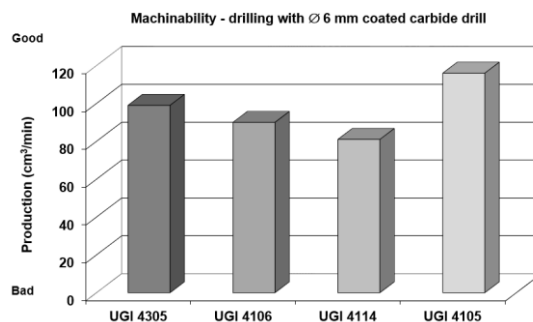
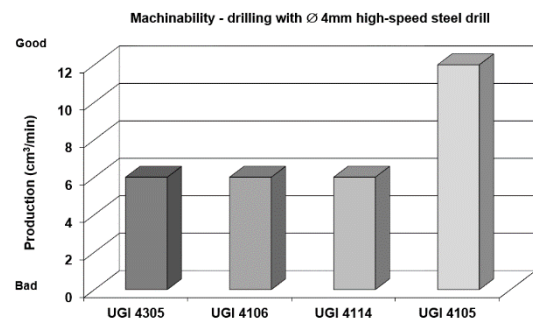
- Heated slowly to 850°C, then more quickly to 1100/1130°C. Forging between 1130°C and 750°C.

Machinability

- Turning
- UGI[®] 4114 has very good turning machinability (better than that of UGI[®] 4305).



- Drilling
- UGI[®] 4114 has very good drilling machinability, although slightly lower than that of UGI[®] 4305 or UGI[®] 4105



Heat treatment

- Softening
- Maximum softening heat treatment with holding temperature of 800°C followed by air cooling. Do not exceed 825°C.

Surface treatment

- Pickling: contact us.
- Passivating: contact us.
- Electropolishing: contact us.



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Available products

Product	Shape	Finish	Tolerance	Dimensions
Bars	Round	Drawn polished, SMQ drawn polished	8 to 9	Ø 6.5 to 31 mm*
		Descaled rolled	k13	Ø 22 to 130 mm*
		Turned Polished (TP)	9 to 11	Ø 22 to 130 mm*
		Turned Polished SMQ	9 to 11	Ø 22 to 55 mm*
		Ground	h6 to h9	Ø 5 to 115 mm*
	Hexagonal	Drawn	9 to 10	3 to 60 mm

* Contact us for dimensions

Applications

- Building: screws, bolts, door handles, etc.
- Food processing (solenoid valve)
- Process: solenoid valves
- Automotive: miscellaneous parts, sensors, etc.



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