

Heat-resistant steel alloy 1.4859

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Properties

1.4859 is a heat and corrosion resistant steel alloy, which belongs to the high temperature materials on iron basis. Accordingly, the material is ideally suited for high temperature applications. The alloy has low carbon content and consists essentially of an austenitic iron-chromium-nickel matrix. 1.4859 is suitable for general use above **600°C**. The most suitable application temperature in air is about **1050°C**.

The chemical composition was designed to expel long-term sufficient mechanical properties and high-temperature corrosion resistance. The alloy is characterized by microstructural stability, high heat resistance and low embrittlement.

Application

- Mineral oil and natural gas facilities with a high temperature load
- Machine engineering (high temperature applications and ductility specifications)
- Energy technology, among other industrial furnaces and high temperature reactor construction
- Chemical industry

Chemical composition

	Fe	Cr	Ni	Si	Nb	Mn	Cu	Mo	P	C	S
min.	-	19,0	31,0	0,5	0,5	-	-	-	-	0,05	-
max.	Bal	21,0	33,3	1,5	1,5	2,0	0,5	0,5	0,04	0,15	0,03

Mechanical properties

Material Characteristics	Unit	As Built
Tensile strength R_m	MPa	720 ± 50
Yield strength $R_{p0,2}$	MPa	510 ± 50
Elongation at break A	%	34 ± 5
E-Modulus	GPa	160 ± 30
Hardness	HRC	19

This data sheet contains approximate values. These values are influenced by part's geometry, additives, and environmental influences. They were developed based on current experiences and knowledge. Therefore, the above mentioned properties cannot be claimed legally binding nor can a definite purpose be derived.