Ferro-Titanit® U

Chemical composition

Carbide phase	Binder phase (main components)			
TiC	**Cr**	**Ni**	**Mo**	**Fe**
34	18	12	2	Balance

(guideline values in % by weight)

Microstructure

Titanium carbide + austenite

Characteristic properties

The binder phase of Ferro-Titanit® U is roughly equivalent to the austenitic CrNiMo steel X 10 CrNiMoNb 18 10 (Mat. No. 1.4580). The material is non-magnetisable and, because of its high Cr and Mo contents, possesses excellent resistance to pitting corrosion in media containing chlorine ions. Its high titanium carbide content of 34 % by weight, or 45 % by volume, provides it with outstanding wear resistance. The Cr and Ni contents simultaneously give the material good scaling resistance and high-temperature strength.
The material requires no later postheat treatment.

Mechanical properties age-hardened

Density	Compression strength	Bending fracture	Service hardness	Further data on the mechanical properties upon request
g/cm³	**MPa**	**MPa**	**HRC**	
6.6	2200	950	approx. 51	

Physical properties

Thermal expansion RT-800 °C
12.5

Thermal conductivity at 20 °C in W · cm^{-1} · °C^{-1}
0.180

Electrical resistivity at 20 °C in Ω · mm² · m^{-1}
0.96

Magnetic properties

Permeability μ
< 1.01

Use

Ferro-Titanit® U is used where non-magnetisable material with a high wear resistance is required. Its excellent corrosion resistance, in particular in media containing chlorine ions, gives it a broad range of applications in the chemical industry.