

## Material: EN 1.4541

### Standard Specification for Seamless Steel Tubes for Pressure Purposes

**Group:** Ferrous Stainless Steel Alloys

**Sub Group:** EN 1.4541 Seamless Steel Tubes for Pressure Purposes

**Application:** Intended for Valve, Pump, General Engineering, Automotive and Other Industries

**Grade Belongs to the Industry:** Steel

Chemical Composition			Heat Treatment	
Carbon	C %	0.080 max.	Solution Annealing	
Silicon	Si %	1.000 max.		
Manganese	Mn %	2.000 max.		
Phosphorus	P %	0.045 max.		
Sulphur	S %	0.030 max.		
Chromium	Cr %	17.000 - 19.000		
Nickel	Ni %	9.000 - 12.000		
Titanium	Ti %	0.700 max.		
Iron	Fe %	Balance	Mechanical Properties	
-	-	-	Tensile Strength in Mpa	460 - 2100
-	-	-	Yield Strength in Mpa	180 min.
-	-	-	Elongation in %	12 min.
-	-	-	Reduction of Area in %	60 min.
-	-	-	Hardness in HB	215 max.
-	-	-	Impact in Joule	55 J @ RT

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
1.4541	EN	European Union	Tube
1.4541	DIN	Germany	Steel
04Ch18N10	GOST	Russia	Steel
304S11	BS	British	Steel and Bar
321	SAE	USA	Steel
X6CrNiTi18 10	DIN	Germany	Steel
X6CrNiTi18-10	AFNOR NF	France	Steel

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