

## Material: MSZ KL 10

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

**Group:** Ferrous Mild Steel Alloys

**Sub Group:** MSZ KL 10 Seamless Steel Tubes for Pressure Purposes

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

**Grade Belongs to the Industry:** Steel and Tube

Chemical Composition			Heat Treatment	
Carbon	C %	0.090 - 0.170	Normalizing + Tempering	
Silicon	Si %	0.150 - 0.400		
Manganese	Mn %	0.450 - 0.750		
Phosphorus	P %	0.035 max.		
Sulphur	S %	0.300 max.		
Chromium	Cr %	0.500 - 0.750		
Molybdenum	Mo %	0.400 - 0.600		
Nickel	Ni %	0.035 max.		
Vanadium	V %	0.200 - 0.350		
Niobium	Nb %	0.010 - 0.060		
Copper	Cu %	0.350 max.	Mechanical Properties	
Nitrogen	N %	0.015 max.	Tensile Strength in Mpa	470 - 660
Titanium	Ti %	0.020 - 0.060	Yield Strength in Mpa	280 min.
Zirconium	Zr %	0.015 - 0.060	Elongation in %	16 min.
Iron	Fe %	Balance	Reduction of Area in %	-
			Hardness in BHN	-
			Impact in Joule	50 J @ RT

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
1.7715	EN	European Union	Steel and Tube
1.7715	EN	European Union	Steel and Tube
1.7715	DIN	Germany	Steel and Tube
14MoV63	DIN	Germany	Steel and Tube
13MoCrV6	UNE	Spain	Sheet, Plate and Strip
660-460	BS	British	Sheet and Forging
15128	CSN	Czech Republic	Steel and Tube

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