GRAVITY CAST PVT. LTD.
GRAVITY GROUP OF COMPANIES

Material - ASTM A234 Grade WP91

Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service

Group - Ferrous Stainless Steel Alloys

Sub Group - ASTM A234 Grade WP91 Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service

Application - Intended for Valve, Pump, General Engineering, Automotive and other Industries

Grade Belongs to the Industry - Pipe

Chemical Composition		
Carbon	C %	0.080 - 0.120
Manganese	Mn %	0.300 - 0.600
Phosphorus	P %	0.020 max.
Sulphur	S %	0.010 max.
Silicon	Si %	0.200 - 0.500
Chromium	Cr %	8.000 - 9.500
Molybdenum	Mo %	0.850 - 1.050
Nickel	Ni %	0.400 max.
Vanadium	V %	0.180 - 0.250
Niobium	Nb %	0.060 - 0.100
Nitrogen	N %	0.030 - 0.070
Aluminium	Al %	0.040 max.
Iron	Fe %	Balance
-	-	-
-	-	-

Heat Treatment
As-Raw or Normalizing & Tempering

Mechanical Properties	
Tensile Strength in Mpa	585 - 760
Yield Strength in Mpa	415 min.
Elongation in %	20 min.
Reduction of Area in %	-
Hardness in HB	-
Impact in Joule	-

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Cross Reference Table			
Material	**Standard**	**Country**	**Grade Belong to the Industry**
S59180	UNS	USA	Steel and Bars
10222-2 1.4903	EN	European Union	Forging
10222-2 X 10 CrMoVNb 9-1	EN	European Union	Forging
X 10 CrMoVNb 9-1	DIN	Germany	Steel
1.4903	DIN	Germany	Steel
A 336 Grade F91	ASTM	USA	Forging
SA-199 Grade T91	ASME	USA	Steel and Tubing

Further any inquiry to discuss with Gravity Cast Pvt. Ltd. – Gravity Group of Companies team member Call on +918469160029, or email marketing@gravitycastindia.com

All information in our data sheets and website is indicative only and is not intended to be a substitute for the full specification from which it is extracted. It is intended to provide typical values to allow comparison between metal alloy option rather than a definitive statement of mechanical performance or suitability for a particular application as these will vary with temperature, product type and product application. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of business.