GRAVITY CAST PVT. LTD.
GRAVITY GROUP OF COMPANIES

Material - ASME SA-335 P91 Type 2

Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service

Group - Ferrous Stainless Steel Alloys
Sub Group - ASME SA-335 Type 2 Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
Application - Intended for Valve, Pump, General Engineering, Automotive and other Industries
Grade Belongs to the Industry - Steel and Pipe

Chemical Composition		
Carbon	C %	0.080 - 0.120
Manganese	Mn %	0.300 - 0.500
Phosphorus	P %	0.020 max.
Sulphur	S %	0.005 max.
Silicon	Si %	0.200 - 0.400
Chromium	Cr %	8.000 - 9.500
Molybdenum	Mo %	0.850 - 1.050
Nickel	Ni %	0.200 max.
Aluminium	Al %	0.020 max.
Nitrogen	N %	0.035 - 0.070
Titanium	Ti %	0.010 max.
Zirconium	Zr %	0.010 max.
Tin	Sn %	0.010 max.
Antimony	Sb %	0.003 max.
Arsenic	As %	0.010 max.

Chemical Composition		
Boron	B %	0.001 max.
Tungsten	W %	0.050 max.
Copper	Cu %	0.100 max.
Iron	Fe %	Balance
-	-	-
Heat Treatment		
Normalizing & Tempering or Quenching & Tempering		
Mechanical Properties		
Tensile Strength in Mpa	585 min.	
Yield Strength in Mpa	415 min.	
Elongation in %	-	
Reduction of Area in %	-	
Hardness in BHN	-	
Impact in Joule	-	

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Cross Reference Table			
Material	**Standard**	**Country**	**Grade Belong to the Industry**
K91560	UNS	USA	Steel
A 182 F 91	ASTM	USA	Steel and Pipe
A 989 K91560	ASTM	USA	Steel
A 369 Grade FP91	ASTM	USA	Steel and Pipe
A 335 Grade P91	ASTM	USA	Steel and Pipe
A 234 Grade WP91	ASTM	USA	Steel
A 369 Grade FP91	ASTM	USA	Steel and Pipe

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.