

## Material: ASTM A 959 Type 660

**Standard Specification for Seamless Nickel and Nickel Alloy Pipe, Tube, Sheet, Strip, Plate, Round Bar, Flat Bar, Forging Stock, Hexagon and Wire**

**Group:** Non-Ferrous Nickel Alloys

**Sub Group:** ASTM A 959 Type 660 Seamless Nickel and Nickel Alloy Pipe, Tube, Sheet, Strip, Plate, Round Bar, Flat Bar, Forging Stock, Hexagon and Wire

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

**Grade Belongs to the Industry:** Pipe, Tube, Sheet, Strip, Plate, Hexagon and Wire

Chemical Composition			Heat Treatment	
Carbon	C %	0.080 max.	As-Cast or Annealing or Age Hardning	
Silicon	Si %	1.000 max.		
Manganese	Mn %	2.000 max.		
Chromium	Cr %	13.500 - 16.000		
Sulphur	S %	0.030 max.		
Molybdenum	Mo %	1.000 - 1.500		
Aluminium	Al %	0.350 max.		
Boron	B %	0.003 - 0.010		
Titanium	Ti %	1.900 - 2.300		
Vanadium	V %	0.100 - 0.500		
Nickel	Ni %	24.000 - 27.000	Mechanical Properties	
Iron	Fe %	Balance	Tensile Strength in Mpa	600 - 1500
-	-	-	Yield Strength in Mpa	737.4 min.
-	-	-	Elongation in %	29.300 min.
-	-	-	Reduction of Area in %	-
-	-	-	Hardness in HRC	31 max.
-	-	-	Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
Incoloy A-286	Gravity	India	Pipe, Tube, Sheet, Strip, Plate, Hexagon and Wire
F 2281 660	ASTM	USA	Pipe, Tube, Sheet, Strip, Plate, Hexagon and Wire
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

**Disclaimer:** All information displayed in our data sheets are for reference purpose only and are sole property of their respective owners. Information and or material are used for educational purposes only. Data at actual may vary at actual and case to case basis. ICAST Alloys LLP does not guarantee validity of these parameters. Warranties and liabilities are exclusive to our terms and conditions of business.

Customer Care: +91-99090 45075 Email: [info@icastllp.com](mailto:info@icastllp.com)