



**GRAVITY CAST PVT. LTD.**  
GRAVITY GROUP OF COMPANIES

## Material - BS HR4

### Standard Specification for Nickel-Chromium-Cobalt-Aluminium-Molybdenum-Titanium Heat-Resisting Alloy Billets, Bars and Forging Parts

Group - Non-Ferrous Nickel Alloys

Sub Group - BS HR4 Nickel-Chromium-Cobalt-Aluminium-Molybdenum-Titanium Heat-Resisting Alloy Billets, Bars and Forging Parts

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

Grade Belongs to the Industry - Billets, Bars and Forging Parts

Chemical Composition			Heat Treatment	
Carbon	C %	0.120 - 0.200	As-Cast or Annealing or Age Hardning	
Silicon	Si %	1.000 max.		
Manganese	Mn %	1.000 max.		
Chromium	Cr %	14.000 - 16.000		
Sulphur	S %	0.015 max.		
Molybdenum	Mo %	3.000 - 5.000		
Cobalt	Co %	13.000 - 15.500		
Copper	Cu %	0.200 max.		
Aluminium	Al %	4.500 - 5.500		
Boron	B %	0.010 - 0.025		
Titanium	Ti %	3.500 - 4.500	<b>Mechanical Properties</b> Tensile Strength in Mpa      1240 - 1273 Yield Strength in Mpa      865 - 870.4 Elongation in %      27 - 27.6 Reduction of Area in %      34.25 Hardness in BHN      - Impact in Joule      -	
Lead	Pb %	0.0015 max.		
Zirconium	Zr %	0.150 max.		
Iron	Fe %	1.000 max.		
Nickel	Ni %	Balance		

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
Nimonic Alloy 115	Gravity	India	Pipe, Tube, Sheet, Strip, Plate, Hexagon and Wire
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

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

**ONE STOP SOLUTION FOR METAL PARTS**