

Laboratory	Urja Metallurgical Services, J/P-15, Telco-Bhosari Road, MIDC, Bhosari, Pune, Maharashtra		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	18.09.2014
Certificate Number	T-2335	Valid Until	17.09.2016
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I. METALS AND ALLOYS				
1.	Ferrous Metals and Alloys	Carbon Silicon Sulphur Phosphorous Chromium Nickel Manganese Molybdenum Vanadium Cobalt Aluminum Copper Niobium Tin Nitrogen Boron Titanium Tungsten Zirconium Arsenic	ASTM E 415 - 2014 IS 8811 : 1998	0.01 % to 1.50 % 0.03 % to 1.50 % 0.001 % to 0.10 % 0.001 % to 0.10 % 0.02 % to 2.0 % 0.02 % to 4.0 % 0.10 % to 2.0 % 0.01 % to 0.5 % 0.0005 % to 0.7 % 0.01 % to 0.20 % 0.01 % to 0.075 % 0.01 % to 0.50 % 0.005 % to 0.085 % 0.005 % to 0.10 % 0.001 % to 0.05 % 0.0006 % to 0.005 % 0.001 % to 0.03 % 0.10 % to 0.6 % 0.01 % to 0.03 % 0.001 % to 0.003 %

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Ferrous Metals and Alloys (Stainless Steel)	Carbon	ASTM E 1086 - 2014 IS 9879 : 1998	0.01 % to 0.20 %
		Silicon		0.30 % to 1.50 %
		Sulphur		0.005 % to 0.040 %
		Phosphorous		0.005 % to 0.040 %
		Chromium		10.0 % to 25.0 %
		Nickel		8.0 % to 25.0 %
		Manganese		0.5 % to 2.0 %
		Molybdenum		0.05 % to 3.0 %
		Vanadium		0.01 % to 0.20 %
		Cobalt		0.010 % to 0.1 %
		Copper		0.02 % to 0.10 %
		Titanium		0.10 % to 0.50 %
		Nitrogen		0.005 % to 0.05 %
3.	Ferrous Metals And Alloys (Cast Iron)	Carbon	ASTM E 415 - 2014	3.3 % to 4 %
		Silicon		1.50 % to 2.5 %
		Manganese		0.2 % to 0.40 %
		Chromium		0.30 % to 0.50 %
		Nickel		0.70 % to 1.20 %
		Copper		0.70 % to 1.20 %
		Titanium		0.05 % to 1.4 %
		Magnesium		0.02 % to 0.06 %
		Vanadium		0.01 % to 0.03 %
		Cerium		0.006 % to 0.01 %

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	Non Ferrous Metals (Cu & Alloys)	Zinc	UM/CHEM/WI/04	0.10 % to 45.0 %
		Lead	Issue No. 00;	0.10 % to 10.0 %
		Tin	Issue Date: 16.04.2014	0.10 % to 13.0 %
		Aluminum		0.10 % to 9.0 %
		Manganese		0.10 % to 2.0 %
		Iron		0.10 % to 5.0 %
		Nickel		0.10 % to 5.50 %
		Antimony		0.05 % to 0.50 %
		Silicon		0.05 % to 0.070 %
		Arsenic		0.01 % to 0.15 %
		Phosphorous		0.02 % to 0.040 %
5.	Non Ferrous Metals (Aluminum & Alloys)	Zinc	IS 11035 - 84 : 2000	0.10 % to 0.50 %
		Lead	ASTM E 1251 - 2011	0.05 % to 0.25 %
		Manganese		0.05 % to 1.50 %
		Iron		0.5 % to 1.20 %
		Nickel		0.01 % to 0.25 %
		Tin		0.005 % to 0.01 %
		Silicon		0.50 % to 15.0 %
		Copper		0.10 % to 6.50 %
		Magnesium		0.05 % to 2.50 %
Titanium		0.12 % to 0.22 %		

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