Laboratory Material Testing Department, Vehicle Factory, Jabalpur, Madhya Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Discipline Chemical Testing Issue Date 26.11.2014

Certificate Number T-0468 Valid Until 25.11.2016

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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 & ALLO	YS		
1.	Steel/Steel Products	Carbon Manganese Nickel Chromium Silicon	IS 228 (Part 1): 2008 IS 228 (Part 2): 2008 IS 228 (Part 5): 2008 IS 228 (Part 6): 2009 IS 228 (Part 8): 2000	0.09 % to 1.25% 0.10 % to 1.5% 0.10 % to 50.0% 0.10 % to 12.0% 0.10% to 5.00%
2.	Cast Iron/cast Iron products.	Silicon Manganese Carbon	IS 12308 (Part 6): 2006 IS 12308 (Part 10): 2006 IS 12308 (Part 11): 2006	0.10 % to 6.00% 0.10 % to 1.5 % 1.50 % to 4.50%
3.	Zn-base Analysis	Tin Lead Magnesium Iron Copper Aluminium Manganese	IS 2599: 2010	0.001% to 0.12% 0.001% to 1.40% 0.001% to 0.20% 0.001% to 0.45% 0.01% to 3.20% 0.007% to 17.0% 0.001% to 0.050%
4.	Fe – base Analysis	Carbon Manganese Phosphorous Sulphur Boron Aluminium Tin Zinc Nickel Chromium Molybdenum Vanadium Silicon Tungsten Cobalt	ASTM E 415-2008 IS 8811: 2006	0.01% to 1.5 % 0.01 % to 3.0% 0.001% to 0.70 % 0.001% to 0.40 % 0.0005% to 0.12% 0.001% to 3.5 % 0.005% to 0.25% 0.001% to 0.03% 0.01 % to 45.0% 0.01% to 30.0% 0.01% to 10.0 % 0.01 % to 5.0 % 0.01% to 4.0 % 0.01% to 20.0% 0.01% to 20.0%

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	Fe – base	Copper		0.01 % to 7.0 %
	Analysis	Lead		0.01 % to 2.0 %
	,	Titanium		0.001% to 3.0 %
		Magnesium		0.001% to 0.10%
5.	Al-base	Manganese	ASTM E 1251: 1994 (RA 1999)	0.001% to 2.8 %
	Analysis	Tin		0.001% to 0.80%
	•	Zinc		0.001 % to 10.0%
		Nickel		0.001% to 3.0 %
		Chromium		0.002% to 0.3%
		Silicon		0.010% to 20.0%
		Lead		0.001% to 0.70%
		Magnesium		0.001% to 6.0%
		Iron		0.001% to 6.0%
		Copper		0.001% to 12.0%
6.	Cu – base	Manganese	ASTM E 1507: 1998	0.01 % to 2.0 %
	Analysis	Phosphorous		0.001% to 1.0%
		Aluminum		0.001% to 12.0%
		Tin		0.01 % to 15.0%
		Zinc		0.01 % to 45.0%
		Nickel		0.01% to 40.0%
		Chromium		0.002% to 0.20%
		Silicon		0.01 % to 6.0 %
		Lead		0.001% to 12.0%
		Magnesium		0.001% to 0.1%
		Iron		0.01% to 6.0%