

Laboratory	Metallurgical Laboratory, Ordnance Factory, Yeddemailaram, Medak (Dist.), Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	19.10.2014
Certificate Number	T-0097	Valid Until	18.10.2016
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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 & ALLOYS				
1.	Carbon Steel & Low Alloy steel	Carbon Silicon Manganese Sulphur Phosphorous Chromium Molybdenum Nickel Copper Vanadium	ASTM E 415a - 2014 IS 8811 : 1998 (RA 2012)	0.02 % to.24 % 0.02 % to 1.8 % 0.10 % to 2.0 % 0.009 % to 0.07 % 0.004 % to 0.06 % 0.002 % to 3.0 % 0.005 % to 1.3 % 0.002 % to 3.5 % 0.020 % to 0.50 % 0.005 % to 0.45 %
2.	Austenitic Stainless Steel	Carbon Silicon Manganese Sulphur Phosphorous Chromium Nickel	ASTM E 1086 - 2014 IS 9879 : 1998 (RA 2012)	0.03 % to 0.20 % 0.1 % to 1.25 % 0.50 % to 1.50 % 0.005 % to 0.035 % 0.005 % to 0.035 % 10.0 % to 30.0 % 5.0 % to 23.0 %
3.	Tool Steel	Carbon Silicon Manganese Sulphur Phosphorous Chromium Molybdenum Tungsten Cobalt Vanadium	ASTM E 1086 - 2014	0.30 % to 1.1 % 0.10 % to 0.60 % 0.10 % to 0.80 % 0.005 % to 0.05 % 0.005 % to 0.05 % 0.50 % to 5.0 % 0.30 % to 10 % 1.0 % to 22.0 % 0.20 % to 11.0 % 0.20 % to 2.00 %

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4.	Carbon Steel & Low Alloy steel, Austenitic Stainless Tool Steel	Carbon	ASTM E 1019 - 2011	0.01 % to 1.25 %
		Sulphur		0.0036 % to 0.040 %
	Cast Iron	Carbon		2.0 % to 3.5 %
		Sulphur		0.0036 % to 0.040 %
5.	Carbon Steel & Low Alloy steel	Silicon	IS 228 (Part 8): 1989 (RA 2004)	0.10 % to 2.0 %
		Manganese	IS 228 (Part 2): 1987 (RA 2012)	0.20 % to 1.5 %
		Chromium	IS 228 (Part 6): 1987 (RA 2009)	0.01 % to 3.0 %
		Nickel	IS 228 (Part 5): 1987 (RA 2009)	0.20 % to 3.5 %
6.	Austenitic Stainless Steel	Silicon	IS 228 (Part 8): 1989 (RA 2004)	0.10 % to 2.0 %
		Chromium	IS 228 (Part 6): 1987 (RA 2009)	10 % to 30.0 %
		Nickel	IS 228 (Part 5): 1987 (RA 2009)	5.0 % to 23.0 %
7.	Ferro Silicon	Silicon	IS 1559 : 1961 (RA 1997)	15.0 % to 75.0 %
8.	Ferro Manganese	Manganese	IS 1559 : 1961 (RA 1997)	15.0 % to 75.0 %
9.	Ferro Chromium	Chromium	IS 1559 : 1961 (RA 1997)	50 % to 75 %

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10.	Cu Alloys	Copper	SOP/TP(C)/05, Issue Date 02.05.2013	55.0 % to 99.0 %
		Tin	SOP/TP©/05-02 Issue Date 21.05.2012	0.5 % to 20.0 %
11.	Al alloys	Copper	IS 504 : 1963 (RA 2000)	0.5 % to 12.0 %
		Manganese		0.5 % to 2.0 %
		Silicon		1.0 % to 12.0 %
		Magnesium	SOP/TP(C)/04 Issue Date 21.05.2012	1.0 % to 7.0 %
12.	Aluminium Alloys	Copper	ASTM E 1251 - 2011	0.001 % to 10.0 %
		Silicon		0.001 % to 14.0 %
		Manganese		0.10 % to 1.10 %
		Zinc		0.001 % to 7.0 %
		Chromium		0.001 % to 0.30 %
		Iron		0.001 % to 1.5 %
		Nickel		0.001 % to 3.0 %
		Titanium		0.001 % to 0.30 %
		Magnesium		0.1 % to 12.0 %

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