Laboratory	**Sohm Analytical Services (I) Pvt. Ltd., A-121/101, B-33/35, Amargian Industrial Estate, Pokharan Road No. 1, Khopat, Thane (W), Maharashtra**			
Accreditation Standard	**ISO/IEC 17025: 2005**			
Discipline	**Chemical Testing**	**Issue Date**	**12.09.2016**	
Certificate Number	**T-2329**	**Valid Until**	**11.09.2018**	
Last Amended on	**22.09.2016**	**Page**	**1 of 8**	

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 / Alloy Steel**	Carbon	ASTM E 415: 2015 IS 8811: 1998	0.025 % to 1.20 %
		Manganese		0.010 % to 2.00 %
		Phosphorus		0.001 % to 0.11 %
		Sulphur		0.001 % to 0.35 %
		Silicon		0.025 % to 2.00 %
		Copper		0.005 % to 0.42 %
		Chromium		0.010 % to 5.00 %
		Aluminum		0.006 % to 1.01 %
		Arsenic		0.001 % to 0.050 %
		Boron		0.0005 % to 0.005 %
		Nickel		0.010 % to 4.00 %
		Niobium		0.001 % to 0.45 %
		Titanium		0.001 % to 0.26 %
		Vanadium		0.001 % to 0.55 %
		Molybdenum		0.001 % to 1.30 %
		Nitrogen		0.001 % to 0.026 %
		Tin		0.001 % to 0.12 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Carbon Steel/ Alloy Steel	Calcium	ASTM E 415: 2015 IS 8811: 1998	0.0005 % to 0.002 %
		Lead		0.005 % to 0.33 %
		Cobalt		0.001 % to 0.051 %
		Antimony		0.002 % to 0.050 %
2.	**Stainless Steel**	Carbon	ASTM E 1086: 2014 IS 9879: 1998	0.010 % to 1.50 %
		Manganese		0.010 % to 12.00 %
		Phosphorus		0.005 % to 0.070 %
		Sulphur		0.001 % to 0.30 %
		Silicon		0.010 % to 2.00 %
		Copper		0.10 % to 5.00 %
		Chromium		5.0 % to 30.00 %
		Nickel		0.50 % to 28.00 %
		Niobium		0.002 % to 1.00 %
		Titanium		0.010 % to 0.48 %
		Molybdenum		0.010 % to 4.10 %
		Nitrogen		0.010 % to 0.28 %
		Tungsten		0.010 % to 0.12 %
		Cobalt		0.0460 % to 1.00 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**Cast Iron**	Carbon	ASTM E 1999: 2011	2.00 % to 4.00 %
		Manganese		0.18 % to 0.90 %
		Phosphorus		0.030 % to 0.10 %
		Sulphur		0.006 % to 0.044 %
		Silicon		1.00 % to 2.40 %
		Copper		0.003 % to 0.23 %
		Chromium		0.088 % to 2.00 %
		Nickel		0.035 % to 2.00 %
		Molybdenum		0.001 % to 0.050 %
		Magnesium		0.010 % to 0.10 %
4.	**High Speed Tool Steel**	Carbon	ASTM E 1086: 2014	0.10 % to 2.50 %
		Manganese		0.010 % to 1.50 %
		Phosphorus		0.005 % to 0.030 %
		Sulphur		0.005 % to 0.025 %
		Silicon		0.010 % to 1.40 %
		Chromium		0.010 % to 12.00 %
		Molybdenum		0.010 % to 6.00 %
		Tungsten		0.010 % to 6.00 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	High Speed Tool Steel	Vanadium	ASTM E 1086: 2014	0.010 % to 4.50 %
		Cobalt		0.010 % to 0.30 %
5 .	**Copper Base & Alloys**	Zinc	BS EN 15079: 2015	0.001 % to 40.0 %
		Lead		0.001 % to 14.00 %
		Tin		0.010 % to 14.00 %
		Phosphorus		0.010 % to 0.38 %
		Manganese		0.001 % to 4.06 %
		Iron		0.001 % to 4.30 %
		Nickel		0.001 % to 34.34 %
		Silicon		0.001 % to 0.83 %
		Silver		0.001 % to 0.10 %
		Cadmium		0.001 % to 0.036 %
		Antimony		0.005 % to 0.50 %
		Sulphur		0.005 % to 0.10 %
		Aluminium		0.005 % to 10.23 %
		Arsenic		0.001 % to 0.25 %
		Bismuth		0.001 % to 0.10 %
		Copper		55.00 % to 85.00 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Copper Base & Alloys	Carbon	BS EN 15079: 2015	0.002 % to 0.030 %
		Beryllium		0.005 % to 0.010 %
6.	**Nickel Base & Alloys**	Carbon	SAS/QS/02/2012	0.004 % to 0.50 %
		Manganese		0.1 % to 1.35 %
		Phosphorus		0.0009 % to 0.050 %
		Sulphur		0.0003 % to 0.050 %
		Silicon		0.01 % to 0.20 %
		Copper		0.005 % to 34.00 %
		Chromium		0.001 % to 21.30 %
		Molybdenum		0.001 % to 25.00 %
		Tungsten		0.001 % to 3.56 %
		Iron		0.01 % to 31.45 %
		Aluminium		0.001 % to 3.40 %
		Cobalt		0.01 % to 0.38 %
		Niobium		0.002 % to 3.60 %
		Titanium		0.005 % to 2.60 %
		Vanadium		0.001 % to 0.23 %
		Nickel		63.00 % to 99.60 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Nickel Base & Alloys	Boron	SAS/QS/02/2012	0.003 % to 0.021 %
		Nitrogen		0.001 % to 0.020 %
7.	**Aluminium & Aluminium Alloy**	Chromium	ASTM E 1251: 2011	0.001 % to 0.13 %
		Cobalt		0.001 % to 0.23 %
		Copper		0.001 % to 4.20 %
		Iron		0.001 % to 0.73 %
		Lead		0.001 % to 0.14 %
		Magnesium		0.001 % to 3.08 %
		Manganese		0.001 % to 1.50 %
		Nickel		0.001 % to 0.41 %
		Silicon		0.001 % to 13.30 %
		Tin		0.001 % to 0.22 %
		Titanium		0.001 % to 0.15 %
		Vanadium		0.001 % to 0.032 %
		Zinc		0.001 % to 3.50 %
		Silver		0.001 % to 0.11 %
		Cadmium		0.001 % to 0.010 %
		Bismuth		0.001 % to 0.13 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
8.	**Iron & Its Alloys**	Ti, V, Cr, Mn, Fe, Co, Ni, Cu, MO, W, Nb	ASTM E 1916: 97 (RA 2004)	Nominal Alloy Verification/ Qualitative
9.	**Nickel & Its Alloys**	Ti, V, Cr, Mn, Fe, Co, Ni, Cu, MO, W, Nb, Hf, Ta	ASTM E 1916: 97 (RA 2004)	Nominal Alloy Verification/ Qualitative
10.	**Copper & Its Alloys**	Cr, Mn, Fe, Ni, Cu, Zn, As, Pb, Sn, Bi, Zr, Ag	ASTM E 1916: 97 (RA 2004)	Nominal Alloy Verification/ Qualitative
11.	**Titanium & Its Alloys**	Ti, Fe, V, Pd, Mn	ASTM E 1916: 97 (RA 2004)	Nominal Alloy Verification/ Qualitative
12.	**Stainless Steel**	C	IS 228 (Part 1): 1987 (RA 2008)	0.015 % to 0.30 %
		Si	IS 228 (Part 8): 1989 (RA 2009)	0.05 % to 3.0 %
		S	IS 228 (Part 9): 1989 (RA 1999)	0.005 % to 0.6 %
		P	ASTM E 353: 93 (RA 2000) IS 228 (Part 3): 1987 (RA 2008)	0.01 % to 0.12 %
		Ni	ASTME 35 (RA 2002)	0.2 % to 25.0 %
		Cr	IS 228 (Part 6): 1987 (RA 2002)/ ASTM E353: 93 (RA 2000)	0.1 % to 26.0 %
		Mo	ASTM Vol. 12 (E to 30) IS 228 (Part 7): 1990 (RA 2001)	1.0 % to 6.0 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
13.	**Low Alloy Steel**	C	IS 228 (Part 1): 1987 (RA 2002)	0.050 % to 2.50 %
		Si	IS 228 (Part 8): 1989 (RA 2009)	0.05 % to 5.0 %
		Mn	IS 228 (Part 2): 1987 (RA 2002)	0.1 % to 3.0 %
		S	IS 228 (Part 9): 1989 (RA 1999)	0.010 % to 0.6 %
		P	ASTME 350: 95 (Reapporved 2005) / IS 228 (Part 3): 1987 (RA 2008)	0.01 % to 0.12 %
		Ni	ASTME 350: 95 (Reapporved 2005)/ IS 228 (Part 5): 1987 (RA 2002)	0.2 % to 5.0 %
		Cr	IS 228 (Part 6): 1987 (RA 2002)	0.5 % to 5.0 %
		Mo	IS 228 (Part 7): 1990 (RA 2006)	0.15 % to 2.0 %
14.	**Copper & Its Alloys**	Cu	IS 440: 1964 (2006)	99.20 % to 99.99 %

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