Laboratory	**Divine Metallurgical Services Private Limited, 14, Gopal Industrial Estate, Odhav, Ahmedabad, Gujarat**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Chemical Testing**	**Issue Date**	**21.01.2015**
Certificate Number	**T-0435**	**Valid Until**	**15.11.2016**
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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 AND ALLOYS**			
1.	**Chemical Analysis of Mild Steel, Low Alloy Steel, High Alloy Steel &Tool Steel**	Carbon	IS 228 (Part 1): 1987 (RA 2007) IS 12308 (Part 11): 1988	0.01 % to 0.050 % 0.06 % to 0.50 % 0.5 % to 1.00 % 1.01 % to 2.5 %
		Sulphur	ASTM E350-12 IS 12308 (Part 2): 1988	0.0010 % to 0.050 % 0.051 % to 0.20 % 0.21 % to 0.50 %
		Phosphorous	IS 228 (Part 3): 1987 (RA 2002) ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006) IS 12308 (Part 5): 1988	0.0010 % to 0.050 % 0.051 % to 0.50 %
		Silicon	IS: 228 (Part 8): 1989 (RA 2004) IS 12308 (Part 2): 1988 ASTM E353-93 (RA 2006) IS 12308 (Part 6): 1988	Upto 0.10 % 0.10 % to 0.3 % 0.30 % to 1.0 % 1.01 % to 5.00 %
		Manganese	IS 228 (Part 2): 1987 (RA 2002) ASTM E350-12 ASTM E353-93 (RA 2006) ASTM E352-13 LDM 4(issue date:22nd July 2013, Issue No.: 04)	0.010 % to 1.00 % 1.01 % to 05.00 % 5.01 % to 18.0 %
		Chromium	IS 228 (Part 6) 1987 (RA 2002) ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006) IS 12308 (Part 8):1988	Up to 0.50 % 0. 5 % to 5.00 % 5.01 % to 14.00 % 14.013 % to 5.00 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Cobalt	ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006)	0.01 % to 1.00 % 1.01 % to 5.00 % 5.01 % to 15 %
		Nickel	ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006) IS 228 (Part 5): 1987 (RA 2002) LDM-1(issue date: 4th Jan 2005 Issue No: 01) IS 12308 (Part 7): 1988	Upto 0.50 % 0.5 % to 4.0 % 4.0 % to 15.0 % 15.01 % to 40.0 %
		Molybdenum	ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006) LDM-3 (issue date: 4th Jan 2005 Issue No: 03) IS 12308 (Part 9): 1988	Upto 0.20 % 0.2 % to 0.60 % 0.6 % to 3.0 % 3.0 % to 7.0 % 7 % to 10.0 %
		Copper	ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006)	Up to 0.2 % 0.2 % to 3.00 % 3.01 % to 5.00 %
		Titanium	ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006)	0.05 % to 0.50% 0.5% to 2.00%
		Vanadium	ASTM E30-88 (RA 2000) ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006)	Up to 0.50 % 0.50 % to 2.00 % 2.01 % to 5.50 %
		Tungusten	ASTM E30-88 (RA 2000) ASTM E350-12 ASTM E352-13 ASTM E353-93 (RA 2006)	0.10 % to 1.00 % 1.01 % to 5.00 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Niobium	LDM 5 (issue date: 22nd Jul 2013, issue No.: 05)	0.02 % to 1 %
		Iron	LDM 6(issue date:22nd Jul 2013, issue No.:06)	Base Metal 50 % to 90.00 %
2.	**Chemical Analysis of Nickel base alloys**	Carbon	ASTM 1473-09 IS-6226 (Part 1): 1994	0.01 % to 0.050% 0.06 % to 0.50% 0.5 % to 1.10%
		Sulphur	ASTM 1473-09	0.0010 % to 0.10 %
		Phosphorous	ASTM 1473-09	0.0010 % to 0.050 % 0.05 % to 0.08 %
		Silicon	ASTM 1473-09	Upto 0.10 % 0.10 % to 0.3 % to 0.3 % to 1.0 % 1.01 % to 5.00 %
		Manganese	LDM 4 Issue date: 22nd Jul 2013, issue No.: 04)	0.010 % to 1.00 % 1.01 % to 3.00 %
		Chromium	ASTM 1473-09	Up to 0.50 % 0. 5 % to 5.00 % 5.01 % to 14.00 % 14.01 % to 33.00 %
		Cobalt	ASTM 1473-09	0.01 % to 1.00 % 1.01 % to 5.00 % 5.01 % to 30 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Molybdenum	ASTM 1473-09 LDM-3 (issue date: 4th Jan 2005 Issue No: 03	1.0 % to 25.0 %
		Copper	ASTM 1473-09	Upto 0.2 % 0.2 % to 3.00 % 3.01 % to 33.00 %
		Titanium	ASTM 1473-09	0.05 % to 0.50 % 0.5 % to 1.00 % 1.0 % to 4.5 %
		Vanadium	ASTM 1473-09	Up to 0.50 % 0.50 % to 2.00 % 2.01 % to 3.25 %
		Tungusten	ASTM 1473-09	0.10 % to 1.00 % 1.01 % to 5.00 %
		Neobium	ASTM 1473-09 LDM 5(issue date: 22nd Jul 2013, Issue No.:05)	0.02% to 4.50%
		Iron	LDM 6 (issue date: 22nd Jul 2013, issue No.: 06)	0.1 % to15 %
		Nickel	ASTM 1473-09,LDM-1(issue date: 4th Jan 2005 Issue No: 01)	Base Metal 50 % to 99.99 %
3.	**Chemical Analysis of Cobalt base Alloys**	Carbon	ASTM 1473-09 IS 6226 (Part 1): 1994	0.25 % to 1.10 %
		Sulphur	ASTM 1473-09	0.0010 % to 0.08 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Silicon	ASTM 1473-09	0.01 % to 5.0 %
		Manganese	ASTM 1473-09	1 % max.
		Chromium	ASTM 1473-09	25.0 % to 30.0 %
		Cobalt	ASTM 1473-09	Base Metal (Balance)
		Molybdenum.	ASTM 1473-09,LDM-3(issue date:4th Jan 2005 Issue No: 03)	3 % max
		Tungsten	ASTM 1473-09	2.0 % to 8.0 %
		Iron	LDM 6 (issue date: 22nd Jul 2013, issue No.: 06)	3.0 % to 7.0 %
		Nickel	ASTM 1473-09 LDM-1 Issue date: 4th Jan 2005 Issue No: 01)	0.10 % to 35.0 %
4.	**Aluminium and Aluminium Alloys**	Silicon	IS 504 (Part 1): 2002 ASTM E34-11	0.05 % to 20.00 %
		Manganese	IS 504: 2089 ASTM E34-11	0.01 % to 2.0 %
		Iron	IS 504 (Part 2): 2002, ASTM E34-11, LDM 7 (issue date: 22nd Jul 2013, issue No.: 07)	0.01 % to 5 %
		Zinc	IS 504 (Part 4): 2002 ASTM E34-11	0.20 % to 12 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Nickel	IS 504 (Part 7): 2002, ASTM E34-11 LDM-1 (issue date: 4th Jan 2005 Issue No: 01)	0.05 % to 4.00 %
		Copper	IS 504 (Part 3): 2002 ASTM E34-11 LDM 2 (issue date: 4th Jan 2005 Issue No: 02)	0.01 % to 20.00 %
		Tin	IS 504 (Part 9): 2002 ASTM E34-11	0.05 % to 1.00 %
		Magnesium	IS 504 (Part 6): 2002	0.10 % to 12.00 %
5.	**Copper & Copper Alloys**	Manganese	ASTM E478-2008 ASTM E76-2000	0.01 % to 15 %
		Iron	IS 440: 1964 (RA 2006) IS 3685: 1966 (RA 2006) LDM 7(Issue date: 22nd Jul 2013, Issue No.:07)	0.10 % to 6 %
		Arsenic	ASTM E62-1989 (RA 2004)	0.02 % to 1 %
		Zinc	ASTM E478-08 LDM 8 (Issue date: 22nd Jul 2013, issue No: 08)	0.20 % to 50 %
		Nickel	ASTM E478-08, IS 3685: 1966 (RA 2006) LDM 1 (Issue date: 4th Jan 2005 Issue No: 01)	0.05 % to 10.00 % 10 % to 50 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Aluminium	LDM 9 (Issue date: 22nd Jul 2013, Issue No: 09)	0.1 % to 12.00 %
		Tin	ASTM E 478-08 ASTM E62-1989 (RA 2004), LDM 10 (Issue date: 22nd Jul 2013, Issue No: 10)	0.01 % to 20.00 %
		Lead	ASTM E 478-08 LDM 11 (Issue date: 22nd Jul 2013, Issue No: 11)	0.05 % to 20.00 %
		Phosphorous	IS 440: 1964 (RA 2006), ASTM E62-1989 (RA 2004)	0.10 % to 6.00 %
		Antimony	IS 318 (Part 7): 2006	1 % Max.
		Magnesium	ASTM E478-08	0.01 % to 3.0 %
		Silicon	ASTM E 478-08 IS 3685: 1966 (RA 2006)	0.05 % to 8 %
		Copper-pure	IS 440 1964: (RA 2006), ASTM E478-08 , IS 3685: 1966 (RA 2006) LDM-2 Issue date: 4th Jan 2005 Issue No: 02)	Upto 99.9% Base Metal
6.	**Zinc base Alloys**	Copper	LDM-2, (Issue date:4th Jan 2005 IssueNo:02)	0.1 % to 10 %
		Manganese	LDM 4 (Issue date: 22nd Jul 2013, Issue No. 04)	0.01 % to 0.5 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Iron	IS 406: 1964 (RA 2000) LDM7 (issue date: 22nd Jul 2013, issue No.:07)	0.10 % to 1.3 %
		Arsenic	IS 406: 1964 (RA 2000)	0.02 % to 1 %
		Nickel	LDM 1 (Issue date: 4th Jan 2005 Issue No: 01)	0.05 % to 1.00 %
		Aluminium	LDM 9 (Issue date: 22nd Jul 2013, Issue No: 09)	0.1 % to 30.00 %
		Tin	LDM 10 (Issue date: 22nd Jul 2013, Issue No:10)	0.01 % to 0.5 %
		Lead	IS 406: 1964: (RA 2000), LDM 11 (Issue date:22nd Jul 2013, Issue No: 11)	0.01% to 0.5 %
		Antimony	IS 406: 1964 (RA 2000)	1 % Max.
		Magnesium	IS 406: 1964 (RA 2000)	0.01 % to 3.0 %
		Zinc	LDM 8 (issue date: 22nd Jul 2013, issue No: 08)	Base metal 40 % to 99.90 %
		Cadmium	IS-406-1964 (RA 2000)	0.05 % to 15 %
7.	**White Metal**	Copper	IS-1409-1959 (RA 2000) LDM-2 (issue date: 4th Jan 2005 IssueNo: 02)	0.1 % to 10 %
		Arsenic	IS 1409: 1959 (RA 2000)	0.02 % to 0.25 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Antimony	IS 1409: 1959 (RA 2000)	0.1 % to 16 %
		Tin	IS 1409: 1959 (RA 2000) LDM 10 (Issue date: 22nd Jul 2013, Issue No: 10)	0.01 % to 20.00 % 20 % to 99.9 %
		Lead	IS 1409: 1959 (RA 2000) LDM 11(Issue date: 22nd Jul 2013, Issue No.:11)	0.05 % to 20.00 % 20 % to 99.9 %
8.	**Ferro Manganese High/Medium Carbon**	Manganese	ASTM -E31-85 (RA 2002) ASTM E1476-95 ASTM -E1621-05	45.00 % to 80.00 %
		Phosphorous	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.05 % to 1.0 %
		Sulphur	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.03 % to 0.5 %
		Silicon	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 5.0 %
9.	**Ferro Manganese Low Carbon**	Manganese	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM -E1621-05	45.00 % to 80.00 %
		Phosphorous	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.05 % to 1.0 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Silicon	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 25.0 %
10.	**Ferro Molybdenum**	Molybdenum	ASTM E31-85 (RA 2002) ASTM E1476-95 & ASTM E1621-05	45.00 % to 70.00 %
		Silicon	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.1 % to 5.0 %
11.	**Ferro Silicon**	Silicon	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	35.00 % to 80.00 %
		Aluminum	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 10 %
		Calcium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 10.0 %
		Phosphorous	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.05 % to 0.20 %
12.	**Ferro Chrome High Carbon**	Chromium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E363-09	40.00 % to 70.00 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Silicon	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E363-09	0.10 % to 10 %
		Manganese	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E363-09	0.10 % to 5.0 %
		Phosphorous	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E363-09	0.02 % to 0.1 %
		Sulphur	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E363-09	0.02 % to 0.1 %
13.	**Ferro Niobium**	Niobium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E 367-2009	40.00 % to 80.00 %
		Silicon	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E 367-2009	0.10 % to 5 %
		Aluminum	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E 367-2009	0.10 % to 3.0 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Titanium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E 367-2009	0.10 % to 5 %
14.	**Ferro Tungsten**	Tungsten	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	50.00 % to 80.00 %
		Silicon	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 5.0 %
		Manganese	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 3.0 %
		Copper	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 0.2 %
		Molybdenum	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 3.0 %
15.	**Ferro Titanium**	Titanium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	30.00 % to 55.00 %
		Aluminium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 15 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Calcium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 5.0 %
		Chromium	ASTM E31-85 (RA 2002) ASTM E1476-95 & ASTM E1621-05	0.10 % to 5.0 %
		Copper	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 1.0 %
		Manganese	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 10 %
		Molybdenum	ASTM E31-85 (RA 2002) ASTM E1476-95 & ASTM E1621-05	0.10 % to 1.0 %
		Niobium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 3.0 %
		Nickel	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.10 % to 1.0 %
		Phosphorous	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.02 % to 0.10 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Sulphur	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.02 % to 0.10 %
		Silicon	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05	0.1 0 % to 5.0 %
16.	**Ferro Vanadium**	Vanadium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E365-90 (RA 2002)	30.00 % to 55.00 %
		Manganese	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E365-90 (RA 2002)	0.10 % to 5.0 %
		Phosphorous	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E365-90 (RA 2002)	0.02 % to 0.10 %
		Sulphur	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E365-90 (RA 2002)	0.02 % to 0.10 %
		Silicon	ASTM E31-2002 ASTM E365-2002 ASTM E1476 ASTM E1621	0.10 % to 5.0%

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Titanium	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E365-90 (RA 2002)	0.10 % to 1.0 %
		Copper	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E365-90 (RA 2002)	0.10 % to 1.0 %
		Nickel	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E365-90 (RA 2002)	0.10 % to 2.0 %
		Chromium	ASTM E31-85 (RA 2002) ASTM E1476-95 & ASTM E1621-05, E365-90 (RA 2002)	0.10 % to 10.0 %
		Molybdenum	ASTM E31-85 (RA 2002) ASTM E1476-95 ASTM E1621-05 ASTM E365-90 (RA 2002)	0.10 % to 1.0 %
17.	**Chemical Analysis of Stainless Steel And High Alloy Steel**	Aluminium	ASTM E1086-08	0.0015 % to 2 %
		Carbon		0.0040 % to 4.5 %
		Cobalt		0.0005 % to 5 %
		Cobalt-High		0.2 % to 20 %
		Chromium		0.0015 % to 10 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Chromium-High	ASTM E1086-08	0.1 % to 35 %
		Copper-High		0.05 % to 10 %
		Copper-Low		0.0005 % to 0.7 %
		Magnesium		0.002 % to 0.4 %
		Manganese		0.0006 % to 6 %
		Manganese-High		0.02 % to 25 %
		Molybdenum		0.0006 % to 10 %
		Nitrogen-High		0.05 % to1 %
		Neobium		0.002 % to 3 %
		Nickel		0.002 % to 10 %
		Nickel-High		1 % to 40 %
		Phosphorus		0.001 % to 1.5 %
		Sulphur		0.0006 % to 0.4 %
		Silicon		0.0015 % to 8 %
		Titanium		0.0003 % to 2%
		Vanadium		0.0005 % to 6 %
		Tungsten		0.003 % to 25 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
18.	**Carbon Steel Low Alloy Steel And Other Cast Alloyed Steel**	Aluminium	ASTM E415-08	0.0015 % to 2 %
		Carbon		0.0040 % to 4.5 %
		Cobalt		0.0005 % to 5.0 %
		Chromium		0.0015 % to 5.0 %
		Copper-Low		0.0005 % to 0.7 %
		Magnesium		0.002 % to 0.4 %
		Manganese		0.0006 % to 5.0 %
		Molybdenum		0.0006 % to 5.0 %
		N-High		0.05 % to 1 %
		Neobium		0.002 % to 3 %
		Nickel		0.002 % to 10%
		Phosphorus		0.001 % to 1.5 %
		Sulphur		0.0006 % to 0.4 %
		Silicon		0.0015 % to 5.0 %
		Titanium		0.0003 % to 2 %
		Vanadium		0.0005 % to 5.0 %
		Tungsten		0.003 % to 5.0 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
19.	**Nickel Base Alloys**	Aluminium	LDM-12 (Issue date: 23rd Dec2013, Issue No: 12)	0.002 % to 6 %
		Carbon		0.005 % to 3 %
		Cobalt		0.002 % to 1 %
		Cobalt-High		0.005 % to 30 %
		Chromium		0.0015 % to 3 %
		Chromium-High		0.1 % to 25 %
		Copper-High		0.2 % to 33 %
		Copper-Low		0.0005 % to 0.5%
		Iron		0.002 % to 5 %
		Iron-High		0.1 % to 50 %
		Magnesium		0.0005 % to 0.3 %
		Manganese		0.01 % to 3 %
		Manganese-High		0.01 % to 25 %
		Molybdenum		0.001 % to 6 %
		Molybdenum-High		1% to 33 %
		Neobium		0.02 % to 6 %
		Phosphorus		0.001% to 0.1 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Sulphur	LDM-12 (Issue date: 23rd Dec2013, Issue No: 12)	0.001 % to 0.4 %
		Silicon		0.03 % to 5 %
		Titanium		0.001 % to 5 %
		Vanadium		0.01 % to 5 %
		Tungsten		0.02 % to 20 %
20.	**Aluminium base Alloys**	Bismuth	ASTM E1251-11	0.0003 % to 0.1 %
		Cadmium		0.0002 % to 0.2 %
		Cobalt		0.0010 % to 0.5 %
		Chromium		0.0005 % to 3 %
		Copper-High		0.200 % to 15 %
		Copper-Low		0.0002 % to 0.5 %
		Iron		0.0005 % to 2 %
		Iron-High		0.1000 % to 10 %
		Magnesium		0.0002 % to 3 %
		Magnesium-High		0.0030 % to 15 %
		Manganese		0.0005 % to 1.8 %
		Manganese-High		1.0 % to 12 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Nickel	ASTM E1251-11	0.0015 % to 5 %
		Phosphorus		0.0010 % to 0.1 %
		Lead		0.0005 % to 2 %
		Antimony		0.0008 % to 0.5 %
		Silicon		0.0003 % to 5 %
		Silicon-High		0.200 % to 25 %
		Tin-High		0.0005 % to 20 %
		Titanium		0.0002 % to 1 %
		Vanadium		0.0005 % to 0.5 %
		Zinc		0.010 % to 10 %
21.	**Copper Base Alloy**	Aluminium	LDM-13 (Issue date: 23rd Dec2013, Issue No:13)	0.001 % to 8 %
		Aluminium-High		0.0002 % to 20 %
		Arsenic		0.0010 % to 0.5 %
		Bismuth		0.0010 % to 0.3 %
		Cadmium		0.0005 % to 0.3 %
		Cobalt		0.0010 % to 2 %
		Chromium		0.0010 % to 3 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Iron	LDM-13 (Issue date: 23rd Dec2013, Issue No:13)	0.002 % to 5 %
		Iron-High		0.200 % to 10 %
		Magnesium		0.0005 % to 3 %
		Manganese		0.0010 % to 2 %
		Manganese-High		0.002% to 12 %
		Neobium		0.0010 % to 0.1 %
		Nickel		0.0020 % to 7 %
		Nickel-High		2 % to 50.00 %
		Phosphorus		0.0010 % to 1 %
		Lead		0.0020 % to 20 %
		Sulphur		0.0005 % to 0.4 %
		Antimony		0.0025 % to 2%
		Silicon		0.0010 % to 8%
		Tin-High		0.500 % to 20 %
		Tin-Low		0.0010 % to 1 %
		Titanium		0.0020 % to 1 %
		Vanadium		-

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Zinc-High	LDM-13 (Issue date: 23rd Dec2013, Issue No:13)	1 % to 50 %
		Zinc		0.0030 % to 10 %
22.	**Zinc base Alloys**	Aluminium	ASTM E634-12	0.0003 % to 8 %
		Aluminium-High		0.0120 % to 30 %
		Arsenic		0.0002 % to 0.5 %
		Cadmium		0.0002 % to 0.2 %
		Copper-High		0.100 % to 10 %
		Copper-Low		0.0003 % to 0.7 %
		Iron		0.0025 % to 1.3 %
		Magnesium		0.0003 % to 3 %
		Magnesium-High		0.0025 % to 3 %
		Manganese		0.0003 % to 0.5 %
		Nickel		0.010 % to 1 %
		Lead		0.0025 % to 0.5 %
		Antimony		0.0030 % to 0.5 %
		Silicon		0.0006 % to 0.5 %
		Tin-High		0.025 % to 0.5 %

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
23.	**Titanium Alloys**	Aluminium	LDM-14 (Issue date: 23rd Dec 2013 , Issue No: 14)	0.0020 % to 10.00 %
		Chromium		0.0050 % to 5.00 %
		Copper-Low		0.0030 % to 2.00 %
		Iron		0.005 % to 2.50 %
		Manganese		0.0050 % to 5.00 %
		Nickel		0.0020 % to 0.50%
		Silicon		0.0050 % to 2.00 %
		Vanadium		0.100 % to 10.00 %
		Zirconium		0.0020 % to 5.00 %
		Molybdenum		0.002 % to 6.0 %
		Tin		0.002 % to 3.0 %

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