



National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name ANALYTICAL RESEARCH & METALLURGICAL LABORATORIES PVT LTD (ARML), #
A101 & A102, KSSIDC COMPLEX, BLOCK II, ELECTRONIC CITY PHASE-I,
BENGALURU, KARNATAKA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7254 Page No. : 1 / 14

Validity 16/03/2020 to 15/03/2022 Last Amended on -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
1	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Chromium	ASTM E 1251: 2017a IS 11035 : 1984 Reaff.: 2014
2	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Copper	ASTM E 1251: 2017a IS 11035 : 1984 Reaff.: 2014
3	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Iron	ASTM E 1251: 2017a IS 11035 : 1984 Reaff.: 2014
4	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Lead	ASTM E 1251: 2017a IS 11035 : 1984 Reaff.: 2014
5	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Magnesium	ASTM E 1251: 2017a IS 11035 : 1984 Reaff.: 2014
6	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Manganese	ASTM E 1251: 2017a IS 11035 : 1984 Reaff.: 2014
7	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Nickel	ASTM E 1251: 2017a IS 11035 : 1984 Reaff.: 2014
8	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Silicon	ASTM E 1251: 2017a IS 11035 : 1984 Reaff.: 2014
9	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Tin	ASTM E 1251: 2017a IS 11035 : 1984 Reaf: 2014



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10	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Titanium	ASTM E 1251: 2017a IS 11035 : 1984 Reaff: 2014
11	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Zinc	ASTM E 1251: 2017a IS 11035 : 1984 Reaff: 2014
12	CHEMICAL- METALS & ALLOYS	Aluminum & Its Alloys	Zirconium	ASTM E 1251: 2017a IS 11035 : 1984 Reaff: 2014
13	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Copper	BS EN 15079: 2015
14	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Aluminium	BS EN 15079: 2015
15	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Bismuth	BS EN 15079: 2015
16	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Copper	IS 7212:1974: 2015
17	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Iron	BS EN 15079: 2015
18	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Lead	BS EN 15079: 2015
19	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Manganese	BS EN 15079: 2015
20	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Nickel	BS EN 15079: 2015
21	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Tin	BS EN 15079: 2015



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22	CHEMICAL- METALS & ALLOYS	Copper & its alloys	Zinc	BS EN 15079: 2015
23	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Aluminum	IS 8811:1998 Reaff 2018 ASTM E415: 2017
24	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Carbon	IS 8811:1998 Reaff 2018 ASTM E415: 2017
25	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Chromium	IS 8811:1998 Reaff 2018 ASTM E415: 2017
26	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Copper	IS 8811:1998 Reaff 2018 ASTM E415: 2017
27	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Manganese	IS 8811:1998 Reaff 2018 ASTM E415: 2017
28	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Molybdenum	IS 8811:1998 Reaff 2018 ASTM E415: 2017
29	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Nickel	IS 8811:1998 Reaff 2018 ASTM E415: 2017
30	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Phosphorous	IS 8811:1998 Reaff 2018 ASTM E415: 2017
31	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Sulphur	IS 8811:1998 Reaff 2018 ASTM E415: 2017



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32	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Titanium	IS 8811:1998 Reaff 2018 ASTM E415: 2017
33	CHEMICAL- METALS & ALLOYS	Low Alloy steel	Silicon	IS 8811:1998 Reaff 2018 ASTM E415: 2017
34	CHEMICAL- METALS & ALLOYS	Metals	Acetic acid & copper sulphate acetic acid Salts Spray Testing	ISO 9227: 2017
35	CHEMICAL- METALS & ALLOYS	Metals	Salts Spray Testing	ASTM B117-11, ISO 9227, JIS Z 2371, IS 101 (Part 6/Sec 1) – 1988, Reaff: 2010
36	CHEMICAL- METALS & ALLOYS	Stainless steel	Carbon	IS 9879:1998 Reaff : 2015
37	CHEMICAL- METALS & ALLOYS	Stainless steel	Chromium	IS 9879:1998 Reaff : 2015
38	CHEMICAL- METALS & ALLOYS	Stainless steel	Copper	IS 9879:1998 Reaff : 2015
39	CHEMICAL- METALS & ALLOYS	Stainless steel	Manganese	IS 9879:1998 Reaff : 2014
40	CHEMICAL- METALS & ALLOYS	Stainless steel	Molybdenum	IS 9879:1998 Reaff : 2015
41	CHEMICAL- METALS & ALLOYS	Stainless steel	Nickel	IS 9879:1998 Reaff: 2015
42	CHEMICAL- METALS & ALLOYS	Stainless Steel	Nitrogen	IS 228 Part-19 1998 Reaff: 2016
43	CHEMICAL- METALS & ALLOYS	Stainless Steel	Phosphorous	IS 9879:1998 Reaff : 2015



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44	CHEMICAL- METALS & ALLOYS	Stainless steel	Silicon	IS 9879:1998 Reaff: 2015
45	CHEMICAL- METALS & ALLOYS	Stainless Steel	Sulphur	IS 9879:1998 Reaff: 2015
46	CHEMICAL- METALS & ALLOYS	Stainless Steel	Titanium	IS 9879:1998 Reaff : 2015
47	CHEMICAL- PLASTIC & RESINS	Plastics and Resins	Ash/ Filler Content	ASTM D 5630-01, ISO 3451-5: 2013
48	CHEMICAL- PLASTIC & RESINS	Plastics and Resins	Density & Specific Gravity (Relative Density)	ASTM D 792 – 08, ISO 1183: 2019
49	CHEMICAL- PLASTIC & RESINS	Plastics and Resins	Identification test	ASTM E1252 – 98 (2013), ISO 1043-1 & IS 15749 : 2007
50	CHEMICAL- RUBBER & RUBBER PRODUCTS	Rubbers and Synthetic Rubber	Ash/Filler Content	ISO 247: 2015
51	CHEMICAL- RUBBER & RUBBER PRODUCTS	Rubbers and Synthetic Rubber	Identification test	ASTM E1252 : 2013
52	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Calcium as Ca	IS 3025 (Part 40) -1991 (RA 2019) APHA 23rd Edn. 3500 Ca B: 2017
53	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Chloride as Cl	IS 3025 (Part 32)-1988 (RA 2019) APHA 23rd Edn. 4500 Cl- B: 2017
54	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Chlorine Residual	IS 3025 (Part 26) – 1986 (RA 2019) APHA 23rd Edn. 4500 Cl B: 2017



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55	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Conductivity	IS 3025 (Part 14) -2013 (RA 2019) APHA 23rd Edn. 2510 B: 2017
56	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Fluoride as F	IS 3025 (Part 60) -2008 (RA 2019) APHA 23rd Edn. 4500 F B, D: 2017
57	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Hexavalent Chromium Cr6+	IS 3025(Part 52 -2003 (RA 2019) APHA 23rd Edn. 3500 - Cr B: 2017
58	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Magnesium as Mg	IS 3025 (Part 46)-1994 (RA 2019) APHA 23rd Edn. 3500 Mg B: 2017
59	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Sulphates as SO4	IS 3025 (Part 24)-1986(RA 2019) APHA 23rd Edn. 4500 SO4 4500 E: 2017
60	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Total Alkalinity as CaCO3	IS 3025 (Part 23)-1986 (RA 2019) APHA 23rd Edn. 2320 B: 2017
61	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Total dissolved Solids	IS 3025 (Part 16) -1984(RA 2019) APHA 23rd Edn. 2540 B: 2017
62	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Total Hardness as CaCO3	IS 3025 (Part 21) -2009 (RA 2019) APHA 23rd Edn. 2340 C: 2017
63	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Total Suspended solids	IS 3025 (Part 17)-1984 (RA 2017) APHA 23rd Edn.2540 D: 2017



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64	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	Turbidity as NTU	IS 3025 (Part 10) -1984 (RA 2017) APHA 23rd Edn. 2130 B: 2017
65	CHEMICAL- WATER	Drinking Water, Ground Water, Irrigation Water	pH	IS 3025 (Part 11)-1983 (RA 2017)APHA 23rd Edn. 4500 - H+: 2017
66	CHEMICAL- WATER	Industrial Water	Ammonical Nitrogen	IS 3025 (Part 34) - 1998 (RA 2019) APHA 23rd Edn. 4500 NH3 C : 2017
67	CHEMICAL- WATER	Industrial Water	Biological Oxygen Demand	IS 3025 (Part 44) – 1993 (RA 2019) APHA 23rd Edn.5210 B: 2017
68	CHEMICAL- WATER	Industrial Water	Chemical Oxygen Demand	IS 3025 (Part 58) - 2019 APHA 23rd Edn. 5220 B: 2017
69	CHEMICAL- WATER	Industrial Water	Chloride as Cl	IS 3025 (Part 32)-1988 (RA 2019) APHA 23rd Edn. 4500 Cl- B: 2017
70	CHEMICAL- WATER	Industrial Water	Chlorine Residual	IS 3025 (Part 26) – 1986 (RA 2019) APHA 23rd Edn. 4500 Cl B: 2017
71	CHEMICAL- WATER	Industrial Water	Dissolved Oxygen as O2	IS 3025 (Part 38) – 1989 (RA 2019) APHA 23rd Edn. 4500 O - B,: 2017



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72	CHEMICAL- WATER	Industrial Water	Hexavalent Chromium Cr6+	IS 3025(Part 52 -2003 (RA 2019) APHA 23rd Edn. 3500 - Cr B: 2017
73	CHEMICAL- WATER	Industrial Water	Nitrogen(TKN)	IS 3025 (Part 34) - 1998 (RA 2019) APHA 23rd Edn. 4500 N B : 2017
74	CHEMICAL- WATER	Industrial Water	Oil & Grease	IS 3025 (Part 39) – 1991 (RA 2019) APHA 23rd Edn. 5520 O&G – B: 2017
75	CHEMICAL- WATER	Industrial Water	pH	IS 3025 (Part 11)-1983 (RA 2017) APHA 23rd Edn. 4500 - H+: 2017
76	CHEMICAL- WATER	Industrial Water	Sulphates as SO4	IS 3025 (Part 24)- 1986 (RA 2019) APHA 23rd Edn. 4500 SO4 4500 E: 2017
77	CHEMICAL- WATER	Industrial Water	Total Dissolved Solids	IS 3025 (Part 16) -1984 (RA 2019) APHA 23rd Edn. 2540 B: 2017
78	CHEMICAL- WATER	Industrial Water	Total Suspended solids	IS 3025 (Part 17)-1984 (RA 2017) APHA 23rd Edn.2540 D: 2017
79	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Ferrous and Non Ferrous materials, alloys & products	Bend	IS : 1599-2019/ ISO 7438-2005 (RA: 2017



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80	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Ferrous and Non Ferrous materials, alloys & products	Brinell Hardness	IS : 1500(Part-1)-2019/ ISO 6506-1-2014, ASTM E10: 2018
81	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Ferrous and Non Ferrous materials, alloys & products	Rockwell Hardness	IS : 1586 (Part-1)-2018/ ISO 6508-1-2016, ASTM E18: 2019
82	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Ferrous and Non Ferrous materials, alloys & products	Shear	IS : 5242-1979 (RA: 2017
83	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Ferrous and Non Ferrous materials, alloys & products	Tensile Test (UTS, Yield stress, 0.01 to 0.5% Proof Stress, Elongation %, Reduction in Area %)	IS:1608(P-1)-2018/ ISO 6892-1-2016, ASTM E8/E8M: 2016
84	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Ferrous and Non Ferrous materials, alloys & products	Vickers Hardness	IS: 1501(Part-1)-2013/ ISO 6507-1-2005, ASTM E384-17, BS EN ISO 9015-1-2011, ISO 9015-2: 2016
85	MECHANICAL- MECHANICAL PROPERTIES OF METALS	High Strength Deformed Steel Bars	Mass per metre	IS : 1786-2008 (RA: 2013
86	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Metallic Tubes	Crushing	IS 3074-2013 (RA: 2018



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87	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Metallic Tubes	Drift Expansion Test	IS 2335-2005/ ISO 8493 -1998 (RA: 2017
88	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Metallic Tubes	Flattening	IS : 2328-2018/ ISO 8492: 2013
89	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Metallic wires	Reverse Bend Test	IS 1716-1985 (RA: 2017
90	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Spot & Seam welded sheets	Chisel Test	ISO 10447-2015, AWS B4.0: 2016
91	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Spot & Seam welded sheets	Peel/ Pull Test	ISO 10447-2015, ASME Sec. IX-2019, AWS B4.0: 2016
92	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Spot & Seam welded sheets	Tensile Shear	ISO 14273-2016 ASME Sec. IX-2019, AWS C1.4M/C1.4-2017, AWS B4.0: 2016



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93	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Welded and Brazed Products	Tensile Test	IS 3600(Part-3)-2018, ASME Sec. IX-2019, ISO 4136-2012, AWS D1.1/D1.1M-2015, AWS D1.2/D1.2M- 2014, AWS D1.6/D1.6M-2017, AWS B4.0: 2016
94	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Welded and Brazed Products	Bend	IS 3600(Part-5)-2018, ASME Sec. IX-2019, ISO 5173-2009, AWS D1.1/D1.1M-2015, AWS D1.2/D1.2M- 2014, AWS D1.3-2018, AWS D1.6/D1.6M- 2017, AWS B4.0: 2016
95	MECHANICAL- MECHANICAL PROPERTIES OF METALS	Welded and Brazed Products	Fracture	ISO 9017-2017, ASME Sec. IX-2019, AWS D1.1/D1.1M-2015, AWS D1.2/D1.2M- 2014, AWS D1.6/D1.6M-2017, AWS B4.0: 2016
96	MECHANICAL- METALLOGRAPHY TEST	Case Hardened Steel	Effective Case Depth by hardness traverse method	IS 6416- 1988(RA2018), IS13691-1993 (RA: 2018
97	MECHANICAL- METALLOGRAPHY TEST	Case Hardened Steel	Total Case Depth by macroscopic method	IS 6416-1988 (RA: 2018



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98	MECHANICAL-METALLOGRAPHY TEST	Case Hardened Steel	Total Case Depth by microscopic method	IS 6416-1988(RA2018), IS 13691-1993(RA: 2018)
99	MECHANICAL-METALLOGRAPHY TEST	Ferrous and Non Ferrous materials, alloys & products	Grain size by comparison method	IS 4748-2009(RA2017) ASTM E112: 2013
100	MECHANICAL-METALLOGRAPHY TEST	Ferrous and Non Ferrous materials, alloys & products	Macrostructural analysis	IS 7739 (P-3)-1975(RA2018), IS 7739 (P-4) -1975(RA2018), IS 7739(P-5) -1976(RA2018), IS 13015-1991(RA2012), IS 11371-1985(RA2007), IS 12573-2010(RA2016), ASTM E340-2015, ASTM E 381-2017, ASM Handbook Vol. 9: 2004



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101	MECHANICAL- METALLOGRAPHY TEST	Ferrous and Non Ferrous materials, alloys & products	Microstructural analysis	IS 7739 (P-3) - 1975(RA2018), IS 7739 (P-4) -1975(RA2018), IS 7739(P-5) - 1976(RA2018), IS 7739(P-6) - 1975(RA2018), IS 7739(P-8) - 1975(RA2018), IS 7739(P-11) - 1976(RA2018), IS 7754-1975(RA2012), ASTM E3-2011 (RA2017), ASM Handbook Vol. 9: 2004
102	MECHANICAL- METALLOGRAPHY TEST	Plated/ Coated Parts	Plating/ Layer Thickness by Microscopic Method	IS 3203-1982 (RA: 2016
103	MECHANICAL- METALLOGRAPHY TEST	Steel Products	Depth of decarburized layer by Microscopic Method	IS 6396-2000 (RA: 2018
104	MECHANICAL- METALLOGRAPHY TEST	Steel Products	Inclusion Rating, Method 'A'	IS 4163-2004(RA 2017)/ ISO 4967-1998(RA2010) ASTM E45: 2018



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105	MECHANICAL- METALLOGRAPHY TEST	Welded and Brazed Products	Macro Examination	IS 3600(Part-9)- 1985(RA2019), ASME Sec. IX-2019, ISO 17639-2003, AWS D1.1/D1.1M-2015, AWS D1.2/D1.2M- 2014, AWS D1.6/D1.6M-2017, AWS C1.4M/C1.4- 2017, ASM Handbook Vol. 9: 2004
106	MECHANICAL- METALLOGRAPHY TEST	Welded and Brazed Products	Microstructural analysis	IS 3600(Part-9)- 1985(RA 2019), ASME Sec. IX-2019, ISO 17639-2003, ASM Handbook Vol. 9: 2004