

MPPL Reference Materials



Accredited Reference Material Producer

A2LA has accredited

METAL POWER PRIVATE LIMITED

Mumbai, INDIA

This accreditation covers the specific materials listed on the agreed upon Scope of Accreditation.

This producer meets the requirements of ISO 17034:2016 General Requirements for the Competence of Reference Material Producers. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system, with the recognized



Presented this 22nd day of July 2024.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7062.01
Valid to August 31, 2026

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I. Chemical Certified Reference Materials

1 Solid Certified Reference Materials

1.1 Carbon Steels and Alloy Steels

1.1.1 Carbon Steels and Low Alloys Steels

Product Code	CRM ID Batch	Equivalent Grades	Accreditation	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	N	V	B	Co	Ti	Sn	W	Nb	Pb	As	Size in mm
3.00244	CFe01001-A S	Pure Iron	A2LA	0.0065	0.0045	0.040	0.0055	0.0036	0.021	0.020	0.0032	0.0017	0.0082	---	---	---	0.0030	---	0.0011	---	---	---	---	Ø39x25
3.00069	G-10180 D-12	AISI-1018, DIN CK15	NABL	0.16	0.21	0.51	0.013	0.063	0.17	0.022	0.015	0.057	0.014	---	---	---	0.0035	---	---	---	---	---	---	Ø40x25
3.00011	G10450 E-10	DIN CK-45, AISI 1045	NABL	0.45	0.24	0.86	0.028	0.014	0.013	0.0051	0.0026	0.020	0.0028	---	0.0010	---	0.0061	---	---	---	---	---	---	Ø37x24
3.00216	G10550 I-18	AISI 1055	A2LA	0.54	0.24	0.87	0.011	0.010	0.16	0.021	---	0.024	0.013	0.010	0.0031	---	0.0046	0.0030	---	---	---	---	---	Ø40x24
3.00125	G10650 E-16	AISI 1065, EN42 B	NABL	0.69	0.18	0.55	0.010	0.071	0.12	0.085	0.025	0.0031	0.14	0.0091	0.036	0.0043	0.0055	0.0020	0.0048	---	0.0010	0.0020	---	Ø40x25
3.00128	G-11390 E-16	EN8M	NABL	0.40	0.20	1.17	0.016	0.17	0.11	0.089	0.017	0.0037	0.19	0.0076	0.0020	0.0016	0.0087	0.0014	0.0082	---	0.0013	---	---	Ø40x25
3.00026	G12130 A-13	EN1A-L	NABL	0.069	0.010	1.15	0.049	0.34	0.043	0.077	0.019	0.0030	0.12	---	0.0042	---	0.012	---	0.035	---	---	0.28	---	Ø38x20
3.00020	G15410A D-11	DIN 36Mn7, EN15	NABL	0.37	0.30	1.20	0.031	0.0053	0.17	0.010	0.0062	0.030	0.013	---	0.0043	0.0025	---	0.043	---	---	---	0.0030	---	Ø45x25
3.00019	G15410B D-11	DIN 36Mn7, EN15	NABL	0.37	0.31	1.21	0.030	0.0062	0.17	0.0087	0.0070	0.033	0.013	0.0080	0.0062	0.0025	0.0030	0.044	---	---	0.0036	---	---	Ø45x25
3.00151	G41300 J-16	AISI 4130, 25CrMo4	NABL	0.32	0.26	0.55	0.021	0.0063	1.06	0.026	0.19	0.029	0.013	0.0089	0.0043	---	0.0086	0.0024	---	---	0.0025	0.0010	---	Ø40x23
3.00152	G41500 J-16	AISI 4150, 50CrMo4	NABL	0.54	0.22	0.82	0.012	0.0090	1.00	0.27	0.16	0.0061	0.044	0.010	0.085	---	0.010	0.0034	0.0030	---	0.0022	0.0022	---	Ø50x24
3.00159	G43400/B C-15	EN24, 40NiCr4Mo3	NABL	0.37	0.27	0.81	0.022	0.019	0.91	1.16	0.27	0.020	0.073	---	---	0.0010	0.013	0.0090	---	---	---	---	---	Ø40x20
3.00239	G43400 K-20	EN24, 40NiCr4Mo3	A2LA	0.42	0.25	0.63	0.011	0.0087	1.20	1.55	0.26	0.018	0.13	0.0090	---	---	---	0.0030	---	---	---	---	---	Ø46x25
3.00235	G86200 H-20	AISI-8620	A2LA	0.21	0.26	0.85	0.012	0.027	0.57	0.43	0.16	0.027	0.029	0.0069	0.0029	---	---	0.0030	---	---	---	---	---	Ø46x25
3.00008	G93100 D-10	DIN EN36C	NABL	0.18	0.24	0.48	0.012	0.0091	0.99	3.62	0.18	0.021	0.11	---	0.0028	---	0.012	0.0037	0.0054	---	---	---	---	Ø38x25
3.00010	S35300 D-10	EN353, 15NiCr1Mo12	NABL	0.18	0.23	0.59	0.023	0.021	1.13	1.03	0.12	0.016	0.11	0.010	0.0093	---	---	---	---	---	---	---	---	Ø37x24
3.00129	K11597 F-16	P11,13CrMo4-5	NABL	0.12	0.62	0.47	0.016	0.010	1.12	0.11	0.50	0.039	0.056	0.010	0.020	0.0011	0.010	0.0058	0.0038	0.010	---	---	---	Ø40x25
3.00107	K21590 H-15	P22, ASTM A182	NABL	0.14	0.33	0.44	0.015	0.0042	2.20	0.096	0.91	0.033	0.088	0.012	0.013	0.00065	0.012	0.0029	0.0078	---	0.020	0.0040	0.0056	Ø39x25
3.00127	K44220 F-16	46Si7, 300M	NABL	0.48	1.82	0.86	0.0092	0.014	0.88	1.36	0.20	0.0055	0.0087	0.0052	0.21	---	0.016	0.0017	0.0030	---	---	---	---	Ø37x25
3.00095	K02204 A-18	ASTM A678 Grade C	NABL	0.23	0.17	1.46	0.014	0.017	0.12	0.016	0.0035	0.023	0.012	0.0082	0.0029	0.00063	0.0023	0.0023	0.0010	---	0.0015	0.0012	---	Ø45x22
MPSS-3.00258	CFe02004-A S	AISI-4140, G-41400	A2LA	0.42	0.18	0.79	0.011	0.025	0.87	0.036	0.16	0.025	0.0059	0.0049	0.0029	---	0.0054	0.0034	---	---	0.0019	---	0.0032	Ø39x25

1.1.2 High Carbon Steels and Spring Steels

Product Code	CRM ID Batch	Equivalent Grades	Accreditation	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	N	V	B	Co	Ti	Sn	Nb	Size in mm
3.00017	G52986 G-11	SAE 52100, EN31	NABL	0.97	0.20	0.31	0.012	0.0053	1.44	0.027	0.0061	0.024	0.015	0.0068	0.0034	---	0.0082	0.0018	---	---	Ø40x25
3.00013	G51500 J-10	AISI 6150, 50Cr4V2	NABL	0.57	0.30	0.83	0.017	0.0094	0.96	0.044	0.013	0.022	0.023	---	0.20	---	0.0087	0.0020	0.0025	---	Ø40x25
3.00126	FS-Gr1 F-16	Special Steel	NABL	1.26	0.16	0.28	0.019	0.012	0.66	0.012	0.0049	0.0032	0.010	0.0077	0.0039	0.0010	0.0056	0.0023	---	0.0010	Ø40x25
3.00015	4501 L-10	EN45, DIN 55Si7	NABL	0.59	1.67	0.80	0.031	0.025	0.089	0.021	0.012	0.014	0.033	---	0.0041	0.0011	0.0081	0.0037	---	---	Ø40x25

1.2 Stainless Steels

1.2.1 Chromium Stainless Steels and Chromium Manganese Stainless Steels

Product Code	CRM ID Batch	Equivalent Grades	Accreditation	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	N	V	B	Bi	Sb	Co	Ti	Sn	W	Nb	As	Pb	Ca	Size in mm
3.00058	S17400 G-14	17-4PH, ASTM A167	NABL	0.049	0.39	0.70	0.021	0.030	15.11	4.08	0.011	0.0030	3.17	---	0.029	---	---	---	0.032	0.0043	---	---	0.29	---	---	---	Ø40x25
3.00230	S17700 D-19	17-7PH, ASTM A167	A2LA	0.051	0.52	0.93	0.027	0.0020	16.38	7.11	---	---	0.063	---	0.086	---	---	---	0.17	0.038	---	0.057	---	---	---	---	Ø40x25
3.00022	S20100 K-11	AISI 201	NABL	0.088	0.34	7.50	0.091	0.017	17.90	3.78	0.13	---	1.38	0.19	0.042	---	---	---	0.086	---	---	---	0.0085	---	---	---	Ø39x25
3.00232	S20910A F-19	AISI 209	A2LA	0.047	0.37	4.39	0.022	0.0039	20.92	12.14	1.74	0.025	0.15	0.26	0.17	---	---	---	0.078	0.012	---	0.059	0.26	---	---	---	Ø48x25
3.00112	S30200 B-16	SS-302	NABL	0.083	0.36	1.12	0.034	0.014	17.95	8.07	0.30	0.0030	0.34	0.060	0.069	---	---	---	0.15	0.0029	---	0.033	0.014	---	---	---	Ø40x25
3.00003	S30400 A-10	AISI 304	NABL	0.067	0.43	1.21	0.031	0.014	18.14	8.17	0.21	0.0037	0.29	0.051	0.064	---	---	---	0.15	0.0032	---	0.029	---	---	---	---	Ø50x20
3.00004	S30403 B-10	AISI 304 L	NABL	0.019	0.29	1.90	0.044	0.024	18.11	8.32	0.28	0.0055	0.33	0.082	0.044	---	---	---	0.094	0.0032	0.012	---	0.011	---	---	---	Ø38x25
3.00113	S31000 B-16	SS-310	NABL	0.055	0.46	1.49	0.036	0.0060	24.23	19.27	0.21	0.0056	0.30	0.064	0.067	---	---	---	0.13	0.023	---	0.044	0.095	---	---	---	Ø40x25
3.00110	S31635 L-15	AISI 316-Ti, ASTM A240	NABL	0.020	0.43	1.83	0.037	0.020	16.79	10.56	2.08	0.022	0.40	0.020	0.072	0.0013	---	---	0.17	0.29	0.0070	0.045	0.014	---	---	---	Ø40x25
3.00207	S31703 J-17	SS 317L	NABL	0.022	0.34	1.58	0.040	0.022	18.16	10.99	3.07	---	0.35	0.055	0.054	0.0010	---	---	0.29	0.0026	0.0051	0.036	---	---	---	---	Ø40x25
3.00006	S32100 B-10	AISI 321	NABL	0.035	0.49	1.94	0.037	0.0035	17.51	9.28	0.33	0.012	0.49	---	0.060	---	---	---	0.15	0.21	---	---	0.015	---	---	---	Ø40x25
3.00029	S41000A J-12	AISI 410	NABL	0.15	0.47	0.76	0.025	0.0040	12.09	0.22	---	0.0033	0.033	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø39x20
3.00030	S41000B J-12	AISI 410	NABL	0.13	0.30	0.39	0.020	0.033	11.66	0.080	---	0.0031	---	---	---	---	---	---	0.038	0.0030	---	---	0.0033	---	---	---	Ø39x18
3.00084	S41600 K-11	SS 416	NABL	0.12	0.40	1.19	0.026	0.28	12.15	0.060	---	0.0027	0.015	---	0.024	0.0028	---	---	0.024	0.0030	---	---	---	---	---	---	Ø40x25
3.00087	S43100 K-14	AISI 431	NABL	0.15	0.36	0.90	0.033	0.016	15.53	1.42	0.16	---	0.12	---	0.037	---	---	---	0.046	0.0016	0.0040	---	0.0083	---	---	---	Ø40x25
3.00180	S44004 E-17	SS 440C	NABL	1.11	0.41	0.65	0.024	0.019	16.71	0.53	0.11	0.0056	0.10	0.026	0.079	---	---	---	0.032	0.0040	---	0.0075	0.028	---	---	---	Ø39x23
3.00259	CFE03002-A S	304L	A2LA	0.024	0.42	1.47	0.024	0.0078	18.45	8.17	0.14	0.0091	0.090	0.078	0.072	0.0007	---	---	0.065	<0.01	0.0043	0.035	0.051	<0.0050	<0.0050	0.0011	Ø39x25
3.00260	CFE03003-A S	420B	A2LA	0.33	0.51	0.61	0.019	0.022	12.39	0.27	0.054	0.0031	0.066	0.033	0.038	<0.0010	<0.0050	<0.010	0.022	0.0014	0.0048	<0.008	<0.005	<0.0100	<0.0020	---	Ø40x25 & Ø43x25

1.2.2 Tool Steel, High Manganese Steel, Silico Manganese Steels, Duplex Steels and Heat-Resistant Steels

Product Code	CRM ID	Equivalent Grades	Accreditation	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	N	V	B	Co	Ti	Sn	W	Nb	Size in mm
	Batch																					
3.00234	T20812A E-19	H12	A2LA	0.38	0.88	0.29	0.029	0.021	4.58	---	1.28	---	0.077	---	0.36	---	---	---	0.0090	0.91	---	Ø50x25
3.00242	T20813 B-21	H13	A2LA	0.40	1.12	0.31	0.014	0.0036	5.00	0.12	1.41	0.024	0.077	---	1.01	---	0.046	---	0.0063	---	---	Ø39x25
3.00018	T30402 G-11	D2	NABL	1.50	0.25	0.29	0.023	0.0037	11.50	0.25	0.79	0.013	0.077	0.034	0.67	---	0.022	0.0035	0.0074	---	---	Ø40x25
3.00114	T30403 B-16	D3	NABL	2.10	0.29	0.30	0.022	0.0038	11.82	0.20	0.11	0.0084	0.056	---	0.069	---	0.018	---	---	0.023	---	Ø40x25
3.00241	T11302 B-21	M2	A2LA	0.92	0.27	0.29	0.049	0.0094	4.06	0.26	4.91	---	0.12	---	1.78	---	1.11	---	---	6.58	---	Ø41x25
3.00090	T11313 L-14	M3	NABL	0.87	0.30	0.19	0.037	0.043	3.98	0.24	5.42	0.035	0.11	---	2.11	---	0.90	0.0035	0.020	6.33	0.028	Ø40x25
3.00172	S31254 D-17	F44	NABL	0.014	0.18	0.60	0.022	0.0029	20.09	17.47	6.08	0.021	0.65	0.20	0.068	---	0.057	0.0058	---	0.088	0.022	Ø43x20
3.00021	S32750-A H-11	F 51	NABL	0.018	0.43	1.35	0.035	0.020	22.62	5.11	3.15	0.046	0.39	0.22	0.089	---	0.12	0.0045	---	0.17	0.015	Ø50x25
3.00024	S31803 H-11	AISI 2205	NABL	0.031	0.60	1.51	0.022	0.0042	22.24	5.98	3.16	---	0.29	0.17	0.13	0.0034	0.11	0.0048	---	0.050	0.017	Ø37x25
3.00027	S63019 E-12	21-4N	NABL	0.56	0.35	8.19	0.030	0.0071	20.54	4.45	0.30	0.0024	0.11	0.40	0.093	---	0.36	0.0050	---	0.18	0.027	Ø40x20
3.00183	S65007 G-17	Valve Steel	A2LA	0.43	3.20	0.71	0.013	0.0090	8.30	0.065	0.042	0.017	0.027	---	0.052	---	0.018	0.0065	--	--	--	40x40x25

1.3 Cast Iron

Product Code	CRM ID	Equivalent Grades	Accreditation	C	Si	Mn	P	S	Cr	Ti	Ni	Al	Cu	V	B	Co	As	Sn	Mo	W	Nb	Pb	Mg	Size in mm
	Batch																							
3.00031	CI GR1 B-12	ASTM G2500 FG-150	NABL	3.20	2.49	0.61	0.019	0.0072	0.15	0.010	0.012	---	0.019	---	---	---	---	---	0.0037	0.034	---	---	---	Ø36x15
3.00033	CI GR3 I-12	---	NABL	2.41	2.10	0.34	0.087	0.022	1.16	0.0030	0.068	0.011	0.065	0.014	---	0.0079	---	---	0.0044	---	0.0015	---	0.030	Ø36x14
3.00061	CI GR4 I-13	---	NABL	2.18	3.46	0.29	0.021	0.27	0.51	0.019	0.054	0.019	0.065	0.065	0.012	0.028	---	0.028	0.56	0.030	0.016	0.013	0.011	Ø37x15
3.00034	CI Gr-5 C-13	---	NABL	2.43	2.97	0.32	0.051	0.14	0.084	0.10	0.097	---	0.021	0.36	0.020	0.042	---	0.0048	1.16	---	0.015	---	---	Ø36x16
3.00035	CI Gr-6 B-13	---	NABL	1.98	2.46	0.46	0.097	0.13	0.43	0.016	0.15	0.046	0.21	0.13	0.035	0.023	---	0.20	0.28	---	0.021	---	0.0055	Ø36x15
3.00062	CI Gr-7 H-13	ASTM G3500b	NABL	3.07	1.58	0.69	0.018	0.070	0.33	0.018	0.35	0.050	0.015	0.013	0.018	0.044	0.035	---	0.073	0.086	0.013	---	0.017	Ø36x14
3.00063	CI Gr-8 H-13	FG 200	NABL	3.52	1.92	1.30	0.18	0.093	0.25	0.048	0.30	0.051	0.13	0.051	0.0066	0.025	---	0.19	0.23	0.037	0.046	---	---	Ø36x15
3.00072	CI GR9K J-13	---	NABL	2.69	0.93	0.69	0.43	0.070	0.98	0.025	0.31	0.15	2.08	0.027	---	0.034	---	0.024	0.061	0.013	---	0.017	---	Ø36x15
3.00066	CI GR14 I-13	---	NABL	1.99	6.39	0.34	0.023	0.27	0.47	0.029	0.058	---	0.063	0.061	0.016	0.016	---	0.032	0.61	---	0.036	0.024	---	Ø36x15

1.4 Aluminium Base

Product Code	CRM ID	Equivalent Grades	Accreditation	Si	Cu	Mg	Mn	Fe	Cr	Ni	Zn	Ti	V	Pb	Sn	Sr	Zr	Be	Ca	Co	Bi	Ga	B	P	Ce	Ag	In	Mo	Sb	Cd	Ba	Li	Na	Hg	As	Al	Size in mm
	Batch																																				
3.00047	A91050 C-13	1050	NABL	0.16	0.0075	0.0015	0.0031	0.35	0.0024	0.0063	0.0057	0.013	0.0028	0.0070	0.0021	---	0.0022	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø40x32
3.00104	A-91060 B-15	1060	NABL	0.14	0.0034	0.0034	0.0022	0.097	0.0062	0.0040	0.0038	0.0065	0.010	---	0.0055	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø43x24
3.00044	A96101 B-13	EC 6101	NABL	0.46	0.0047	0.72	0.012	0.14	0.0023	0.0043	0.0036	0.017	0.013	0.0067	0.0021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø35x20
3.00039	A96351 K-10	6351	NABL	0.81	0.025	0.72	0.49	0.19	0.0091	---	0.0089	0.031	0.0057	---	0.0088	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø40x23
3.00102	A95083 L-14	5083	NABL	0.17	0.063	4.48	0.63	0.20	0.10	0.0060	0.055	0.046	0.010	0.011	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø50x20	
3.00214	A03562 H-18	AC4C-H	NABL	7.14	0.029	0.31	0.046	0.18	0.0061	0.010	0.016	0.11	0.012	0.0046	0.0028	---	0.0010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	92.22	Ø50x35	
3.00060	AC-43100 G-13 LM9		NABL	10.91	0.14	0.33	0.34	0.54	0.013	0.0086	0.056	0.049	0.012	0.013	---	0.0036	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø48x33	
3.00206	AC42000 J-17	AC4B	A2LA	7.41	2.46	0.20	0.25	0.54	0.038	0.046	1.50	0.11	---	0.049	0.027	---	0.0077	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø50x40		
3.00211	A46100 E-18	AlSi10Cu	NABL	10.57	1.68	0.074	0.19	1.06	0.016	0.072	0.13	0.19	0.010	0.012	0.0083	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	Ø50x36		
3.00202	A03330 A-18	LM24	NABL	8.27	3.22	0.24	0.19	0.84	0.051	0.088	2.10	0.069	0.027	0.15	0.097	--	0.0033	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	Ø50x30		
3.00261	CAI03001-A S	6082	A2LA	1.20	0.082	0.73	0.50	0.21	0.029	0.0057	0.0069	0.021	0.0088	0.010	0.0079	<0.0001	0.0015	0.0001	0.0007	0.0016	0.011	0.010	0.0012	0.0017	0.0015	0.0003	0.0003	0.0095	0.0095	0.0002	0.0006	---	---	---	97.20	Ø40x25	
3.00264	CAI03004-A S	6061	A2LA	0.74	0.28	0.95	0.082	0.16	0.094	0.0036	0.0033	0.025	0.0085	0.009	0.012	<0.0001	0.0010	<0.0001	0.0008	<0.0020	0.0046	0.010	0.0029	0.0012	<0.0015	<0.0010	<0.0003	<0.0005	<0.010	<0.0010	<0.0005	<0.0001	<0.0010	0.0023	0.0023	97.54	Ø40x25
3.00265	CAI03005-A S	6063	A2LA	0.44	0.0037	0.47	0.016	0.17	0.0014	0.0042	0.0024	0.015	0.0095	0.0080	0.0063	0.0002	0.0011	0.0001	0.0007	0.0010	0.0027	0.011	<0.0010	0.0013	<0.0015	0.0004	0.0003	<0.0010	---	0.0002	---	<0.0001	---	---	---	98.81	Ø40x25

1.5 Copper Base

Product Code	CRM ID	Equivalent Grades	Accreditation	Cu	Sn	Pb	Zn	Fe	Ni	Mn	S	Al	Sb	Bi	As	Si	P	Cd	Ag	Cr	Te	Ti	Co	Au	Se	B	Mg	Be	Zr	Size in mm	
	Batch																														
3.00217	C11000 H-18	ETP Cu	NABL	99.97	0.0010	0.0026	0.0017	0.0023	0.0025	---	0.0020	0.0035	0.0016	---	0.0010	0.0015	0.0029	---	0.0014	0.0014	---	---	---	---	---	---	---	---	---	---	Ø39x25
3.00155	C12200 L-16	DHP Cu	NABL	99.89	0.0054	0.0020	0.012	0.0052	0.057	---	0.0045	---	0.0010	---	---	---	0.021	---	0.0088	---	---	---	---	---	---	---	---	---	---	---	Ø40x25
3.00118	C16200 E-16	Copper-Cadmium	NABL	99.25	---	---	0.0036	0.0035	0.0017	---	---	---	---	---	---	0.0018	---	0.68	0.0014	---	---	---	---	---	---	---	---	---	---	---	Ø40x20
3.00067	C35000 G-13	Leaded Brass	NABL	61.26	0.20	1.59	36.79	0.25	0.15	0.0025	0.0057	0.012	---	0.0013	0.0060	---	0.0017	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø39x23
3.00156	C44300 L-16	CuZn	NABL	70.40	0.92	0.033	28.51	0.057	0.065	---	0.0045	---	---	0.0043	0.042	---	0.0016	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø40x25
3.00049	C46700B A-12	CuZn39Sn1	NABL	62.04	1.23	0.046	36.59	0.018	0.0048	---	0.0024	0.0022	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø40x18
3.00243	C63000 C-21	Al-Ni Bronze	A2LA	80.54	0.012	0.0058	0.054	3.81	4.84	0.63	---	9.80	---	---	---	0.070	0.0067	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø57x26
3.00157	C68700 K-16	Al Brass	NABL	77.03	0.041	0.017	21.06	---	0.034	0.0066	---	2.01	---	---	---	0.036	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø40x25
3.00245	C93800A D-17	High Pb Sn Bronze	A2LA	77.49	6.76	12.53	0.92	0.019	1.82	0.0015	0.059	0.0015	0.21	0.010	0.020	0.0048	0.057	---	---	---	---	---	---	---	---	---	---	---	---	Ø40 x 20	
3.00054	C95800 H-13	ASTM B148, B51400-AB2	NABL	79.75	---	0.0056	0.11	4.64	4.66	1.14	---	9.45	---	0.0040	0.0050	0.083	0.0099	---	---	---	---	---	---	---	---	---	---	---	---	---	Ø40x24
3.00200	C95210 J-17	CuAl10Fe3 Al-Bronze	NABL	86.58	0.014	0.020	0.18	2.81	0.60	0.11	---	9.53	---	---	---	0.047	0.021	---	0.023	---	---	---	---	---	---	---	---	---	---	---	40x40x25
3.00262	CCu01001-A S	C11000	A2LA	99.97	0.0017	0.0060	0.0030	0.0022	0.0010	0.0002	0.0010	0.0022	0.0033	0.0009	0.0013	0.0029	0.0003	0.0007	0.0010	0.0004	0.0018	0.0006	0.0008	0.0010	0.0016	0.0010	---	---	---	Ø44x25	
3.00263	CCu02001-A S	C46400	A2LA	59.42	0.76	0.0052	39.61	0.025	0.020	0.0011	0.0021	0.0025	0.0077	0.0020	---	0.0016	0.0036	0.0004	0.0022	0.0033	---	0.0010	0.0016	---	---	0.0008	0.0004	0.0033	0.0002	Ø38x25	

1.6 Nickel Base

Product Code	CRM ID	Equivalent Grades	Accreditation	C	Fe	Si	Cu	Mn	P	S	V	Mo	Cr	Co	Ti	Al	Ni	Nb	W	Size in mm
	Batch																			
3.00099	N08825 E-16	Inconel 825	NABL	0.011	34.19	0.19	1.91	0.62	---	---	0.084	2.61	20.16	0.076	0.86	0.090	38.95	---	0.025	Ø45x25
3.00249	CNi02001-A 5	Inconel 625	A2LA	0.020	2.18	0.096	0.041	0.050	0.0082	0.0022	0.016	8.12	20.36	0.090	0.20	0.16	65.38	3.31	---	Ø40x25

1.7 Zinc Base

Product Code	CRM ID	Equivalent Grades	Accreditation	Cu	Sn	Fe	Al	Mg	Pb	Zn	Mn	Ni	Cd	Ag	Size in mm
	Batch														
3.00136	Z33520 I-16	Zamak 3	NABL	0.0032	---	0.0054	4.29	0.042	0.0020	95.39	---	0.0018	---	---	Ø50x40
3.00131	Z12002 F-16	Pure Zinc	NABL	0.00057	---	0.00071	---	0.00030	0.0016	99.99	0.00050	0.00010	0.00023	0.00047	40x40x25

1.8 Lead Base

Product Code	CRM ID	Equivalent Grades	Accreditation	Cu	Sn	Fe	Al	Mg	Pb	Bi	Ag	Sb	Zn	As	Ni	Size in mm
	Batch															
3.00142	Pb-Sb3 I-16	---	A2LA	0.027	0.15	---	0.00010	---	---	0.0086	0.0020	2.47	---	0.25	0.00020	Ø50x20
3.00130	L50001 F-16	Pure Lead	NABL	---	---	---	---	---	99.97	0.010	0.0019	---	0.0003	---	---	Ø45x20 & Ø50x20

1.9 Titanium Base

Product Code	RM ID	Equivalent Grades	Accreditation	Al	V	Fe	Si	Zr	Mo	O	N	H	Cu	Cr	Sn	Size in mm
	Batch															
3.00187	R56400 G-17	6Al4V	NABL	6.18	4.14	0.17	0.026	0.0040	0.098	0.16	0.014	0.0023	0.0043	---	---	Ø40x18
3.00205	R56320 I-17	9Ti3Al2.5V	NABL	4.13	2.14	0.032	0.018	0.13	---	---	---	---	---	0.0030	0.0063	Ø37x18 & Ø45x18
3.00188	R56260 H-17	6Al2Sn4Zr6Mo	NABL	6.23	---	0.096	0.056	4.10	6.29	---	---	---	0.0038	---	2.12	Ø31x24

1.10 Setting Up Samples (SUS)

1.10.1 Ferrous Base

Product Code	SUS ID	SUS BATCH	C	Si	Mn	P	S	Cr	Ti	Ni	Al	Nb	B	Mo	W	Mg	Co	Sn	Cu	V	Pb	Zr	As	N	Sb	Zn	Se	Te	Nb+Ta	Ca	Size in mm
4.00021	SS-2A	E-12	0.058	2.10	1.58	0.013	0.018	15.95	0.160	8.70	0.570	---	0.002	2.13	0.090	---	0.26	<0.01	0.95	0.070	<0.01	0.012	<0.01	0.24	0.240	---	<0.01	0.015	0.213	0.010	Ø40x25
4.00033	GR5A	A-14	2.62	2.47	1.67	0.091	0.080	12.42	0.158	2.45	0.007	0.003	0.0030	3.30	0.010	---	0.026	0.005	2.34	0.101	---	---	---	0.043	---	---	---	---	---	---	~35x35x15
4.00034	GR6A	B-14	1.43	0.80	0.30	0.042	0.016	32.45	0.032	0.577	0.10	0.004	<0.001	0.71	<0.005	---	0.036	0.003	0.363	0.14	---	---	---	0.067	---	---	---	---	---	---	36x36x15
4.00036	GR7A	B-14	2.07	1.73	1.78	0.14	0.022	1.59	0.014	15.40	0.018	0.0010	0.0010	<0.001	0.020	---	0.009	0.006	6.62	<0.001	---	---	---	0.008	---	---	---	---	---	---	36x36x15
4.00041	QA-01	G-18	3.0	1.50	0.80	0.25	0.10	0.65	0.073	0.75	0.03	0.10	<0.015	<0.01	<0.05	<0.005	<0.05	0.30	0.02	0.40	0.015	---	0.015	---	---	0.020	0.05	---	---	---	Ø36x14

1.10.2 Copper Base

Product Code	SUS ID	SUS BATCH	S	Cu	Pb	Sn	Mn	Fe	Ni	P	Zn	Si	As	Bi	Ag	Sb	Al	Cr	C	Co	B	Cd	Size in mm
4.00070	SUS-Cu1	H-18	0.006	--	0.002	0.009	0.0003	0.022	--	--	0.032	0.002	0.002	--	0.003	--	0.001	0.003	0.005	--	0.002	0.001	Ø39x23
4.00071	SUS-Cu6C	I-13	0.105	79.47	9.94	8.80	0.003	0.039	0.221	0.021	0.879	0.003	0.019	0.009	0.019	0.458	---	---	---	0.019	---	---	Ø40x29
4.00072	SUS-Cu7B	I-17	0.036	67.27	0.018	0.016	0.72	0.80	30.90	---	0.13	0.014	---	---	---	---	<0.001	0.011	0.026	0.025	---	---	Ø44x23

1.11 Argon Gas Quality Check (ARQC)

Product Code	RM ID	C	Si	Mn	P	S	Cr	Ti	Ni	Al	Cu	V	B	Co	Sn	Mo	W	Nb	Mg	Size in mm
4.00069	ARQC (Batch C-13)	2.43	2.97	0.32	0.051	0.14	0.084	0.10	0.097	---	0.021	0.36	0.020	0.042	---	1.16	---	---	---	Ø36x15mm

These Setting Up Samples (SUS) are to be used for re-standardization / drift corrections of calibration of spectrometer, but they are not certified with respect to accurate composition. Only approximate values are issued with these Standards.
ARQC standard is to be used to check Argon Gas quality check.

2 Chips Certified Reference Materials

2.1 Low Alloys Steels

Product Code	CRM ID	Equivalent Grades	Accreditation	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	V	Al
	Batch													
MPSS-7.00001	CFe02001-A C	TMT Steel, TRST	A2LA	0.35	0.42	0.70	0.045	0.047	0.43	0.19	0.086	0.39	0.013	0.0044

2.2 Stainless Steels

Product Code	CRM ID	Equivalent Grades	Accreditation	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	V	Co
	Batch													
MPSS-7.00002	CFe03001-A C	SS 329	A2LA	0.047	0.66	0.25	0.028	0.0064	22.80	2.64	1.25	0.15	0.050	0.052



3 Powder Certified Reference Materials

3.1 Iron Ore Powder

Product Code	CRM ID	Equivalent Grades	Accreditation	LOI	Fe ₂ O ₃	SiO ₂	Al ₂ O ₃	P ₂ O ₅	TiO ₂	MgO	S
	Batch										
MPSS-5.00001	CFe09001-A P	Iron Ore High Grade	A2LA	2.61	91.11	2.57	3.05	0.20	0.22	0.016	---
MPSS-5.00002	CFe09002-A P	Iron Ore Medium Grade	A2LA	7.73	76.89	7.66	6.91	0.16	0.22	---	0.0093
MPSS-5.00003	CFe09003-A P	Iron Ore Low Grade	A2LA	7.69	70.97	8.70	11.07	0.14	0.66	---	---



3.2 Ferro Alloy Powder

Product Code	CRM ID	Equivalent Grades	Accreditation	Al	C	Mn	P	S	Si	Ca	Mg	Co	Cr	Ni
	Batch													
MPSS-6.00001	CFe10001-A P	Ferro Silicon High grade	A2LA	1.07	0.099	0.18	0.028	0.0073	69.67	0.34	0.045	---	---	---
MPSS-6.00002	CFe10002-A P	Ferro Silicon Medium grade	A2LA	2.33	0.36	0.11	0.022	0.0077	66.34	0.37	---	---	---	---
MPSS-6.00003	CFe10003-A P	Ferro Silicon Low grade	A2LA	2.30	0.74	0.23	0.039	0.011	32.19	---	---	---	---	---
MPSS-6.00004	CFe11001-A P	Ferro Chrome - HC	A2LA	---	7.49	0.44	0.031	0.070	3.85	---	---	0.086	59.14	0.35
MPSS-6.00005	CFe11002-A P	Ferro Chrome - LC	A2LA	---	0.10	0.23	0.027	0.0078	0.90	---	---	0.065	55.15	0.20
MPSS-6.00006	CFe12001-A P	Ferro Manganese - HC	A2LA	---	6.79	70.23	0.084	0.0056	0.16	---	---	---	---	---
MPSS-6.00007	CFe12002-A P	Ferro Manganese - MC	A2LA	---	1.69	70.65	0.37	0.0065	3.84	---	---	---	---	---
MPSS-6.00008	CFe12003-A P	Ferro Manganese - LC	A2LA	---	0.52	75.33	0.20	0.0059	4.99	---	---	---	---	---

II Mechanical Certified Reference Materials

Product Code	CRM ID	Accreditation	Material	Property	Certified Value	Size
8.00003	CFe02001-A TS	A2LA	Tensile Testing Ferrous Dumbbell Bar (Set of 3 Test pieces)	Tensile strength	1059.33 Mpa	Ø12.5 ± 0.2mm x 160 mm Length
				0.2 % Proof strength	955.30 Mpa	
				Percentage elongation	18.76%	
				Percentage reduction in area	58.90%	
8.00001	CFe02001-A CV	A2LA	Charpy V Notch @ RT (Set of 5 Test pieces)	Absorbed Energy (Joules) at RT (2mm Striker)	129.08 Joules	10x10x55 mm
8.00002	CFe02001-A IV	A2LA	IZOD V Notch @ RT (Set of 1 Test piece)	Absorbed Energy (Joules) at RT (2mm Striker)	118.63 Joules	10x10x130 mm



Tensile



Charpy



Izod



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