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MBH
Reference Materials

MBH

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An ISO 9001 Certified Company

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January 2015

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Please Note

This catalogue details only the current Reference Materials produced exclusively by MBH Analytical Ltd. Prices detailed herein are our March 2015 prices in £stg and are subject to change without notice.

Certified Reference Materials

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Please note. Most of the MBH range of discs are also available in chippings form. Please see the following data for general composition information.
Please enquire for availability, bottle size and price.

Note: Chippings are made to order, and are non-returnable. Please ensure you have correctly identified your requirement before ordering.

Listing of new materials added in this catalogue. **2 - 3**

This catalogue is not the full listing of the materials supplied by MBH but only those materials exclusively produced by MBH. Please also see our full product catalogue.

Introduction

January 2015

On the following pages you will find the current range of reference materials, principally for OES, produced by MBH. The range includes Reference Materials, Certified Reference Materials and Setting Up Samples for both ferrous and non-ferrous alloys.

The format of the catalogue has followed the same conventions we use in our full Reference Materials catalogue. Whilst every effort has been made to detail the latest information, it is possible that products will be remade or replaced and values and dimensions changed. This catalogue can therefore only be a snapshot of the information available at the time of publication. It will be re-issued every ~8-12 months.

Listed you will find details of the latest additions and imminent new materials produced by MBH. Materials noted as "provisional values" are currently being certified and can be supplied with a Provisional certificate of analysis prior to the completion of the full certificate. The final certificate is mailed to all purchasers when completed.

The majority of materials are certified to current international guide-lines and those meeting the definition for Certified Reference Materials are clearly identified.

The catalogue lists currently available or forthcoming materials produced by MBH only. If you cannot find the catalogue reference number you want listed it may have been changed, deleted or excluded because of its age. It may not be produced by MBH but from another producer. Please enquire

We trust you will find this 'MBH only' catalogue useful. Should you have any questions or require further information please do not hesitate to contact us.

Information

Abbreviations

CRM	This material is classified by MBH as a Certified Reference Material
( )	The concentration value stated within the brackets is not certified and is provided for information purposes only
R.E.	Rare Earth
ppm	Parts per Million (w/w)
Form	
C	Material is a **Cast** product
CC or (2xCC)	Material is **Chill Cast** product or (**Double Chill Cast)**
HIP	Material is **Hot Isostatically Pressed** powder
SC	Material is a **Spray Cast** product
W	Material is a **Wrought** product
R	Material has been cut from **Rolled** strip
** provisional values	This material is in production and is currently available for purchase and will be supplied with a provisional certificate. However the values presented are the result of an incomplete analysis programme. The final certified values are expected to be available within ~8 months, but may differ slightly. A copy of the final certificate will be mailed to you as soon as available. Please enquire .
Sold Out	Materials where data is struck through (for example ~~14X MN2 Q~~ etc.) and indicated as 'sold out' will be remade later; please enquire.

Material listed in previous editions but now no longer listed herein should be considered no longer available and are not likely to be remade.

1.2.2 Residuals in Mild Steel

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	As	Zn	N		Size (mm) Ø x H	Form
CRM	**12X 10550 A ****	0.555	0.275	0.0055	0.019	0.670	0.024	0.335	0.008	0.028	0.0015	0.032	0.007	0.002	0.005	** provisional values	40 x 20	W
CRM	**12X 15180 A ****	0.175	0.215	0.0025	0.011	1.20	0.105	0.115	0.022	0.14	0.011	0.019	0.011	0.002	0.006	** provisional values	40 x 20	W

1.2.3 Low Alloy Steel

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	As	Zn	N		Size (mm) Ø x H	Form
CRM	**12X 11572 A**	0.111	0.649	0.0025	0.0069	0.498	0.0977	1.107	0.499	0.0576	0.0049	0.0290	. . . .	0.0030	0.0009	0.0058		38 x 15	W
CRM	**12X 24065 A ****	0.38	0.22	0.005	0.012	0.52	0.27	1.44	0.173	0.22	0.013	1.05	0.004	0.008	0.003	0.008	** provisional values	40 x 15	W
CRM	**12X 40CDV12 A ****	0.400	0.245	0.0015	0.008	0.600	0.105	3.27	0.94	0.098	0.0048	0.022	0.200	0.004	. . . .	0.016	** provisional values	38 x 15	W
CRM	**12X 826M40 A ****	0.395	0.245	0.0025	0.0100	0.500	2.42	0.645	0.505	0.130	0.009	0.041	. . . .	0.008	. . . .	0.0090	** provisional values	38 x 15	W

1.3.5 Special Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	W	Co	B	N			Size (mm) Ø x H	Form
CRM	**13X 32900 A ****	0.025	0.555	0.0265	0.0270	1.47	5.57	24.9	1.31	0.354	0.007	0.014	0.094	0.016	0.072	0.0028	0.0975	** provisional values		40 x 15	W
CRM	**13X 64152 A ****	0.112	0.22	0.0015	0.013	0.67	2.50	11.35	1.57	0.061	0.032	. . . .	0.27	. . . .	0.018	. . . .	0.0335	** provisional values	UNS S64152	38 x 15	W

1.3.7 High Nitrogen Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	V	W	Co	Nb	B	N			Size (mm) Ø x H	Form
CRM	**13X NSA12 A ****	0.0185	0.480	0.0007	0.0265	1.270	24.9	19.65	4.19	1.475	0.016	0.065	0.048	0.090	0.009	0.0022	0.066	** provisional values	UNS N08904	40 x 15	W

2.15 Ni/Co/Cr/Fe/Mo (Hastelloy Type)

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Nb	V	W	Mg	Zr	N	Ni		Size (mm) Ø x H	Form
CRM	**215X 10276 A ****	0.007	0.030	0.495	0.042	5.78	15.60	16.00	0.180	0.019	0.202	0.0010	0.0027	0.033	0.196	3.59	0.0092	0.0085	0.0100	57.80	** provisional values	38 x 15	W

2.19 Various Nickel Alloys

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	V	Nb	Zr	B	Mg	Ni		Size (mm) Ø x H	Form
CRM	**219X 08825 A ****	0.015	0.23	0.500	1.865	31.88	22.00	3.002	0.064	1.19	0.148	0.0008	0.019	0.039	0.006	0.0021	0.0027	0.0025	39.1	** provisional values	40 x 15	W

3.2.1 Phosphor-Bronze

		Sn	Pb	Zn	Fe	Ni	Al	As	Bi	P	S	Ag	Cu	Size (mm) Ø x H	Form
CRM	**32X 51000 A**	4.85	0.0032	0.0105	0.0024	0.0084	0.0007	. . . .	. . . .	0.300	0.0021	0.0022	94.87	38 x 15	W
CRM	**32X 52100 A**	7.73	0.0031	0.0026	0.0008	0.0111	0.0009	0.0009	0.0019	0.146	0.0008	0.0011	92.10	38 x 15	W

3.6.1 Cupro Nickel

		Sn	Pb	Zn	Fe	Ni	Al	Mn	P	S	Co	B	C	Cu		Size (mm) Ø x H	Form
CRM	**36X 70600 A**	0.0090	0.0086	0.115	1.619	10.65	(0.001)	0.759	0.0062	0.0136	0.0087	. . . .	(0.002)	86.70		40 x 15	W
CRM	**36X 71500 A ****	0.0113	0.0113	0.151	0.888	31.25	(0.002)	0.850	0.0076	0.0448	0.0163	0.0048	0.0240	66.75	** provisional values	40 x 15	W

5.1.1 Residuals in Aluminium

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Zr	Co	V	Ga	Size (mm) Ø x H	Form
CRM	**51X A1350 A**	0.0016	0.0032	0.0232	0.0968	0.0019	0.0071	0.0148	(0.001)	0.0005	0.0029	0.0024	0.0007	0.0005	0.0042	0.0137	50 x 20	W

Continued on next page

Listing of New Materials Added to this Catalogue (2).

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Blocks / Discs

	5.4 Al/Si	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	V	Ga	Zr			Size (mm) Ø x H	Form
CRM	**54X G25DX A ****	*0.020*	*0.40*	*7.15*	*0.08*	*0.029*	*0.008*	*0.035*	*0.004*	*0.001*	*0.158*	*0.006*	*0.008*	*0.020*	*0.007*	** provisional values	. . . .	65 x 30	HIP

	5.6 Al/Cu	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	V	Zr		Size (mm) Ø x H	Form
CRM	**56X G2024 A**	4.31	1.500	0.123	0.180	0.656	0.0053	0.0448	0.0009	0.0010	0.0102	0.0395	0.0071	0.0050		50 x 20	W

	5.9 Al/Zn/Mg/Cu	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	V	Zr	B	Size (mm) Ø x H	Form
CRM	**59X G7020 A**	0.0320	1.313	0.049	0.178	0.200	0.0051	4.82	0.0018	0.0022	0.0261	0.192	0.0107	0.146	0.0025	50 x 20	W
CRM	**59X G7050 A**	2.119	2.030	0.045	0.0745	0.0047	0.0041	6.18	0.0010	0.0010	0.0242	0.0097	0.0092	0.100	0.0011	50 x 20	W

	5.11 Al/Mg	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	V	Ga	Size (mm) Ø x H	Form
CRM	**511X G6061 A**	0.260	0.896	0.696	0.304	0.0721	0.0044	0.0105	0.0014	0.0012	0.0204	0.200	0.0138	0.0160	50 x 20	W

	8.3 Lead with Impurities	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Cd	Ni	Te	Se	Se	S		Size (mm) Ø x H	Form
CRM	**83X CU06 A ****	*<0.001*	*<0.001*	*0.013*	*0.055*	*<0.001*	*0.002*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*0.0005*	*0.0005*	*<0.001*	** provisional values	40 x 15	C

	13.1 Silver with Impurities	All Elements ppm							Size (mm) Ø x H	Form
		Bi	Se	Fe	Cu	Cr	Si	Al		
	131X AgSe1 A	304	162	23	. . . .	. . . .	. . . .	. . . .	40 x 10	C
	131X AgSe2 A	790	465	22	1333	37	39	43	40 x 10	C

	8.5 Various Lead Alloys	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Ni	Se	S		Size (mm) Ø x H	Form
CRM	**85X YUM A ****	*0.004*	*2.46*	*0.014*	*0.023*	*0.31*	*0.002*	*0.0001*	*0.0003*	*0.0007*	*0.0007*	*0.006*	** provisional values	40 x 15	C
CRM	**85X 2.5LA A ****	*0.065*	*2.48*	*0.015*	*0.038*	*0.33*	*0.002*	*0.0001*	*0.0002*	*0.0005*	*0.0005*	*0.001*	** provisional values	40 x 15	C

	13.3 Silver Alloys	These Elements in %								These Elements in ppm													Size (mm) Ø x H	Form
		Au	Cu	Pb	Zn	Sn	Bi	Sb	Fe	Al	As	Cd	Co	Mn	Ni	Pd	Pt	Se	Te	Ge	In			
	133X AGA1 A	1.48	19.95	0.207	0.211	0.291	0.194	0.050	0.039	96	255	165	406	61	118	54	67	169	271	107	37	Unmounted	25 x 3	R
	133X AGA2 A	0.507	10.00	1.02	0.502	0.520	0.113	0.192	0.027	19	144	113	163	115	264	76	114	78	98	47	65	Unmounted	25 x 3	R
	133X AGA3 A	0.258	4.91	1.89	0.816	0.921	0.048	0.459	(0.015)	(20)	80	42	50	98	450	156	256	44	54	45	134	Unmounted	25 x 3	R

1.1.3 High Phosphorus

		C	Si	S	P	Mn	Cr	Mo	Size (mm) Ø x H	Form
CRM	**11X HPC1 H**	3.29	3.27	0.0035	0.808	0.620	1.056	0.060	40 x 15	CC
CRM	**11X HPC2 K**	2.85	2.19	0.066	1.55	0.775	2.05	. . . .	40 x 17	CC
CRM	**11X HPC3 J**	3.38	1.63	0.0473	2.01	1.287	1.48	0.120	40 x 15	CC
CRM	**11X HPC5 A**	3.68	1.175	0.223	0.246	1.028	1.42	. . . .	40 x 17	CC

1.1.4 Spheroidal Graphite

		C	Si	S	P	Mn	Ni	Cr	Cu	Al	Ti	Mg	As	Zn	Size (mm) Ø x H	Form
CRM	**11X SG1 A**	3.53	2.96	0.0095	0.0363	0.278	0.042	0.0299	0.0194	0.0187	0.0150	0.040	0.0021	0.041	40 x 15	concast
CRM	**11X SG2 A**	3.48	3.03	0.0075	0.0353	0.297	0.0263	0.0304	0.0245	0.0238	0.0146	0.055	0.0022	0.040	40 x 15	concast

1.1.7 Low Alloy

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	Nb	Co	W	As	Sb	Bi	Se	Zn		
CRM	**11X C1 Q**	2.82	1.40	0.0349	0.092	1.341	0.556	0.335	0.062	0.154	0.0248	0.069	0.196	0.1036	0.091	0.0407	. . . .	0.0105	0.055	0.0093	0.005	0.0051		
CRM	**11X C2 T**	3.24	1.19	0.075	0.203	0.829	1.212	1.085	0.102	0.123	0.054	0.132	0.0275	0.280	0.075	0.1085	0.100	0.027	0.121	0.0100	0.0099	0.0024		
CRM	**11X C3 AB ****	*3.45*	*0.85*	*0.20*	*0.45*	*0.43*	*3.22*	*2.02*	*0.21*	*0.30*	*0.21*	*0.01*	*0.04*	*0.69*	*0.15*	*0.24*	*0.052*	*0.097*	*0.25*	*0.015*	*0.018*	*0.036*	** provisional values	
CRM	**11X C4 R**	1.86	2.92	0.098	0.108	0.493	2.02	1.531	0.101	0.345	0.0102	0.040	0.080	0.0208	0.0373	0.0316	0.120	0.0050	0.015	0.0144	0.021	0.0083		
CRM	**11X C5 W**	2.52	2.09	0.096	0.080	0.846	1.595	1.111	0.471	1.80	0.0371	0.0484	0.054	0.089	0.0403	0.0558	0.0297	0.0199	0.0265	0.0108	0.005	0.019		continued
~~CRM~~	~~**11X C6 V**~~	~~3.76~~	~~0.487~~	~~0.0567~~	~~0.069~~	~~1.088~~	~~0.060~~	~~0.606~~	~~1.561~~	~~0.890~~	~~0.0585~~	~~(0.018)~~	~~0.049~~	~~0.0608~~	~~0.023~~	~~0.094~~	~~. . . .~~	~~0.0499~~	~~0.037~~	~~0.005~~	~~0.007~~	~~0.025~~	sold out	
CRM	**11X C7 N**	2.51	0.829	0.0101	0.0266	1.942	0.0303	0.507	0.071	0.075	0.0114	0.0127	0.022	0.036	0.051	0.0335	0.066	0.0159	0.025	0.0137	. . . .	0.0226		
CRM	**11X C8 U**	2.50	1.38	0.154	0.831	0.424	0.175	0.360	0.128	0.259	0.080	(0.10)	0.071	0.0452	0.031	0.081	0.013	0.077	0.0631	0.0164	0.0280	0.0051		
CRM	**11X C9 C**	2.82	1.19	0.0306	0.032	1.88	2.58	1.31	0.158	(0.32)	0.052	0.005	0.054	(0.49)	0.062	0.132	0.286	0.046	0.152	(0.011)	0.0091	0.010		
CRM	**11X C10 C ****	*3.50*	*2.1*	*0.048*	*0.100*	*0.68*	*2.68*	*0.30*	*0.33*	*1.55*	*0.045*	*0.11*	*0.070*	*0.060*	. . . .	. . . .	*0.33*	*0.020*	*0.007*	. . . .	. . . .	. . . .	** provisional values	

Continuation from above	Pb	B	Zr	Te	Ag	N		Size (mm) Ø x H	Form
11X C1 Q	0.0107	0.054	0.0072	. . . .	. . . .	0.0095		40 x 15	CC
11X C2 T	0.0085	0.0189	. . . .	. . . .	. . . .	0.0084		40 x 15	CC
11X C3 AB **	*0.01*	*0.005*	. . . .	. . . .	. . . .	*0.010*	** provisional values	40 x 15	CC
11X C4 R	0.019	0.0086	0.0031	. . . .	0.008	0.0078		40.x 15	CC
11X C5 W	0.0295	0.011	0.0050	0.0010	. . . .	0.0171		40 x 15	CC
~~**11X C6 V**~~	~~0.006~~	~~0.0053~~	~~0.005~~	~~. . . .~~	~~. . . .~~	~~0.0152~~	sold out	~~40 x 15~~	~~CC~~
11X C7 N	0.0106	0.0097	(0.003)	. . . .	. . . .	0.025		40 x 15	CC
11X C8 U	0.0057	0.0330	0.0040	0.0043	0.008	0.0032		40 x 15	CC
11X C9 C	0.0044	0.0058	. . . .	0.015	. . . .	. . . .		40 x 15	CC
11X C10 C **	0.005	. . . .	. . . .	. . . .	. . . .	0.010	** provisional values	40 x 15	CC

1.1.9 Corrosion Resistant

		C	Si	S	P	Mn	Ni	Cr	Cu	Size (mm) Ø x H	Form
CRM	11X S/1 Cr3 J	2.91	1.07	0.023	0.072	0.861	14.53	1.61	9.01	40 x 15	CC
CRM	11X S/1 Cr5 G	2.58	1.494	0.033	0.114	1.315	17.45	3.74	3.90	40 x 15	CC
	11X S/2Cr1 E	2.83	2.85	0.011	0.31	1.68	16.5	2.48	0.02	40 x 15	CC
	11X S/2Cr4 D	2.82	2.59	0.010	0.049	0.97	20.7	1.10	0.24	40 x 15	CC
	11X S/3Cr1 D	2.61	2.52	0.011	0.046	0.70	31.7	0.15	0.19	40 x 15	CC
	11X S/3Cr2 C	2.30	2.59	0.010	0.045	0.85	31.0	2.62	0.21	40 x 15	CC
	11X S/3Cr3 B	2.49	2.44	0.050	0.053	0.66	29.4	4.06	0.23	40 x 15	CC

	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Co	Sn	Al	Ti	V	Pb		Size (mm) Ø x H	Form
11X 20001 J	2.90	1.01	0.143	0.005	0.58	21.4	1.50	. . . .	0.01	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
11X 20002 J	2.67	2.04	0.045	0.060	1.06	20.0	2.03	. . . .	0.30	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
11X 20003 K	2.91	3.03	0.007	0.174	1.53	17.8	2.53	. . . .	0.52	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
~~11X 0331.1 H~~	~~2.831~~	~~2.10~~	~~0.137~~	~~0.111~~	~~1.353~~	~~13.75~~	~~2.022~~	~~0.111~~	~~7.68~~	~~0.154~~	~~0.048~~	~~(0.030)~~	~~0.094~~	~~. . . .~~	~~0.030~~	sold out	~~40 x 13~~	~~CC~~
~~11X 0331.2 J~~	~~2.25~~	~~2.32~~	~~0.092~~	~~0.059~~	~~1.048~~	~~14.65~~	~~1.470~~	~~0.080~~	~~7.01~~	~~0.146~~	~~0.0313~~	~~0.066~~	~~0.080~~	~~0.0324~~	~~(0.030)~~	sold out	~~40 X 13~~	~~CC~~
11X 0331.3 G	2.27	1.79	0.049	0.0339	0.613	17.23	2.014	0.0518	6.02	0.108	0.0127	(0.116)	0.085	0.029	0.0247		40 X 13	CC
11X 0331.5 C	2.73	2.93	0.217	0.164	0.893	14.52	0.582	0.117	7.74	. . . .	0.121	0.018	. . . .	. . . .	0.0056		40 X 13	CC

Note: items that are cast (form C) may contain some primary carbon.

1.1.11 With Chromium

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	V	W	Co	Pb	Size (mm) Ø x H	Form
CRM	11X 15294 U	3.16	0.374	0.051	0.081	0.590	1.28	27.53	0.755	0.220	0.0633	0.144	0.35	0.237	0.014	40 x 15	CC
CRM	11X 15295 Q	2.430	1.032	0.081	0.078	1.126	0.331	25.64	0.486	0.259	0.0455	(0.169)	0.219	0.494	0.0093	40 x 15	CC
CRM	11X 15309 R	3.273	0.562	0.0110	0.0340	1.196	2.05	23.30	0.982	1.142	. . . .	0.096	(0.057)	0.068	. . . .	40 x 15	CC
CRM	11X 15310 A	2.71	0.892	0.0278	0.051	1.45	5.66	21.22	0.980	2.64	. . . .	0.071	0.137	0.0709	. . . .	40 x 15	CC

1.2.2 Residuals in Mild Steel

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Co	Zn	Nb	N	Bi	Se	Sb	Size (mm) Ø x H	Form
CRM	**12X 10180 A**	0.170	0.221	0.0336	0.0104	0.806	0.101	0.095	0.0220	0.176	0.0143	0.0243	....	....	....	0.0058	....	0.0031	....	0.0106	....	....	....	40 x 20	W
CRM	**12X 10180 B**	0.169	0.114	0.0056	0.0101	0.722	0.0333	0.0451	0.0062	0.0544	0.0065	0.043	....	....	....	0.0059	....	0.0079	....	0.0071	....	....	....	40 x 20	W
CRM	**12X 10400 A**	0.420	0.220	0.0305	0.0137	0.754	0.0631	0.139	0.0169	0.140	0.0127	0.0323	....	....	....	0.0068	....	0.0033	....	0.0133	....	....	....	40 x 15	W
CRM	**12X 10550 A ****	*0.555*	*0.275*	*0.0055*	*0.019*	*0.670*	*0.024*	*0.335*	*0.008*	*0.028*	*0.0015*	*0.032*	....	....	....	*0.007*	....	*0.002*	....	*0.005*	** provisional values			40 x 20	W
CRM	**12X 15180 A ****	*0.175*	*0.215*	*0.0025*	*0.011*	*1.20*	*0.105*	*0.115*	*0.022*	*0.14*	*0.011*	*0.019*	....	....	....	*0.011*	....	*0.002*	....	*0.006*	** provisional values			40 x 20	W
CRM	**12X 12700 A**	0.365	0.238	0.0116	0.0205	0.636	0.0197	0.070	0.0345	0.0342	....	0.055	....	0.0033	....	0.0060	0.0047	0.0120	....	0.0073	....	....	....	50 x 20	C
CRM	**12X 12701 A**	0.330	0.308	0.0124	0.0218	0.636	0.0557	0.235	0.0163	0.0346	....	0.0426	....	0.0040	....	0.0060	0.0058	0.0014	....	0.0072	....	....	....	50 x 20	C
CRM	**12X 12746 U**	0.0132	0.183	0.064	0.0247	1.70	0.161	0.182	0.654	0.368	0.202	0.021	0.0283	0.0160	0.101	0.049	0.115	....	....	....	....	....	....	40 x 15	W
CRM	**12X 12747 U**	0.149	0.337	0.041	0.029	2.02	0.391	0.443	0.500	0.437	0.167	0.015	0.072	0.0375	0.030	0.0114	0.200	....	....	....	....	....	....	42 x 15	W
CRM	**12X 12748 U ****	*0.10*	*0.22*	*0.050*	*0.032*	*0.91*	*0.38*	*0.41*	*0.33*	*0.34*	*0.080*	*0.105*	*0.110*	*0.052*	*0.045*	*0.13*	*0.33*	....	....	....	** provisional values			40 x 15	W
CRM	**12X 12749 W**	0.132	0.298	0.101	0.0257	1.250	0.485	0.554	0.224	0.311	0.040	0.004	0.031	0.069	0.034	0.071	0.436	....	....	....	....	....	....	40 x 15	W
CRM	**12X 12750 T**	0.202	0.383	0.0082	0.0106	0.248	1.012	0.853	0.119	0.0215	0.227	0.285	0.116	0.0961	0.105	....	0.670	....	0.120	....	....	....	....	40 x 15	W
CRM	**12X 349 C**	0.255	0.222	0.0198	0.0246	0.748	0.241	0.183	0.107	0.161	0.183	0.0469	0.128	0.0526	0.0495	0.0097	0.0167	....	....	....	....	....	....	40 x 15	W
CRM	**12X 350 B**	0.138	0.672	0.0363	0.029	0.706	0.162	0.392	0.149	0.150	0.0298	0.341	0.099	0.0286	0.275	0.053	0.0206	....	....	....	....	....	....	40 x 15	W
CRM	**12X 352 D**	0.298	0.338	0.125	0.066	0.627	0.334	0.423	0.257	0.144	0.105	0.146	0.285	0.0584	0.223	0.0095	0.0504	....	....	....	....	....	....	40 x 15	W
CRM	**12X 353 F ****	*0.12*	*0.16*	*0.020*	*0.010*	*0.65*	*0.22*	*0.70*	*0.11*	*0.28*	*0.12*	*0.090*	*0.075*	*0.012*	*0.13*	*0.050*	*0.026*	....	*0.060*	*0.011*	*0.022*	*0.015*	*0.13*	40 x 15	W
	12X 354 A	0.27	0.19	0.015	0.066	0.86	....	....	....	....	....	0.01	....	0.02	....	....	0.03	....	0.07	....	....	....	0.05	38 x 15-20	W
CRM	**12X 355 B**	0.152	0.486	0.0284	0.0289	0.595	0.081	0.103	0.0603	0.632	0.0547	0.118	0.144	0.121	0.0294	0.0294	0.0515	....	0.039	0.0067	0.043	0.0338	0.080	40 x 15	W
CRM	**12X 356 C ****	*0.21*	*0.065*	*0.032*	*0.055*	*0.20*	*0.038*	*0.26*	*0.030*	*0.44*	*0.038*	*0.036*	*0.028*	*0.061*	*0.11*	*0.026*	*0.16*	*0.010*	*0.003*	*0.006*	*0.007*	*0.005*	*0.030*	40 x 15	W
CRM	**12X 357 C ****	*0.27*	*0.16*	*0.057*	*0.011*	*0.22*	*0.095*	*0.090*	*0.011*	*0.27*	*0.019*	*0.20*	*0.065*	*0.17*	*0.02*	*0.015*	*0.21*	*0.008*	*0.005*	*0.007*	*0.005*	*0.005*	*0.015*	40 x 15	W

** provisional values

1.2.3 Low Alloy Steel

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Nb	Ti	Ta	Zn	Zr	N	Size (mm) Ø x H	Form
CRM	**12X LA1 B ****	*0.105*	*0.77*	*0.057*	*0.009*	*1.27*	*0.21*	*1.03*	*0.067*	*0.057*	....	*0.010*	*0.450*	....	*0.022*	*0.014*	....	** provisional values			....	*0.0145*	40 x 15	W
CRM	**12X LA2 D**	0.157	0.976	0.043	0.034	0.569	0.728	0.868	0.138	0.778	....	1.377	0.0687	....	0.298	0.0169	....	....	....	....	....	0.0186	40 x 15	W
CRM	**12X LA3 B**	0.439	0.157	0.0379	0.0215	1.176	0.300	0.357	0.302	0.173	....	0.0300	0.157	....	....	0.0300	....	....	....	0.0098	(0.027)	0.0080	40 x 15	W
CRM	**12X LA4 B**	0.537	0.335	0.039	0.0363	0.303	0.521	0.499	0.489	0.334	....	0.057	0.328	0.091	....	0.105	....	....	....	....	....	0.0222	42 x 15	W
CRM	**12X LA5 B**	0.724	0.637	0.0216	0.050	0.977	0.150	0.131	0.225	0.161	....	0.157	0.589	....	....	0.158	....	....	....	0.0290	....	0.0068	40 x 15	W
CRM	**12X LA6 B**	0.089	0.133	0.0097	0.0115	0.148	0.0112	0.0377	0.0073	0.071	....	0.204	0.0162	....	....	0.0062	....	....	....	0.0191	....	0.0034	40 x 15	W
CRM	**12X 15217 Q**	0.176	1.390	0.073	0.058	0.652	0.864	1.24	0.358	0.231	0.0737	(0.021)	0.662	0.121	....	0.248	0.131	....	....	....	....	0.0253	40 x 15	W
CRM	**12X 15251 T**	1.17	2.27	0.0258	0.0284	1.003	1.035	0.792	0.205	0.110	0.0047	0.050	0.405	0.053	....	0.259	0.29	....	....	....	....	0.0232	42 x 15	W
CRM	**12X 15252 Q**	0.0478	0.265	0.0580	0.0213	0.818	2.03	0.887	0.248	0.154	0.0448	0.074	0.330	....	....	0.154	0.10	....	(0.054)	....	....	0.0218	40 x 15	W
CRM	**12X 15253 S**	0.173	0.299	0.053	0.0552	0.992	0.506	1.505	0.513	0.326	0.129	0.024	0.242	0.265	0.0259	0.0898	0.383	....	0.011	....	....	0.0235	40 x 15	W
~~CRM~~	~~**12X 15255 P**~~	~~0.473~~	~~1.13~~	~~0.0225~~	~~0.111~~	~~1.170~~	~~0.405~~	~~1.99~~	~~0.111~~	~~0.395~~	~~0.100~~	~~0.13~~	~~0.541~~	~~0.209~~	~~....~~	~~0.051~~	~~0.145~~	....	....	....	....	sold out	~~40 x 15~~	~~W~~
CRM	**12X 15256 P**	0.082	0.137	0.0134	0.0177	0.553	5.70	0.970	0.130	0.050	0.123	0.129	0.554	0.103	....	0.546	0.101	....	....	....	....	0.0273	40 x 15	W
CRM	**12X 15259 P**	0.740	1.90	0.099	0.0401	0.314	4.01	0.554	0.434	0.161	0.070	0.192	0.165	1.04	....	0.123	0.377	....	....	....	....	0.0132	40 x 15	CC
CRM	**12X 15260 W**	0.352	0.485	0.074	0.0275	2.08	0.453	2.98	0.098	0.152	0.0094	0.191	0.442	....	0.055	0.0884	0.254	....	(0.016)	....	....	....	40 x 15	CC
CRM	**12X 15266 U**	0.425	0.589	0.0156	0.0468	1.203	1.581	3.12	0.318	0.229	0.020	0.466	0.102	....	0.068	0.379	1.467	....	0.110	....	....	....	40 x 15	CC
CRM	**12X 15254 Z**	0.285	0.916	0.047	0.043	1.117	0.394	2.12	0.758	0.123	0.0651	0.599	0.290	0.349	....	0.550	0.347	0.303	....	....	....	....	40 x 15	W
CRM	**12X 15258 N**	0.548	1.020	0.070	0.0439	1.434	0.327	0.465	0.215	0.0934	0.0453	0.032	0.218	0.102	....	0.272	0.103	0.120	....	....	....	....	42 x 15	W
CRM	**12X 15261 W**	0.689	1.606	0.079	0.111	0.437	0.113	0.495	1.508	0.252	0.0157	1.013	0.114	0.256	....	0.363	0.691	0.397	....	....	....	....	40 x 15	CC

1.2.3 Low Alloy Steel (continued)

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	As	Zn	N		Size (mm) Ø x H	Form
CRM	**12X 11572 A**	0.111	0.649	0.0025	0.0069	0.498	0.0977	1.107	0.499	0.0576	0.0049	0.0290	. . . .	0.0030	0.0009	0.0058		38 x 15	W
CRM	**12X 19965 A**	0.936	0.247	0.0081	0.0196	0.600	0.141	1.713	0.210	0.148	0.0070	0.0256	0.0087	. . . .	0.0008	0.0087		38 x 15	W
CRM	**12X 32550 A**	0.257	1.59	0.0054	0.0061	1.350	1.750	0.377	0.417	0.108	0.0206	0.0178	0.0222	0.0054	. . . .	0.0101		38 x 15	W
CRM	**12X 41300 A**	0.319	0.183	0.0156	0.0082	0.551	0.084	0.996	0.217	0.131	0.0060	0.027	. . . .	0.0043	0.0012	0.0095		38 x 15	W
CRM	**12X 41400 A**	0.418	0.221	0.0210	0.0138	0.795	0.127	1.003	0.211	0.238	0.0181	0.0195	. . . .	0.0088	. . . .	0.0101		38 x 20	W
CRM	**12X 43400 A**	0.422	0.259	0.0284	0.0164	0.592	1.378	1.181	0.223	0.177	0.007	0.013	. . . .	0.0084	0.0027	0.0089		40 x 15	W
CRM	**12X 44220 A**	0.417	1.662	0.0009	0.0050	0.874	1.89	0.846	0.401	0.031	0.0019	0.029	0.0764	0.0026	. . . .	0.0030		38 x 15	W
CRM	**12X 52986 A**	1.023	0.246	0.0011	0.0049	0.372	0.0411	1.418	0.0169	0.077	0.0063	0.0258	0.0615	(0.002)	. . . .	(0.002)		38 x 15	W
CRM	**12X 61500 A**	0.530	0.240	0.0102	0.0104	0.912	0.0976	1.023	0.0195	0.157	0.0114	(0.007)	0.110	0.0067	0.0055	. . . .		38 x 15	W
CRM	**12X 86200 A**	0.198	0.299	0.0104	0.0110	0.849	0.598	0.602	0.224	0.213	0.0100	0.0305	0.0045	0.0051	. . . .	0.0091		38 x 15	W
CRM	**12X 93106 A**	0.122	0.206	0.0103	0.0071	0.605	3.255	1.107	0.0879	0.199	0.0094	0.0246	0.0030	0.0050	. . . .	0.0098		38 x 15	W
CRM	**12X 24065 A ****	*0.38*	*0.22*	*0.005*	*0.012*	*0.52*	*0.27*	*1.44*	*0.173*	*0.22*	*0.013*	*1.05*	*0.004*	*0.008*	*0.003*	*0.008*	** provisional values	40 x 15	W
CRM	**12X 15CDV6 A**	0.171	0.152	0.0086	0.0056	0.839	0.044	1.397	0.875	0.0231	0.0011	0.019	0.242	0.0041	. . . .	0.0069		40 x 15	W
CRM	**12X 40CDV12 A ****	*0.400*	*0.245*	*0.0015*	*0.008*	*0.600*	*0.105*	*3.27*	*0.94*	*0.098*	*0.0048*	*0.022*	*0.200*	*0.004*	. . . .	*0.016*	** provisional values	38 x 15	W
CRM	**12X 722M24 A**	0.236	0.262	0.0199	0.0135	0.510	0.208	3.094	0.497	0.200	0.0116	0.0187	0.0080	0.0075	0.0028	. . . .		38 x 15	W
CRM	**12X 826M40 A ****	*0.395*	*0.245*	*0.0025*	*0.0100*	*0.500*	*2.42*	*0.645*	*0.505*	*0.130*	*0.009*	*0.041*	. . . .	*0.008*	. . . .	*0.0090*	** provisional values	38 x 15	W
CRM	**12X 19MNVS6 A**	0.174	0.357	0.0245	0.0114	1.563	0.110	0.1087	0.0270	0.203	0.0214	0.0101	0.0939	. . . .	. . . .	0.0210		38 x 15	W

1.3.2 Austenitic Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Co	Nb	N	B	Ta	V	Sb	Ti	W	Zr	Ca	Size (mm) Ø x H	Form
	13X 17001 B	0.114	0.34	0.016	0.080	1.73	6.05	14.89	0.12	0.037	0.030	0.01	0.15	0.76	0.040	0.008	....	....	....	....	....	....	....	40 x 15	C
CRM	**13X 17002 D**	0.117	0.664	0.050	0.056	1.38	7.84	17.62	0.222	0.085	(0.0024)	(0.0046)	0.103	0.487	0.047	....	....	....	....	....	....	....	....	42 x 15	W
	13X 17003 A	0.10	0.78	0.035	0.037	0.85	11.90	11.89	0.27	0.08	....	....	0.07	0.34	....	....	....	....	....	....	....	....	....	40 x 15	C
	13X 17004 A	0.06	1.32	0.048	0.024	0.62	16.06	21.78	0.31	0.11	....	....	0.05	0.23	....	....	....	....	....	....	....	....	....	40 x 15	C
CRM	**13X 17005 D**	0.107	1.500	0.057	0.0209	0.349	20.84	24.72	0.699	0.1076	....	....	0.0510	0.191	0.064	0.0028	0.049	....	....	....	....	....	....	40 x 15	CC
CRM	**13X 30300 A**	0.041	0.424	0.312	0.0199	1.84	8.55	17.59	0.333	0.0252	....	....	0.0259	....	0.0350	0.0035	....	0.092	....	....	....	....	....	40 x 15	W
CRM	**13X 30403 A**	0.0201	0.284	0.0248	0.0297	1.488	7.92	18.25	0.192	0.217	....	....	0.101	(0.019)	0.081	....	....	0.113	....	....	0.018	....	....	40 x 15	W
CRM	**13X 30908 A**	0.0560	0.320	0.0011	0.0267	1.638	12.05	22.51	0.221	0.269	....	0.0035	0.120	0.0142	0.0652	0.0027	....	0.128	....	....	....	....	....	38 x 15	W
CRM	**13X 32100 A**	0.0463	0.498	0.0011	0.0298	1.52	9.32	17.39	0.282	0.415	0.0115	0.0247	0.105	0.0191	0.0115	0.0025	....	0.106	....	0.376	0.021	....	....	38 x 15	W
CRM	**13X 34700 A**	0.016	0.480	(0.0005)	0.0276	1.283	9.32	17.22	0.392	0.165	0.0053	0.025	0.132	0.329	0.0163	0.0007	....	0.123	....	....	0.144	....	....	38 x 15	W
CRM	**13X 18001 B ****	*0.20*	*0.23*	*0.080*	*0.007*	*0.47*	*6.10*	*16.0*	*0.80*	*0.15*	....	*0.02*	*0.03*	*0.43*	*0.032*	....	....	*0.095*	....	** provisional values				40 x 15	W
CRM	**13X 18002 D ****	*0.15*	*0.39*	*0.055*	*0.024*	*0.74*	*7.90*	*17.9*	*0.22*	*0.13*	....	*0.06*	*0.065*	*1.50*	*0.066*	....	....	*0.055*	....	** provisional values				40 x 15	W
CRM	**13X 18003 C ****	*0.10*	*0.79*	*0.028*	*0.055*	*1.00*	*9.80*	*19.8*	*0.42*	*0.054*	....	*0.035*	*0.10*	*1.05*	*0.086*	....	....	*0.074*	....	** provisional values				40.x 15	W
CRM	**13X 18004 B**	0.099	1.21	0.0191	0.068	1.400	12.67	21.57	0.601	0.050	....	0.0111	0.211	0.749	0.061	....	....	0.161	....	....	....	....	....	40 x 15	W
CRM	**13X 19001 B**	0.055	1.20	0.0174	0.0151	0.460	5.10	15.07	1.51	0.202	....	....	0.025	0.032	0.070	....	(0.019)	0.083	....	....	....	....	....	40 x 15	W
CRM	~~**13X 19003 B**~~	~~0.0132~~	~~0.550~~	~~0.0390~~	~~0.0406~~	~~1.273~~	~~12.22~~	~~18.56~~	~~2.47~~	~~0.068~~	~~....~~	~~....~~	~~0.121~~	~~0.122~~	~~0.020~~	....	....	....	....	....	....	sold out		~~42 x 15~~	~~W~~
	13X 19004 B	0.066	0.36	0.014	0.069	1.96	17.9	22.8	3.62	0.022	....	....	....	0.18	....	....	....	....	....	....	....	....		40 x 15	C
CRM	**13X 12533 Z**	0.110	0.440	0.0156	0.0149	0.812	5.06	18.80	1.05	0.131	0.0097	0.059	0.0299	....	0.073	0.0100	....	0.181	....	0.147	....	....	....	40 x 15	CC
CRM	**13X 12534 V**	0.069	0.661	0.0146	0.0281	0.833	9.27	18.54	2.309	0.070	....	0.072	0.1018	0.193	0.069	....	0.021	0.093	....	0.19	....	....	....	40 x 15	CC
CRM	**13X 12535 BD**	0.276	1.31	0.069	0.072	0.495	14.73	16.89	3.91	0.086	0.0182	0.267	0.711	....	0.0141	0.0135	....	0.090	....	1.18	....	....	....	40 x 15	CC
CRM	**13X 12536 S**	0.149	0.865	0.136	0.052	0.406	12.07	15.30	2.54	0.065	0.018	0.049	0.298	....	0.062	0.0274	0.091	....	....	0.105	....	....	....	40 x 15	CC
~~CRM~~	~~**13X 12537 S**~~	~~0.090~~	~~1.18~~	~~0.048~~	~~0.092~~	~~1.174~~	~~11.10~~	~~19.32~~	~~3.12~~	~~0.659~~	~~0.049~~	~~(0.011)~~	~~0.114~~	~~....~~	~~0.043~~	~~0.007~~	~~(0.15)~~	~~....~~	~~....~~	~~0.053~~	....	sold out		~~40 x 15~~	~~CC~~
CRM	**13X 31603 A**	0.0242	0.332	0.0246	0.0284	1.78	10.17	16.83	1.98	0.322	0.0045	0.0098	0.0571	0.0078	0.080	0.0011	....	0.093	....	....	0.0444	....	....	40 x15	W
CRM	**13X 31603 B**	0.0167	0.325	0.0210	0.0262	1.898	10.07	16.89	2.04	0.350	0.0057	0.009	0.133	0.0099	0.082	....	....	0.101	....	(0.001)	0.063		....	32 x 20	W
CRM	**13X 12853 K**	0.109	1.057	0.025	0.0216	0.838	12.09	17.15	2.73	0.587	....	....	0.285	....	....	0.0051	0.013	....	0.0203	0.0028	0.095	0.015	....	40 x 15	CC
CRM	**13X 12854 L**	0.053	1.308	0.0278	0.024	1.300	11.60	15.77	2.50	0.306	....	....	0.33	0.689	0.0550	0.0076	(0.06)	....	....	0.065	0.16	....	....	40 x 15	CC
CRM	**13X 12855 M**	0.182	1.10	0.0233	0.0240	1.162	10.80	17.13	2.86	0.446	....	....	0.226	....	....	0.0099	0.050	....	0.210	0.061	0.201	....	....	40 x 15	CC

1.3.3 Maraging Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Al	Ti	Co	N	Size (mm) Ø x H	Form
	13X 14933 R	0.008	0.05	0.014	0.023	0.17	16.8	0.022	3.83	<0.005	0.029	11.4	. . . .	40 x 15	C
CRM	**13X 14934 Q**	0.0254	0.502	0.0288	0.024	0.254	17.60	0.388	4.22	0.15	0.694	9.03	0.006	40 x 15	CC
CRM	**13X 14935 T**	0.0105	0.441	0.055	0.036	0.494	18.96	0.745	5.61	(0.007)	0.106	7.17	0.0102	40 x 15	CC

1.3.4 Ferritic & Martensitic Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	As	Co	Nb	W	B	Sb	Pb	Ca	N	Size (mm) Ø x H	Form
~~CRM~~	~~**13X 12547 L**~~	~~0.335~~	~~0.246~~	~~0.110~~	~~0.062~~	~~1.16~~	~~0.58~~	~~16.43~~	~~0.741~~	~~0.544~~	~~0.0232~~	~~. . . .~~	~~. . . .~~	~~0.098~~	~~. . . .~~	~~0.313~~	~~0.349~~	. . . .	. . . .	. . . .		sold out		~~40 x 15~~	~~W~~
CRM	**13X 12548 M**	0.189	0.421	0.218	0.0260	0.576	1.08	12.98	1.33	0.228	. . . .	. . . .	. . . .	. . . .	. . . .	0.352	0.585	0.033	. . . .	0.022	. . . .	. . . .	0.0508	40 x 15	CC
	13X 12549 K	0.16	0.43	0.29	0.092	0.34	1.26	11.70	1.49	0.10	. . . .	. . . .	. . . .	. . . .	. . . .	0.52	0.23	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
	13X 14775 R	0.05	0.63	0.054	0.053	1.37	1.75	17.7	0.47	0.21	. . . .	. . . .	. . . .	. . . .	. . . .	0.15	0.75	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**13X 15023 V**	0.118	0.311	0.008	0.014	1.352	0.850	10.96	1.052	(0.052)	. . . .	0.14	. . . .	0.0252	. . . .	0.0555	1.53	0.018	. . . .	. . . .	0.0104	. . . .	0.0409	40 x 15	CC
	13X 15024 W	0.12	0.77	0.028	0.030	0.57	2.84	14.94	0.24	0.36	. . . .	. . . .	. . . .	. . . .	. . . .	0.10	0.10	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**13X 15035 U**	0.115	0.636	0.0456	0.0415	0.674	2.38	14.00	0.399	0.204	. . . .	(0.093)	. . . .	0.160	. . . .	0.199	0.500	0.048	. . . .	. . . .	. . . .	. . . .	0.0584	40 x 15	CC
CRM	**13X 15059 P**	0.084	0.495	0.0133	0.0130	0.995	1.584	15.85	0.600	0.105	(0.02)	. . . .	0.038	0.070	. . . .	0.266	0.430	0.081	. . . .	. . . .	. . . .	. . . .	0.113	40 x 15	CC
CRM	**13X 41001 A**	0.136	0.298	0.0037	0.0142	0.464	0.0939	12.06	0.0102	0.056	0.0051	(0.004)	. . . .	0.079	. . . .	0.0143	. . . .	. . . .	. . . .	. . . .	. . . .	0.0010	0.0316	41 x 15	W
CRM	**13X 41600 A**	0.111	0.442	0.302	0.0253	0.627	0.331	13.23	0.0499	0.160	0.0066	(0.004)	. . . .	0.0888	. . . .	0.0216	0.0053	(0.003)	. . . .	. . . .	. . . .	. . . .	0.0245	41 x 15	W
CRM	**13X 42000 A**	0.208	0.496	0.0253	0.0241	0.679	0.295	12.56	0.0398	0.202	0.0073	. . . .	. . . .	0.046	. . . .	0.0161	. . . .	. . . .	0.0013	. . . .	. . . .	. . . .	0.0273	38 x 15	W
CRM	**13X 43100 A**	0.166	0.535	0.0050	0.0199	0.378	2.10	16.39	0.0768	0.134	0.004	. . . .	. . . .	0.0577	. . . .	0.0239	0.006	0.004	. . . .	. . . .	. . . .	. . . .	0.075	38 x 15	W
CRM	**13X 44004 A**	1.052	0.363	0.0178	0.0214	0.346	0.207	16.74	0.462	0.0548	. . . .	0.0305	. . . .	0.076	. . . .	0.0188	. . . .	0.030	. . . .	. . . .	. . . .	. . . .	0.0247	40 x 15	W
CRM	**13X 8110L D**	0.750	0.812	0.068	0.052	0.446	4.62	12.30	2.81	0.344	. . . .	(0.071)	0.0108	0.211	0.074	0.31	. . . .	. . . .	0.989	. . . .	. . . .	. . . .	0.0286	40 x 15	CC

1.3.5 Special Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	W	Co	Nb	Ta	B	N		Size (mm) Ø x H	Form
	13X 12538 J	0.04	0.64	. . . .	. . . .	0.78	6.07	23.72	1.53	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
CRM	**13X 12540 M**	0.131	0.805	0.0512	0.051	0.800	4.975	27.44	0.993	0.181	. . . .	. . . .	0.210	0.097	0.109	0.107	. . . .	. . . .	0.054		40 x 15	CC
CRM	**13X 14207 K**	0.147	1.52	0.052	0.0213	0.901	12.60	19.83	0.299	0.248	. . . .	. . . .	. . . .	3.18	0.033	0.245	(0.064)	. . . .	0.097		40 x 15	CC
CRM	**13X 14211 Q**	0.064	1.64	0.0146	0.0157	0.766	12.55	25.70	0.325	0.161	(0.11)	0.220	. . . .	3.24	0.071	0.161	. . . .	. . . .	. . . .		40 x 15	CC
CRM	**13X 14212 R**	0.104	2.02	0.025	0.0290	1.29	8.79	20.86	0.570	1.184	0.12	0.15	0.134	2.01	0.252	0.980	. . . .	. . . .	0.156		40 x 15	CC
CRM	**13X 14215 K**	0.126	0.56	0.016	0.016	1.08	15.70	23.8	0.046	0.03	. . . .	0.08	0.06	2.89	0.016	(0.016)	. . . .	. . . .	. . . .		40 x 15	C
	13X 14219 J	0.08	1.48	0.048	0.047	0.48	12.39	21.71	0.19	0.23	. . . .	. . . .	. . . .	4.07	. . . .	0.19	. . . .	. . . .	. . . .		40 x 15	C
CRM	**13X 31008 A**	0.063	0.503	0.0040	0.0302	1.234	19.34	24.48	0.338	0.159	. . . .	. . . .	0.078	0.165	0.078	0.013	. . . .	. . . .	0.063		UNS S31008	38 x 15	W
CRM	**13X 32900 A ****	*0.025*	*0.555*	*0.0265*	*0.0270*	*1.47*	*5.57*	*24.9*	*1.31*	*0.354*	*0.007*	*0.014*	*0.094*	*0.016*	*0.072*	. . . .	. . . .	*0.0028*	*0.0975*	** provisional values	40 x 15	W
CRM	**13X 64152 A ****	*0.112*	*0.22*	*0.0015*	*0.013*	*0.67*	*2.50*	*11.35*	*1.57*	*0.061*	*0.032*	. . . .	*0.27*	. . . .	*0.018*	. . . .	. . . .	. . . .	*0.0335*		UNS S64152	38 x 15	W
CRM	**13X 66286 A**	0.035	0.216	(0.0006)	0.0172	1.173	25.21	14.99	1.185	0.195	0.193	1.92	0.262	0.098	0.083	. . . .	. . . .	0.0044	0.0040		UNS S66286	38 x 15	W

** provisional values

1.3.6 Precipitation Hardening Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Ti	Al	V	Co	Nb	W	B	Ta	N		Size (mm) Ø x H	Form
CRM	**13X PH3 M**	0.184	1.60	0.0208	0.0188	0.395	3.08	15.86	0.751	5.99	. . . .	. . . .	0.176	0.420	0.394	. . . .	0.0049	. . . .	0.070		40 x 15	CC
CRM	**13X PH13800 A**	0.0386	0.081	0.0030	0.0064	0.0332	8.04	12.52	2.10	0.0449	0.0122	1.075	0.0188	0.0220	. . . .	. . . .	. . . .	. . . .	0.0041	UNS S13800	38 x 15	W
CRM	**13X PH17400 A**	0.0200	0.349	0.0215	0.0202	0.829	4.52	15.74	0.061	3.09	. . . .	. . . .	0.112	0.0411	0.184	. . . .	. . . .	. . . .	0.0342	UNS S17400	41 x 15	W
CRM	**13X PH17700 A**	0.0732	0.551	0.0008	0.0181	0.496	6.98	16.88	0.340	0.146	0.051	1.172	0.0390	0.0464	0.0201	0.009	0.0033	. . . .	0.0192	UNS S17700	38 x 15	W
CRM	**13X PH2S143 A**	0.044	0.479	0.0021	0.0212	0.546	5.20	13.46	1.326	1.61	. . . .	. . . .	0.087	0.0483	0.225	0.018	. . . .	. . . .	0.0246		32 x 15	W
CRM	**13X FV520B A**	0.0181	0.342	0.0016	0.0221	0.655	5.29	13.73	1.334	1.462	. . . .	. . . .	0.080	0.030	0.301	0.020	. . . .	. . . .	0.0197		40 x 15	W

1.3.7 High Nitrogen Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	V	W	Co	Nb	B	N			Size (mm) Ø x H	Form
	13X NSA1 E	0.07	0.41	. . . .	. . . .	0.42	7.9(6)	20.3	2.47	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	0.040			40 x 15	C
CRM	**13X NSA2 H**	0.132	0.739	0.0278	0.0252	1.014	10.08	17.82	2.013	0.259	. . . .	0.139	. . . .	. . . .	0.155	. . . .	0.131			40 x 15	CC
	13X NSA3 J	0.16	0.57	. . . .	. . . .	1.07	12.0	16.1	2.8	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	0.20			40 x 15	W
CRM	**13X NSA4 A**	0.0262	0.44	0.0130	0.0281	5.59	17.11	23.79	4.19	0.487	(0.016)	. . . .	. . . .	. . . .	0.079	. . . .	0.532			40 x 17	CC
CRM	**13X NSA5 A**	0.063	0.281	0.0212	(0.010)	4.27	9.52	20.73	2.32	0.098	(0.012)	. . . .	. . . .	. . . .	0.574	. . . .	0.340			40 x 17	CC
CRM	**13X NSA6 B**	0.0467	0.64	0.0113	0.060	1.607	31.13	26.14	7.03	1.52	(0.08)	. . . .	. . . .	. . . .	0.149	. . . .	0.245			40 x 15	CC
CRM	**13X NSA7 A**	0.0209	0.359	0.0009	0.022	0.951	5.67	25.91	3.25	1.42	(0.009)	. . . .	. . . .	. . . .	0.015	. . . .	0.247			UNS S32550	42 x 15	W
CRM	**13X NSA8 A**	0.0240	(0.40)	0.0008	0.0216	0.656	6.29	25.93	3.60	0.903	. . . .	0.060	0.586	0.0374	(0.004)	. . . .	0.239			UNS S32760	44 x 15	W
CRM	**13X NSA9 A**	0.019	0.469	(0.0007)	0.0248	1.592	5.44	22.57	3.11	0.240	. . . .	0.068	0.024	0.072	0.012	. . . .	0.156			UNS S31803	40 x 15	W
CRM	**13X NSA10 A**	0.016	0.375	0.0006	0.0207	5.23	12.96	20.69	2.636	0.175	. . . .	0.151	0.061	0.061	0.142	(0.0029)	0.343			UNS S20910	38 x 15	W
CRM	**13X NSA11 A**	0.0159	0.275	<0.001	0.0186	0.640	23.89	20.19	6.16	0.187	(0.02)	0.0513	0.038	0.0981	0.150	. . . .	0.203			UNS N08367	38 x 15	W
CRM	**13X NSA12 A ****	*0.0185*	*0.480*	*0.0007*	*0.0265*	*1.270*	*24.9*	*19.65*	*4.19*	*1.475*	*0.016*	*0.065*	*0.048*	*0.090*	*0.009*	*0.0022*	*0.066*		** provisional values	UNS N08904	40 x 15	W
CRM	**13X 21800 A**	0.0765	4.03	0.0011	0.032	8.00	8.32	16.81	0.325	0.431	0.012	0.0619	. . . .	0.0943	0.007	(0.001)	0.125			Nitronic 60/UNS S21800	38 x 15	W
CRM	**13X 31254 A**	0.0185	0.400	0.0011	0.0191	0.590	18.34	20.11	6.13	0.575	0.0134	0.0595	0.017	0.125	. . . .	0.0025	0.205			254 SMO/UNS S31254	40 x 15	W
CRM	**13X 32101 A**	0.0325	0.777	(0.0004)	0.0194	4.913	1.476	21.12	0.0970	0.295	0.0122	0.0830	. . . .	0.0347	0.0070	0.0014	0.241			UNS S32101	38 x 15	W
	13X NSB1 D	0.17	0.58	. . . .	. . . .	0.44	10.0	19.1	0.11	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	0.04				40 x 15	W
	13X NSB2 D	0.06	0.66	. . . .	. . . .	0.62	11.1	18.2	0.21	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	0.095				40 x 15	W
CRM	**13X NSB3 G**	0.121	0.471	. . . .	. . . .	0.632	9.26	15.22	0.630	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	0.198				42 x 15	W
CRM	**13X NSC1 P**	0.316	0.788	0.0097	. . . .	6.53	5.06	18.76	0.196	0.391	. . . .	0.501	0.100	. . . .	1.499	. . . .	0.0877				40 x 15	CC
CRM	**13X NSC2 P**	0.560	0.997	0.0117	. . . .	8.70	4.20	21.98	0.850	1.026	. . . .	0.321	0.062	. . . .	2.21	. . . .	0.341				40 x 15	CC
CRM	**13X NSC3 Y**	0.830	1.32	0.0102	. . . .	9.98	3.11	23.43	0.071	0.08	0.050	0.131	. . . .	. . . .	2.29	. . . .	0.54				40 x 15	CC
CRM	**13X NSC4 E**	0.630	1.51	0.0075	. . . .	7.77	6.86	32.2	1.242	0.205	. . . .	0.245	0.201	. . . .	2.51	. . . .	0.951				40 x 15	CC
CRM	**13X NSC5 B**	0.558	1.19	0.0155	. . . .	2.22	4.34	22.10	(0.01)	0.787	0.21	0.0461	. . . .	. . . .	2.38	. . . .	0.296				40 x 15	CC
CRM	**13X NSC6 A**	0.0266	0.523	0.0055	0.0049	8.85	6.52	20.47	(0.002)	0.0064	(0.009)	0.0052	. . . .	. . . .	. . . .	. . . .	0.235				40 x 13	HIP
CRM	**13X NSC7 A**	0.410	0.803	0.0091	0.0155	3.80	7.41	23.63	0.448	0.144	(0.1)	0.123	0.052	0.308	0.509	. . . .	0.337				40 x 15	CC
CRM	**13X NSD1 C**	0.389	0.58	0.0025	0.031	22.92	0.110	21.94	1.18	0.082	0.0103	. . . .	0.063	0.130	0.0414	. . . .	1.00		Please enquire		small pieces only	W

1.4.2 Tool Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Nb	N	Pb	Alloy Type		Size (mm) Ø x H	Form
CRM	**14X HS1 C**	0.718	0.22	0.020	0.018	0.29	0.27	4.00	0.37	0.069	(0.035)	. . . .	1.05	17.0	. . . .	0.25	. . . .	0.023	. . . .	T-1		40 x 15	W
CRM	**14X HS2 C**	0.780	0.216	0.0146	0.021	0.240	0.190	4.10	0.445	0.106	. . . .	. . . .	1.17	18.09	. . . .	5.06	. . . .	0.0211	. . . .	T-4		40 x 15	W
~~CRM~~	~~**14X HS3 L**~~	~~0.855~~	~~0.318~~	~~0.046~~	~~0.035~~	~~0.621~~	~~0.706~~	~~5.25~~	~~1.24~~	~~0.200~~	~~0.288~~	~~. . . .~~	~~1.79~~	~~17.93~~	~~0.044~~	~~10.64~~	~~. . . .~~	~~0.087~~	~~0.010~~	T-5/6	sold out	~~40 x 17~~	~~CC~~
CRM	**14X HS9 A**	2.14	0.406	0.0126	0.0222	0.259	0.239	12.40	1.11	0.039	. . . .	(0.022)	4.06	0.011	. . . .	0.037	(0.011)	0.032	. . . .	D-7		42 x 15	HIP
CRM	**14X HS10 A**	1.710	0.660	0.0099	0.0135	0.134	0.146	14.83	1.679	0.0605	. . . .	. . . .	1.142	1.75	. . . .	0.0866	. . . .	(0.001)	. . . .			48 x 13	HIP
CRM	**14X HS11 A**	1.739	0.794	0.0107	0.0133	0.237	0.188	19.34	1.52	0.0562	. . . .	. . . .	1.032	2.24	. . . .	0.074	. . . .	(0.002)	. . . .			48 x 13	HIP
CRM	**14X 72305 A**	1.085	0.206	0.0028	0.0128	0.349	0.089	0.425	0.0231	0.149	0.0101	0.0049	0.0045	. . . .	. . . .	. . . .	. . . .	0.0068	. . . .	W-5		40 x 15	W
	14X 14944 D	0.62	0.17	0.011	0.016	0.23	0.19	2.87	0.14	0.10	. . . .	. . . .	1.00	15.5	. . . .	0.15	. . . .	. . . .	. . . .			40 x 15	C
	14X 14946 D	0.85	0.46	0.048	0.051	0.53	1.06	5.06	0.21	0.25	. . . .	. . . .	1.03	16.9(7)	. . . .	0.44	. . . .	. . . .	. . . .	T-1		40 x 15	C
	14X 14952 D	0.90	0.32	0.054	0.054	0.64	0.34	4.93	0.32	0.02	. . . .	. . . .	1.24	18.0	. . . .	0.02	. . . .	. . . .	. . . .			40 x 15	C
	14X 14890 K	0.81	0.69	0.028	(0.012)	0.58	0.08	3.60	5.59	0.09	. . . .	. . . .	1.99	5.30	. . . .	0.32	. . . .	. . . .	. . . .			40 x 15	C
	14X 14892 K	0.83	0.23	0.047	0.054	0.23	0.23	3.99	4.99	0.20	. . . .	. . . .	1.76	6.30	. . . .	0.16	. . . .	. . . .	. . . .			40 x 15	C

1.4.5 High Manganese Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Nb	Ti	Ta	N		Size (mm) Ø x H	Form
CRM	**14X MN1 AJ**	0.479	0.528	0.0042	0.0229	19.46	0.352	1.434	0.510	0.0603	0.0050	0.205	0.0191	0.149	0.067	0.012	0.048		40 x 15	CC
CRM	**14X MN2 R**	0.701	1.48	0.0098	0.0198	9.65	0.530	0.355	1.546	0.081	0.061	0.120	0.121	0.294	0.179	. . . .	0.0125		40 x 15	CC
CRM	**14X MN3 S**	0.958	1.05	0.017	0.049	11.44	1.044	0.643	0.307	0.229	0.0210	(0.17)	0.0481	0.251	0.350	. . . .	0.0211		40 x 15	CC
CRM	**14X MN4 AB ****	*1.15*	*1.05*	*0.027*	*0.039*	*12.6*	*1.00*	*2.05*	*0.76*	*0.24*	*0.014*	*0.008*	*0.035*	*0.104*	*0.010*	*0.02*	*0.038*	** provisional values	40 x 15	CC
CRM	**14X MN5 S**	1.377	1.57	0.0110	0.0270	8.55	1.372	3.31	1.91	0.421	0.0129	0.262	0.0397	0.021	1.01	0.005	0.0155		40 x 15	CC
	14X 15196 S	1.08	1.64	0.012	0.037	10.16	0.25	0.26	0.22	0.22	0.10(5)	0.13(5)	0.21	. . . .	. . . .	. . . .	. . . .		40 x 15	C

1.4.8 Free Machining & Resulfurised Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	As	Pb	N		Size (mm) Ø x H	Form
CRM	**14X MSFM1 K**	0.062	0.490	0.382	0.078	1.07	0.036	0.319	0.196	0.0101	0.0253	(0.021)	0.0116	0.0578	. . . .	. . . .	0.005		40 x 15	CC
CRM	**14X MSFM2 J**	0.210	0.477	0.256	0.049	1.84	0.0667	0.568	0.287	0.0225	0.0095	(0.016)	0.0359	0.0137	. . . .	. . . .	0.0049		40 x 15	CC
	14X MSFM3 F	0.55	0.52	0.087	0.060	2.10	. . . .	. . . .	0.27	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
CRM	**14X MSFM4 A**	0.226	0.469	0.224	0.0386	1.141	6.22	1.69	0.974	0.429	0.0141	(0.007)	0.0151	0.0253	. . . .	. . . .	0.0220		40 x 15	CC
CRM	**14X 11170 A**	0.154	0.151	0.120	0.0133	1.129	0.0877	0.1126	0.0317	0.1101	0.0110	0.0023	. . . .	. . . .	0.0044	0.0011	0.0112		38 x 15	W
CRM	**14X 11390 A**	0.419	0.198	0.191	0.0342	1.040	0.0239	0.0609	0.0067	0.0395	0.0022	0.0026	. . . .	. . . .	0.0028	. . . .	0.0042		38 x 15	W
CRM	**14X 12144 A**	0.0800	0.0093	0.325	0.0630	1.227	0.0162	0.0807	0.0089	0.0106	. . . .	0.0034	. . . .	. . . .	0.0022	0.328	0.0066		38 x 15	W
CRM	**14X 12130 A**	0.0871	0.022	0.305	0.061	1.219	0.0345	0.0505	0.0102	0.0201	0.0054	0.0024	. . . .	. . . .	0.0016	. . . .	0.0097		38 x 15	W
CRM	**14X 606M36T A**	0.378	0.167	0.196	0.0159	1.574	0.0931	0.163	0.272	0.179	0.0103	0.0071	. . . .	. . . .	0.0085	. . . .	0.0096		38 x 15	W

1.4.11 High-Ni Calibration Series

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Co	Ti	Mg	N		Size (mm) Ø x H	Form
CRM	**14X FeNi20 B**	0.0137	1.12	0.0089	0.010	0.0284	20.06	0.102	. . . .	0.074	0.018	0.994	. . . .	. . . .	. . . .		40 x 15	CC
CRM	**14X FeNi25 B**	0.0084	0.019	0.58	0.011	0.0121	25.10	0.0334	. . . .	0.035	0.103	0.746	. . . .	. . . .	. . . .		40 x 15	CC
CRM	**14X FeNi35 C ****	*0.080*	*0.305*	*0.139*	*0.030*	*0.17*	*34.5*	*0.100*	. . . .	*0.355*	*0.004*	*0.34*	. . . .	. . . .	. . . .	** provisional values	40 x 15	CC
CRM	**14X FeNi40 B**	0.0450	0.030	(1.09)	0.0185	0.081	40.57	0.0446	. . . .	0.0517	1.18	0.858	. . . .	. . . .	. . . .		40 x 15	CC
CRM	**14X FeNi45 B**	0.0045	0.567	0.038	0.0416	0.0149	45.20	0.048	. . . .	0.078	0.552	0.654	. . . .	. . . .	. . . .		40 x 15	CC
CRM	**14X FeNi50 B**	0.0488	0.203	0.243	0.0259	0.115	50.09	0.093	. . . .	0.105	0.052	0.499	. . . .	. . . .	. . . .		40 x 15	CC
CRM	**14X 93603 A**	0.0101	0.153	0.0045	0.0050	0.339	35.79	0.024	0.0145	0.0460	0.0404	0.0974	0.0011	0.0019	0.0057	Invar/UNS K93603	40 x 15	W

2.1.2 Residuals in Nickel

	Si	Mn	Cu	Fe	Cr	Co	Ti	Al	Mg	Size (mm) Ø x H	Form
21X 17520 H	0.20	0.18	0.09	0.25	0.10	0.48	0.08	0.04	0.06	40 x 15	C
21X 17521 J	0.28	0.11	0.16	0.24	0.16	0.26	0.12	0.03	0.03	40 x 15	C

2.2 Ni/Cr (Nimonic Type)

	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Zr	Pb	W	B	Size (mm) Ø x H	Form
22X 801 D	0.14	0.51	0.56	0.22	0.57	20.75	0.25	0.25	2.19	1.33	0.03	. . . .	. . . .	. . . .	. . . .	40 x 15	C
22X 803 E	0.06	1.05	0.22	0.007	0.33	19.85	0.50	0.50	1.93	1.60	0.0002	. . . .	. . . .	. . . .	. . . .	40 x 15	C
22X 804 D	0.07	0.56	0.54	0.21	0.66	19.72	0.09	0.20	2.34	1.33	0.004	. . . .	. . . .	. . . .	. . . .	40 x 15	C
22X 806 D	0.007	0.10	0.09	0.004	0.18	19.66	0.01	0.03	2.48	1.35	. . . .	0.004	0.007	0.02	0.004	40 x 15	C

	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	B	Size (mm) Ø x H	Form
22X 902 B	0.15	0.50	0.51	0.13	0.61	18.80	0.22	17.08	2.26	1.31	0.02	. . . .	. . . .	. . . .	40 x 15	C
22X 903 C	0.08	1.09	0.25	0.01	0.83	19.84	0.07	17.60	1.86	1.67	0.002	. . . .	. . . .	. . . .	40 x 15	C
22X 904 C	0.08	0.52	0.50	0.10	0.25	19.9	0.21	16.9	2.26	1.29	0.005	. . . .	. . . .	. . . .	40 x 15	C
CRM **22X 1051 D**	0.166	0.58	0.206	0.115	0.575	15.95	4.50	18.98	1.078	4.35	0.0186	0.0015	0.0040	0.0009	40 x 15	C
22X 1052 C	0.19	0.51	0.26	0.13	0.65	15.7	4.48	18.6	1.09	4.08	0.002	. . . .	. . . .	. . . .	40 x 15	C

2.3 Fe/Ni/Cr (Incoloy Type)

	C	Si	Mn	Cu	Cr	Mo	Co	Ti	Al	Ni	Size (mm) Ø x H	Form
23X 8004 E	0.06	0.53	0.70	0.30	19.72	0.33	0.53	0.34	0.31	31.8	40 x 15	C
23X 8005 E	0.07	0.46	0.73	0.28	20.81	0.34	0.50	0.35	0.22	32.2	40 x 15	C

2.3 Fe/Ni/Cr (Incoloy Type) continued

	C	Si	Mn	Cu	Cr	Mo	Co	Ti	Al	Ni	Size (mm) Ø x H	Form
23X DS2 E	0.06	2.07	1.00	0.30	17.81	0.30	0.48	0.17	0.04	37.4	40 x 15	C
23X DS4 E	0.06	2.01	1.02	0.30	16.83	0.29	0.48	0.20	0.037	37.15	40 x 15	C
23X DS5 E	0.080	1.98	1.04	0.30	18.64	0.30	0.50	0.17	0.083	36.57	40 x 15	C

2.4 Ni/Cr/Co/Mo

	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Size (mm) Ø x H	Form
24X 14939 E	0.42	0.63	0.52	0.57	21.0	6.62	19.58	1.88	0.76	40 x 15	C

2.4.1 Waspalloy, 720-types

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ni	B	V	W	Zr	Nb	N	Size (mm) Ø x H	Form
CRM	**24X WASP3 F**	0.102	0.40	0.650	0.470	1.197	19.76	3.98	13.77	3.904	(1.5)	0.0171	0.018	53.51	0.0102	0.082	(0.111)	(0.14)	0.149	. . . .	40 x 15	CC
CRM	**24X 07001 B**	0.0357	0.064	0.0311	0.0115	0.997	19.52	4.29	13.31	3.01	1.384	(0.0007)	0.0033	57.2	0.0060	. . . .	. . . .	0.0563	0.0314	. . . .	32 x 20	W
CRM	**24X 7201 A**	0.0326	0.039	0.0022	. . . .	0.09	15.99	3.01	14.79	5.11	2.47	0.0027	0.0030	57.09	0.0246	. . . .	1.29	0.0432	. . . .	0.0043	40 x 13	HIP

2.5 Ni/Cr/Nb/Mo

	Si	Mn	Cu	Fe	Cr	Mo	Co	W	Nb	Size (mm) Ø x H	Form
25X 10221 F	0.45	0.28	0.11	0.62	20.0	6.57	0.26	2.23	7.43	40 x 15	C
25X 10231 D	0.14	0.13	0.06	0.55	20.58	6.00	0.11	2.67	6.76	40 x 15	C
25X 10235 E	0.56	0.53	0.26	1.26	19.87	5.85	0.53	3.14	7.25	40 x 15	C

2.6 Ni/Cr/Mo

	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Size (mm) Ø x H	Form
26X 11381 D	0.30	0.43	0.008	0.70	19.76	9.47	(0.047)	2.48	0.41	40 x 15	C
26X 11384 E	0.15	0.13	0.12	0.98	20.5	10.2	0.30	2.6	0.50	40 x 15	C

2.7 Ni/Cr/Mo/Co

	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Size (mm) Ø x H	Form
27X 14184 F	0.41	0.40	0.09	0.40	21.8	10.7	10.5	0.02	0.02	40 x 15	C
27X 14188 D	0.33	0.30	(0.003)	0.44	21.17	10.3	10.4	0.03	<0.01	40 x 15	C
27X 14387 E	0.28	0.27	<0.005	1.11	20.2	10.8	10.0	<0.005	<0.005	40 x 15	C

2.8 Ni/Cr/Fe (Inconel Type)

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Ta	B	Ni	N		Size (mm) Ø x H	Form
	28X 6001 G	. . . .	0.95	0.12	0.83	6.33	16.38	. . . .	1.02	0.58	0.02	0.01	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
	28X 6002 F	. . . .	0.25	0.65	0.02	8.24	16.23	. . . .	0.22	0.12	0.18	0.004	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
	28X 6003 E	. . . .	0.74	0.47	0.42	7.1	15.56	. . . .	0.62	0.22	0.025	0.01	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
	28X 6004 E	. . . .	0.65	0.38	0.42	7.17	16.21	. . . .	0.77	0.27	0.05	0.008	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
	28X 6005 E	. . . .	0.60	0.39	0.39	6.98	16.93	. . . .	0.62	0.28	0.06	0.002	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
	28X X7504 D	0.03	0.39	1.09	0.22	6.42	14.22	0.46	. . . .	2.59	0.70	. . . .	. . . .	. . . .	0.95	. . . .	. . . .	. . . .	. . . .		40 x 15	C
~~CRM~~	~~**28X 6251 L**~~	~~0.028~~	~~0.274~~	~~0.139~~	~~0.072~~	~~3.28~~	~~20.49~~	~~9.94~~	~~(0.041)~~	~~0.017~~	~~(0.054)~~	~~. . . .~~	~~0.0043~~	~~0.0055~~	~~2.00~~	~~. . . .~~	~~(0.0043)~~	~~63.36~~	~~0.0431~~	sold out	~~40 x 15~~	~~CC~~
CRM	**28X 6252 N**	0.093	0.605	0.323	0.161	4.51	21.48	9.01	0.215	0.072	(0.06)	. . . .	0.0145	0.0106	3.60	0.017	. . . .	60.00	0.0796		40 x 15	CC
CRM	**28X 6253 Q**	0.129	1.15	0.498	0.298	5.55	21.96	8.98	0.420	(0.084)	(0.12)	. . . .	0.0143	0.0211	4.31	0.041	. . . .	56.25	0.083		40 x 15	CC
CRM	**28X 6254 M**	0.047	(0.79)	0.457	0.044	3.33	22.71	8.92	0.195	(0.15)	(0.01)	. . . .	0.0160	0.0097	3.60	. . . .	0.005	59.55	0.0364		40 x 15	CC
~~CRM~~	~~**28X 6255 L**~~	~~0.035~~	~~0.591~~	~~0.230~~	~~0.686~~	~~1.88~~	~~19.41~~	~~8.05~~	~~0.239~~	~~0.413~~	~~0.35~~	~~. . . .~~	~~0.016~~	~~0.008~~	~~4.11~~	~~0.194~~	~~. . . .~~	~~63.6~~	~~0.099~~	sold out	~~40 x 15~~	~~CC~~
CRM	**28X 6256 A**	0.0173	0.041	0.0004	0.018	(0.034)	21.29	8.81	. . . .	0.266	0.301	. . . .	(0.002)	0.0033	3.75	. . . .	. . . .	65.4	0.007		40 x 13	HIP
CRM	**28X 06625 A**	0.020	0.273	0.090	0.0288	0.917	21.94	9.15	0.031	0.238	0.184	. . . .	0.0037	(0.002)	3.52	. . . .	0.0009	63.49	0.0219		40 x 15	W
CRM	**28X 7181 J**	0.0198	0.811	0.150	0.042	18.98	18.42	3.25	(0.014)	0.125	0.070	. . . .	0.0089	0.0146	4.88	. . . .	0.0021	53.10	0.038		40 x 15	CC
CRM	**28X 7182 N**	0.0840	0.706	0.417	0.125	18.04	19.22	2.59	0.515	0.691	(0.31)	. . . .	0.0125	0.0110	4.54	0.025	0.0042	52.6	0.064		40 x 15	CC
CRM	**28X 7183 U**	0.104	0.903	0.534	0.321	15.48	18.38	3.66	0.986	0.959	0.499	. . . .	0.0217	0.0213	5.66	. . . .	0.0114	(52.3)	0.0420		40 x 15	CC
CRM	**28X 7184 K**	0.085	0.403	0.215	0.123	18.22	16.91	3.07	0.44	0.633	0.620	. . . .	0.0158	0.0103	5.07	0.077	0.0052	54.16	0.084		40 x 15	CC
CRM	**28X 7185 K**	0.060	0.882	0.286	0.203	18.44	20.77	2.71	0.220	0.281	0.359	. . . .	0.0089	0.0189	4.61	0.115	0.0107	50.67	0.172		40 x 15	CC
CRM	**28X 7186 J**	0.043	0.358	0.398	0.190	16.51	16.13	3.24	0.579	1.04	0.70	. . . .	0.0264	0.020	5.75	. . . .	0.0097	55.06	0.064		40 x 15	CC
CRM	**28X 07718 A**	0.026	0.076	0.055	0.038	19.55	18.62	3.01	0.172	0.945	0.544	. . . .	0.0015	0.0063	5.05	. . . .	0.0034	51.99	0.0056		38 x 15	W

2.10 Ni/Co/Cr/Al/Ti

	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Zr	V	Size (mm) Ø x H	Form
210X 11979 G	0.025	0.30	0.13	0.07	0.56	8.07	3.28	14.32	5.22	3.76	0.04	0.82	40 x 15	C
210X 11981 F	0.09	0.33	0.21	0.10	0.93	11.81	3.66	14.65	4.83	5.07	0.11	0.73	40 x 15	C

2.11 Ni/Cr/Al

	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Nb	Ta	Zr	Size (mm) Ø x H	Form
211X 11236 E	0.21	0.21	0.16	0.46	15.98	4.02	0.64	1.33	6.14	2.73	0.10	0.05	40 x 15	C

2.12 Ni/Cu (Monel Type)

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Pb	Sn	Zn	Cd	Be	Bi	Se	Ni	Size (mm) Ø x H	Form
CRM	212X 4001 P **	*0.012*	*1.44*	*2.9*	*28.8*	*0.49*	*0.080*	*. . . .*	*0.102*	*0.095*	*0.040*	*0.002*	*0.020*	*0.019*	*0.10*	*0.070*	*0.052*	*. . . .*	** provisional values			*. . . .*	*65.7*	40 x 15	CC
CRM	212X 4002 L	0.0369	0.090	1.68	32.41	1.022	0.084	. . . .	0.064	0.0421	0.081	0.0222	0.0019	. . . .	0.0318	0.0373	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	64.33	40 x 15	CC
CRM	212X 4003 K	0.036	0.245	1.105	30.13	2.63	0.097	0.0317	0.0286	0.0201	0.010	0.050	0.0257	0.0059	0.150	0.053	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	(65.3)	40 x 15	CC
CRM	212X 4004 M	0.081	0.557	0.953	29.0	3.68	0.822	0.197	0.0758	0.652	0.71	. . . .	0.0110	0.0400	0.949	0.0206	0.0596	. . . .	0.0010	. . . .	. . . .	. . . .	62.1	40 x 15	CC
CRM	212X 4005 F	0.0529	2.55	1.784	21.53	1.503	0.152	0.094	0.170	0.792	1.29	0.0168	0.0193	0.016	0.30	0.0212	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	(69.6)	40 x 15	CC
CRM	212X 4006 H **	*0.065*	*3.90*	*0.80*	*24.6*	*2.32*	*0.12*	*. . . .*	*0.032*	*1.50*	*4.0*	*0.040*	*0.022*	*. . . .*	*0.51*	*0.031*	*0.031*	*0.069*	** provisional values			*. . . .*	*61.7*	40 x 15	CC
CRM	212X 4007 A	0.0219	2.19	0.955	29.39	1.89	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	0.0063	0.015	2.30	0.022	0.0207	0.0183	0.0125	0.0040	0.0490	0.023	63.05	small pcs only	CC

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Zr	Pb	B	N	Ni	Size (mm) Ø x H	Form
	212X NA2 G	0.07	2.50	1.06	29.8	1.53	. . . .	. . . .	. . . .	. . . .	. . . .	0.008	0.023	0.019	. . . .	. . . .	0.02	. . . .	. . . .	. . . .	40 x 15	C
CRM	212X NA4 A	0.098	3.83	1.082	29.34	2.26	0.120	0.026	0.046	0.037	0.012	0.0014	0.004	0.0053	(0.51)	. . . .	0.018	. . . .	. . . .	62.8	40 x 13	CC
CRM	212X 04400 A	0.157	0.253	1.027	32.47	2.065	0.166	0.0307	0.0432	0.0193	0.030	0.053	(0.002)	0.0033	. . . .	. . . .	. . . .	0.0019	0.0005	63.69	40 x 15	W
CRM	212X 05500 A	0.135	0.167	0.634	29.91	1.162	0.073	. . . .	(0.009)	0.632	3.00	0.0098	0.0010	0.0031	. . . .	0.0343	. . . .	0.0015	0.0010	64.3	38 x 15	W

2.15 Ni/Co/Cr/Fe/Mo (Hastelloy Type)

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	B	Nb	V	W	Mg	Zr	N	Ni		Size (mm) Ø x H	Form
CRM	215X HB1 P **	*0.045*	*0.22*	*0.70*	*0.07*	*5.8*	*1.20*	*33*	*0.28*	*. . . .*	*. . . .*	*0.05*	*0.006*	*. . . .*	*0.21*	*0.52*	*. . . .*	*. . . .*	*. . . .*	*0.017*	*(58)*	** provis values	40 x 15	CC
CRM	215X HB2 G	0.049	0.390	0.800	0.0526	4.20	0.689	31.84	0.584	0.13	0.19	0.0196	0.0084	. . . .	0.248	0.480	. . . .	. . . .	. . . .	0.0108	60.2		40 x 15	CC
CRM	215X HB3 H	0.069	0.799	0.61	0.134	6.32	2.35	27.17	1.03	0.21	0.23	0.0156	0.0197	. . . .	0.699	0.287	. . . .	. . . .	. . . .	0.0271	(60.1)		40 x 15	CC
CRM	215X HB4 F	0.079	1.02	0.666	(0.024)	7.02	0.414	27.59	1.71	. . . .	. . . .	0.013	0.036	. . . .	. . . .	0.115	(0.028)	. . . .	. . . .	0.0028	61.21		43 x 20	C
CRM	215X HB5 L	0.151	1.05	0.335	0.268	3.45	0.123	26.1	2.49	0.192	0.49	0.0113	0.038	0.003	. . . .	0.136	. . . .	. . . .	. . . .	0.006	65.3		40 x 15	CC
CRM	215X HC1 L	0.045	(0.20)	1.19	0.046	2.60	15.42	20.91	2.60	0.264	0.72	0.0086	0.007	. . . .	. . . .	0.090	2.66	. . . .	. . . .	0.059	. . . .		40 x 15	CC
CRM	~~215X HC2 J~~	~~0.090~~	~~0.79~~	~~1.036~~	~~. . . .~~	~~4.02~~	~~16.19~~	~~19.28~~	~~1.72~~	~~(0.078)~~	~~(0.01)~~	~~0.024~~	~~0.012~~	~~(0.006)~~	~~. . . .~~	~~0.362~~	~~3.92~~	. . . .	. . . .	~~0.092~~	~~52.09~~	sold out	~~40 x 15~~	~~CC~~
CRM	215X HC3 L	0.102	1.21	0.698	0.254	5.02	17.48	18.00	0.903	0.087	0.048	0.0245	0.0102	0.0093	. . . .	0.404	4.42	. . . .	. . . .	0.063	. . . .		40 x 15	CC
CRM	215X HC4 K	0.151	0.76	0.550	0.466	5.80	17.92	17.39	0.667	(0.094)	0.074	0.0246	0.029	. . . .	. . . .	0.492	4.93	. . . .	. . . .	0.0605	50.8		40 x 15	CC
CRM	215X HC5 U	0.132	1.08	0.290	0.486	6.43	19.00	16.52	0.201	0.0416	(0.15)	0.022	0.029	0.0048	. . . .	0.590	5.45	. . . .	. . . .	0.082	. . . .		40 x 15	CC
CRM	215X HC6 A	0.005	(0.048)	0.099	. . . .	5.00	15.67	16.14	1.16	0.003	0.066	0.0021	. . . .	. . . .	. . . .	0.012	3.22	. . . .	. . . .	0.0034	58.45		40 x 13	HIP
CRM	215X 10276 A **	*0.007*	*0.030*	*0.495*	*0.042*	*5.78*	*15.60*	*16.00*	*0.180*	*0.019*	*0.202*	*0.0010*	*0.0027*	*. . . .*	*0.033*	*0.196*	*3.59*	*0.0092*	*0.0085*	*0.0100*	*57.80*	** provis values	38 x 15	W

2.19 Various Nickel Alloys

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ta	V	W	Nb	Zr	B	Mg	Ni	N	Size (mm) Ø x H	Form
CRM	219X 20500 B	0.0486	1.24	0.710	0.0103	3.65	49.99	0.082	0.016	. . . .	. . . .	0.0100	0.0026	. . . .	. . . .	. . . .	0.214	. . . .	. . . .	. . . .	43.88	0.175	40 x 15	CC
CRM	219X 1867 D	0.092	0.187	0.131	0.308	0.244	7.78	6.00	9.80	1.355	6.05	0.0055	0.0054	4.05	. . . .	0.066	0.052	0.273	0.0152	. . . .	63.81	. . . .	40 x 15	CC
CRM	219X 08825 A **	*0.015*	*0.23*	*0.500*	*1.865*	*31.88*	*22.00*	*3.002*	*0.064*	*1.19*	*0.148*	*0.0008*	*0.019*	*. . . .*	*0.039*	*. . . .*	*0.006*	*0.0021*	*0.0027*	*0.0025*	*39.1*	** provis. values	40 x 15	W
CRM	219X 20004 A	0.224	0.916	14.07	0.319	9.48	13.63	0.104	(0.104)	0.52	. . . .	0.0028	0.0147	0.077	. . . .	. . . .	1.53	. . . .	. . . .	. . . .	59.1	. . . .	40 x 15	CC
CRM	219X 86182 A	0.148	0.807	7.68	0.150	7.88	15.88	0.078	0.047	0.421	. . . .	0.0034	0.0098	0.031	. . . .	. . . .	2.17	. . . .	. . . .	. . . .	64.7	. . . .	40 x 15	CC

3.1 Brass - Cu/Zn Binaries

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	P	Se	S	B	Cd	Cu		Size (mm) Ø x H	Form
CRM	31X B1 P	0.0196	0.0126	44.04	0.0319	0.0078	0.015	0.006	0.0047	0.0141	0.0102	0.0073	0.0020	. . . .	0.0176	. . . .	. . . .	0.0017	0.0013	55.75		40 x 15	CC
CRM	31X B2 M	0.0113	0.0103	39.50	0.0146	0.0121	(0.001)	0.0047	0.0049	0.0147	0.0105	0.0111	. . . .	0.0032	0.0121	. . . .	. . . .	0.0008	0.0029	60.42		40 x 15	CC
CRM	31X B3 L	0.0149	0.0194	34.95	0.0541	0.0431	0.287	0.0126	0.0144	0.0072	0.0098	0.0159	0.0022	0.0212	. . . .	. . . .	. . . .	0.0021	0.0108	64.57		40 x 15	CC
CRM	31X B4 M	0.053	0.045	28.97	0.111	0.0649	0.0011	(0.002)	0.0516	0.0011	0.0103	0.0118	0.0038	0.0263	0.0302	. . . .	0.0114	. . . .	0.0236	70.60		40 x 15	CC
CRM	31X B5 K	0.045	0.021	23.60	0.056	0.0085	(0.001)	(0.001)	0.0054	0.0006	0.0061	0.0057	0.0002	0.0062	. . . .	. . . .	. . . .	0.0002	0.00050	76.22		40 x 15	CC
CRM	31X B6 K	0.0029	0.0122	19.93	0.0097	0.0066	0.0010	0.015	0.0009	0.0039	0.0010	0.0011	<0.0005	0.0063	. . . .	. . . .	. . . .	0.0023	0.0037	79.90		40 x 15	CC
CRM	31X B7 K	0.0876	0.0338	14.51	0.100	0.0251	0.0015	0.013	0.0030	0.0010	0.060	0.0089	0.0006	0.0124	. . . .	. . . .	. . . .	0.0029	0.0011	85.17		40 x 15	CC
CRM	31X B8 J	0.0311	0.082	10.23	0.132	0.0421	(0.001)	(0.002)	0.0074	0.0006	0.030	0.0254	(0.001)	0.0072	0.0026	. . . .	0.045	. . . .	0.0155	89.37		40 x 15	CC
CRM	31X B9 L	0.0245	0.0549	3.83	0.0168	0.0129	(0.0005)	0.0036	0.0053	0.0017	0.0068	0.0075	. . . .	. . . .	. . . .	0.0029	. . . .	(0.0003)	. . . .	96.05		40 x 17	CC

3.1.1 Alloyed Brass

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	B	Co	Cr	Cd	Ag	Hg	Cu		Size (mm) Ø x H	Form
CRM	31X B10 M	0.0310	0.0274	36.05	(1.39)	1.475	0.358	0.0389	0.0087	0.205	0.0215	0.0124	. . . .	. . . .	. . . .	0.0390	0.0192	. . . .	. . . .	. . . .	60.18		40 x 15	CC
CRM	31X B11 H	0.0117	0.0134	36.65	0.802	1.033	0.0262	0.0063	0.0061	0.653	0.0054	0.0057	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	60.72		40 x 15	CC
CRM	31X B12 G	0.0229	0.0244	36.67	0.430	0.491	0.081	0.0207	0.0181	1.720	0.0198	0.0194	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	60.51		40 x 15	CC
CRM	31X B13 G	0.0127	0.0188	36.67	0.182	0.212	0.0148	0.032	0.0120	2.84	0.0116	0.0056	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	60.03		40 x 15	CC
CRM	31X B14 G	0.486	0.0104	36.52	0.0183	0.0190	4.02	0.051	0.0091	0.0117	0.0103	0.0139	. . . .	. . . .	. . . .	0.0109	. . . .	. . . .	0.0130	. . . .	58.85		40 x 15	CC
CRM	31X B15 H	0.944	0.0073	36.80	0.0176	0.0102	2.98	0.109	0.0048	0.0122	0.0074	0.0111	. . . .	. . . .	. . . .	0.0046	. . . .	. . . .	0.0071	. . . .	59.07		40 x 15	CC
CRM	31X B16 H	2.13	0.0295	37.18	0.0162	0.0076	1.98	0.197	0.0056	0.0029	0.0042	0.0126	. . . .	. . . .	. . . .	0.0023	. . . .	. . . .	0.0052	. . . .	58.37		40 x 15	CC
CRM	31X B17 F	0.010	(0.05)	(33.9)	(0.02)	(0.01)	6.05	(0.007)	(0.015)	<0.001	<0.001	<0.001	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	60.0		40 x 15	CC
CRM	31X B18 J	0.046	0.916	39.11	0.0193	0.0143	0.0236	0.018	0.0196	0.00110	0.0051	0.0129	0.0117	<0.005	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	59.82		42 x 18	CC
CRM	31X B19 Q	0.0278	2.43	39.08	0.0143	0.0141	0.053	0.0248	0.0092	0.0150	0.0115	0.0095	0.047	(0.002)	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	58.23		40 x 15	CC
CRM	31X B20 N	0.0244	4.43	37.03	0.024	0.021	0.0025	(0.005)	0.0028	0.0005	0.0025	0.0039	0.0230	(0.004)	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	58.53		42 x 17	CC
CRM	~~31X B21 D~~	~~0.132~~	~~0.120~~	~~29.50~~	~~0.129~~	~~0.107~~	~~0.121~~	~~0.147~~	~~0.108~~	~~0.0647~~	~~0.114~~	~~0.130~~	~~0.100~~	~~(0.002)~~	~~0.0050~~	. . . .	. . . .	. . . .	. . . .	. . . .	~~69.24~~	sold out	~~42 x 18~~	~~CC~~
CRM	31X B22 F	0.160	0.152	15.92	0.158	0.154	0.0402	0.047	0.165	. . . .	0.17	0.161	0.207	0.030	0.0043	0.139	. . . .	0.0117	. . . .	. . . .	82.47		40 x 15	CC
CRM	31X B23 D	0.060	0.046	9.97	0.060	0.047	0.0048	0.0046	0.0482	0.0053	0.0463	0.0448	0.030	0.053	. . . .	0.0472	. . . .	0.0010	. . . .	. . . .	89.57		40 x 15	CC
CRM	31X B24 D	1.93	0.050	1.99	0.0342	0.134	(0.002)	. . . .	0.0116	0.0030	0.0126	0.118	0.0065	0.050	. . . .	. . . .	. . . .	0.0008	. . . .	. . . .	95.65		40 x 15	CC
CRM	31X B25 B	0.613	0.298	40.83	0.056	0.236	0.470	0.254	0.0284	0.127	0.0594	0.0843	0.093	. . . .	(0.0045)	. . . .	. . . .	. . . .	. . . .	. . . .	56.95		42 x 17	CC
CRM	31X B26 E	1.62	0.752	29.81	1.08	1.68	1.12	0.195	0.112	0.474	0.096	0.116	0.054	. . . .	0.0011	0.113	. . . .	0.0172	. . . .	. . . .	62.80		40 x 15	CC
CRM	31X B27 B	0.985	0.492	17.65	0.111	0.0315	0.0015	0.0044	0.048	0.0059	0.0320	0.0243	0.0150	0.0080	(0.0005)	. . . .	. . . .	. . . .	. . . .	. . . .	80.65		42 x 18	CC
CRM	31X B28 A	0.0126	0.081	35.47	0.0490	0.083	0.034	. . . .	. . . .	0.094	. . . .	. . . .	. . . .	(0.0018)	. . . .	. . . .	0.073	0.0072	. . . .	0.0007	64.02		42 x 18	CC
CRM	31X B29 A	0.0328	0.146	24.75	0.144	4.11	0.219	. . . .	. . . .	0.0625	. . . .	. . . .	3.33	. . . .	. . . .	. . . .	0.062	0.0144	. . . .	. . . .	67.08		40 x 15	CC

3.1.2 Brass - Trace Elements

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	Se	Cd	B	C	Ag	Cu		Size (mm) Ø x H	Form
CRM	31X TB1 J	0.231	0.201	36.90	0.038	0.220	0.210	0.093	0.153	0.314	0.049	0.104	0.084	. . . .	0.006	0.0114	0.0006	. . . .	. . . .	61.39		40 x 15	CC
CRM	31X TB2 H	0.106	0.0982	36.47	0.087	0.111	0.0876	0.031	0.111	0.204	0.0404	0.0533	0.0112	0.0864	. . . .	0.0014	0.0014	. . . .	. . . .	62.54		40 x 15	CC
CRM	31X TB3 K	0.089	0.169	37.92	0.0282	0.0637	0.0045	0.016	0.0454	0.0244	0.0030	0.0222	. . . .	. . . .	. . . .	0.0043	(0.0005)	. . . .	. . . .	61.58		40 x 17	CC
~~CRM~~	~~31X TB4 F~~	~~0.0356~~	~~0.0225~~	~~34.86~~	~~0.0229~~	~~0.0114~~	~~(0.0004)~~	~~(0.0027)~~	~~0.0065~~	~~0.0021~~	~~0.0056~~	~~0.0064~~	~~. . . .~~	~~. . . .~~	~~. . . .~~	~~. . . .~~	~~0.0021~~	~~0.0018~~	~~. . . .~~	~~65.00~~		sold out	~~40 x 15~~	~~CC~~
CRM	31X TB5 A	0.107	0.576	40.63	0.178	0.079	0.0458	0.122	0.349	0.445	0.314	0.174	(0.20)	0.0229	. . . .	0.501	. . . .	. . . .	0.213	55.84		40 x 15	CC

3.1.3 Naval Brass

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	B	C	Cu	Size (mm) Ø x H	Form
CRM	**31X NB1 H**	0.535	0.504	29.73	0.037	0.520	(0.0004)	0.004	0.161	0.051	0.0065	0.0057	0.0223	0.0024	(0.0006)	. . . .	. . . .	68.35	40 x 15	CC
CRM	**31X NB2 H**	1.009	0.239	35.47	0.112	0.0578	0.168	0.107	0.0970	0.151	0.100	0.099	0.0139	0.0019	. . . .	. . . .	. . . .	62.21	40 x 15	CC
CRM	**31X NB3 H**	1.67	0.197	24.64	0.113	0.0299	0.094	0.145	0.074	0.0166	0.093	0.265	0.150	(0.006)	. . . .	0.0026	(0.0020)	72.45	40 x 15	CC
CRM	**31X NB4 J**	2.01	0.067	32.57	0.235	0.230	0.178	0.203	0.0062	0.0053	0.104	0.450	0.230	(0.0032)	. . . .	0.0009	. . . .	63.71	40 x 15	CC

3.1.5 High Tensile Brass

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Sb	P	S	C	Cu	Size (mm) Ø x H	Form
CRM	**31X HT31 A**	0.0149	0.020	18.19	2.90	0.196	6.70	0.041	0.0006	5.27	(0.0011)	0.00032	(0.0003)	0.006	66.67	50 x 18	W
CRM	**31X HT37 A**	0.0116	0.623	34.69	0.0344	0.0105	0.0004	1.38	0.0011	2.88	0.0007	0.003	<0.0005	0.003	60.33	40 x 18	W
CRM	**31X HT38 A**	0.039	0.051	36.66	0.0530	0.0242	0.960	0.869	0.0008	2.60	(0.0006)	0.0024	(0.001)	0.003	58.77	50 x 18	W

3.1.6 Bismuth Brass

		Bi	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Co	Sb	P	S	Se	Cd	B	Cu		Size (mm) Ø x H	Form
CRM	**31X BIB1 D ****	*1.90*	*0.46*	*0.160*	*37.2*	*0.053*	*0.26*	*0.121*	*0.165*	*0.030*	*0.027*	*. . . .*	*0.01*	*0.047*	*<0.001*	*0.0033*	*0.010*	*. . . .*	*59.5*	** provisional values	40 x 15	CC
CRM	**31X BIB2 D ****	*1.00*	*1.18*	*0.155*	*33.4*	*0.225*	*0.47*	*0.41*	*0.15*	*0.020*	*. . . .*	*0.055*	*0.077*	*0.032*	*<0.001*	*0.005*	*0.009*	*. . . .*	*62.9*	** provisional values	40 x 15	CC
CRM	**31X BIB3 C**	4.04	0.198	0.181	31.83	0.0510	0.127	0.154	0.0516	0.0476	. . . .	0.0032	0.0321	0.0626	0.0018	0.0047	0.0014	. . . .	63.18		40 x 15	CC
CRM	**31X BIB4 B**	0.897	0.512	0.093	36.26	0.153	0.205	0.391	0.0475	. . . .	. . . .	0.0317	0.0059	0.0144	0.0011	0.0073	0.0014	0.0011	61.32		40 x 15	CC

3.1.7 Leaded Brass

		Pb	Sn	Zn	Fe	Ni	Mn	Al	Si	As	Bi	Sb	P	S	Co	Ag	Se	Cd	B	Cu	Size (mm) Ø x H	Form
CRM	**31X 7835.1 S**	2.75	0.304	34.98	0.137	0.057	. . . .	0.0445	0.005	0.0051	0.0100	0.0106	0.0162	. . . .	0.0114	0.0061	. . . .	0.0014	(0.001)	61.56	40 x 15	CC
CRM	**31X 7835.2 K**	2.07	0.152	32.94	0.0309	0.0462	. . . .	0.060	0.0193	0.0280	0.0099	0.0358	0.0226	. . . .	0.0290	0.0102	. . . .	0.0020	0.0023	64.49	40 x 15	CC
CRM	**31X 7835.3 H**	1.53	0.107	36.86	0.17	0.217	. . . .	0.039	0.010	0.0693	0.0283	0.1020	(0.05)	. . . .	0.022	0.0193	0.0029	0.0052	. . . .	60.91	40 x 15	CC
CRM	**31X 7835.4 J**	1.049	0.070	30.36	0.0350	0.477	. . . .	0.525	. . . .	0.142	0.0169	0.068	0.121	. . . .	0.0027	. . . .	. . . .	0.0088	0.0021	67.13	40 x 15	CC
CRM	**31X 7835.5 A**	1.64	0.116	6.23	0.126	0.249	. . . .	0.078	. . . .	0.104	. . . .	0.114	0.018	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	91.25	40 x 15	CC
CRM	**31X 7835.6 B**	1.52	0.091	37.00	(0.023)	(0.017)	. . . .	0.625	0.010	0.0060	0.0031	0.0125	0.0165	0.0007	0.0013	0.0022	0.0004	0.0017	0.0035	60.52	40 x 15	CC
CRM	**31X 7835.7 A**	2.29	0.137	7.50	0.030	0.943	. . . .	0.0084	0.039	. . . .	0.048	0.0327	0.080	0.0075	0.0120	. . . .	. . . .	0.0047	. . . .	88.87	40 x 15	CC
CRM	**31X 7835.8 A**	3.15	0.516	24.83	0.100	0.158	0.093	. . . .	. . . .	0.143	0.112	0.115	0.122	. . . .	0.313	0.463	. . . .	0.087	. . . .	69.93	40 x 15	CC
CRM	**31X 7835.9 A**	1.024	1.48	14.34	0.408	0.100	0.0009	0.092	. . . .	0.107	0.81	0.445	0.0390	0.0161	0.0813	2.12	0.34	0.0673	. . . .	78.48	40 x 15	CC
CRM	**31X CZ114 A**	1.219	0.511	38.25	0.740	0.0183	1.475	0.714	(0.006)	. . . .	0.0107	(0.003)	0.0018	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	57.10	38 x 15	W

See also Section 3.1.1 products 31X B18 - B20

3.1.8 Manganese Brass

		Mn	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Bi	Sb	P	S	Co	Ag	Cr	C	Cu	Size (mm) Ø x H	Form
CRM	**31X MNB1 C**	0.188	0.105	1.44	29.37	0.268	0.053	0.599	0.128	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	67.77	40 x 15	CC
CRM	**31X MNB2 D**	2.05	0.289	0.983	31.30	0.548	0.118	0.272	0.579	0.0201	. . . .	0.0177	0.0246	. . . .	0.0086	0.041	. . . .	. . . .	63.75	40 x 15	CC
CRM	**31X MNB3 E**	3.08	0.459	0.504	25.97	1.15	0.348	0.584	1.53	0.0179	. . . .	0.0056	0.0259	. . . .	0.0556	0.0162	. . . .	. . . .	66.18	40 x 15	CC
CRM	**31X MNB4 F**	2.97	0.547	0.221	25.59	1.728	0.347	3.91	0.103	0.0125	. . . .	0.0189	0.0274	. . . .	0.0312	0.0131	. . . .	. . . .	64.62	40 x 15	CC
CRM	**31X MNB5 Q**	0.137	1.60	0.243	37.12	0.013	0.996	2.96	0.44	0.0100	. . . .	0.0118	(0.008)	. . . .	0.0155	0.0063	0.19	. . . .	56.18	40 x 15	CC
CRM	**31X MNB5 R**	0.175	1.228	0.157	37.11	0.898	1.32	3.24	0.528	0.0021	. . . .	(0.006)	0.0399	. . . .	0.066	0.0195	0.0116	. . . .	55.14	40 x 15	CC
CRM	**31X MNB6 C**	0.871	0.0310	0.016	28.53	0.0697	0.261	0.0148	0.0196	0.0107	. . . .	0.0128	0.0226	. . . .	0.0107	0.0509	. . . .	. . . .	70.01	40 x 15	CC
CRM	**31X MNB11 A**	11.99	0.161	1.610	22.85	0.337	4.46	1.19	0.071	0.0010	0.0021	0.0051	0.0186	(0.0007)	0.0046	. . . .	0.0046	(0.009)	57.36	40 x 15	CC
CRM	**31X MNB12 B**	18.37	0.194	1.96	21.76	0.313	0.497	0.70	0.0487	0.0077	0.0204	0.0072	0.0521	(0.0006)	0.0040	. . . .	0.0013	0.0125	56.03	40 x 15	CC

3.1.9 Silicon Brass

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Cr	Mg	Cd	Cu		Size (mm) Ø x H	Form
CRM	31X WSB6 E	0.071	0.225	0.450	0.088	0.1114	0.0311	3.60	0.0048	0.900	. . . .	0.0022	0.0206	. . . .	0.0079	. . . .	. . . .	0.0004	94.47		40 x 15	CC

3.2.1 Phosphor-Bronze

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Mg	C	Ag	Cu		Size (mm) Ø x H	Form
CRM	32X PB10 P	12.37	0.0182	0.256	0.0043	0.0130	(0.002)	(0.001)	0.0126	<0.001	0.034	0.0134	0.0030	0.0144	0.0062	. . . .	. . . .	. . . .	87.14		40 x 15	CC
CRM	32X PB11 G	3.306	0.995	1.71	0.399	0.898	0.081	0.123	0.198	0.132	0.0310	0.584	0.946	0.0148	0.090	0.0091	. . . .	. . . .	90.44		40 x 15	CC
CRM	32X PB12 F **	*5.05*	*0.043*	*0.128*	*0.052*	*0.205*	*<0.001*	. . . .	*0.052*	*0.0015*	*0.064*	*0.180*	*0.076*	*0.009*	*0.015*	. . . .	. . . .	*0.0155*	*94.2*	** provisional values	40 x 15	CC
CRM	32X PB13 E	6.55	0.109	0.301	0.0549	0.0953	0.0251	0.053	0.0391	0.0440	0.0224	0.092	0.089	. . . .	0.0088	. . . .	. . . .	0.0205	92.48		40 x 15	CC
CRM	32X PB14 D	9.00	0.048	0.038	0.0056	0.144	(0.0009)	(0.0025)	0.0331	(0.0002)	0.224	0.055	(0.008)	0.065	0.0013	0.0003	. . . .	. . . .	90.26		40 x 17	CC
CRM	32X PB15 A	2.21	0.174	0.76	0.116	0.212	0.045	0.043	0.123	0.0125	. . . .	0.026	0.0873	. . . .	0.0509	0.0275	. . . .	. . . .	96.07		40 x 15	CC
CRM	32X PB20 A	4.55	0.0045	0.007	0.0013	0.0090	<0.001	0.0046	0.0011	(0.007)	. . . .	0.0012	0.196	0.0030	. . . .	. . . .	(0.0014)	. . . .	95.22		38 x 17	W
CRM	32X PB23 A	7.56	0.0042	0.0020	(0.0005)	0.0033	(0.0004)	0.0016	0.0011	(0.0006)	. . . .	0.0025	0.319	0.0015	. . . .	. . . .	0.004	. . . .	92.04		49 x 17	W
CRM	32X 51000 A	4.85	0.0032	0.0105	0.0024	0.0084	0.0007	. . . .	. . . .	. . . .	. . . .	. . . .	0.300	0.0021	. . . .	. . . .	. . . .	0.0022	94.87		38 x 15	W
CRM	32X 52100 A	7.73	0.0031	0.0026	0.0008	0.0111	0.0009	. . . .	0.0009	. . . .	0.0019	. . . .	0.146	0.0008	. . . .	. . . .	. . . .	0.0011	92.10		38 x 15	W

3.2.2 Leaded Bronze

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Cd	Ag	Cu		Size (mm) Ø x H	Form
CRM	32X LB10 F	8.26	12.46	0.426	0.0045	0.695	0.0188	0.008	0.146	. . . .	0.0563	0.557	0.0063	0.010	0.0395	. . . .	0.0459	77.23		40 x 15	CC
CRM	32X LB11 D	10.87	10.17	0.124	0.0025	0.565	0.0022	(0.002)	0.0315	(0.0003)	0.0338	0.111	0.007	0.053	0.0202	. . . .	0.118	77.97		40.x 15	CC
CRM	32X LB12 D	9.52	9.06	0.584	0.0223	0.433	(0.001)	<0.001	0.0897	. . . .	0.0231	0.442	0.383	0.094	0.0751	. . . .	. . . .	79.27		40 x 15	CC
CRM	32X LB13 C	5.80	7.59	0.520	0.0160	0.828	0.0011	(0.0035)	0.131	0.0005	0.0721	0.0186	0.0161	0.115	0.0293	. . . .	0.0063	84.87		40 x 17	CC
CRM	32X LB14 G **	*5.65*	*15.2*	*0.58*	*0.009*	*0.255*	*0.001*	. . . .	*0.050*	*<0.001*	*0.72*	*0.075*	*0.058*	*0.016*	*0.09*	. . . .	*0.122*	*77.1*	** provisional values	40 x 15	CC
CRM	32X LB15 E	4.51	21.42	0.064	0.0012	0.123	(0.001)	0.0008	0.0273	. . . .	(0.13)	0.127	0.0035	0.032	0.0051	. . . .	0.0217	73.60		40 x 15	CC
CRM	32X LB16 A	5.55	18.78	0.458	0.0040	0.793	(0.001)	. . . .	. . . .	. . . .	0.0119	(0.001)	(0.002)	0.0012	. . . .	. . . .	0.0016	74.42		32 x 17	W
CRM	32X LB17 A	5.97	9.83	0.634	0.488	0.465	0.388	. . . .	1.51	0.296	0.220	4.10	0.051	. . . .	0.0083	0.151	0.911	74.83		40 x 15	CC
CRM	32X 93700 A	9.95	8.38	0.78	0.0011	0.307	. . . .	. . . .	. . . .	. . . .	. . . .	0.0051	(0.0015)	0.0017	0.0004	. . . .	. . . .	80.43		42 x 15	W

3.2.3 Aluminium Bronze

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	P	Cr	Co	Mg	Bi	Sb	Ag	C	Se	Be	Cu	Size (mm) Ø x H	Form
CRM	32X ALB1 P	0.0314	0.207	0.0228	3.11	5.74	8.83	0.106	0.0083	0.057	0.0145	0.0052	. . . .	0.0092	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	81.85	42 x 18	CC
CRM	32X ALB2 K	0.0715	0.147	0.174	4.27	4.42	10.08	0.245	0.0110	0.341	0.029	0.0973	0.286	0.0183	. . . .	. . . .	0.0210	. . . .	. . . .	. . . .	79.64	40 x 15	CC
~~CRM~~	~~32X ALB3 R~~	~~0.110~~	~~0.105~~	~~0.311~~	~~3.97~~	~~3.47~~	~~11.20~~	~~0.173~~	~~0.0114~~	~~0.297~~	~~0.022~~	~~0.0060~~	~~. . . .~~	~~0.0117~~	. . . .	. . . .	. . . .	sold out		. . . .	~~80.31~~	~~42 x 18~~	~~CC~~
CRM	32X ALB4 H	0.085	0.120	0.264	3.55	7.03	7.87	0.252	0.0130	1.028	0.036	0.022	. . . .	0.153	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	79.61	42 x 18	CC
~~CRM~~	~~32X ALB5 J~~	~~0.062~~	~~0.093~~	~~0.487~~	~~2.22~~	~~4.14~~	~~6.91~~	~~0.086~~	~~0.064~~	~~1.21~~	~~0.048~~	~~0.0056~~	~~0.0307~~	~~0.0176~~	. . . .	. . . .	. . . .	sold out		. . . .	~~84.61~~	~~40 x 15~~	~~CC~~
CRM	32X ALB6 K	0.120	0.0749	0.126	2.71	5.42	9.69	0.073	0.0116	0.787	(0.006)	. . . .	0.139	0.0104	. . . .	. . . .	0.0082	. . . .	. . . .	. . . .	80.77	40 x 15	CC
CRM	32X ALB7 C	0.30	0.029	0.527	4.82	4.96	4.01	0.399	0.056	0.383	0.057	0.061	. . . .	0.0039	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	84.40	42 x 18	CC
CRM	32X ALB8 E	0.312	0.071	0.352	5.54	6.68	6.38	0.603	0.145	1.562	0.171	0.36	0.554	0.015	. . . .	0.024	0.0099	. . . .	. . . .	. . . .	77.17	40 x 15	CC
CRM	32X ALB9 B	0.061	0.377	1.17	3.13	1.21	13.86	0.282	0.0275	0.090	(0.054)	(0.064)	0.0259	0.205	. . . .	. . . .	0.042	(0.006)	. . . .	. . . .	79.24	42 x 18	CC
CRM	32X ALB10 A	0.202	0.107	0.315	4.23	7.58	11.25	0.169	0.017	1.73	0.040	0.0103	. . . .	0.0029	. . . .	. . . .	. . . .	(0.0022)	. . . .	. . . .	74.28	42 x 18	CC
CRM	32X ALB11 A	0.0289	0.118	0.576	3.81	4.33	8.80	0.069	. . . .	1.13	0.045	. . . .	0.089	0.075	0.120	0.093	. . . .	. . . .	0.006	0.0194	80.58	40 x 15	CC
CRM	32X ALB11 B	0.0062	0.0316	0.508	3.99	4.44	8.85	0.015	. . . .	1.290	0.0249	. . . .	0.0180	0.072	0.082	0.203	. . . .	. . . .	0.007	0.064	80.38	40 x 15	CC
CRM	32X ALB12 A	0.310	0.0018	0.0625	1.094	6.33	8.29	0.0202	. . . .	0.958	0.0101	. . . .	0.0056	0.0013	. . . .	. . . .	0.044	. . . .	. . . .	. . . .	82.90	41 x 15	W
CRM	32X ALB13 A	0.0072	(0.001)	0.0194	1.171	1.381	7.09	0.086	. . . .	5.39	0.009	. . . .	0.0011	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	84.96	35 x 15	W
CRM	32X 61400 A	0.301	(0.001)	0.060	2.74	0.0242	6.81	0.0124	. . . .	0.082	0.0008	. . . .	. . . .	0.0050	. . . .	. . . .	0.0010	. . . .	. . . .	. . . .	89.99	42 x 15	W

3.2.3 Aluminium Bronze (continued)

		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	Cr	Mg	Co	Ag	C	Cu		Size (mm) Ø x H	Form
CRM	**32X CA1 A**	0.0180	0.007	0.162	4.63	4.94	9.79	0.090	0.296	0.003	0.0049	0.0003	. . . .	0.0012	(0.007)	80.03		42 x 18	W
CRM	**32X CA7 A**	0.0172	(0.004)	0.006	2.09	0.234	9.37	0.017	0.151	. . . .	0.0028	0.0004	0.0003	0.0009	0.0028	88.06		42 x 18	W
CRM	**32X CA12 A**	0.0157	(0.0017)	0.0405	0.657	0.088	6.14	2.57	0.0290	. . . .	. . . .	0.0005	(0.0003)	0.0010	(0.002)	90.48		42 x 18	W
CRM	**32X CA23 A**	0.0164	(0.0026)	0.031	3.63	4.71	9.19	0.026	1.298	0.0011	0.0018	0.0003	. . . .	0.0008	(0.0050)	81.05		50 x 18	W
CRM	**32X CA31 A**	0.0037	(0.0024)	0.041	4.06	4.28	8.95	0.036	0.336	(0.003)	0.0026	0.0008	0.0029	0.0008	0.006	82.24		42 x 18	W

3.2.4 Bismuth Bronze (Sebiloy Type)

		Sn	Pb	Zn	Fe	Ni	As	Bi	Sb	P	S	Co	Al	Se	In	Ag	Cd	Cu		Size (mm) Ø x H	Form
CRM	**32X SEB1 D**	4.26	0.197	7.81	0.071	0.102	0.0402	4.25	0.305	0.0021	0.0052	0.0478	. . . .	0.812	. . . .	. . . .	0.0033	81.88		40 x 15	CC
CRM	**32X SEB2 D**	6.96	0.104	1.40	0.074	0.0449	0.0160	4.57	0.0222	0.036	0.030	0.0133	. . . .	0.044	0.074	0.0443	0.0255	86.56		40 x 15	CC
CRM	**32X SEB3 E**	2.96	0.296	0.887	0.0113	1.214	0.0325	6.47	0.108	0.0139	0.0180	0.0491	. . . .	1.30	. . . .	. . . .	0.0095	86.47		40 x 15	CC
CRM	**32X SEB4 E ****	*10.05*	*0.034*	*7.00*	*0.093*	*0.020*	*0.0065*	*2.50*	*0.033*	*0.0045*	. . . .	*0.310*	*0.0005*	*0.115*	. . . .	. . . .	*0.0018*	*79.8*	** provisional values	40 x 15	CC
CRM	**32X SEB5 C**	5.18	0.268	5.30	0.0430	0.317	. . . .	1.056	0.0334	0.072	0.050	0.0156	(0.001)	0.471	. . . .	. . . .	0.0051	87.21		40 x 15	CC
CRM	**32X SEB6 C**	7.14	0.0463	4.55	0.151	0.860	0.083	0.615	0.235	0.0118	. . . .	0.231	. . . .	0.322	. . . .	. . . .	0.0036	85.66		40 x 17	CC
CRM	**32X SEB7 A**	3.20	0.343	4.42	0.074	1.165	0.038	3.58	0.262	0.0206	0.067	0.119	. . . .	1.19	. . . .	. . . .	0.0074	85.46		42 x 17	CC

3.2.9 Bronze

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Cr	Co	Bi	Sb	Cd	Au	Ag	P	S	Cu		Size (mm) Ø x H	Form
CRM	**32X SN1 F**	11.65	5.66	0.259	0.0014	1.931	(0.001)	(0.001)	0.0111	<0.001	. . . .	0.0136	. . . .	0.0274	. . . .	. . . .	. . . .	0.0022	0.0126	80.34		40 x 15	CC
CRM	**32X SN2 J**	14.22	2.06	0.940	0.041	1.025	(0.002)	0.009	0.0119	0.0246	. . . .	0.0343	0.119	0.106	. . . .	. . . .	0.0107	0.220	0.0106	81.17		40 x 15	CC
CRM	**32X SN3 G**	16.14	0.159	0.150	0.14	0.464	(0.14)	0.0247	0.0323	0.067	. . . .	0.0460	. . . .	0.362	. . . .	. . . .	. . . .	0.646	0.035	81.7		40 x 15	CC
CRM	**32X SN4 A**	18.80	1.059	0.342	0.060	0.556	0.034	(0.004)	0.0468	0.0065	. . . .	0.151	. . . .	0.102	. . . .	. . . .	. . . .	0.988	0.040	77.88		42 x 18	CC
~~CRM~~	~~**32X SN5 A**~~	~~16.05~~	~~0.259~~	~~0.494~~	~~1.20~~	~~0.502~~	~~0.474~~	~~. . . .~~	~~0.0615~~	~~0.720~~	~~0.0585~~	~~0.138~~	~~0.097~~	~~0.664~~	~~0.145~~	~~0.0102~~	~~0.099~~	~~. . . .~~	~~0.0009~~	~~78.96~~	sold out	~~40 x 15~~	~~CC~~
CRM	**32X SN6 A**	7.31	1.559	1.17	0.099	0.203	0.0313	. . . .	0.764	0.0024	0.0074	0.655	0.158	0.323	0.0903	0.0073	1.159	. . . .	0.018	86.39		40 x 15	CC
CRM	**32X SN7 A**	12.60	2.60	1.96	(0.06)	0.175	0.052	. . . .	1.071	0.0010	. . . .	0.443	0.052	0.263	0.0385	0.0005	0.305	0.056	. . . .	80.30		40 x 15	CC
CRM	**32X CSN1 A**	0.306	. . . .	0.0039	0.0020	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	0.0007	. . . .	. . . .		20 x 22	W

3.3 Gun Metal

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Se	Cr	Co	Ag	Cd	Cu		Size (mm) Ø x H	Form
CRM	**33X GM4 AC**	2.57	5.21	5.78	0.024	1.510	(0.001)	0.0011	0.0205	0.0007	0.0132	0.0101	0.0022	0.107	. . . .	. . . .	0.0195	0.0108	. . . .	84.79		40 x 15	CC
~~CRM~~	~~**33X GM5 M**~~	~~4.47~~	~~4.81~~	~~5.80~~	~~0.254~~	~~0.697~~	~~0.084~~	~~0.028~~	~~0.0342~~	~~. . . .~~	~~0.0493~~	~~0.0505~~	~~0.042~~	~~0.070~~	~~. . . .~~	~~. . . .~~	~~0.0453~~	~~0.0419~~	~~0.0034~~	~~83.38~~	sold out	~~40 x 15~~	~~CC~~
CRM	**33X GM6 K**	6.58	3.94	1.409	0.0256	0.890	0.0012	(0.001)	0.158	0.0022	0.0359	0.259	0.0041	0.090	. . . .	. . . .	0.0100	0.0148	. . . .	86.51		40 x 15	CC
CRM	**33X GM7 J**	9.61	1.119	2.72	0.050	0.511	0.0110	(0.003)	0.103	0.0088	0.119	0.1092	0.082	0.064	. . . .	. . . .	0.095	0.050	. . . .	85.40		40 x 15	CC
CRM	**33X GM8 G**	4.03	6.21	5.71	0.033	0.1491	. . . .	. . . .	0.0114	. . . .	0.062	0.0237	0.0062	0.0083	. . . .	. . . .	0.0222	0.1018	. . . .	83.64		40 x 15	CC
CRM	**33X GM20 A**	4.07	0.106	3.87	0.570	0.999	(0.001)	. . . .	0.196	0.219	0.031	2.004	0.063	. . . .	. . . .	0.015	0.0382	0.141	0.0229	87.58		40 x 15	CC
CRM	**33X GM21 A**	4.55	6.99	5.05	0.751	0.129	0.255	0.0156	0.464	. . . .	0.452	1.049	0.050	0.080	0.194	. . . .	. . . .	0.694	0.255	78.90		40 x 15	CC
CRM	**33X GM24 A**	3.85	3.35	3.67	0.0083	0.0087	. . . .	0.0028	0.0010	<0.0005	0.0009	0.0012	0.190	0.003	. . . .	(0.0013)	. . . .	0.0046	. . . .	88.88		44 x 17	W
CRM	**33X GM29 A**	6.12	0.050	4.23	0.0102	0.0289	. . . .	0.0027	0.0017	(0.0005)	0.0019	0.0015	0.138	0.0024	. . . .	(0.0004)	. . . .	0.0026	. . . .	89.36		33 x 19	W
CRM	**33X RB1 A**	2.137	5.02	7.95	0.928	0.0539	0.0048	0.063	0.0030	0.0167	0.0029	0.432	0.020	0.0044	. . . .	0.0013	. . . .	0.0174	. . . .	83.24		42 x 17	CC
CRM	**33X RB2 A**	3.19	3.85	9.14	0.493	0.255	0.0352	0.0116	0.0211	0.0028	0.101	0.019	0.0208	0.078	. . . .	0.0017	. . . .	0.0029	. . . .	82.67		42 x 17	CC
CRM	**33X 54400 A**	3.97	4.69	3.87	0.072	0.244	0.0009	. . . .	0.0156	. . . .	. . . .	0.0362	0.243	0.0251	. . . .	. . . .	0.0013	0.0124	. . . .	86.79		38 x 15	W

3.4 Nickel Silver

		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	S	Co	Cr	Ag	Mg	C	Cu		Size (mm) Ø x H	Form
CRM	**34X NS1 F**	0.0110	0.0141	33.41	0.064	7.81	(0.003)	(0.002)	0.0009	0.0140	(0.0004)	0.052	0.0003	0.069	0.0020	(0.0018)	58.63		42 x 18	CC
CRM	**34X NS2 F**	0.019	0.063	25.31	0.085	13.39	. . . .	(0.003)	0.0013	0.0091	(0.020)	0.0118	(0.001)	0.0026	<0.0005	. . . .	61.09		42 x 17	CC
CRM	**34X NS3 F**	0.056	0.178	19.96	0.285	14.96	<0.001	(0.002)	0.0377	0.0295	0.0028	0.0922	. . . .	0.100	<0.001	. . . .	64.16		40 x 15	CC
CRM	**34X NS4 F**	0.0301	0.071	17.09	0.449	16.61	0.0454	0.102	0.304	0.0570	0.0110	0.152	. . . .	0.0324	0.0009	. . . .	64.97		40 x 15	CC
CRM	**34X NS5 G ****	*0.140*	*0.90*	*24*	*0.250*	*17*	*0.085*	*0.115*	*0.110*	*0.102*	. . . .	*0.215*	. . . .	*0.010*	. . . .	. . . .	*57.5*	** provisional values	40 x 15	CC
CRM	**34X 79830 A**	0.1158	2.033	41.80	0.079	9.76	0.0012	. . . .	0.311	0.0047	(0.001)	(0.001)	. . . .	0.0028	. . . .	(0.005)	45.88		38 x 15	W

3.6.1 Cupro Nickel

		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Bi	P	S	Co	Cr	Mg	B	C	Ti	Nb	Zr	Be	Cu	Size (mm) Ø x H	Form
CRM	**36X CN1 P ****	*0.225*	*0.035*	*0.355*	*1.87*	*9.20*	*0.054*	*0.10*	*1.80*	. . . .	*0.056*	*0.006*	*0.117*	*0.160*	*0.033*	. . . .	*0.01*	** provisional values				*85.7*	40 x 15	CC
CRM	**36X CN2 J**	0.061	0.048	0.0358	1.70	15.47	0.005	0.044	1.26	0.0045	0.015	0.035	0.264	0.240	0.0006	. . . .	0.004	0.0102	(0.032)	. . . .	. . . .	80.78	40 x 17	CC
CRM	**36X CN3 M**	0.190	0.223	1.014	0.996	19.55	. . . .	0.349	0.726	. . . .	0.049	0.0153	0.0701	0.0259	0.075	(0.002)	0.020	. . . .	0.030	. . . .	0.0042	76.60	40 x 15	CC
CRM	**36X CN4 K**	0.009	(0.023)	0.041	2.67	27.49	0.0013	0.025	0.164	0.0077	0.0079	0.0076	0.052	0.022	(0.0004)	. . . .	0.0053	(0.004)	0.0139	. . . .	. . . .	69.48	40 x 17	CC
CRM	**36X CN5 P**	0.0090	0.0120	0.209	0.347	31.03		0.689	0.217	. . . .	0.034	0.088	0.0238	0.141	0.0106	0.0053	(0.008)	0.0203	0.430	. . . .	0.0035	66.67	40 x 15	CC
CRM	**36X CN6 H**	. . . .	0.033	0.388	0.792	31.21	0.063	0.154	0.458	0.0331	0.0104	0.0051	0.0590	2.65	. . . .	. . . .	0.0072	0.057	0.196	0.049	. . . .	63.80	40 x 15	CC
CRM	**36X CN7 F**	0.039	0.028	0.203	1.021	29.95	. . . .	0.304	0.659	(0.014)	(0.021)	0.0151	0.108	1.51	0.0041	(0.004)	0.0106	(0.037)	0.58	(0.003)	. . . .	65.58	40 x 17	CC
CRM	**36X CN8 J**	0.0502	0.037	0.107	1.65	28.94	(0.030)	0.309	0.951	0.0518	0.019	0.0119	0.121	1.38	. . . .	0.005	0.013	(0.038)	0.585	. . . .	. . . .	65.78	40 x 15	CC
CRM	**36X CN9 J**	0.0291	0.020	0.060	0.722	28.90	(0.094)	0.413	1.019	. . . .	0.008	0.0130	0.323	1.84	. . . .	0.0065	0.0098	0.150	1.40	0.0019	. . . .	64.96	40 x 15	CC
CRM	**36X CN10 B**	0.0164	0.013	0.058	4.76	28.35	1.346	0.906	0.552	. . . .	(0.009)	0.030	0.122	1.498	. . . .	(0.012)	0.0107	0.227	0.450	0.080	. . . .	61.63	40 x 15	CC
CRM	**36X CN11 A**	(0.002)	(0.003)	(0.006)	0.992	14.96	1.457	0.083	4.34	. . . .	(0.002)	0.0012	0.0049	0.380	0.0241	. . . .	(0.001)	. . . .	0.124	. . . .	. . . .	77.56	40 x 15	W
CRM	**36X CN12 A**	(0.001)	0.0037	0.157	0.105	13.05	2.41	0.040	0.402	. . . .	0.0011	. . . .	0.0056	. . . .	0.072	0.0055	0.0101	. . . .	0.0010	. . . .	. . . .	83.79	40 x 15	W
CRM	**36X CN13 A**	(0.001)	(0.001)	0.0017	0.870	14.52	2.65	0.012	0.442	. . . .	0.0011	(0.002)	(0.001)	. . . .	0.0039	(0.002)	(0.003)	. . . .	. . . .	. . . .	. . . .	81.46	38 x 15	W
CRM	**36X 70600 A**	0.0090	0.0086	0.115	1.619	10.65	(0.001)	. . . .	0.759	. . . .	0.0062	0.0136	0.0087	. . . .	. . . .	. . . .	(0.002)	. . . .	. . . .	. . . .	. . . .	86.70	40 x 15	W
CRM	**36X 71500 A ****	*0.0113*	*0.0113*	*0.151*	*0.888*	*31.25*	*(0.002)*	. . . .	*0.850*	. . . .	*0.0076*	*0.0448*	*0.0163*	. . . .	. . . .	*0.0048*	*0.0240*	** provisional values				*66.75*	40 x 15	W

															As	Ag	Cd	C	Cu			Size (mm) Ø x H	Form
CRM	**36X CN21 A**	0.038	0.051	0.0203	0.0316	5.50	1.95	. . . .	0.0391	. . . .	0.053	. . . .	0.0079	0.0050	0.0067	0.0064	0.0021	. . . .	92.17			40 x 17	CC
CRM	**36X CN22 A**	0.0371	0.0260	0.0175	0.088	1.806	6.09	. . . .	(0.016)	. . . .	0.0178	. . . .	0.0231	0.0144	0.0208	0.0196	0.0083	. . . .	91.80			40 x 17	CC
CRM	**36X CN23 A**	0.102	0.115	14.88	0.140	14.38	0.007	. . . .	0.0095	. . . .	0.0299	. . . .	0.0509	0.0021	0.047	0.042	0.0021	. . . .	70.22			40 x 17	CC
CRM	**36X CN24 A**	(0.002)	0.0056	8.00	0.127	15.41	(0.001)	. . . .	23.60	. . . .	0.0037	. . . .	0.0096	0.0065	(0.001)	0.0466	. . . .	0.0436	52.56		Block	**38 x 13 x 13**	concast

3.6.1a Cu/Ni/Sn (Spinodal Alloy)

		Sn	Ni	Cu	Zn	Fe	Al	Si	Mn	Bi	Sb	P	S	Ag	Pb	Mg	Co	B	Ti	Nb	Size (mm) Ø x H	Form
CRM	**36X SP1 A**	5.75	8.33	84.90	0.344	0.45	0.0020	0.004	0.084	0.0039	0.0177	(0.003)	0.005	0.005	0.0115	. . . .	0.057	0.0007	(0.0004)	(0.031)	40 x 15	CC
CRM	**36X SP2 A**	8.92	15.72	74.91	0.029	(0.09)	0.0003	(0.0023)	0.0019	(0.0027)	0.006	(0.0006)	0.0030	0.0181	0.026	0.0002	0.119	0.0005	(0.0008)	. . . .	40 x 15	CC

3.6.4 Cu/Be/Co

		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Co	Cr	Ag	Mg	Be	Cu	Size (mm) Ø x H	Form
CRM	36X CBC2 E	0.009	0.0099	0.0103	0.0208	0.0472	0.0231	0.0205	0.0015	2.47	0.0044	0.0020	. . . .	0.450	96.96	40 x 17	W
CRM	36X CBC3 D	0.0021	0.0025	0.004	0.046	0.007	0.019	0.039	. . . .	0.209	. . . .	. . . .	0.0040	1.840	97.77	40 x 15	W
CRM	36X CBC4 D	0.003	0.318	0.005	0.026	0.004	0.018	0.041	. . . .	0.207	. . . .	. . . .	0.0070	1.865	97.46	40 x 15	W
CRM	36X CBC5 A	0.01	0.009	0.038	0.028	1.69	0.021	0.036	(0.001)	0.14	0.006	. . . .	. . . .	0.32	97.6	40 x 15	W

3.6.5 Cu/Cr

		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	S	P	Co	Cr	Ag	As	Mg	Zr	Cu	Size (mm) Ø x H	Form
CRM	36X CCR1 E	0.0018	0.0008	(0.001)	0.0170	0.0111	0.0013	. . . .	. . . .	0.0016	0.0223	. . . .	0.652	0.0042	0.0007	(0.0003)	0.079	99.24	50 x 17	W
CRM	36X 274 A	0.0140	0.0021	0.0395	0.0779	2.54	0.0013	0.594	0.0148	0.0035		0.0028	0.531	. . . .	. . . .	. . . .	<0.005	96.23	46 X 17	W

3.7.1 Various Copper Alloys

		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	S	Cr	Co	C	Zr	Cu	Size (mm) Ø x H	Form
CRM	37X 218 A	0.015	0.0025	0.027	0.074	2.52	0.0022	0.58	0.083	0.0014	0.007	0.032	0.0013	0.0022	. . . .	96.57	38 x 17	W
CRM	37X 218 B	0.0032	0.0014	0.0054	0.0209	1.892	0.0018	0.564	0.0022	. . . .	. . . .	0.176	. . . .	. . . .	. . . .	97.29	38 x 15	W
CRM	37X 226 A	0.0030	(0.001)	2.82	1.51	0.0024	0.0020	3.55	0.577	0.0022	0.0005	0.0023	. . . .	0.006	(0.0002)	91.58	57 x 17	W
CRM	37X 65500 A	0.0426	0.0034	0.0353	0.035	0.0059	0.0028	3.13	0.960	0.0046	0.0010	0.0029	. . . .	(0.004)	. . . .	95.75	38 x 15	W
	37X HK7 A #	2.30	5.32	0.38	1.72	30.7	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	59.3	40 x 10	CC

This alloy is for XRF use only

3.8 Residuals in Pure Copper - Wire

All Elements ppm

		Sn	Pb	Zn	Fe	Ni	Ag	As	Mn	Bi	Sb	Co	Cr	Si	P	Cd	Te	Se	S	O	Size (mm) Ø x H	Form
CRM	38X C1 C	(0.01)	(0.05)	<0.1	1.7	0.27	11	0.19	(0.005)	0.10	0.10	. . . .	<0.005	<0.1	<0.05	<0.01	(0.21)	(0.25)	2.0	266	(5 x 80mm pcs.)	Wire

3.9 Residuals in Pure Copper

All Elements ppm

		Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Bi	Sb	P	S	Co	Cr	Cd	Ag	Au	Se	Te	In	Mg	Ge	Size (mm) Ø x H	Form
CRM	39X 17866 AG	1710	280	470	(20)	608	(10)	547	17	128	65	16	520	325	. . . .	52	77	24	72	224	364	. . . .	. . . .	40 x 15	CC
CRM	39X 17867 AD	1150	196	325	. . . .	410	. . . .	387	. . . .	153	143	15	410	194	. . . .	110	79	75	67	78	130	41	62	40 x 15	CC
CRM	39X 17868 AG	1030	1040	1970	1100	222	72	226	123	308	300	510	220	248	. . . .	130	249	101	133	206	76	85	. . . .	40 x 15	CC
CRM	39X 17869 AF	440	880	820	79	102	136	99	23	450	400	163	90	36	. . . .	201	376	53	243	319	37	10	. . . .	40 x 15	CC
CRM	39X 17870 AG	31	447	1290	(400)	62	12	33	. . . .	470	478	12	26	17	. . . .	305	468	9	261	11	78	. . . .	76	40 x 15	CC
CRM	39X 17871 C	48	65	27	(6)	344	11	207	. . . .	530	124	. . . .	54	9	. . . .	58	219	37	287	82	47	. . . .	<10	40 x 15	CC
CRM	39X 27866 A	448	54	287	30	487	. . . .	383	. . . .	47	52	147	469	308	12	139	57	16	28	32	437	. . . .	29	38 x 20	W
CRM	39X 27869 A	106	225	65	30	190	. . . .	98	. . . .	376	362	119	112	36	(2)	28	349	80	127	153	90	. . . .	123	38 x 20	W

All Elements %

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Cr	Cd	Mg	Ag	Au	Se	Te	In	Size (mm) Ø x H	Form
CRM	39X 17872 A	0.180	0.293	0.107	(0.045)	0.0537	0.0118	. . . .	0.0203	0.0055	0.0240	0.0217	0.0045	0.0242	0.0102	. . . .	0.0013	. . . .	0.0214	(0.002)	0.0103	0.0208	0.0241	42 x 15	C
CRM	39X 17873 A	0.0274	0.065	0.0231	0.019	0.0173	0.015	0.030	0.0209	0.0182	0.0233	0.0229	0.078	0.0206	0.0233	0.0231	0.0052	0.011	0.0228	. . . .	0.0114	0.0070	0.0212	40 x 15	C

4.1 Residuals in Pure Zinc

All elements ppm

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Tl	In	Hg	Size (mm) Ø x H	Form
CRM	41X Z1 Q	27.6	(1)	(1.1)	12.0	28.2	5.1	11.6	1.4	4.7	3.0	(2.4)	2.8	2.6	3.4	50 x 20	C
CRM	41X Z2 P	40.0	(3.3)	1.5	21.4	33.1	19.7	20.1	11.1	34.1	11.6	2.0	11.2	11.1	15.0	50 x 20	C
CRM	41X Z3 M	50.2	(3.4)	15.8	32.7	60.5	29.7	34.5	20.9	52.4	31.5	16.7	21.0	23.3	28.9	50 x 20	C
CRM	41X Z4 L	58.4	33.1	65	43.7	148	22.1	32.6	32.0	28.6	31.9	34.0	27.7	30.4	25	50 x 20	C
CRM	41X Z5 N	286	107	243	165	262	63.2	109	51.4	49.4	56	54	68	57.3	50	50 x 20	C
CRM	41X Z6 A	310	<5	96	93	(20)	38	88	2	2	122	. . . .	4	228	. . . .	50 x 20	C
CRM	41X Z11 A	77	. . . .	261	155	19	72	116	. . . .	. . . .	189	26	(10)	345	(9)	50 x 20	C

4.1.1 Zinc with Impurities

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Tl	Ag	As	Size (mm) Ø x H	Form
CRM	41X 0336Zn1 L	1.007	0.0062	0.0177	0.0067	0.0106	0.0051	0.0088	0.0009	0.0102	. . . .	. . . .	. . . .	. . . .	0.0008	50 x 20	C
CRM	41X 0336Zn2 M	0.486	0.099	1.55	0.145	(0.01)	0.038	0.354	0.0137	0.0212	0.0099	0.0007	0.0012	0.0102	0.0009	50 x 20	C
CRM	41X 0336Zn3 K	0.0282	0.147	0.336	0.341	0.0456	0.127	0.353	0.0022	0.0106	. . . .	. . . .	. . . .	. . . .	0.0003	50 x 20	C
CRM	41X 0336Zn5 A	0.91	<0.0005	0.035	0.056	0.016	0.21	0.023	(0.0005)	(0.0001)	(0.001)	0.008	. . . .	. . . .	. . . .	50 x 20	C

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Cr	Co	Ag		Size (mm) Ø x H	Form
CRM	41X 4380Zn1 D **	*0.065*	*0.003*	*0.039*	*0.39*	*0.025*	*0.055*	*0.18*	*0.006*	*0.0005*	*0.002*	*0.002*	*0.0005*	*0.0005*	. . . .	*0.003*	** provisional values	50 x 20	C
CRM	41X 4380Zn2 C	0.268	0.0243	0.0153	0.284	0.048	0.0021	0.0288	0.0023	0.0087	0.0076	0.0093	0.0251	0.0027	. . . .	. . . .		50 x 20	C
CRM	41X 4380Zn3 C	0.180	0.0220	0.0203	0.0950	0.017	0.080	0.073	0.0120	0.0180	0.0103	0.0046	0.125	0.0029	. . . .	. . . .		50 x 20	C
CRM	41X 4380Zn4 D	0.310	0.118	0.446	0.086	0.017	0.0416	0.0284	0.0172	0.0092	0.0101	0.0156	(0.0003)	0.0029	0.0018	. . . .		50 x 20	C
CRM	41X 4380Zn5 C	0.140	0.00165	0.0215	0.0571	0.0120	0.0101	0.071	0.00147	0.035	0.0308	0.0061	0.339	0.0075	. . . .	. . . .		50 x 20	C
CRM	41X 4380Zn6 D	0.427	0.0044	0.0260	0.0466	0.0307	0.101	0.0327	0.0073	0.200	0.0047	(0.002)	0.0029	0.0064	0.0091	0.0030		50 x 20	C
CRM	41X 4380Zn7 D	1.18	0.0029	0.277	0.0156	0.0018	0.0036	0.0133	0.0120	0.0036	. . . .	0.086	0.0065	. . . .	. . . .	. . . .		50 x 20	C
CRM	41X 4380Zn8 D **	*0.71*	*0.006*	*0.24*	*0.010*	*0.008*	*0.018*	*0.020*	*0.045*	*0.008*	*0.015*	*0.016*	*0.002*	*0.0005*	. . . .	*0.013*	** provisional values	50 x 20	C
CRM	41X 4380Zn9 A	0.0139	0.0153	0.295	0.0032	0.0113	0.0008	0.0416	0.0009	0.0018	0.00046	0.0060	. . . .	0.0015	. . . .	. . . .		50 x 20	C
CRM	41X 4380Zn10 A	0.0043	0.184	0.0004	0.0007	0.49	0.0014	0.0022	0.063	. . . .	. . . .	0.0005	. . . .	0.117	. . . .	. . . .		50 x 18	C

4.1.2 Galvanising Alloys

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	As	Cr	Co	V		Size (mm) Ø x H	Form
CRM	41X GLV1 D	0.0224	0.0008	0.202	0.0100	0.021	0.0134	0.0169	0.0019	. . . .	0.0040	0.0010	0.0002	. . . .	0.0003	. . . .		50 x 20	C
CRM	41X GLV2 B	0.259	0.0006	0.111	0.0037	0.143	0.0148	0.0050	0.0145	(0.033)	0.0172	0.0071	0.0035	0.014	0.0024	. . . .		50 x 20	C
CRM	41X GLV3 B	0.0091	0.00145	0.334	0.0188	0.0031	0.0060	0.0260	0.0300	0.0111	0.0016	0.058	(0.0007)	0.00084	0.00150	. . . .		50 x 20	C
CRM	41X GLV4 C	0.0062	0.0034	0.514	0.0006	0.0028	0.0024	0.0321	0.0441	0.0089	0.0061	0.0287	(0.0003)	0.0007	0.0037	. . . .		50 x 20	C
CRM	41X GLV4 D	0.0058	0.0025	0.503	0.0013	0.008	0.0035	0.0246	0.0078	0.164	0.0047	0.0235	0.0002	0.0010	0.0061	. . . .		50 x 20	C
CRM	41X GLV5 B	0.0166	0.0014	0.0139	0.0136	0.0443	0.0172	0.0103	0.0025	. . . .	0.0098	0.148	0.00044	. . . .	0.0011	. . . .		50 x 20	C
CRM	41X GLV6 A	0.120	. . . .	0.474	0.0053	0.0047	0.0152	0.039	0.0008	0.0013	0.0248	0.0112	0.0014	0.0029	0.0047	<0.0005		50 x 20	C
CRM	41X GLV7 A	0.082	. . . .	0.399	0.00056	0.0031	(0.0006)	0.023	0.0060	0.0025	0.0108	0.0031	0.0016	0.0010	(0.0001)	<0.0001		50 x 20	C
CRM	41X GLV8 B **	*0.004*	*0.001*	*0.28*	*0.0005*	*0.008*	*0.0005*	*0.011*	*0.0025*	*0.0035*	*0.0005*	*0.006*	. . . .	*0.0005*	. . . .	. . . .	** provisional values	50 x 20	C
CRM	41X GLV9 A	0.0043	0.0014	0.547	0.0028	0.0039	0.0028	0.0037	0.0009	0.0027	0.0019	0.0048	. . . .	. . . .	0.0005	. . . .		50 x 20	C
CRM	41X GLV10 A	0.0066	0.0040	0.969	0.0030	0.0051	0.0062	0.0073	0.0022	0.0062	0.0031	0.0009	. . . .	. . . .	0.0002	. . . .		50 x 20	C
CRM	41X CGL F	0.046	. . . .	0.28	(0.0015)	. . . .	<0.001	(0.0005)	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .		42-48 x 20	C

4.1.3 Zn/Mn, Zn/Mg, Zn/Ni & Zn/Sb Binaries

		Pb	Al	Cd	Fe	Cu	Ni	Mn	Mg	Sb	Sn	Bi	Size (mm) Ø x H	Form
	41X ZMn1 A	(0.0026)	(0.0001)	(0.0002)	(0.0025)	(0.0005)	(0.0009)	1.07	. . . .	. . . .	. . . .	. . . .	50 x 20	C
	41X ZMg1 A	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	1.13	. . . .	. . . .	. . . .	40 x 15	C
	41X ZMg3 A	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	2.80	. . . .	. . . .	. . . .	40 x 15	C
CRM	**41X ZNiBi A**	0.0187	0.050	0.0020	0.0133	0.0132	2.02	. . . .	. . . .	. . . .	0.154	0.502	50 x 20	C
CRM	**41X ZNi2 A**	0.0172	0.0135	0.0010	0.0061	0.0056	1.97	. . . .	. . . .	. . . .	0.141	0.0050	50 x 20	C
	41X ZSb1 A	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	1.03	. . . .	. . . .	40 x 15	C
	41X ZSb4 A	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	3.78	. . . .	. . . .	40 x 15	C
	41X ZSb8 A	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	7.68	. . . .	. . . .	40 x 15	C

4.1.4 Special Alloys

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Ti	Cr	Size (mm) Ø x H	Form
CRM	**41X 2951Zn1 A**	0.0042	0.0029	0.029	0.0005	0.011	(0.0007)	0.79	0.0038	0.0013	0.278	0.083	50 x 20	C
CRM	**41X 2951Zn2 A**	0.0040	0.0123	0.032	0.0037	0.019	(0.0015)	1.37	0.0027	0.0011	0.209	0.142	50 x 20	C
CRM	**41X 2951Zn3 A**	0.0065	0.0164	0.078	0.0062	0.029	(0.006)	1.89	0.0010	0.0018	0.133	0.184	50 x 20	C

4.1.5 RoHS Monitors

		Pb	Cd	Hg	Cr	Size (mm) Ø x H	Form
CRM	**41X ZSC1 A**	0.0621	0.0288	0.026	0.0039	50 x 20	C
CRM	**41X ZSC2 A**	0.111	0.0016	0.0053	0.0036	50 x 20	C
CRM	**41X ZSC3 A**	0.0273	0.119	0.0021	0.0148	50 x 20	C
CRM	**41X ZSC4 A**	0.156	0.0131	0.050	0.0299	50 x 20	C
CRM	**41X ZSC6 A**	0.0077	0.215	0.029	<0.0002	50 x 20	C

4.2 Zn/Al

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Sb	Cr	Si	Tl	In	Ce	La	Zr	Size (mm) Ø x H	Form
CRM	**42X Z1 J**	0.0017	0.0009	4.66	0.0014	0.013	0.0007	0.0050	0.0014	0.0038	0.0011	0.0004	(0.002)	. . . .	. . . .	0.0011	(0.0008)	. . . .	50 x 20	C
CRM	**42X Z2 K ****	*0.0025*	*0.014*	*3.8*	*0.0015*	*0.006*	*0.0005*	*0.028*	*0.016*	*0.030*	*0.0005*	*0.0005*	*0.001*	. . . .	. . . .	*0.005*	*0.003*	** provisional values	50 x 20	C
CRM	**42X Z3 J**	0.0068	0.0503	3.84	0.0065	0.0145	0.0048	0.135	0.0071	0.0090	0.0006	. . . .	(0.002)	. . . .	. . . .	0.0032	0.0013	. . . .	50 x 20	C
CRM	**42X Z4 J**	0.0133	0.0663	3.52	0.0065	0.019	0.0052	0.0752	0.0170	0.0083	. . . .	(0.0002)	0.006	. . . .	0.0025	0.0361	0.0183	. . . .	50 x 20	C
CRM	**42X Z5 L**	0.0051	0.0471	4.24	0.0027	0.021	0.0022	0.1095	0.0325	0.0023	. . . .	(0.0002)	. . . .	(0.001)	0.0037	0.0277	0.0138	. . . .	50 x 20	C
CRM	**42X Z6 B**	0.0093	0.177	3.67	0.0039	0.008	0.0057	0.238	0.00030	0.0157	0.0169	0.0034	(0.010)	0.0021	0.0019	(0.012)	(0.011)	. . . .	50 x 20	C
CRM	**42X Z7 B**	0.0097	0.0095	4.39	0.030	0.027	0.012	0.0249	0.0067	0.0045	. . . .	(0.0001)	0.006	. . . .	. . . .	0.072	0.061	. . . .	50 x 20	C
CRM	**42X Z8 A**	0.0025	0.0033	7.03	0.0003	0.013	(0.002)	0.0215	0.0019	0.0014	. . . .	(0.0002)	0.013	. . . .	. . . .	0.0081	0.0079	. . . .	50 x 20	C
CRM	**42X Z9 A**	0.0021	0.0464	5.58	0.0054	0.032	(0.0004)	0.0070	(0.0003)	0.0006	. . . .	. . . .	(0.004)	. . . .	. . . .	0.0047	0.0044	0.011	50 x 20	C
CRM	**42X Z11 A**	0.0058	0.0329	3.19	0.0020	(0.036)	0.0017	0.093	0.0241	0.0196	0.0047	0.0016	. . . .	0.0047	0.0037	0.0014	(0.0009)	. . . .	50 x 20	C
CRM	**42X Z12 A**	0.0079	0.0488	4.72	0.00277	0.046	0.0022	0.156	0.0413	0.0483	0.0070	0.00063	. . . .	0.0076	0.0068	0.0116	0.0084	. . . .	50 x 20	C
CRM	**42X Z15 A**	0.0074	0.0026	9.99	0.0023	0.026	0.0006	0.0028	0.0017	0.0037	0.0006	0.0003	. . . .	. . . .	0.0024	. . . .	. . . .	. . . .	50 x 20	C
CRM	**42X Z16 A**	0.0090	0.105	12.28	0.0045	0.033	0.0034	0.235	0.0039	0.0028	. . . .	0.0007	0.011	(0.003)	0.0051	. . . .	. . . .	. . . .	50 x 20	C

4.3 Zn/Al/Cu

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Cr	Si	Be		Size (mm) Ø x H	Form
CRM	**43X Z1 K**	0.0038	0.0256	4.50	0.0014	0.0070	0.0019	0.717	0.0010	0.0014	0.0015	0.0007	. . . .	0.0007	. . . .	. . . .		50 x 20	C
CRM	**43X Z2 M**	0.0106	0.0828	3.89	0.0053	0.0081	0.0099	1.004	0.0024	0.0086	0.0022	0.0068	0.0008	0.0063	0.011	. . . .		50 x 20	C
CRM	**43X Z2 N**	0.0125	0.0885	4.02	0.0080	0.0023	0.0052	1.049	0.0022	0.099	0.0027	0.0062	0.0008	0.0011	(0.001)	. . . .		50 x 20	C
CRM	**43X Z3 M**	0.0077	0.114	3.40	0.0109	(0.042)	0.0058	1.499	0.0062	0.0013	0.0092	0.0029	. . . .	0.0046	. . . .	. . . .		50 x 20	C
CRM	**43X Z4 C**	0.0062	0.0480	4.79	0.0033	0.0017	0.0030	2.69	0.0258	0.0153	0.0113	(0.002)	. . . .	. . . .	(0.001)	. . . .		50 x 20	C
CRM	**43X Z5 A**	0.0045	0.041	3.05	0.0111	0.023	0.0032	6.05	0.0021	0.0030	. . . .	. . . .	0.0009	0.0010	0.003	. . . .		50 x 20	C
CRM	**43X Z6 B**	0.005	0.0238	4.51	0.0031	0.024	0.0052	2.85	0.0027	0.0022	0.0054	0.0044	. . . .	0.0005	. . . .	. . . .		50 x 20	C
CRM	**43X Z7 A**	0.0058	0.062	3.68	0.00092	0.029	0.0031	3.14	0.0005	0.0025	(0.001)	0.0016	0.067	0.0003	. . . .	0.0194	Beric type Alloy	50 x 20	C
CRM	**43X Z8 A**	0.0027	0.00155	2.51	0.00090	(0.002)	(0.0005)	0.481	0.00033	0.00021	. . . .	. . . .	. . . .	0.00024	. . . .	. . . .		50 x 20	C
CRM	**43X Z9 A**	0.0078	0.0472	3.17	0.0034	0.073	0.0020	4.82	0.0027	0.0108	0.0033	0.0033	0.0012	0.0034	. . . .	0.0010		50 x 20	C
CRM	**43X Z10 A**	0.0046	0.0403	3.99	0.0014	0.007	0.0012	2.97	0.0036	0.0050	. . . .	. . . .	. . . .	0.0003	0.009	. . . .		50 x 20	C
CRM	**43X Z11 F**	0.0202	0.0357	11.12	0.0175	0.015	0.0145	0.335	0.0014	0.0032	0.0046	0.0009	. . . .	(0.0003)	0.0013	. . . .		50 x 20	C
CRM	**43X Z12 E**	0.0041	0.0287	10.38	0.0045	0.037	0.0017	0.791	0.0033	0.0026	0.0021	0.0032	0.0050	0.0008	(0.002)	. . . .		50 x 20	C
CRM	**43X Z13 E**	0.0086	0.0198	9.01	0.0072	0.0045	0.0056	1.113	0.0036	0.0025	0.0014	0.0020	. . . .	0.0004	(0.001)	. . . .		50 x 20	C
CRM	**43X Z14 E**	0.015	0.0133	8.05	0.0083	0.031	0.0054	1.13	0.0066	0.0050	0.0096	0.0089	0.0014	0.0047	0.016	. . . .		50 x 20	C
CRM	**43X Z15 C**	0.0054	0.0024	7.36	0.0030	0.009	0.004	1.53	0.0019	0.0020	0.005	0.005	0.0020	0.0025	(0.011)	. . . .		50 x 20	C
CRM	**43X Z21 C**	0.012	0.047	23.5	0.027	0.12	0.0140	1.81	0.043	0.0104	. . . .	. . . .	0.013	0.0087	0.022	. . . .		50 x 20	C
CRM	**43X Z22 D**	0.0053	0.0099	27.4	0.0043	0.068	0.0020	2.11	0.0101	0.0057	. . . .	. . . .	0.0073	0.0010	0.019	. . . .		50 x 20	C
CRM	**43X Z23 E**	0.0112	0.0242	30.7	0.0042	0.055	0.0115	3.22	0.0236	0.0090	. . . .	. . . .	0.0045	0.0147	0.077	. . . .		50 x 20	C

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Cr	Si	Ce	La		Size (mm) Ø x H	Form
CRM	**43X SC1 A**	0.0150	0.740	3.75	0.0011	0.073	0.0082	1.903	0.0161	0.0201	0.0082	0.022	. . . .	. . . .		50 x 20	C
CRM	**43X SC2 A**	0.0097	0.498	3.41	0.0018	0.046	0.0031	4.80	0.0096	0.0183	0.023	0.0133	. . . .	. . . .		50 x 20	C
CRM	**43X SC3 A**	0.0066	0.257	3.14	0.0028	0.018	0.0078	3.03	0.0261	0.0337	0.0108	0.022	. . . .	. . . .	spin-casting alloys	50 x 20	C
CRM	**43X SC4 A**	0.0064	0.093	4.35	0.0058	0.022	0.0056	1.122	0.0249	0.044	0.009	0.022	. . . .	. . . .		50 x 20	C
CRM	**43X GALF1 A**	0.0505	0.0999	4.68	0.0499	0.061	0.0514	4.39	. . . .	. . . .	. . . .	. . . .	0.0569	0.0284		50 x 20	C
CRM	**43X GALF2 A**	0.0050	0.0504	5.40	0.0043	0.032	0.0040	0.0585	. . . .	. . . .	. . . .	. . . .	0.0318	0.0158		50 x 20	C
CRM	**43X GALF3 A**	0.0032	0.0099	8.37	0.0018	0.018	0.0025	0.507	. . . .	. . . .	. . . .	. . . .	0.0152	0.0076	galfan-type alloys	50 x 20	C
CRM	**43X GALF4 A**	0.0122	0.0062	10.71	0.0108	0.074	0.0110	2.470	. . . .	. . . .	. . . .	. . . .	0.079	0.041		50 x 20	C
CRM	**43X GALF5 A**	0.0084	0.0016	15.03	0.0080	(0.072)	0.0081	0.0114	. . . .	. . . .	. . . .	. . . .	0.0041	0.0019		50 x 20	C

4.4 High Alloy Zinc

	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Bi	Sb	Ag	Size (mm) Ø x H	Form
44X ZnCd30 A	0.09	. . . .	. . . .	31.0	0.002	0.05	0.05	0.001	0.05	1.03	0.05	40 x 15	C

4.5 Zn/Al 'Galvalume'

	Zn	Si	Fe	Cu	Ni	Sn	Pb	Mg	Ca	Ti	Li	Sr	Al		Size (mm) Ø x H	Form
45X ZnAl1 B	24.6	3.07	0.22	0.057	. . . .	0.017	0.021	0.044	0.0021	0.016	0.0015	. . . .	bal.		55 x 6	CC
45X ZnAl7 C **	*46.5*	*1.60*	*0.078*	*0.006*	*0.005*	*0.009*	*0.008*	*0.006*	. . . .	*0.005*	. . . .	*0.000*	*(bal)*	** provisional values	55 x 6	CC
45X ZnAl7 D **	*43.5*	*1.55*	*0.15*	*0.010*	*0.003*	*<0.001*	*0.005*	*<0.001*	. . . .	*0.025*	. . . .	*(0.007)*	*(bal)*	** provisional values	55 x 6	CC
45X ZnAl11 A	27.4	2.21	0.139	0.037	. . . .	0.008	0.010	0.011	0.0020	0.012	(0.001)	. . . .	bal.		55 x 6	CC

5.1.1 Residuals in Aluminium

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Zr	Co	V	Ag	Bi	Sb	Cd	Ga	As	Hg	Size (mm) Ø x H	Form
CRM	51X G00H1 D	0.0131	0.054	0.142	0.831	0.0074	0.231	0.243	0.0021	0.096	0.0135	0.0061	(0.001)	....	0.0081	....	0.023	(0.003)	....	....	....	....	40x15 or 50x20	C
CRM	51X G00H2 E	0.111	0.093	0.350	0.356	0.154	0.119	0.113	0.114	0.0065	0.128	0.0174	0.0150	....	0.0148	....	0.011	0.0265	0.0031	0.011	(0.005)	....	40x15 or 50x20	C
CRM	51X G00H3 D	0.399	0.0077	0.895	0.313	0.210	0.0115	0.097	0.055	0.083	0.0043	0.095	0.0095	0.0042	0.0142	0.0079	0.076	0.0025	0.0186	0.010	(0.0003)	<0.001	50 x 20	C
CRM	51X G00H4 B	0.051	0.024	0.028	0.072	0.0309	0.036	0.151	0.021	0.031	0.029	0.040	0.0261	0.030	0.0108	....	0.0202	....	0.0208	0.022	0.0014	0.012	50 x 20	C
CRM	51X G00H5 B	0.227	0.110	0.739	0.490	0.196	0.161	0.479	0.130	0.201	0.100	0.0249	0.0005	0.045	0.0295	0.11	0.130	0.056	0.0103	0.0122	(0.0005)	<0.001	50 x 20	C
CRM	51X A1350 A	0.0016	0.0032	0.0232	0.0968	0.0019	0.0071	0.0148	(0.001)	0.0005	0.0029	0.0024	0.0007	0.0005	0.0042	....	....	....	....	0.0137	....	....	50 x 20	W

5.4 Al/Si

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Sb	Cd	Sr	Ga	Zr	Li	Size (mm) Ø x H	Form
CRM	54X G231H1 D	1.141	0.342	10.52	0.945	0.0568	0.349	0.726	0.096	0.156	0.0233	0.107	....	....	0.0018	....	....	....	0.010	....	....	....	50 x 15	C
CRM	54X G231H2 C	0.868	0.159	11.6	0.131	0.191	0.171	0.397	0.082	0.127	0.085	0.0469	....	....	0.0146	....	....	....	(0.0006)	....	....	....	50 x 15	C
CRM	54X G231H3 C	0.420	0.039	13.17	0.393	0.477	0.0932	0.130	0.0080	0.0139	0.128	0.0630	....	....	0.0003	....	....	....	....	....	....	....	50 x 15	C
CRM	54X GS20J1 E	0.308	0.186	18.8	0.79	0.097	0.159	0.43	0.120	0.130	0.129	0.115	....	....	(0.0001)	....	....	....	<0.0001	....	....	....	40x13 or 50x17	C
CRM	54X GS20J2 E	0.168	0.178	18.7	0.56	0.059	0.091	0.305	0.066	0.075	0.082	0.066	....	....	<0.0001	....	....	....	<0.0001	....	....	....	40x13 or 50x17	C
CRM	54X GS20J3 D	0.079	0.118	23.9	0.328	0.302	(0.003)	0.030	0.077	(0.012)	0.0055	0.0017	....	....	<0.0001	....	....	....	<0.0001	....	....	....	40x13 or 50x17	C
CRM	54X GS20J4 D	(0.0037)	0.0050	25.5	0.227	0.146	0.265	0.224	0.0014	(0.0021)	0.107	0.194	....	....	0.0017	....	....	....	(0.002)	....	....	....	40x13 or 50x17	C
CRM	54X G06H1 R	0.630	0.489	8.43	1.08	0.022	0.611	0.60	0.082	0.133	0.248	0.084	0.015	0.010	....	0.006	....	0.0074	....	....	....	<0.001	40x13 or 50x17	C
CRM	54X G06H2 S	0.54	0.40	10.19	0.640	0.234	0.55	0.47	0.213	0.116	0.179	0.130	0.0086	0.018	....	0.027	....	(0.0004)	....	....	....	(0.0044)	40x13 or 50x17	C
CRM	54X G06H3 P	0.322	0.202	9.94	0.510	0.345	0.214	0.0270	0.0203	0.0488	0.079	0.0530	0.0208	0.0278	....	0.0067	....	0.0048	....	....	....	....	50 x 15	C
CRM	54X G06H4 Q	0.237	0.134	13.21	0.138	0.691	0.139	0.131	0.040	(0.007)	0.124	0.120	0.207	0.011	....	....	....	....	(0.005)	....	....	<0.001	40x13 or 50x17	C
CRM	54X G06H5 L	0.0229	(0.0022)	13.76	0.210	0.85	0.0067	0.225	(0.0020)	0.022	0.0106	0.026	....	0.008	....	....	....	(0.0002)	....	....	....	(0.0001)	40x13 or 50x17	C
CRM	54X G13H1 N	1.87	2.89	8.91	0.801	0.0137	1.83	0.37	0.240	0.260	0.112	0.062	0.0051	....	0.0078	<0.001	<0.005	....	<0.001	....	<0.005	....	40x13 or 50x17	C
CRM	54X G13H2 M	1.29	1.37	10.42	0.767	0.248	1.15	0.530	0.083	0.145	0.166	0.103	0.004	....	...	....	....	....	....	....	....	....	40x13 or 50x17	C
CRM	54X G13H3 M	0.82	0.89	10.2	0.79	0.43	0.95	0.42	0.050	0.092	0.152	0.060	0.009	....	0.0075	....	....	....	....	....	(0.004)	....	40x13	C
CRM	54X G13H4 P	0.688	0.644	12.41	0.534	0.227	0.789	0.443	0.062	0.060	0.109	0.0283	0.0048	....	0.0018	....	....	....	0.045	....	0.0165	....	50 x 15	C
CRM	54X G13H5 L	0.216	0.092	13.26	0.715	0.119	0.115	0.070	0.013	0.009	0.032	0.044	0.0016	....	0.0049	....	....	....	(0.033)	....	....	....	50 x 15	C
CRM	54X G25D1 L	0.010	0.67	3.37	0.721	0.815	0.262	0.359	(0.0033)	<0.005	0.099	0.140	....	0.016	0.0011	0.112	....	....	....	....	(0.004)	....	40x15 or 50x20	C
CRM	54X G25D2 K	0.130	0.59	3.93	0.576	0.479	0.139	0.169	0.073	0.042	0.152	0.150	0.105	(0.006)	0.049	0.22	....	0.011	....	....	....	....	40x15 or 50x20	C
CRM	54X G25D3 S	0.119	0.386	6.29	0.379	0.253	0.0353	0.102	0.050	0.046	0.067	0.0413	0.0086	0.0047	0.0022	....	....	....	(0.045)	....	....	....	50 x 15	C
CRM	54X G25D4 N	0.161	0.074	7.41	(0.115)	0.091	0.095	0.107	0.160	0.091	(0.131)	0.021	0.049	(0.002)	0.0191	0.092	....	0.0176	....	....	....	....	40x15	C
CRM	54X G25D5 L	0.273	(0.0011)	8.14	0.191	(0.0046)	0.0082	0.020	0.273	0.130	0.0068	0.0097	0.0024	(0.0025)	0.022	....	....	....	....	....	....	....	40x15 or 50x20	C
CRM	54X G25D6 A	0.0021	0.715	5.97	0.080	0.0096	0.0044	0.0050	(0.003)	(0.002)	0.0071	0.0009	....	0.0133	0.0220	....	....	....	....	0.0027	....	....	50 x 15	C
CRM	54X G25DX A **	*0.020*	*0.40*	*7.15*	*0.08*	*0.029*	*0.008*	*0.035*	*0.004*	*0.001*	*0.158*	*0.006*	....	*0.008*	....	** provisional values			....	*0.020*	*0.007*	....	65 x 30	HIP

5.5 Al/Si/Cu

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Bi	Sb	Zr	Be	Li	Size (mm) Ø x H	Form
CRM	55X G900J1 F	0.895	0.962	0.128	0.549	0.0134	0.0048	0.152	0.202	0.350	0.0056	0.0011	....	0.0110	0.0705	....	0.0242	0.0011	....	50 x 15	C
CRM	55X G900J2 G	0.726	0.594	0.227	0.504	0.192	0.083	0.295	0.217	0.240	0.079	0.080	....	....	0.366	0.0374	0.0637	0.0035	(0.007)	50 x 15	C
	55X G900J3 F	0.41	0.38	0.82	0.29	0.56	0.21	0.39	0.14	0.15	0.16	0.25	0.070	....	....	(0.029)	....	....	....	40 x 15	C
CRM	55X G900J4 F	0.249	0.459	1.39	0.306	0.75	0.351	0.149	0.088	0.153	0.171	0.343	....	(0.010)	0.285	....	....	....	....	40x15 or 50x20	C
	55X G900J5 E	0.024	0.009	1.65	0.18	1.16	0.41	0.023	0.014	0.006	0.33	0.46	....	....	....	....	....	....	....	40x15 or 50x20	C

5.5 Al/Si/Cu (continued)

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Sb	Ag	Ca	P	Cd	Zr	Size (mm) Ø x H	Form
CRM	55X G02D5 A	0.406	0.331	10.03	0.557	0.391	0.0652	0.131	0.067	0.051	0.0180	0.760	0.0752	0.0129	0.0037	....	0.031	....	....	....	0.0182	....	50 x 15	C
CRM	55X G02D6 K	0.510	0.376	11.55	0.528	0.300	0.0511	0.577	0.0580	0.0355	0.055	0.366	0.0195	0.0182	0.0026	....	0.0150	....	....	....	0.0115	....	50 x 15	C
CRM	55X G02D7 N	1.35	0.332	9.79	0.950	0.502	0.192	0.786	0.311	0.158	0.195	0.0481	0.0419	0.0208	0.0012	....	0.0039	....	....	....	0.0022	....	50 x 13	C
CRM	55X G02D8 L	2.36	0.119	9.38	0.779	0.443	0.364	1.38	0.248	0.239	0.182	0.0704	0.0303	0.0438	0.0008	....	0.0245	....	....	....	0.0049	....	50 x 13	C
CRM	55X G02D8 M **	*2.45*	*0.15*	*9.05*	*0.78*	*0.26*	*0.42*	*1.45*	*0.20*	*0.20*	*0.155*	*0.078*	*0.011*	*0.053*	....	....	*0.012*	** provisional values			*0.0035*	....	65 x 30	HIP
CRM	55X G02D9 K	3.50	0.0935	8.49	0.427	0.260	0.497	2.49	0.102	0.185	0.096	0.184	0.0074	0.0220	0.0035	0.0335	0.049	....	....	....	0.0012	....	50 x 15	C
CRM	55X G02D10 L	4.59	0.0206	7.33	0.975	0.0524	0.645	2.77	0.022	0.138	0.0302	0.128	0.0544	0.0341	0.0389	....	0.0086	....	....	....	0.0012	....	50 x 15	C
CRM	55X G02DX A	2.33	0.118	9.58	0.773	0.247	0.206	1.030	0.029	0.0288	0.0410	0.0321	0.0108	0.0129	0.0020	0.020	....	0.0052	(0.001)	0.0053	0.0011	0.0103	65 x 30	HIP
CRM	55X G02DY A	3.67	0.309	11.31	0.591	0.107	0.109	0.153	0.0620	0.0747	0.0687	0.063	0.0195	0.0250	0.0012	0.0100	....	0.0102	(0.001)	0.0100	0.0032	0.0218	65 x 30	HIP
CRM	55X G04HX A	3.40	0.063	5.78	0.280	0.193	0.302	0.492	0.0125	0.0112	0.176	0.0165	0.0060	0.0183	0.0006	0.0058	0.0053	0.0030	0.0011	(0.002)	0.0048	0.0278	65 x 30	HIP

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Bi	Ca	Cd	Sr	Ga	Na	Li	P	Size (mm) Ø x H	Form
CRM	55X G04H2 D	3.21	0.360	5.22	0.349	0.203	0.0104	0.185	0.0159	0.0049	0.0553	0.0108	....	....	....	0.0010	....	0.0025	....	(0.0009)	....	(0.0020)	45 x 20	C
CRM	55X G04H3 N	3.67	0.173	5.56	0.643	0.362	0.0100	0.507	0.025	0.0047	0.109	0.0136	....	....	....	0.0010	....	0.0022	....	(0.0009)	....	0.0021	45 x 20	C
CRM	55X G04H6 E	5.56	0.151	3.30	0.83	0.028	0.77	0.199	0.221	0.181	0.126	0.126	0.0024	0.014	0.029	....	0.0039	....	....	....	0.019	....	40x15 or 50x20	C
CRM	55X G04H7 E	4.65	0.263	4.43	0.633	0.212	0.500	0.537	0.227	0.174	0.0476	0.035	0.030	0.0057	0.022	....	0.0073	....	....	....	0.0066	....	40x15 or 50x20	C
CRM	55X G04H8 J	2.86	0.126	4.96	0.529	0.255	0.197	0.998	0.128	0.0809	0.179	0.0301	0.0160	0.0214	0.007	....	0.0055	....	....	....	0.0033	....	50 x 15	C
CRM	55X G04H9 E	2.70	0.043	6.60	0.393	0.436	0.160	1.70	0.101	0.0563	0.117	0.0172	0.0114	0.0188	(0.0037)	....	0.0018	....	....	....	(0.0028)	....	50 x 15	C
CRM	55X G04H10 D	1.36	0.004	7.21	0.512	0.532	0.0232	2.26	(0.0074)	<0.01	0.0097	0.090	0.043	0.008	0.029	....	....	....	0.011	....	(0.001)	....	40x15 or 50x20	C
	55X G26H1 F	4.34	0.29	7.69	1.78	0.015	0.012	1.14	0.24	(0.008)	0.21	0.20	0.022	0.012	0.07	....	....	....	....	....	....	....	40x15 or 50x20	C
CRM	55X G26H2 F	4.14	1.49	9.36	0.71	0.52	0.41	0.64	0.111	0.110	0.120	0.083	0.052	0.011	0.035	....	(0.0024)	....	....	....	....	....	40x15 or 50x20	C
	55X G26H3 F	2.19	1.01	9.6	1.07	0.45	0.51	0.79	0.23	0.16	0.147	0.130	0.076	0.020	....	....	....	....	....	....	....	....	40x15 or 50x20	C
CRM	55X G26H4 D	3.72	1.64	10.37	0.511	0.165	0.909	0.286	0.120	0.234	0.304	0.0623	....	0.0189	(0.025)	....	....	....	....	....	....	....	40x15 or 50x20	C
CRM	55X G26H5 E	1.40	1.41	11.38	0.199	0.495	1.13	0.008	0.0108	0.035	0.018	0.0394	0.015	0.0169	0.0201	....	....	....	....	....	....	....	50 x 20	C

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Sb	Cd	P	Bi	Ca	Size (mm) Ø x H	Form
CRM	55X G28J1 Z	1.82	1.26	14.33	0.678	0.024	2.47	0.258	0.0036	0.182	0.104	0.319	0.119	0.0095	....	....	....	(0.0048)	....	....	40x13 or 50x17	C
CRM	55X G28J2 T	1.44	0.0902	15.04	0.516	0.231	1.63	0.292	0.058	0.136	0.065	0.088	0.0029	0.0221	(0.0002)	0.030	0.0023	....	....	....	50 x 20	C
	55X G28J3 U	1.45	1.30	21.6	0.43	0.33	1.47	0.30	0.07	0.11	0.07	0.09	....	....	....	....	....	....	....	....	40x13 or 50x17	C
CRM	55X G28J4 T	0.82	0.60	20.4	0.52	0.45	0.84	0.32	0.094	0.041	0.28	0.040	0.079	0.010	....	....	....	(0.002)	....	....	40x13 or 50x17	C
	55X G28J5 Y	0.69	0.73	27.6	0.26	0.67	0.43	0.015	0.18	0.03	0.24	0.009	....	....	....	....	....	<0.005	....	....	40 x 13	C
CRM	55X G28J6 A	(0.035)	(0.032)	27.15	(0.26)	(0.12)	<0.01	(0.052)	(0.008)	<0.002	(0.024)	(0.006)	....	....	....	(0.007)	(0.038)	....	....	....	65 x 30	SC
CRM	55X A30J1 H	5.75	1.03	14.6	1.07	0.132	0.014	0.233	0.135	0.006	0.194	0.031	0.091	0.0114	0.0043	....	....	(0.004)	0.015	....	40x13 or 50x17	C
CRM	55X A30J4 G	3.21	0.508	16.4	0.511	0.350	0.164	0.067	0.0257	0.0190	0.0231	0.0752	....	0.020	....	....	....	(0.003)	....	....	40x13 or 50x17	C
CRM	55X A30J5 A	4.51	0.722	17.08	0.727	0.213	0.209	0.693	0.084	0.0776	0.070	0.069	0.0396	....	0.0029	....	....	0.016	0.0100	0.0053	65 x 30	HIP

5.6 Al/Cu

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Sb	Zr	Ag	Li	Ca	Size (mm) Ø x H	Form
	56X G14H2 C	4.61	0.97	0.18	0.31	0.48	1.82	0.16	0.03	0.07	0.20	0.08	....	....	....	....	....	....	....	....	....	40 x 15	C
CRM	**56X G14H4 C**	3.82	1.72	0.504	0.251	0.122	2.37	0.091	0.050	0.037	0.069	0.0309	0.0288	0.0252	....	....	....	....	....	....	....	50 x 20	C
CRM	**56X G250J1 C**	3.82	0.075	0.26	0.41	0.040	1.33	0.28	0.101	0.125	0.008	0.0067	0.008	0.102	<0.0005	....	(0.003)	(0.003)	....	....	....	40x15 or 50x20	C
CRM	**56X G250J2 D**	4.81	0.060	0.211	0.346	0.225	1.10	0.155	(0.0016)	(0.004)	0.210	0.063	0.195	0.018	....	....	0.324	0.247	....	....	....	40x15 or 50x20	C
CRM	**56X G250J3 C**	4.90	(0.001)	0.11	0.079	0.278	0.92	0.103	0.024	0.031	0.162	0.024	0.264	0.036	0.0014	....	0.35	0.275	....	....	....	40x13 or 50x18	C
CRM	**56X G250J5 D**	4.36	0.022	0.205	0.535	0.150	1.77	0.086	0.076	0.097	0.051	0.047	0.34	0.021	0.0022	....	0.076	0.22	....	....	....	40x15 or 50x20	C
	56X G250J7 A	5.14	0.06	0.23	0.43	0.17	1.30	0.185	<0.01	<0.01	0.247	0.09	1.48	....	....	....	0.24	<0.01	....	....	....	40 x 15	C
CRM	**56 X G2000J1 C**	3.29	1.70	0.099	0.086	1.27	0.0046	0.864	0.022	0.099	0.0053	0.0007	0.00044	0.0097	....	0.008	....	0.293	0.0048	(0.0001)	....	40x15 or 50x20	C
CRM	**56 X G2000J2 C**	3.73	1.292	0.517	1.38	0.937	0.149	0.711	1.114	0.092	0.096	0.0200	0.056	0.170	0.0054	0.078	....	0.188	0.0446	0.0112	....	50 x 20	C
CRM	**56 X G2000J3 C**	4.78	1.018	0.773	0.382	0.589	0.091	0.114	0.375	0.0157	0.196	0.0573	0.108	0.0099	0.0039	0.152	....	0.0268	0.0105	0.0019	....	40x15 or 50x20	C
CRM	**56 X G2000J4 C**	5.02	0.505	1.33	0.705	0.271	0.089	0.0131	0.879	0.0092	0.135	0.053	0.0247	0.0132	....	0.0049	....	0.105	0.0122	0.0025	....	40x15 or 50x20	C
CRM	**56 X G2000J5 C**	5.52	0.39	0.321	0.98	0.007	0.204	0.368	0.69	<0.005	0.063	0.0078	0.077	0.027	0.0050	0.136	....	0.064	0.234	0.009	....	40x15 or 50x20	C
CRM	**56X G2007 A**	3.699	0.663	0.328	0.252	0.605	0.0087	0.386	0.889	0.0676	0.0236	0.0354	....	....	....	0.147	....	0.0020	....	....	0.0051	50 x 20	W
CRM	**56X G2011 A**	5.70	0.0102	0.089	0.632	0.0183	0.0044	0.0188	0.332	0.0037	0.0121	0.0031	....	....	....	0.527	....	....	....	....	....	50 x 20	W
CRM	**56X G2014 A**	4.41	0.453	0.611	0.243	0.572	0.0070	0.195	0.0110	(0.0047)	0.0244	0.0766	....	....	....	0.0013	....	0.135	....	....	....	50 x 20	W
CRM	**56X G2024 A**	4.31	1.500	0.123	0.180	0.656	0.0053	0.0448	0.0009	0.0010	0.0102	0.0395	....	0.0071	....	....	....	0.0050	....	....	....	50 x 20	W
CRM	**56X G2618 A**	2.45	1.625	0.175	1.057	0.0394	0.953	0.0139	0.0020	0.0007	0.069	0.0165	....	0.0162	....	....	....	0.0011	....	....	0.0020	50 x 20	W

5.6.1 Al/Cu/Ag

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Ag	Size (mm) Ø x H	Form
CRM	**56X A201.1 A**	4.49	0.198	0.193	0.089	0.310	0.0066	0.0113	0.0020	(0.0025)	0.132	0.0029	0.494	50 x 20	C

5.7 Al/Cu/Si

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Sb	Cd	Ga	Zr	B	Li	Size (mm) Ø x H	Form
CRM	**57X G12H1 C**	5.54	0.40	2.52	0.88	0.032	0.31	1.03	0.016	0.095	0.114	0.069	0.113	0.15	0.0019	....	0.012	....	0.07	....	0.008	40x15 or 50x20	C
CRM	**57X G12H2 C**	7.96	0.336	2.79	1.021	0.0900	0.309	0.999	0.12	0.202	0.0081	0.0148	0.0391	0.0027	....	....	0.0025	....	0.0111	(0.003)	....	50 x 15	C
CRM	**57X G12H3 C**	8.69	0.296	1.48	0.350	0.117	0.479	0.554	0.092	0.132	0.196	0.086	0.039	0.0126	0.0016	....	0.0055	....	(0.001)	....	....	50 x 20	C
	57X G12H5 G	12.2	0.028	0.55	0.19	0.073	0.11	0.072	0.068	0.067	0.036	0.016	0.054	0.033	0.003	0.066	0.023	0.017	0.045	....	....	40x15 or 50x20	C
CRM	**57X G12H6 A**	8.28	0.292	1.63	0.85	0.223	0.387	6.74	0.110	0.108	0.108	0.054	0.0247	0.0143	(0.0003)	....	0.0028	....	0.0262	....	....	50 x 20	C
CRM	**57X G12H7 A**	4.75	0.020	1.21	0.369	0.0327	0.0380	0.384	0.030	0.0307	0.0565	0.0221	0.0483	0.0111	....	....	0.0002	....	0.0328	0.0093	....	50 x 15	C
	57X AlCu25 A	25.08	0.0012	5.78	0.42	0.0035	0.0017	5.89	....	0.0024	....	....	....	....	....	....	....	....	....	....	....	50 x 20	C
	57X AlCu28 A	27.78	0.0020	5.44	0.22	0.0032	0.0030	5.42	....	0.0023	....	....	....	....	....	....	....	....	....	....	....	50 x 20	C

5.8 Al/Zn

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	Be	Zr	Cd	Sb	Li	Size (mm) Ø x H	Form
CRM	58X G40H6 B	0.111	(0.003)	0.09	0.08	0.004	0.008	7.55	<0.002	<0.005	0.064	0.005	0.006	(0.002)	(0.004)	0.032	<0.0005	(0.004)	40x15 or 50x20	C
CRM	58X G40H7 B	0.050	0.304	0.161	0.101	0.078	0.142	7.16	0.054	0.067	0.0045	0.0018	0.026	0.0012	0.0030	0.027	0.007	(0.0003)	40x15 or 50x20	C
	58X G40H8 B	0.14	0.69	0.1	0.30	0.20	0.22	6.5	0.090	0.010	0.063	0.22	....	....	(0.004)	....	....	....	40x15 or 50x20	C
CRM	58X G40H9 C	0.172	0.960	0.347	0.320	0.0372	0.062	4.83	0.190	0.068	0.279	0.241	0.0150	(0.0001)	0.157	....	....	....	50 x 20	C
CRM	58X G40H10 C	0.188	1.25	0.224	0.361	0.269	0.097	4.66	0.044	0.042	0.187	0.468	0.050	(0.0003)	0.215	....	....	....	50 x 20	C

5.9 Al/Zn/Mg/Cu

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Bi	Cd	Ga	Zr	Be	As	Mo	B	Size (mm) Ø x H	Form
	59X G77J1 F	2.41	4.83	0.15	0.21	0.46	0.17	1.91	0.125	0.126	0.178	0.24	0.018	0.005	0.06	0.004	(0.013)	0.01	....	0.004	0.004	....	40x15 or 50x20	C
CRM	59X G77J2 E	2.37	3.04	0.206	0.293	0.239	0.527	3.25	0.127	0.0054	0.0156	0.0966	....	0.0153	....	0.0023	....	0.152	....	....	....	....	40x15 or 50x20	C
CRM	59X G77J3 F	1.30	2.53	0.647	0.70	0.246	0.402	4.72	0.108	0.122	0.148	0.150	0.032	0.0181	0.0297	0.0095	....	0.0144	....	....	....	....	50 x 20	C
CRM	59X G77J4 E	0.81	1.47	0.59	1.04	0.224	0.0037	5.30	0.073	0.219	0.119	0.071	....	0.0067	....	0.00054	....	0.080	....	....	....	....	40x15 or 50x20	C
CRM	59X G77J5 E	0.0203	0.851	0.562	1.37	0.0398	1.002	7.82	0.0194	0.0140	0.0255	0.0301	0.0373	0.052	....	0.0142	....	0.0194	0.0036	....	....	....	50 x 15	C
CRM	59X G77J6 B	1.08	2.60	0.094	0.293	0.0318	0.0248	12.02	0.0123	0.0267	0.020	0.0127	0.0087	0.0107	....	0.0015	....	0.261	0.0079	....	....	....	50 x 15	C
CRM	59X G7020 A	0.0320	1.313	0.049	0.178	0.200	0.0051	4.82	0.0018	0.0022	0.0261	0.192	....	0.0107	....	....	....	0.146	....	....	....	0.0025	50 x 20	W
CRM	59X G7022 A	0.631	2.69	0.126	0.120	0.127	0.0030	5.17	0.0019	0.0006	0.0160	0.140	....	....	....	....	....	0.0016	....	....	....	....	50 x 20	W
CRM	59X G7050 A	2.119	2.030	0.045	0.0745	0.0047	0.0041	6.18	0.0010	0.0010	0.0242	0.0097	....	0.0092	....	....	....	0.100	....	....	....	0.0011	50 x 20	W
CRM	59X G7068 A	1.676	2.70	0.051	0.117	0.0156	0.0056	7.96	0.0020	(0.001)	0.0419	0.0324	....	....	....	....	....	0.088	....	....	....	....	50 x 20	W
CRM	59X G7075 A	1.68	2.324	0.147	0.239	0.0757	0.0045	5.69	0.0177	0.0008	0.0615	0.196	....	....	....	....	0.0088	0.0008	....	....	....	....	50 x 20	W

5.11 Al/Mg

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Cd	Ga	Zr	Na	B	Li	Mo	Size (mm) Ø x H	Form
CRM	511X G05H1 H	0.32	2.02	0.42	0.79	0.012	0.125	0.47	0.023	0.178	0.204	0.242	....	0.053	(0.0002)	0.013	....	(0.002)	....	....	....	....	40x15 or 50x20	C
CRM	511X G05H2 H	0.187	3.58	0.301	0.638	0.126	0.156	0.372	0.0490	0.0495	0.0700	0.173	....	0.0251	0.0018	0.0023	....	0.0108	....	0.0083	....	....	50 x 15	C
	511X G05H3 H	0.093	3.97	0.21	0.41	0.40	0.090	0.092	0.107	0.096	0.25	0.095	....	....	0.0074	....	....	....	....	....	....	....	40x15 or 50x20	C
	511X G05H4 F	0.056	5.1	0.11	0.14	0.55	0.040	0.062	0.15	0.14	0.048	0.029	....	....	0.014	....	....	....	....	....	....	....	50 x 20	C
CRM	511X G05H5 F	0.071	9.22	0.141	0.129	1.110	0.0129	0.019	0.185	0.0089	0.0157	0.0113	....	0.041	0.0062	....	....	0.107	....	....	....	....	50 x 20	C
CRM	511X G10H4 C	0.163	10.24	0.244	0.193	0.228	0.117	0.117	0.080	0.075	0.155	0.083	....	....	0.0061	....	....	....	....	....	....	....	50 x 20	C
CRM	511X G10H5 B	0.0227	13.97	0.050	0.057	0.098	0.036	0.029	0.165	0.013	0.0052	0.0017	....	....	0.0274	....	....	....	....	....	0.0032	....	50 x 20	C
CRM	511X G3000B1 C	0.287	0.253	0.788	0.669	0.752	0.142	0.0347	0.145	0.163	0.0327	0.0972	....	0.054	....	....	0.051	....	....	....	....	....	40x15 or 50x20	C
CRM	511X G3000B2 B	0.20	0.68	0.23	0.335	0.81	0.063	0.098	0.137	0.105	0.111	0.200	0.007	<0.005	0.0017	(0.0007)	0.012	....	....	....	0.017	(0.059)	40x15 or 50x20	C
CRM	511X G3000B3 B	0.120	0.80	0.35	0.376	1.06	0.116	0.140	0.062	0.028	0.22	0.056	0.008	<0.005	0.005	(0.001)	0.014	....	....	....	....	(0.093)	40x15 or 50x20	C
CRM	511X G3000B4 C	0.086	1.267	0.130	0.440	0.916	0.0347	0.058	0.0285	0.0456	0.052	0.0121	....	0.0199	0.0140	....	0.0284	....	....	....	....	....	50 x 20	C

5.11 Al/Mg continued

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	V	Zr	Bi	Ga	Size (mm) Ø x H	Form
CRM	**511X G5083 A**	0.042	3.98	0.22	0.363	0.592	0.0094	0.0488	0.0069	0.0015	0.0294	0.237	0.0092	0.0011	0.0016	. . . .	50 x 20	W
CRM	**511X G6061 A**	0.260	0.896	0.696	0.304	0.0721	0.0044	0.0105	0.0014	0.0012	0.0204	0.200	0.0138	. . . .	. . . .	0.0160	50 x 20	W
CRM	**511X G6063 A**	0.0014	0.437	0.412	0.185	0.0239	0.0021	0.0062	0.0011	(0.001)	0.011	0.0021	0.0087	. . . .	. . . .	. . . .	50 x 20	W
CRM	**511X G6082 A**	0.0184	0.759	0.753	0.081	0.534	0.0035	0.054	0.0012	0.0011	0.0278	0.0606	. . . .	. . . .	. . . .	. . . .	50 x 20	W
CRM	**511X G6082 B**	0.0141	0.660	0.910	0.180	0.566	0.0044	0.0016	(0.001)	(0.001)	0.0158	0.0055	. . . .	. . . .	(0.0007)	. . . .	50 x 20	W

5.11 Al/Mg with Bi, Sn and Pb

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Bi	Zr	Be	Size (mm) Ø x H	Form
CRM	**511X G6012**	0.114	1.10	1.35	0.285	0.910	0.0154	0.255	1.10	0.040	0.016	0.269	0.552	0.032	0.0072	50 x 17	C
CRM	**511X G6012A**	0.351	0.712	0.768	0.71	0.424	0.048	0.060	0.211	1.88	0.197	0.0223	0.701	0.0480	0.0110	50 x 17	C
CRM	**511X G6023 A**	0.451	0.512	1.21	0.51	0.556	0.036	0.0260	0.0110	1.037	0.0117	0.0054	0.353	0.0110	0.0020	50 x 17	C
CRM	**511X G6065 A**	0.214	1.180	0.495	0.74	0.131	0.0144	0.164	0.0310	0.0251	0.112	0.0759	1.27	0.144	0.0011	50 x 17	C
CRM	**511X G6262 A**	0.267	0.881	0.649	0.58	0.163	0.028	0.198	0.0081	0.539	0.045	0.121	0.444	0.0051	0.0011	50 x 17	C
CRM	**511X G6262 B**	0.243	0.829	0.557	0.329	0.0737	0.0034	0.0209	0.499	(0.001)	0.0194	0.0666	0.424	. . . .	. . . .	50 x 20	W

5.14 Al/Mn

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Zr	Size (mm) Ø x H	Form
CRM	**514X 9091.1 C**	0.046	(0.001)	0.035	0.081	6.93	(0.0026)	0.029	0.016	0.013	0.0017	<0.005	0.184	40x15 or 50x15	C
CRM	**514X 9091.3 D**	0.62	0.148	0.74	0.94	11.3	0.141	0.223	0.111	0.019	0.424	0.106	<0.005	40x15 or 50x15	C

Price* - Where two sizes are available the price for the smaller is given, the price for the larger is available on request.

5.17 Sacrificial Anode

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	In	Ga	Cd	Size (mm) Ø x H	Form
CRM	**517X LF1 A**	0.0020	0.0097	0.248	0.101	0.0013	0.0010	3.71	(0.002)	(0.005)	0.0396	(0.001)	0.0187	0.0164	<0.0005	45 x 20	C

5.18 Pressed Powder Alloys

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Ca	Mo	Zr	Sr	B	P	Size (mm) Ø x H	Form
CRM	**518X 429 A**	1.023	1.25	28.9	0.201	0.0165	0.014	0.0042	0.0020	. . . .	0.0163	0.0034	2.22	0.0090	0.020	. . . .	. . . .	0.0006	(0.002)	(0.004)	65 x 25	HIP
CRM	**518X 905 A**	2.51	0.645	0.10	2.54	0.994	4.98	0.0052	(0.001)	(0.0024)	0.587	0.0090	0.0033	0.0186	(0.0007)	0.807	0.77	. . . .	. . . .	. . . .	45 x 40	HIP

6.1 Residuals in Pure Magnesium

		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Ce	La	Nd	Y		Size (mm) Ø x H	Form
CRM	61X MGP2 A ++	0.065	0.0122	0.0118	(0.0007)	0.0109	0.031	0.0061	0.0029	0.0138	0.0073	0.0061	0.003	<0.0001	0.0063	0.0019	0.0014	. . . .	. . . .	++ unsuitable for use with glow discharge systems	45 x 20	C
CRM	61X MGP3 A ++	0.096	0.0196	0.0137	(0.0014)	0.0292	0.044	0.014	0.0048	0.054	0.0155	0.0148	0.0125	<0.0001	0.0154	0.0055	0.0038	. . . .	. . . .		45 x 20	C
CRM	61X MGP4 A ++	0.0247	0.0158	0.0100	0.030	0.0108	0.037	(0.0044)	0.0028	0.028	0.0067	0.0066	0.0203	<0.0001	0.0071	0.0041	0.0030	. . . .	. . . .		45 x 20	C
CRM	61X MGP5 A	0.119	0.099	0.201	. . . .	0.092	0.094	0.0048	0.0176	. . . .	0.0352	0.0357	0.0342	0.0018	0.0292	0.049	0.0382	0.0446	0.0132		40x15 or 50x20	C
CRM	61X MGP6 A	0.0449	0.010	0.0125	. . . .	0.0067	0.044	0.0041	0.0025	(0.001)	0.0091	0.0120	0.0043	. . . .	0.0025	0.0209	0.0137	0.0238	0.0375		40x15 or 50x20	C

6.3 Mg/Mn

		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Ti		Size (mm) Ø x H	Form
CRM	63X MGE1 E	(0.088)	0.083	0.860	. . . .	0.0503	0.052	0.0014	0.0162	. . . .	0.0053	0.011	0.0195	(0.0002)	0.0017	. . . .		40x15 or 50x20	C
CRM	63X MGE2 B	0.0432	0.0245	1.75	. . . .	0.0203	0.019	0.0020	0.0035	0.0015	0.0024	0.0020	0.0090	. . . .	0.0009	. . . .		40x15 or 50x20	C
CRM	63X MGE3 B	0.015	0.022	2.36	<0.001	0.012	(0.009)	0.004	0.0023	0.13	0.0055	0.005	. . . .	. . . .	0.0009	<0.001		40x15 or 45x20	C

6.4 Mg/Al

		Al	Zn	Mn	Cu	Si	Fe	Ni	Sn	Pb	Be	Ce	La	Nd	Typical alloy type			Form
CRM	64X MGQ1 A	1.083	0.235	0.377	0.0840	0.062	0.0034	0.0041	0.0195	0.0199	0.00036	. . . .	. . . .	. . . .	AZ10A		40x15 or 50x20	C
CRM	64X MGQ2 A	4.53	0.107	0.378	0.0151	0.051	0.0041	0.0061	0.0107	0.0107	0.0013	. . . .	. . . .	. . . .	AM50A		40x15 or 50x20	C
CRM	64X MGQ3 A	8.66	0.0039	0.206	0.0349	0.083	0.0090	0.0032	0.0019	0.0022	0.0041	. . . .	. . . .	. . . .	AM90A		40x15 or 50x20	C
CRM	64X MGQ4 A	6.50	0.188	0.183	0.310	0.067	0.0040	0.0068	0.0282	0.0322	0.00029	. . . .	. . . .	. . . .	AM60A		40x15 or 50x20	C
CRM	64X MGQ5 A	5.76	0.0465	0.276	0.0072	0.052	0.0043	0.0010	0.0050	0.0056	0.0013	. . . .	. . . .	. . . .	AM60B		40x15 or 50x20	C
CRM	64X MGQ6 A	2.31	0.072	(0.26)	0.0045	(0.97)	(0.004)	0.0026	0.0055	0.0060	0.0007	. . . .	. . . .	. . . .	AS21A	Mn and Si segregation	40x15 or 50x20	C
CRM	64X MGQ7 A	4.02	0.061	(0.43)	0.0167	(1.05)	0.0028	0.0053	0.0096	0.0126	0.00042	. . . .	. . . .	. . . .	AS41A	Mn and Si segregation	40x15 or 50x20	C
CRM	64X MGQ8 A	1.030	0.0442	0.700	0.0019	0.045	0.0018	0.0004	0.0022	0.0008	0.00015	. . . .	. . . .	. . . .	AZ10-mod		40x15 or 50x20	C
CRM	64X MGQ9 A	2.14	0.243	0.0684	0.0104	(0.37)	0.0069	0.0020	0.0076	0.0096	0.0015	0.111	0.083	0.114	AS21B	Si segregation	40x15 or 50x20	C

6.5 Mg/Al/Zn

		Al	Zn	Mn	Cu	Si	Fe	Ni	Sn	Pb	Be	Ca	Ag	Ce	La	Cd	Sr	Hg	Typical alloy type	Size (mm) Ø x H	Form
CRM	65X MGA1 J ++	5.45	1.26	0.060	0.221	0.20	0.021	0.021	0.072	0.012	0.006	0.029	0.012	0.009	0.007	0.013	++ unsuitable for use with glow-discharge systems			45 x 20	C
CRM	65X MGA5 A	8.00	0.411	0.401	0.0195	0.110	0.006	0.0201	0.0124	0.042	0.0013	(0.014)	0.0050	. . . .	. . . .	0.0035	0.0004	. . . .		40x15 or 50x20	C
CRM	65X MGA11 A	3.63	1.59	0.044	0.0496	0.022	0.0048	0.0134	0.093	0.0190	0.0021	0.102	(0.0002)	(0.0005)	(0.0005)	0.0014	. . . .	0.006		40x15 or 50x20	C
CRM	65X MGA12 A	5.68	3.18	0.198	0.266	0.0142	0.0053	0.0148	0.0021	0.010	(0.0036)	0.037	0.0128	0.0009	0.0007	0.0121	. . . .	(0.016)		40x15 or 50x20	C
CRM	65X MGA13 A	7.45	0.925	0.092	0.125	0.022	(0.008)	0.0039	0.043	0.0085	(0.010)	0.0064	0.0074	0.0024	0.0021	0.0055	. . . .	(0.033)		40x15 or 50x20	C
CRM	65X MGA14 A	9.09	0.685	0.282	0.0102	0.080	0.008	0.0082	0.0085	0.006	0.0029	0.016	0.0016	0.0120	0.0111	0.0014	. . . .	(0.082)		40x15 or 50x20	C
CRM	65X MGA15 A	10.67	0.348	0.067	0.0273	0.034	0.010	0.0026	0.0021	0.0051	0.0062	(0.0014)	0.030	0.0069	0.0048	0.0034	. . . .	0.011		40x15 or 50x20	C
CRM	65X MGA16 A	6.78	4.03	0.271	0.099	0.023	0.0073	0.0057	0.028	0.050	0.0011	0.0024	0.0035	0.0017	0.0012	0.0066	. . . .	0.005		40x15 or 50x20	C
CRM	65X MGA17 A	4.20	0.128	0.203	0.0215	0.33	0.0069	0.0141	0.0050	0.0009	. . . .	0.021	0.0064	. . . .	. . . .	0.0049	. . . .	. . . .		40x15 or 50x20	C
CRM	65X MGA18 A	6.75	0.502	0.192	0.052	0.043	0.0081	0.0074	0.0114	0.0244	0.00051	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	AZ61A	40x15 or 50x20	C
CRM	65X MGA19 A	8.97	2.17	0.322	0.0426	0.196	0.0085	0.0065	0.0489	0.0489	0.00025	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	AZ92A	40x15 or 50x20	C
CRM	65X MGA20 A	5.87	1.32	0.067	0.0131	0.052	0.0078	0.0025	0.0320	0.0075	0.0018	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	AZ61A	40x15 or 50x20	C
CRM	65X MGA21 A	12.37	5.11	0.0777	0.0020	0.028	0.0140	0.0010	0.0063	0.0048	0.0006	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	AZ125A	40x15 or 50x20	C
CRM	65X MGA22 A	8.62	0.89	0.40	0.078	0.085	0.0060	0.0058	0.0033	0.0038	0.0006	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	AZ91A	40x15 or 50x20	C
CRM	65X MGA23 A	9.75	0.555	0.130	0.0155	0.027	0.0085	0.0011	0.0024	0.0019	0.0024	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	AZ91D	40x15 or 50x20	C

6.5 Mg/Al/Zn - continued

		Al	Zn	Mn	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Be	Cd	Ti		Size (mm) Ø x H	Form
CRM	65X MGB1 E	1.90	1.60	0.770	0.051	0.069	0.0027	0.0020	(0.067)	0.0098	0.0095	0.0300	. . . .	. . . .	0.0008	0.076	. . . .		40x15 or 50x20	C
CRM	65X MGB2 C	2.67	0.95	0.333	0.113	0.069	0.010	0.0028	0.011	0.0047	0.0036	0.0099	0.0009	0.0007	0.0008	0.0115	0.0003		40 x 18	C
CRM	65X MGB2 D	2.81	1.047	0.526	0.065	(0.088)	0.0032	0.0043	(0.010)	0.0052	0.0053	0.0099	. . . .	. . . .	0.0014	0.0103	. . . .		40x15 or 50x20	C
CRM	65X MGB3 B ++	3.19	0.608	0.0122	0.0214	0.012	(0.005)	0.0020	0.030	0.0050	0.0037	(0.002)	. . . .	. . . .	0.0029	0.012	(0.003)	++ unsuitable for use with glow-discharge	45 x 20	C
CRM	65X MGB3 C	3.38	0.711	0.277	0.0222	0.042	0.0028	0.0027	(0.003)	0.0017	0.0023	0.0028	. . . .	. . . .	0.0019	0.0025	. . . .		40x15 or 50x20	C
CRM	65X MGB4 C	3.86	0.333	0.031	0.0183	0.037	(0.009)	0.0003	0.0010	0.0050	0.0037	0.0046	0.0003	(0.0001)	0.0033	0.00016	(0.0008)		40 x 18	C

6.6 Mg/Zn

		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Nd	Be	Sr	Size (mm) Ø x H	Form
CRM	66X MGC4 C	0.039	6.81	0.166	<0.001	0.0024	0.06	0.006	0.0009	. . . .	0.021	0.0030	0.0074	. . . .	. . . .	. . . .	(0.0001)	(0.00014)	40x15 or 50x20	C
CRM	66X MGC5 A	0.072	6.61	1.17	. . . .	0.0286	0.026	0.0008	0.0111	. . . .	0.0051	0.0281	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40x15 or 50x20	C
CRM	66X MGD1 B	0.147	1.19	0.125	. . . .	0.066	(0.073)	0.0029	0.0162	. . . .	0.026	0.026	. . . .	0.065	0.031	0.064	. . . .	. . . .	40x15 or 50x20	C
	66X MGD3 B ++	0.041	1.97	0.28	0.029	0.058	0.020	0.023	0.002	(0.07)	0.007	0.009	0.005	0.004	0.004	. . . .	0.0003	++ unsuitable for use with glow-discharge	45 x 20	C
CRM	66X MGD5 A	0.040	6.25	0.307	. . . .	2.88	0.134	0.008	0.0120	(0.030)	0.104	0.097	0.044	. . . .	. . . .	. . . .	<0.0005	. . . .	40x15 or 50x20	C

6.7 Mg/Al/Rare Earth

		Al	Zn	Mn	Cu	Si	Fe	Ni	Be	Ce	La	Nd	Pr	Gd	Size (mm) Ø x H	Form
CRM	67X MGK2 A	3.84	0.132	0.534	0.0041	0.057	0.0016	0.0033	0.0025	0.70	0.34	0.125	0.053	0.053	40x15 or 50x20	C
CRM	67X MGK3 A	4.56	0.050	0.516	0.0017	0.068	0.0024	0.0016	0.0007	0.83	0.374	0.175	0.069	0.038	40x15 or 50x20	C

The rare-earths in the above product were added as Neodymium rich R.E, but breakdowns of the individual R.E. values are not available.

Samples marked ++ may be unsuitable for use with glow discharge analysers.

7.1 Tin with Impurities

		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	Cr	Co	In	Au	Te	Se	P	Ga	Ge	Hg	Size (mm) Ø x H	Form
CRM	**71X PB3 A**	0.0022	0.0103	0.0024	2.77	0.0074	. . . .	0.0008	0.0016	. . . .	. . . .	0.0011	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**71X PB4 A**	0.0045	(0.002)	0.0059	4.00	0.0014	. . . .	0.0027	0.0063	. . . .	. . . .	0.0047	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**71X SR0 C**	0.0005	0.0029	0.0055	0.0457	0.0073	0.0040	0.0024	0.0053	0.0025	0.0414	0.0024	. . . .	0.0004	0.0088	0.0012	0.0021	0.0006	0.0004	0.0054	0.0021	0.0099	40 x 15	C
CRM	**71X SR1 E**	0.0102	0.0107	0.0156	0.0324	0.0111	(0.0021)	0.0104	0.0146	0.0041	(0.0016)	0.0212	. . . .	. . . .	0.0120	0.0014	0.0112	(0.0015)	. . . .	0.0049	. . . .	0.0142	40 x 15	C
CRM	**71X SR2 F**	0.0070	0.0403	0.074	0.151	0.116	0.0133	0.0351	0.0058	0.0183	0.0022	0.0305	0.0031	. . . .	0.0597	0.0077	0.0246	. . . .	. . . .	. . . .	0.009	0.140	40 x 15	C
CRM	**71X SR3 F**	0.097	0.123	0.128	0.306	0.121	0.0203	0.100	0.054	0.0371	(0.0014)	0.050	. . . .	. . . .	0.104	0.0145	0.070	0.0031	. . . .	0.0339	. . . .	0.115	40 x 15	C

7.3 Tin White Metals (Pewter, Babbit)

		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	Co	In	S	P		Size (mm) Ø x H	Form
CRM	**73X SC1 A**	0.008	0.084	1.48	0.067	2.02	0.0025	0.006	0.003	0.0041	0.0025	0.010	<0.001	0.008	<0.002	. . . .		40 x 15	C
CRM	**73X SC2 B ****	*0.037*	*0.65*	*3.00*	*0.045*	*1.02*	*0.005*	*0.028*	*0.001*	*0.015*	. . . .	*0.033*	*0.022*	*0.009*	. . . .	. . . .	** provisional values	40 x 15	C
CRM	**73X SC3 A**	0.029	0.020	4.60	0.040	0.222	0.017	0.024	0.0014	0.0136	0.001	0.013	0.006	0.031	(0.002)	. . . .		40 x 15	C
CRM	**73X SC4 B**	0.0268	0.153	5.94	0.429	2.63	0.0014	0.0085	(0.001)	0.0130	(0.002)	0.0525	0.0020	0.0143	. . . .	0.005		40 x 15	C
CRM	**73X SC5 A**	0.013	0.43	7.03	0.136	0.57	0.004	0.008	0.001	0.0058	0.003	0.063	0.011	0.036	(0.001)	. . . .		40 x 15	C
CRM	**73X SC6 A**	0.204	0.115	0.092	0.100	5.17	0.007	0.0125	0.01	0.013	(0.003)	0.08	0.0050	0.058	(0.004)	. . . .		40 x 15	C
CRM	**73X SC7 B**	0.059	0.013	13.86	0.32	5.71	(0.043)	0.0019	0.0033	0.0160	(0.001)	0.0059	0.0143	0.0194	(0.001)	. . . .		40 x 15	C
CRM	**73X SC8 B**	0.11	0.0531	5.52	0.110	3.78	0.055	0.098	0.004	0.0351	(0.001)	0.0253	0.0267	0.0325	0.004	. . . .		40 x 15	C
CRM	**73X SC9 A**	0.53	0.066	8.18	0.20	8.47	0.037	0.078	(0.003)	0.008	<0.001	0.004	0.0030	0.010	(0.008)	. . . .		40 x 15	C
CRM	**73X SC11 B**	0.292	0.560	12.01	0.061	11.18	0.011	1.75	0.063	0.452	0.0025	0.066	. . . .	. . . .	. . . .	0.019		40 x 15	C
CRM	**73X SC12 B**	(0.034)	0.0301	7.50	0.091	6.03	0.024	0.758	0.0210	0.115	0.0015	0.842	0.0210	. . . .	. . . .	. . . .		40 x 15	C
CRM	**73X SC13 A**	0.054	0.0188	4.21	0.259	4.19	0.053	0.0021	0.0126	. . . .	(0.01)	. . . .	. . . .	. . . .	. . . .	(0.02)		40 x 15	C

7.4 Tin Lead-Free Solders

		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	P	Se	Au	Co	Ge	In	Size (mm) Ø x H	Form
CRM	**74X AM F**	0.0038	0.190	1.064	0.126	3.07	(0.001)	0.0061	(0.006)	0.0260	(0.001)	0.496	(0.002)	(0.001)	. . . .	. . . .	. . . .	0.0082	40 x 15	C
CRM	**74X E F**	0.0092	0.0099	0.0168	0.0248	2.94	0.0008	0.0003	(0.005)	0.0069	(0.001)	0.667	(0.001)	0.0008	. . . .	. . . .	. . . .	0.0074	40 x 15	C
CRM	**74X HA G**	0.0032	0.0639	2.10	0.077	0.629	0.0029	0.0018	2.73	0.0133	(0.002)	2.80	(0.001)	(0.001)	. . . .	. . . .	. . . .	0.0090	40 x 15	C
CRM	**74X HB G**	0.045	0.038	4.81	0.056	4.49	0.0138	0.0103	(0.02)	1.22	(0.003)	0.086	(0.002)	0.0038	. . . .	. . . .	. . . .	0.0179	40 x 15	C
CRM	**74X HN E**	0.010	0.122	0.037	0.0404	3.82	0.010	0.0057	(0.0009)	0.185	0.005	0.143	(0.002)	0.0016	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**74X TC F**	0.024	0.106	0.124	0.183	4.99	0.0031	0.0150	0.004	0.0167	(0.001)	0.039	(0.002)	0.0473	. . . .	. . . .	. . . .	0.0215	40 x 15	C
CRM	**74X BZ1 A**	0.0119	3.03	0.031	0.0238	0.026	0.011	0.0012	8.27	0.0097	0.0021	0.004	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**74X AB1 A**	0.0280	0.997	0.0111	0.0353	0.0285	0.0435	0.0199	. . . .	0.0036	. . . .	3.58	. . . .	. . . .	0.0010	0.0032	. . . .	0.0262	40 x 15	C
CRM	**74X GE1 A**	. . . .	. . . .	. . . .	0.0339	0.662	. . . .	0.0059	. . . .	0.0289	0.065	0.052	. . . .	. . . .	. . . .	. . . .	0.046	. . . .	38 x 13	C
CRM	**74X GE2 A**	. . . .	. . . .	. . . .	0.0467	0.713	. . . .	0.0086	. . . .	0.031	0.068	0.079	. . . .	. . . .	. . . .	. . . .	0.479	. . . .	38 x 13	C

7.4 Tin Lead-Free Solders

		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	P	In	Au	Se	Co	Hg	Ge	Cr	Size (mm) Ø x H	Form
CRM	74X OA A	0.080	1.065	0.0098	0.128	3.41	0.007	0.00063	(0.002)	0.0025	(0.001)	0.100	0.0072	0.0034	(0.0001)	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	74X WS A	0.0105	0.0063	1.49	0.037	4.58	(0.004)	0.00140	0.0009	0.0048	(0.001)	0.298	0.0122	0.0032	(0.0002)	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	74X CA1 B	. . . .	0.0131	0.0169	0.077	0.682	. . . .	0.0071	. . . .	. . . .	0.0262	0.440	. . . .	. . . .	0.0053	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	74X CA2 B	0.018	0.0365	0.079	0.0496	0.795	0.0023	0.0017	0.0005	0.0361	<0.001	3.50	0.010	0.0053	0.0009	0.0022	0.0019	0.0017	0.023	. . . .	40 x 15	C
CRM	74X CA3 B	0.0039	0.0156	0.0266	0.0491	0.0869	0.006	0.00045	0.0009	0.0077	0.0010	2.98	0.031	0.0042	0.007	. . . .	. . . .	. . . .	0.0093	. . . .	40 x 15	C
CRM	74X CA4 C	0.0076	0.0608	0.0709	0.0800	0.545	0.0052	0.0018	(0.006)	0.0872	0.0005	3.01	. . . .	0.0057	. . . .	(0.001)	0.0052	0.0054	. . . .	0.0094	40 x 15	C
CRM	74X CA5 B	0.0125	0.0050	0.124	0.044	1.189	0.0021	0.0023	(0.002)	0.0149	(0.001)	4.09	(0.011)	0.0129	0.0091	0.0004	. . . .	0.0030	. . . .	. . . .	40 x 15	C
CRM	74X CA6 B	0.0133	0.0098	(0.010)	0.0287	0.602	0.0120	0.0005	(0.0005)	0.0246	(0.0003)	0.305	(0.001)	0.0243	0.0048	(0.0005)	. . . .	0.0039	. . . .	. . . .	40 x 15	C
CRM	74X CA7 B	0.0085	0.0102	0.0194	0.107	0.347	0.007	0.0059	0.0501	0.0315	. . . .	4.02	. . . .	0.0053	. . . .	. . . .	(0.002)	0.049	. . . .	0.0045	40 x 15	C
CRM	74X CA8 B	0.0144	0.0172	0.0180	0.084	0.950	0.0043	0.0101	. . . .	0.0020	. . . .	2.47	0.010	0.0062	. . . .	. . . .	0.0202	0.101	0.0020	. . . .	40 x 15	C
CRM	74X CA9 A	0.0173	0.0364	0.076	0.038	0.097	0.0085	0.0015	0.0010	0.0039	0.0007	1.002	0.011	0.0165	0.0025	. . . .	. . . .	. . . .	0.0049	. . . .	40 x 15	C

8.1 Binaries: Pb/Sb, Pb/As & Pb/Mg

		Sb	As	Mg	Size (mm) Ø x H	Form
CRM	**81X PA0.5 C**	0.481	. . . .	. . . .	40 x 15	C
CRM	**81X PA1.0 C**	0.989	. . . .	. . . .	40 x 15	C
CRM	**81X PA2.0 D**	1.996	. . . .	. . . .	40 x 15	C
CRM	**81X PA3.5 E**	3.49	. . . .	. . . .	40 x 15	C
CRM	**81X PA7.0 D**	7.02	. . . .	. . . .	40 x 15	C
CRM	**81X PA10.0 C**	9.60	. . . .	. . . .	40 x 15	C
CRM	**81X PA12.5 D**	12.72	. . . .	. . . .	40 x 15	C
	81X PAs1 A	. . . .	1.25	. . . .	40 x 15	C
	81X PMg1 A	. . . .	. . . .	1.15	40 x 15	C
	81X PMg2 A	. . . .	. . . .	0.173	40 x 15	C
	81X PMg3 A	. . . .	. . . .	0.023	40 x 15	C

8.2 Pb/Ag

		Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Fe	In	Al	Size (mm) Ø x H	Form
CRM	**82X PAg 1.5R E**	0.036	0.386	0.065	0.27	0.005	1.55	(0.004)	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**82X PAg 2.5R D**	0.082	0.246	0.13	0.26	0.009	2.21	(0.0024)	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**82X PAg 3.5R D**	0.25	0.106	0.290	0.073	0.020	3.54	(0.0004)	0.0027	<0.001	0.037	0.0015	40 x 15	C
CRM	**82X PAg 6.0R A**	0.50	0.48	0.52	0.18	0.021	5.93	0.007	0.010	<0.001	0.008	<0.001	40 x 15	C
	82X PAG0.7 A	. . . .	. . . .	. . . .	. . . .	. . . .	0.733	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
	82X PAG0.9 A	. . . .	. . . .	. . . .	. . . .	. . . .	0.903	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C

8.3 Lead with Impurities

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	Na	Hg	Pt	S	Size (mm) Ø x H	Form
CRM	**83X PR1 K**	0.016	0.0100	0.0508	0.0465	0.0338	0.1029	. . . .	(0.002)	0.074	0.0080	(0.0004)	0.0058	0.0008	0.0019	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**83X PR2 F**	0.104	0.050	0.0310	0.0346	0.0235	0.0537	. . . .	(0.0008)	0.0021	0.0012	0.0026	0.0114	(0.002)	0.0008	0.0012	0.0021	0.0041	. . . .	. . . .	40 x 15	C
CRM	**83X PR3 F**	0.050	0.095	0.162	0.0551	0.0017	0.0033	. . . .	(0.0011)	0.0479	0.0069	0.0142	0.0021	0.0104	0.0041	0.0125	0.0026	0.0103	. . . .	. . . .	40 x 15	C
CRM	**83X PR4 H**	. . . .	0.0050	0.0150	0.0454	0.0003	0.0114	. . . .	. . . .	0.0081	. . . .	0.0029	0.0229	(0.004)	0.0021	0.0021	. . . .	0.019	. . . .	. . . .	40 x 15	C
CRM	**83X PR5 F**	(0.0001)	(0.0001)	0.0020	0.0002	(0.0002)	0.0011	(0.0002)	0.0002	(0.0001)	. . . .	0.0001	(0.0001)	(0.0002)	. . . .	. . . .	. . . .	(0.0003)	. . . .	. . . .	40 x 15	C
CRM	**83X PR7 B**	0.189	0.795	0.479	0.176	0.051	0.290	(0.0008)	(0.0006)	0.455	0.653	(0.0015)	0.0097	0.0052	. . . .	. . . .	. . . .	. . . .	0.0047	. . . .	40 x 15	C
CRM	**83X PR8 C**	0.603	0.259	1.186	0.066	0.155	0.505	. . . .	. . . .	0.211	0.224	0.0020	0.0011	0.0064	0.0082	. . . .	0.0073	0.089	. . . .	. . . .	40 x 15	C
CRM	**83X PR11 A**	0.119	0.497	0.0117	0.0551	0.0095	0.0030	(0.0003)	. . . .	0.0008	. . . .	0.0011	. . . .	(0.0001)	. . . .	0.0042	. . . .	. . . .	. . . .	0.009	40 x 15	C
CRM	**83X PR12 A**	0.0005	0.0011	0.0119	0.0353	(0.0003)	0.0030	(0.0003)	. . . .	0.0011	. . . .	0.0009	. . . .	(0.0002)	. . . .	0.0051	. . . .	. . . .	. . . .	(0.0002)	40 x 15	C
CRM	**83X CU06 A ****	*<0.001*	*<0.001*	*0.013*	*0.055*	*<0.001*	*0.002*	. . . .	*<0.001*	*<0.001*	. . . .	*<0.001*	*<0.001*	*0.0005*	. . . .	** provisional values			. . . .	*<0.001*	40 x 15	C

	Sn	Ag	Zn	Cd	Al	Li	Na	Mg	Ca	Ba	Size (mm) Ø x H	Form
83X PR9 A	0.153	0.0049	0.0045	0.0007	0.0138	0.066	0.077	0.054	0.556	0.200	40 x 13	C

8.4 Battery Alloys (Pb/Sn/Ca)

		Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Al	Ca	Ni	Te		Size (mm) Ø x H	Form
CRM	**84X BA1 J**	0.989	0.0011	0.0154	0.0016	(0.0007)	0.0102	0.0058	0.0017	0.0218	0.1001	(0.0005)	(0.0003)		40 x 15	C
CRM	**84X BA2 D**	0.544	(0.003)	0.0230	(0.002)	0.0004	0.0044	0.0273	0.0040	0.0183	0.0756	(0.0004)	(0.0003)		40 x 15	C
CRM	**84X BA3 C**	0.341	0.010	0.0411	0.006	(0.0006)	0.0082	(0.0055)	0.0044	0.0026	0.0163	(0.0004)	0.0004		40 x 15	C
CRM	**84X BA4 C**	0.0480	0.0078	0.0260	0.0064	(0.003)	0.0020	0.0065	0.0092	0.0015	0.0014	(0.0004)	0.0205		40 x 15	C
CRM	**84X BA7 B**	0.594	0.0022	0.0140	0.0020	(0.0004)	0.0015	0.0024	0.0004	0.0085	0.0391	(0.0003)	(0.0002)		40 x 15	C
CRM	**84X BA8 D**	0.325	0.0043	0.0147	0.0008	0.0005	0.0035	0.0018	0.0004	0.0359	0.136	0.0002	(0.0002)		40 x 15	C
CRM	**84X BA9 B**	2.92	0.0022	0.0186	0.0026	<00005	0.0017	0.0020	0.0010	0.0154	0.109	(0.0003)	<0.0005		40 x 15	C
CRM	**84X BA11 A**	1.304	0.0079	0.0165	0.0026	0.0005	0.0023	0.0005	0.0006	0.0125	0.0552	. . . .	. . . .		40 x 15	C
CRM	**84X BA12 B**	1.483	0.0007	0.0181	(0.001)	0.0005	0.0051	0.0025	0.0009	0.0148	0.0665	. . . .	. . . .		40 x 15	C
CRM	**84X BA13 A**	1.716	0.0010	0.0370	0.0007	0.0008	0.0075	0.0047	0.0014	0.0198	0.0738	. . . .	. . . .		40 x 15	C
CRM	**84X BA14 A**	0.959	(0.002)	0.0162	0.0016	(0.0004)	0.0103	0.0057	0.0015	0.0188	0.076	(0.0002)	(0.0002)		40 x 15	C
CRM	**84X BA15 A**	0.941	0.0047	0.0140	0.0011	0.0005	0.0095	0.0062	0.0013	0.0161	0.0865	. . . .	. . . .		38 x 15	C
CRM	**84X BA20 B**	0.370	0.0038	0.0144	. . . .	. . . .	0.0295	0.0435	0.0051	0.065	0.368	. . . .	. . . .		38 x 15	C
CRM	**84X BA21 B ****	*0.16*	*0.003*	*0.017*	. . . .	. . . .	*0.010*	*0.015*	*0.001*	*0.012*	*0.56*	. . . .	. . . .	** provisional values	40 x 15	C
CRM	**84X BA22 B**	0.128	0.0022	0.0138	. . . .	. . . .	0.0044	0.0053	0.0018	0.074	0.799	. . . .	. . . .		38 x 15	C
CRM	**84X BA23 B**	0.237	0.0061	0.0134	. . . .	. . . .	0.0024	0.0026	0.00012	0.0569	1.052	. . . .	. . . .		38 x 15	C

8.5 Various Lead Alloys

		Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Ni	Te	Se	S	Co	Size (mm) Ø x H	Form
CRM	**85X PSn2 C**	2.06	0.0239	0.0154	0.0128	0.0048	0.0048	(0.0004)	0.0007	0.0003	0.0045	0.0042	(0.0009)	0.0004	40 x 15	C
CRM	**85X PSb3 H**	0.15	2.24	0.0191	0.0308	0.275	0.0046	0.0008	0.0029	0.0044	0.0053	0.0233	(0.001)	. . . .	40 x 15	C
CRM	**85X PSb5 B**	0.94	4.87	0.0195	0.0346	0.197	0.0257	(0.0017)	0.0011	0.0011	0.0018	0.0020	(0.0040)	. . . .	40 x 15	C
CRM	**85X PSb5 C**	0.040	4.46	0.0219	0.0238	0.135	0.0026	(0.0006)	0.0009	0.0013	0.0015	0.0020	0.030	. . . .	40 x 15	C
CRM	**85X PSb5 D**	0.094	4.68	0.0204	0.0251	0.180	0.0023	(0.0020)	0.0013	0.0017	0.0018	0.0024	0.0075	. . . .	40 x 15	C
CRM	**85X PSb5 E**	0.285	4.51	0.0134	0.0593	0.149	0.0018	0.00057	0.0016	0.0015	0.0029	0.014	0.018	. . . .	38 x 15	C
CRM	**85X PSb8 B**	0.041	8.04	0.0178	0.0169	0.0352	0.0049	<0.001	0.0010	0.0016	0.0043	0.0022	0.005	. . . .	40 x 15	C
CRM	**85X PSb10 B**	0.090	10.00	0.0410	0.169	0.127	0.0020	0.015	0.0018	0.0027	0.0037	0.0020	<0.001	. . . .	40 x 15	C
CRM	**85X PSb12 B**	0.270	11.50	0.0310	0.330	0.071	0.0019	0.071	0.00053	0.0033	0.0056	0.0004	<0.001	. . . .	40 x 15	C

8.5 Various Lead Alloys

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	S	Hg	Co	Mn	Size (mm) Ø x H	Form
CRM	**85X ANTH F**	1.25	6.25	0.0196	0.0072	0.183	0.0070	(0.0004)	0.0005	0.0039	. . . .	0.0045	0.0067	0.014	. . . .	. . . .	0.0026	. . . .	0.0006	. . . .	40 x 15	C
CRM	**85X CADH B**	0.096	1.85	0.0292	0.0260	0.201	0.0076	0.0005	0.044	2.09	. . . .	0.0045	0.0121	0.0010	. . . .	. . . .	<0.0005	. . . .	. . . .	<0.0005	40 x 15	C
CRM	**85X CADL A**	0.010	1.54	0.0169	0.0093	0.0065	0.0076	(0.0006)	(0.0018)	1.69	. . . .	(0.0005)	0.0030	(0.0011)	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**85X HRH H**	0.851	1.107	0.0996	0.072	0.721	0.236	. . . .	. . . .	0.0066	. . . .	0.0012	0.0024	0.0375	. . . .	. . . .	(0.0022)	. . . .	. . . .	. . . .	40 x 15	C
CRM	**85X SASH A**	0.0130	1.54	0.0602	0.0245	0.683	0.0016	. . . .	. . . .	0.00024	. . . .	0.0005	0.0006	. . . .	. . . .	. . . .	(0.0005)	. . . .	. . . .	. . . .	40 x 15	C
CRM	**85X A16 A**	0.0356	1.57	0.0165	0.0006	0.0503	0.0297	(0.0001)	0.0001	0.0001	. . . .	0.0006	. . . .	0.0218	. . . .	. . . .	(0.0003)	. . . .	. . . .	. . . .	38 x 15	C
CRM	**85X M2 A**	0.071	1.847	0.0141	0.0281	0.259	0.0016	(0.0002)	(0.0001)	0.0003	. . . .	0.0005	. . . .	0.0247	. . . .	. . . .	(0.0008)	. . . .	. . . .	. . . .	38 x 15	C
CRM	**85X MS2X A**	0.392	1.367	0.0188	0.0277	0.176	0.0043	(0.0001)	0.0003	0.0002	. . . .	0.0004	. . . .	0.0334	. . . .	. . . .	(0.0002)	. . . .	. . . .	. . . .	38 x 15	C
CRM	**85X N35 A**	0.044	3.42	0.0130	0.0246	0.201	0.0011	(0.0001)	0.0001	0.00013	. . . .	0.0006	. . . .	0.0004	. . . .	. . . .	0.007	. . . .	. . . .	. . . .	38 x 15	C
CRM	**85X SB28 A**	0.051	2.87	0.0140	0.0035	0.162	0.0025	(0.0002)	(0.0001)	(0.0001)	. . . .	0.0012	. . . .	0.0223	. . . .	. . . .	0.0010	. . . .	. . . .	. . . .	38 x 15	C
CRM	**85X SM31 A**	0.0274	2.98	0.0114	0.0084	0.0581	0.0009	(0.0001)	0.0002	(0.0001)	. . . .	0.0006	. . . .	0.0183	. . . .	. . . .	0.0003	. . . .	. . . .	. . . .	38 x 15	C
CRM	**85X YUM A ****	*0.004*	*2.46*	*0.014*	*0.023*	*0.31*	*0.002*	. . . .	*0.0001*	*0.0003*	. . . .	*0.0007*	. . . .	*0.0007*	. . . .	. . . .	*0.006*	. . . .	** provisional values		40 x 15	C
CRM	**85X 2.5LA A ****	*0.065*	*2.48*	*0.015*	*0.038*	*0.33*	*0.002*	. . . .	*0.0001*	*0.0002*	. . . .	*0.0005*	. . . .	*0.0005*	. . . .	. . . .	*0.001*	. . . .	** provisional values		40 x 15	C
CRM	**85X SSBC A**	9.70	2.14	0.413	. . . .	0.075	0.456	. . . .	. . . .	0.455	0.209	. . . .	0.0037	0.0029	0.0079	0.0196	(0.0008)	. . . .	. . . .	. . . .	40 x 15	C
CRM	**85X SSCH A**	2.64	5.52	0.0441	0.177	0.208	0.0134	(0.002)	0.0007	0.0040	. . . .	0.010	0.0070	(0.015)	. . . .	. . . .	0.0035	. . . .	. . . .	. . . .	40 x 15	C
CRM	**85X 0494Pb1 A**	0.051	0.95	0.0017	0.012	0.049	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	0.004	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**85X 0494Pb3 C**	0.245	2.99	0.129	0.108	0.248	0.0212	(0.0003)	. . . .	. . . .	. . . .	. . . .	0.0145	0.036	. . . .	. . . .	0.007	. . . .	. . . .	. . . .	40 x 15	C
CRM	**85X 0616Pb1 C**	0.0045	1.59	0.0333	0.0143	0.060	0.0071	. . . .	0.0004	0.0016	. . . .	0.0011	0.0065	0.0087	. . . .	. . . .	. . . .	0.0010	. . . .	. . . .	40 x 15	C

8.6 Lead Babbits

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Pd	Te	Size (mm) Ø x H	Form
CRM	**86X PSS1 B**	4.29	11.54	0.195	0.0249	0.554	0.0049	0.0018	0.0030	0.0057	0.0074	0.0100	0.0023	. . . .	40 x 15	C
CRM	**86X PSS2 B**	7.00	8.04	0.0646	0.127	1.43	0.0179	(0.001)	0.031	0.066	0.0059	0.0165	0.0049	. . . .	40 x 15	C
CRM	**86X PSS3 B**	9.39	14.13	0.0273	0.489	0.409	0.0140	0.0025	0.0030	0.0170	0.0111	0.0009	. . . .	0.0050	40 x 15	C
CRM	**86X PSS4 B**	10.64	15.93	0.102	0.355	0.241	0.0264	0.0035	0.012	0.0539	0.0174	0.0010	. . . .	0.0146	40 x 15	C

9.1 Tin / Lead Solders

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Al	Te	Au	Se	Hg		Size (mm) Ø x H	Form
CRM	**91X S10PR1 C**	9.10	0.0278	0.0277	0.0097	0.0045	0.0078	(0.0016)	<0.001	0.0029	. . . .	0.0006	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
CRM	**91X S10P D**	10.07	(0.002)	(0.006)	(0.001)	(0.001)	(0.001)	<0.001	<0.0001	<0.0001	<0.001	<0.001	<0.001	. . . .	. . . .	. . . .	. . . .		40 x 15	C
CRM	**91X S30PR2 C**	30.17	0.619	0.158	0.095	0.028	0.060	0.009	0.016	0.0060	. . . .	0.0077	<0.0005	. . . .	0.0017	. . . .	. . . .		40 x 15	C
CRM	**91X S30PR3 C**	30.88	0.269	0.294	0.102	0.0126	0.024	0.0016	(0.003)	0.0115	0.0085	0.0269	. . . .	. . . .	0.0063	. . . .	. . . .		40 x 15	C
CRM	**91X S40PR2 D**	40.68	0.596	0.154	0.085	0.010	0.086	0.0096	0.0275	0.0046	. . . .	0.0050	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
CRM	**91X S40P D**	40.00	(0.002)	(0.005)	(0.001)	(0.007)	(0.001)	(0.001)	<0.0001	<0.0001	(0.002)	<0.001	<0.0005	. . . .	. . . .	. . . .	. . . .		40 x 15	C
CRM	**91X S50PR4 B ****	*53.0*	*0.13*	*0.12*	*1.16*	*0.040*	*0.070*	*0.002*	*0.032*	*0.012*	*0.048*	*0.018*	*0.001*	. . .	*0.035*	*0.0035*	. . . .	** provisional values	40 x 15	C
CRM	**91X S50P E**	50.05	(0.002)	(0.005)	(0.002)	(0.006)	(0.001)	(0.001)	<0.0001	<0.0001	(0.003)	(0.001)	<0.0005	. . . .	. . . .	. . . .	. . . .		40 x 15	C
CRM	**91X S62AG2 A**	61.68	0.347	0.168	0.069	0.022	2.03	0.0065	0.0011	0.0016	. . . .	(0.0016)	(0.0011)	. . . .	0.0020	. . . .	. . . .		40 x 15	C
CRM	**91X S63PR0 B**	60.03	0.0182	0.0084	0.0202	0.0094	0.0097	(0.002)	<0.0005	0.0097	0.0048	0.0018	. . . .	0.0034	0.0148	. . . .	0.004		40 x 15	C
CRM	**91X S63PR1 G**	61.45	0.052	0.0588	0.214	0.0064	0.0061	(0.002)	(0.002)	0.0045	0.0308	0.0060	. . . .	0.0047	0.0348	. . . .	(0.015)		40 x 15	C
CRM	**91X S63PR2 J**	62.38	0.539	0.144	0.0733	0.0190	0.054	0.0129	0.004	0.0130	0.0154	0.0092	(0.0014)	0.0032	0.076	. . . .	. . . .		40 x 15	C
CRM	**91X S63PR3 G**	64.01	0.243	0.254	0.101	0.0264	0.0193	0.0078	0.0061	0.0009	0.0097	0.0085	. . . .	0.0068	0.169	. . . .	(0.038)		40 x 15	C
CRM	**91X S63PR4 A**	66.8	0.093	0.030	0.021	<0.002	0.030	<0.005	<0.001	0.021	0.014	<0.005	. . . .	0.006	0.05	. . . .	. . . .		40 x 15	C
CRM	**91X S63Bi1 A**	61.9	0.470	0.597	0.105	<0.002	0.0592	0.0204	(0.002)	0.0095	0.0067	0.0131	(0.0015)	0.0012	0.074	. . . .	. . . .		40 x 15	C
CRM	**91X S63P J ****	*62.9*	*(0.010)*	*(0.005)*	*(0.015)*	*(0.001)*	*(0.016)*	*(0.001)*	*<0.0001*	*<0.0005*	*(0.006)*	*(0.001)*	*<0.0005*	. . . .	*<0.001*	. . . .	. . . .	** provisional values	40 x 15	C

9.3 Tin / Lead / Antimony Solders

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Size (mm) Ø x H	Form
CRM	**93X S30APR1 C**	28.58	2.54	0.059	0.192	0.010	0.0144	(0.012)	(0.0004)	0.0014	0.0094	0.0010	0.0024	40 x 15	C
CRM	**93X S30APR2 C**	30.68	1.80	0.168	0.062	0.0178	0.049	0.0026	0.028	0.0061	0.0199	0.042	0.0102	40 x 15	C
CRM	**93X S30APR3 C**	33.0	0.96	0.28	0.008	0.018	0.021	0.0026	0.005	0.009	. . . .	0.010	. . . .	40 x 15	C

9.5 Fusible Alloys	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Al	Pb	Co	Ni	Au	Nominal Melting Temperature °C	Size (mm) Ø x H	Form
95X 117 A	7.99	0.012	45.3	0.011	. . . .	0.0047	. . . .	0.0053	4.99	18.6	. . . .	23.1	. . . .	. . . .	. . . .	47	40 x 15	C
95X 136 A	12.05	0.023	48.7	0.0029	. . . .	0.0057	. . . .	0.030	0.0091	21.5	. . . .	17.8	. . . .	. . . .	. . . .	58	40 x 15	C
95X 158 A	13.5	0.057	50.2	0.048	. . . .	0.002	. . . .	0.044	9.6	0.006	. . . .	27.0	. . . .	. . . .	. . . .	70	40 x 15	C
95X 174 A	16.79	0.082	57.12	0.0029	. . . .	0.0076	. . . .	0.036	0.0089	26.2	. . . .	0.081	. . . .	. . . .	. . . .	79	40 x 15	C
95X 255 A	0.24	0.32	55.7	0.045	. . . .	0.0019	. . . .	0.035	0.0065	0.010	. . . .	43.7	. . . .	. . . .	. . . .	124	40 x 15	C
95X BIS40P1 B	42.3	0.092	57.4	0.0670	0.0101	0.035	(0.001)	. . . .	0.0050	0.0164	. . . .	0.043	. . . .	. . . .	. . . .	138	40 x 15	C
95X BIS40P2 A	44.7	0.005	55.3	0.003	0.002	0.005	0.001	0.002	0.0008	0.005	0.002	0.020	0.001	0.002	0.0006	. . . .	40 x 15	C
95X BIS40P3 A	38.2	0.020	60.0	0.10	(0.005)	0.29	0.014	0.001	0.005	1.01	0.034	0.106	0.016	0.032	0.009	. . . .	40 x 15	C
95X BIS40P4 A	38.2	0.144	58.0	0.21	(0.007)	(0.70)	0.047	0.003	0.009	2.02	0.062	0.210	0.031	0.073	0.009	. . . .	40 x 15	C
95X BIS50P1 A	50.0	. . . .	49.8	. . . .	. . . .	. . . .	0.051	0.006	0.022	. . . .	. . . .	. . . .	. . . .	0.025	. . . .	. . . .	40 x 15	C
95X BIS50P2 A	50.3	. . . .	49.6	. . . .	0.002	0.090	0.007	. . . .	. . . .	. . . .	0.005	. . . .	. . . .	. . . .	0.015	. . . .	40 x 15	C
95X BIS50P3 A	48.6	. . . .	49.8	. . . .	0.073	1.50	0.003	0.002	0.015	. . . .	. . . .	. . . .	. . . .	. . . .	0.0025	. . . .	40 x 15	C
95X BIS70P1 A	69.1	. . . .	29.6	. . . .	0.025	1.10	0.010	. . . .	. . . .	0.040	<0.001	. . . .	. . . .	0.029	0.0004	. . . .	40 x 15	C
95X BIS70P2 A	65.0	. . . .	32.8	. . . .	. . . .	2.01	. . . .	0.001	. . . .	0.049	<0.001	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
95X CDS50P1 A	50.1	0.113	0.13	0.26	0.027	0.030	(0.0022)	0.007	18.1	0.092	<0.002	31.0	. . . .	. . . .	. . . .	145	40 x 15	C
95X PBS40P1 A	42.6	0.016	13.8	0.025	0.005	0.011	(0.0006)	0.0010	0.0043	0.005	(0.0006)	(43.6)	. . . .	. . . .	. . . .	. . . .	40 x 15	C
95X SC34 A	34.05	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	(65.99)	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
95X SC36 A	36.09	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	(63.98)	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C

Note: All these are RMs not CRMs

10. Titanium Base

Updated: 13th January 2015

Blocks / Discs

10.1 Various Ti Alloys		Al	Sn	V	Mo	Nb	Zr	Cr	Fe	Ni	Cu	Si	Y	C	S	N	O	H	Size (mm) Ø x H	Form
CRM	**101X Ti1 A**	3.08	. . . .	. . . .	14.98	2.75	. . . .	. . . .	0.035	0.0099	0.05	0.201	0.0030	0.0417	(0.003)	0.005	0.169	0.0069	40 x 13	HIP
CRM	**101X Ti2 A**	6.02	2.05	. . . .	2.08	. . . .	3.97	0.0054	0.053	0.0073	(0.003)	0.110	0.0002	0.016	. . . .	0.0053	0.143	0.0076	40 x 13	HIP
CRM	**101X Ti3 A**	6.14	0.0215	4.00	0.0213	. . . .	0.0152	0.0194	0.104	0.0303	0.0047	0.013	0.0101	0.0619	. . . .	0.010	0.198	0.0034	40 x 13	HIP

Note: These products are available in other thicknesses on request

11. Cobalt Base

Updated: 13th January 2015

Blocks / Discs

11.1 Co/Cr/W (Alloy WI 52 Type)		C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Nb	Ta	Al	Cu	N	Pb	Sn	Size (mm) Ø x H	Form
	111X 12669 J	. . . .	0.71	. . . .	. . . .	0.57	0.62	22.04	10.65	1.41	. . . .	2.06	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**111X 12670 N**	(0.007)	0.589	0.026	0.0052	0.48	1.10	19.24	10.95	1.28	(0.057)	2.53	0.105	(0.004)	(0.059)	0.006	. . . .	0.021	40 x 15	C
	111X 12671 J	. . . .	0.51	. . . .	. . . .	0.61	0.88	20.5	11.8	1.45	. . . .	1.95	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**111X 12673 A**	(0.005)	0.82	0.022	0.010	0.52	1.69	19.0	9.75	1.70	0.086	2.35	0.06	<0.005	0.104	0.031	(0.003)	0.074	40 x 15	C

11.2 Co/Cr/Mo (Stellite 8 / BS 3531 Type)		C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Al	Ti	Nb	Cu	B	N	Size (mm) Ø x H	Form
CRM	**112X 14943 G**	0.129	0.58	0.026	0.006	1.20	0.138	30.64	0.060	1.23	7.94	(0.024)	. . . .	0.119	0.229	0.0059	0.056	40 x 15	CC

11.9 Various Cobalt Alloys		C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Cu	Nb	Ta	Al	Mg	B	N	Size (mm) Ø x H	Form
CRM	**119 X COB1 G**	0.065	0.40	0.015	0.026	0.395	20.8	24.7	11.6	14.6	0.40	0.088	0.345	. . . .	0.020	. . . .	. . . .	0.130	40 x 15	CC
CRM	**119X ST3 L**	2.36	0.807	0.0260	. . . .	0.887	2.15	29.9	12.6	3.42	0.163	0.032	. . . .	. . . .	. . . .	. . . .	0.127	0.053	40 x 15	CC

13.1 Silver with Impurities

All Elements ppm

	Cu	Pb	Bi	Zn	As	Sb	Se	Au	Sn	Pt	Pd	Fe	Te	Mn	Cd	Ni	Si	Ga	Al	Size (mm) Ø x H	Form
131X AGP1 B	815	420	523	502	145	485	299	521	505	505	332	57	435	404	377	276	. . . .	. . . .	. . . .	25 x 3	R
131X AGP2 B	193	75	96	109	29	107	65	114	95	112	105	(20)	90	49	56	57	. . . .	. . . .	. . . .	25 x 3	R
131X AGP3 B	66	12	12	34	6	21	16	26	22	23	16	(11)	18	3	6	12	. . . .	. . . .	. . . .	25 x 3	R
131X AGP4 B	41	5	7	20	3	12	6	9	6	7	7	(23)	5	3	2	6	. . . .	. . . .	. . . .	25 x 3	R

R - Samples prepared from rolled strip

131X PAg1 A	75	40	40	50	12	50	35	120	40	35	180	5	120	35	35	25	30	60	8	34 x 12	concast
131X PAg2 A	400	12	12	40	8	12	10	20	10	10	180	7	15	10	5	9	4	15	2	34 x 12	concast

All Elements ppm

	Bi	Se	Fe	Cu	Cr	Si	Al	Size (mm) Ø x H	Form
131X AgSe1 A	304	162	23	. . . .	. . . .	. . . .	. . . .	40 x 10	C
131X AgSe2 A	790	465	22	1333	37	39	43	40 x 10	C

13.2 Silver Copper Alloys

	Ag	Cu	Zn	Size (mm) Ø x H	Form
132X AGB75 A	75.35	24.29	. . . .	40 x 10	C
132X AGB85 A	85.11	14.80	. . . .	40 x 10	C
132X AGB87 A	87.33	12.56	. . . .	40 x 10	C
132X AGB90 A	90.16	9.56	. . . .	40 x 10	C
132X AGB93 A	92.86	7.10	. . . .	40 x 10	C
132X AGB94 A	93.98	5.83	. . . .	40 x 10	C
132X AGB100 A	99.89	0.136	. . . .	40 x 10	C

All these items made to order

C - Samples cast

132X 925Zn1 B	92.70	6.09	1.39	Unmounted	25 x 3**	R
132X 925Zn3 B	92.64	4.53	2.88	Unmounted	25 x 3**	R

R - Samples prepared from rolled strip

**Also available mounted in Bakelite 30mm diameter

13.3 Silver Alloys

These Elements in %

	Au	Cu	Pb	Zn	Sn	Bi	Sb	Fe
133X AGA1 A	1.48	19.95	0.207	0.211	0.291	0.194	0.050	0.039
133X AGA2 A	0.507	10.00	1.02	0.502	0.520	0.113	0.192	0.027
133X AGA3 A	0.258	4.91	1.89	0.816	0.921	0.048	0.459	(0.015)
133X AGQ1 C	0.251	2.532	0.245					
133X AGQ2 C	0.978	5.808	0.469					
133X AGQ3 C	1.975	9.612	0.921					

These Elements in ppm

	Al	As	Cd	Co	Mn	Ni	Pd	Pt	Se	Te	Ge	In		Size (mm) Ø x H	Form
133X AGA1 A	96	255	165	406	61	118	54	67	169	271	107	37	Unmounted	25 x 3	R
133X AGA2 A	19	144	113	163	115	264	76	114	78	98	47	65	Unmounted	25 x 3	R
133X AGA3 A	(20)	80	42	50	98	450	156	256	44	54	45	134	Unmounted	25 x 3	R
133X AGQ1 C													Unmounted	25 x 3	R
133X AGQ2 C													Unmounted	25 x 3	R
133X AGQ3 C													Unmounted	25 x 3	R

R - Samples prepared from rolled strip

Note: All the items on this page are RMs, not CRMs

16. Setting Up Samples

Updated: 13th January 2015

All of these samples have been prepared to meet the daily setting up requirements of laboratories using Direct Reading Spectrometers.
Analytical Data are supplied with each sample but are not certified as accurate as these are not intended to be used as Primary Reference Materials, and should not be used for calibration..

16.4.2 Aluminium

	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	Be	Sb	Ca	Sr	Zr	Ag	Size (mm) Ø x H	Form
164X ALSUS7	4	0.15	0.9	0.55	0.06	1.1	0.12	0.11	0.01	0.3	0.01	0.2	0.1	0.12	<0.001	0.003	0.18	. . . .	50 x 25	C
164X ALSUS8	0.75	0.9	9.5	0.25	0.45	0.12	0.25	0.001	0.13	0.02	0.06	0.025	0.015	0.03	<0.001	0.07	0.025	0.09	50 x 25	C

16.5.1 Pure Copper

All Elements ppm

	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Cr	Co	Ag	Mg	C	Se	O	N	Size (mm) Ø x H	Form
165X CUSUS1	0.7	11	0.4	8	1	0.05	0.05	0.05	0.01	0.05	0.1	1	11	0.01	0.1	0.05	0.01	(0.5)	0.05	(370)	(6)	50 x 45	W

16.5.2 Copper

	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Cr	Co	Mg	Se	Cu	Size (mm) Ø x H	Form
165X MNB5 SUS	1.6	0.20	38	0.55	1.1	3.2	0.40	. . . .	0.20	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	55	40 x 17	CC
165X PB10 SUS	11.0	0.04	0.05	0.002	0.06	0.001	0.001	0.02	<0.001	0.02	0.15	0.002	0.03	0.001	0.01	. . . .	0.01	89	42 x 18	CC
165X ALB1 SUS	0.03	0.20	0.06	2.8	5.3	9.0	0.10	0.005	0.08	0.015	. . . .	0.015	. . . .	0.01	. . . .	0.04	. . . .	82	40 x 18	CC

16.6 Magnesium

	Al	Zn	Mn	Cu	Si	Fe	Ni	Ti	Sn	Pb	Ag	Be	Cd	Size (mm) Ø x H	Form
166X MGSUS2	8	0.4	0.4	0.02	0.12	0.005	0.02	. . . .	0.01	0.04	0.005	0.002	0.004	40 x 40	C
166X MGSUS3	0.4	0.09	0.8	0.07	0.01	<0.005	0.02	. . . .	0.005	0.04	0.02	0.0005	0.005	50 x 15	C
166X MGSUS4	9	5	0.12	0.2	0.015	0.02	0.003	0.005	0.05	0.02	1.6	0.003	0.04	50 x 15	C

16. Setting Up Samples

Updated: 13th January 2015

All of these samples have been prepared to meet the daily setting up requirements of laboratories using Direct Reading Spectrometers.
Analytical Data are supplied with each sample but are not certified as accurate as these are not intended to be used as Primary Reference Materials, and should not be used for calibration.

16.8 Lead

	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Tl	Au	S	Hg	Size (mm) Ø x H	Form
168X PBSUS1	1.3	6.2	0.04	0.03	0.37	0.01	0.002	0.001	0.015	0.01	0.003	0.01	0.01	0.001	0.001	0.002	. . . .	45 x 30	C
168X PBSUS5	0.9	0.35	0.35	0.06	0.35	0.2	<0.001	. . . .	0.09	0.08	0.001	0.003	. . . .	0.002	0.0005	0.0005	0.02	50 x 25	C
168X PBSUS6	0.15	0.12	0.22	0.10	0.025	0.04	<0.001	0.002	0.015	0.01	0.003	0.0005	0.003	0.03	0.001	0.0005	. . . .	45 x 35	C
168X PBSUS7	0.1	7	0.05	0.05	0.7	0.01	. . . .	(0.02)	0.005	0.002	. . . .	0.02	0.01	0.01	0.005	0.001	. . . .	50 x 20	C

16.8.1 Lead for fire assay

	ppm Pt	ppm Pd	ppm Au	ppm Rh	ppm Ru	ppm Ir	ppm Ag	ppm Fe	ppm Bi	ppm Cu	ppm Ni	ppm Te	ppm As	ppm Sb	ppm Tl	ppm S	Size (mm) Ø x H	Form
168X PBSUS PM1	55	20	35	12	0.1	2	40	1	100	5	3	1	2	1	10	2	48 x 28	C

16.9 Zinc

	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Tl	In	Ag	Cr	Si	Size (mm) Ø x H	Form
169X ZN SUS1	0.6	0.002	0.35	0.3	0.05	0.3	0.35	0.06	0.001	0.005	0.2	0.001	0.06	0.25	0.04	0.001	0.003	50 x 20	C

16.90 Zinc control sample

	Pb	Mg	Al	Cd	Fe	Sn	Cu	Size (mm) Ø x H	Form
1690X ZnChk1	0.005	0.02	4	0.005	0.025	0.003	1.2	50 x 20	C
1690X ZnChk2	2	<0.001	0.01	0.12	0.75	1	0.42	50 x 20	C

16.11 Tin

	As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	Co	In	Au	Se	Te	Tl	Size (mm) Ø x H	Form
1611X SNSUS6	0.3	0.08	0.15	1.0	0.4	0.03	0.01	0.005	0.03	. . . .	0.1	0.02	0.005	0.001	0.003	0.001	0.005	50 x 20	C
1611X SNSUS7	2.1	2.3	9	0.35	11	(0.05)	0.03	0.005	0.05	<0.001	0.3	0.005	0.03	0.005	0.005	0.003	0.03	50 x 20	C

16.12 Cobalt

	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Al	Nb	Cu	B	Sn	Pb	Ta	Ti	V	Co	Size (mm) Ø x H	Form
1612X COSUS1	1.0	1.6	0.07	0.05	1.7	17	26	8.0	3.5	6.5	1.5	2.2	0.15	0.01	0.08	0.01	0.02	0.20	0.25	~30	43 x 20	C

18.1 Gases in Tool Steels		C	S	N	O	Approximate Matrix Composition	Size grams
CRM	18X D7 A	2.32	0.0111	0.0124	0.072	12% Cr, 4% V, 1% Mo	100
CRM	18X H13 A	0.344	0.0080	0.0115	0.063	5% Cr, 1% V, 1.5% Mo, 1% Si	100

These materials are supplied in powder form - particle size approximately <200u

Most of the MBH range of discs can also be supplied in chippings form. See the sections earlier for general composition information.
Chippings are made to order from the currently available disc material as detailed in this catalogue.

Please note that the certification for chippings may differ slightly from the disc certification. This is caused by a review of the relevant analytical techniques used in certifying the material applicable to the chippings form of the material

Note: chippings are made to order and are non-returnable

Please enquire to confirm availability, bottle quantity and price.

As material is made to order it is not possible for us to give a general listing of available material. Please contact us for all chips enquiries to confirm our ability to supply and to confirm the quantity of material per bottle and unit price.

Definitions

The materials in this catalogue have been categorised as Certified Reference Materials, Reference Materials or Setting Up / Control Samples.
The following definitions used in ISO Guide 30: 1992 apply to the first two categories;

Certified Reference Material	"A Reference Material, accompanied by a certificate, one or more of whose property values are certified by a procedure which establishes its traceability to an accurate realisation of the unit in which the property values are expressed and for which each certified values ia accompanied by an uncertainty at a stated level of confidence." Such materials are indicated with **CRM** in the left hand margin against the catalogue number.
Reference Material	"A material or substance one or more of whose property values are sufficiently homogeneous and well established to be used for the calibration of an apparatus, the assessment of a measured method, or for assigning values to materials."
Setting Up Samples	Samples which have been prepared to meet the routine setting up requirements of laboratories using direct reading spectrometers. Whilst analytical data are supplied with each sample they are not certified and are only intended to be used as Setting Up Samples.

Note: **Products that are <u>not</u> marked in this catalogue as 'CRM' may be presumed to be Reference Materials as defined above.**

Use of Reference Materials

Whilst modern instrumental methods of analysis are capable of high accuracy and precision, they are comparative techniques.
Reference materials must be selected and used correctly for optimum performance to be achieved, and the following points should be considered.

The instrument manufacturer's recommendations and advice should be followed.

Users should be aware of the possible effects of structure, sample preparation and physico-chemical interferences when using reference materials.

Validity of Information

IMPORTANT - Please Note

The majority of the analytical data in the following pages indicate actual values for the batch currently available. However some materials may be remade during the lifetime of this catalogue and the values achieved for the replacements may differ from those stated.

We recommend that customers verify the availability of any material where it is important that the material supplied has the element concentration values listed.

All concentration values in this catalogue are given in % (w/w) unless otherwise stated.

All stated dimensions and weights are approximate. Finished sizes/weights may differ from those stated.

Whilst every effort is taken to present accurate data, errors and omissions excepted, it remains the responsibility of the purchaser to verify data prior to purchase.

For materials not classified as 'CRM' it is the responsibility of the purchaser to ensure the end-user is willing to use a material of lower status.

Conditions of Sale & Ordering procedure.

January 2015

General Conditions

All materials are subject to our general Conditions of Sale . The text is reproduced here for your convenience

1 All items listed in this catalogue or otherwise offered for sale are subject to availability and any delivery dates that may be quoted are conditional on supplies. We are unable to accept liability for delay and if any item becomes unavailable during the life of a catalogue we will advise on suitable alternatives where appropriate.

2 Unless credit facilities have been agreed with us (in which case payment is due on a net monthly basis), payment for items is due either against a Pro Forma invoice at the time of ordering or by Confirmed Irrevocable Letter of Credit through a British Clearing Bank payable on presentation of invoice and despatch documents.

3 We draw the attention of all customers to the notes in our catalogue relating to definitions, analyses and calibration procedures.

4 To the extent that the law may permit, the following condition stands in substitution for all conditions and warranties as to merchantability and fitness for purpose as implied by statute, common law or otherwise.

a. It is the responsibility of the customer to decide on the suitability and fitness for purpose of all items purchased

b. Any items claimed to be defective must be returned to us (within 3 months of delivery) for examination and analysis. No claims can be entertained if this is not done.

c. We may, at our discretion, replace any item shown to be defective or refund the price paid. Our liability in respect of any such item will not in any circumstances exceed the amount paid for the item in question and no liability is accepted for consequential losses however arising.

5 These conditions shall apply to all contracts entered into by us to the exclusion of all other conditions and notwithstanding any items that may appear on any printed stationery of any customer. No variation of these conditions shall be effective unless confirmed by us in writing on or prior to formal acceptance by us of any order.

6 Until such a time as we have received full payment, items supplied to customers shall remain our property notwithstanding delivery to the customer and we shall be entitled to enter upon the customer's premises to recover the property if the customer shall go into liquidation, or if a receiver is appointed .

7 This contract shall be governed by English Law and any disputes shall be referred to the exclusive jurisdiction of the English Courts.

Ordering Procedure

Orders are accepted by mail, fax or email. Please ensure any subsequent confirmation of an order is appropriately marked so as to avoid duplication.

Send your order to:

MBH Analytical Ltd
Holland House
Queens Road
Barnet, Herts., EN5 4DJ
United Kingdom

Tel: **++44 (0)208 441 2024**

Fax: **++44 (0)208 449 0810**

Email: **sales@mbh.co.uk**

Orders placed shall include: Catalogue number, quantity required, description, price, agreed discount and confirmation of invoicing and delivery address. Unless specifically instructed all orders will be despatched by our chosen carrier, with due regard to speed, security and cost.

All orders will be acknowledged by either fax, e-mail or post. Please check the acknowledgement to ensure we have correctly understood your requirement.

Conditions of Sale - Prices, VAT and payment terms.

January 2015

Prices

The prices given in this catalogue are stated in £stg and are correct at the time of publication and exclude UK V.A.T. (see below).
All prices are stated Packed Ex Works (Barnet) and include usual commercial packing, but exclude any shipping costs, special packing requirements requested by the customer (and subject to prior agreement) or extra documentation (please enquire)

Prices are subject to change without notice. We recommend that customers verify the price of items prior to placing their order.

Although we endeavour to give advance notice of any price changes, the prices ruling at the time of placing your order will apply unless otherwise agreed in writing. Should prices be requested in US$ or Euro €, we will be pleased to submit our quotation in either of these currencies. Payment should be made to the corresponding currency account at our bank as detailed below.

We are pleased to provide written quotations upon request indicating current availability and estimated despatch costs.

Value Added Tax (VAT)

All orders delivered to a UK address are subject to VAT at the rate applicable at the time of despatch. European Community countries are also subject to UK VAT unless we are advised of your VAT number at the time of placing your purchase order. Orders originating from outside the EU but for delivery to an address in the EU (such as a freight agent) for onward despatch will also be liable for VAT until we receive proof of export from the EU within 90 days of our initial despatch from MBH. The VAT charged will then be refunded upon receipt of the proof of export but this must be presented to MBH within the 90 day period. After 90 days you will need to apply direct to the tax authorities for any refund of VAT.

Insurance & Freight

Insurance and freight costs are charged extra at cost. We will be pleased to provide our quotation detailing these costs upon request.
All materials are packed in strong cardboard outer cartons suitable for despatch by air parcel post, courier or air freight as necessary.
Special packing instructions and freight requirements should be discussed and agreed with us prior to placing your order.

Payment Terms

Payment should be in Sterling (or stated currency) and free of all local/senders bank charges. **MBH will only accept our own bank's charges.**
Payments must be sent for the full amount **after** deduction of all transmission fees (including senders fee & intermediary bank fees).

Payment may be made by any of the following methods.

- Visa Purchasing Card or major debit/credit/charge card (Visa, Mastercard or American Express). Payments over £500.00 are subject to a 2.5% surcharge. Please note we can only invoice/collect payment in Sterling for card transactions. The currency amount billed to your card will reflect your card company's currency conversion rate and fee.

  The card payment will be taken (in £Sterling) at the time of despatch and a receipt forwarded with the invoice.

continues…….

Payment Terms

continued.

- Sterling (or stated currency) prepayment with your order against our Proforma invoice by bankers draft or automated bank transfer.
- Irrevocable Letter of Credit through a London bank, payable at sight upon presentation of documents (minimum order value stg£4,000.00 applies).
- Established customers may apply to receive strictly Net Monthly Account terms, subject to satisfactory bank and trade references.

Our bank details are:

Name of Banker: **National Westminster Bank plc. (Natwest Bank)**
Branch Address: **181 Darkes Lane**
POTTERS BAR
Herts EN6 1XT
United Kingdom

Account Name: **MBH Analytical Ltd**
Account No: **(£ Sterling) 13140922** **(IBAN)** GB10NWBK60174913140922
Please see the currency a/c details and IBAN references below for remittances in US Dollar or EURO.
Bank Sort Code: **60 17 49**
BIC (Swift code): **NWBKGB2L**

For payments of invoices stated in **Euros** please remit to our Euro currency account stated below, and for invoices in **US Dollars** please use our US Dollar curency account stated below. Both accounts are held at the NATWEST bank detailed above.

Currency Account Numbers: **Euro 06848966** **(IBAN)** GB18NWBK60720506848966
(All other bank details remain as stated above.) **US Dollar 16500466** **(IBAN)** GB71NWBK60730116500466

Please ensure you send your payment to the correct currency account as currency exchange rate losses will be incurred on your account when moving payment to the correct MBH a/c.

All payments should exclude any charges/fees from the payees bank or intermediary (or correspondent) bank.
Our bank must receive the full invoiced amount after deducting senders fees and before our own bank fees are applied.

Conditions of Sale

All materials sold are subject to our standard Conditions of Sale. These are printed on page 47.

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