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Introduction

On the following pages you will find the full current range of material, principally for OES, produced by MBH. The range includes Reference Material, Certified Reference Material 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 product 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 months.

Included in this publication you will find the current prices against each item. It is our intention that the pricing will remain unchanged for as long as possible but we reserve the right to revise prices as necessary and without notice .

Listed on the following pages you will find details of the latest additions and forthcoming new materials produced by MBH. The majority of materials are certified to the latest international guide-lines and those meeting the definitions for Certified Reference Materials are clearly identified.

The catalogue lists currently available or forthcoming materials. If you cannot find the catalogue reference number you want listed it may have been changed, deleted or excluded because of its age. 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

** provisional values or ^{PP} 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. A copy of the final certificate will be mailed to you as soon as available. Please enquire .
Sold Out	Materials whose data are stuck through (for example ~~12X 352 B~~ etc.) and indicated as sold out will be remade later; please enquire.
	Material listed in previous editions and now no longer listed herein should be considered no longer available and will not be remade.

Information

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 homogenous 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.

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 [main] 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 option, 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 of the undertaking of the customer or any of his or its property.

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:

BREITLÄNDER
Part of LGC Standards

Breitländer GmbH
Mercatorstr. 51
46485 Wesel

mail@breitlander.com **+49-281-319-391-0**

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 to ensure we have correctly understood your requirement.

1.1.3 High Phosphorus

		C	Si	S	P	Mn	Cr	Size (mm) Ø x H	Form
CRM	11X HPC1 G	3.22	2.60	0.0311	0.75	0.499	. . . .	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 H	3.77	1.58	0.0513	1.96	1.316	. . . .	40 x 15	CC
CRM	11X HPC4 P	3.15	1.08	0.094	2.03	0.804	1.57	40 x 17	CC
CRM	11X HPC5 A	3.68	1.175	0.223	0.246	1.028	1.42	40 x 17	CC

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	Size (mm) Ø x H	Form
CRM	11X CC21 A	3.12	2.19	0.083	0.0246	0.785	0.107	0.351	0.0357	0.153	0.0078	0.0024	0.0259	0.0083	. . . .	. . . .	. . . .	0.0101	. . . .	. . . .	. . . .	. . . .	45 x 6	2xCC
CRM	11X CC22 A	3.70	1.82	0.080	0.033	.690	0.060	0.319	0.021	0.712	0.012	(0.002)	0.029	0.0087	. . . .	. . . .	. . . .	0.009	. . . .	. . . .	. . . .	. . . .	45 x 6	2xCC
CRM	11X C1 P **	2.80	1.49	0.038	0.103	1.26	0.68	0.52	0.075	0.17	0.035	0.018	0.17	0.105	0.17	0.085	. . . .	0.020	0.065	0.007	0.01	0.022		
CRM	11X C2 R	3.50	1.31	0.096	0.798	0.980	1.58	1.15	0.109	0.189	0.058	0.0098	0.054	0.289	0.148	0.106	0.081	0.053	0.098	0.0248	0.0285	0.0096		
CRM	11X C3 Z	3.27	0.944	0.152	0.387	0.797	4.14	2.43	0.235	0.431	0.236	(0.015)	0.071	0.796	0.186	0.376	(0.054)	0.120	0.264	(0.002)	0.0026	0.0111		
CRM	11X C4 Q	1.89	3.02	0.138	0.111	0.651	2.41	1.50	0.114	0.342	0.0207	0.032	0.091	0.0233	0.072	0.0175	0.122	0.0103	0.011	0.0050	(0.0030)	0.0112		
CRM	11X C5 U	2.49	1.78	0.103	0.097	0.791	2.05	1.15	0.497	2.71	0.021	0.006	0.079	0.0537	(0.088)	0.105	(0.083)	0.0225	0.037	0.006	0.0046	0.011	continued	
CRM	11X C6 V **	3.80	0.50	0.057	0.066	1.07	0.060	0.60	1.55	0.89	0.056	0.015	0.052	0.060	0.025	0.096	. . . .	0.049	0.036	0.005	0.007	0.026		
CRM	11X C7 N **	2.52	0.84	0.010	0.025	1.93	0.030	0.51	0.072	0.075	0.011	0.01	0.020	0.038	0.055	0.033	0.07	0.017	0.02	0.013	. . . .	0.022		
CRM	11X C8 T	3.03	1.61	0.189	0.843	0.486	0.320	0.501	0.158	0.317	0.091	0.016	0.115	0.0637	(0.082)	0.174	0.0175	0.077	0.068	0.041	(0.073)	0.007		
CRM	11X C9 B	2.82	1.19	0.0306	0.032	1.88	2.58	1.31	0.158	0.299	0.052	0.005	0.054	0.475	0.062	0.132	0.286	0.046	0.152	(0.011)	0.0091	0.010		

Continuation from above

	Pb	B	Zr	Te	Cd	N		Size (mm) Ø x H	Form
11X C1 P **	0.015	0.05	0.007	. . . .	. . . .	0.004	** provisional	40 x 15	CC
11X C2 R	(0.009)	0.0097	0.0009	(0.002)	. . . .	. . . .		40 x 17	CC
11X C3 Z	(0.008)	(0.003)	. . . .	0.0024	. . . .	. . . .		40 x 17	CC
11X C4 Q	0.0155	0.018	0.006	0.0010	0.0014	. . . .		40 x 17	CC
11X C5 U	0.023	0.0172	(0.004)	0.005	. . . .	. . . .		40 x 17	CC
11X C6 V **	0.005	0.004	0.004	. . . .	. . . .	0.015	** provisional	40 x 15	CC
11X C7 N **	0.010	0.010	0.003	. . . .	. . . .	0.025	** provisional	40 x 15	CC
11X C8 T	0.023	0.0409	. . . .	0.0043	. . . .	0.0075		40 x 15	CC
11X C9 B	0.0044	0.0058	. . . .	0.015	. . . .	. . . .		40 x 17	CC

1.1.8 Abrasion Resistant

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	Nb	Pb	Size (mm) Ø x H	Form
CRM	11X AR5 J	3.10	1.70	0.0316	0.0299	0.57	5.16	9.73	0.12	0.032	(0.018)	0.0147	0.0586	0.030	(0.003)	40 x 17	CC

1.1.9 Corrosion Resistant

		C	Si	S	P	Mn	Ni	Cr	Cu	Size (mm) Ø x H	Form
CRM	11X S/1Cr3 H	2,92	1.20	0,035	0,093	0,86	14,91	0,96	6,09	40 x 15	CC
CRM	11X S/1Cr5 F	2.54	1.27	0.035	0.107	0.75	16.3	3.36	6.31	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/2Cr2 D	3,03	1,23	0,046	0,14	0,53	18.0	2,35	0,23	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/2Cr5 D	3,01	2,51	0,042	0,14	0,83	19,5	3,99	0,24	40 x 15	CC
	11X S/2Cr6 D	2,65	3,59	0,009	0,254	0,81	18.0	4,39	0,27	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
	11X S/3Cr4 C	2,51	2,37	0,056	0,081	0,65	29,5	5.30	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
CRM	11X 0331.1 H **	2.84	2.08	0.136	0.110	1.36	13.75	2.03	0.110	7.70	0.152	0.047	0.027	0.095	. . . .	0.028	** provisional values	40 x 13	CC
CRM	11X 0331.2 H	2.54	2.78	0.126	0.062	1.32	15.61	1.50	0.085	7.42	. . . .	0.0220	0.049	. . . .	. . . .	0.029		40 X 13	CC
CRM	11X 0331.3 F	2.10	2.46	0.061	0.040	1.08	18.03	2.57	0.061	6.49	. . . .	0.0091	0.055	. . . .	. . . .	0.0112		40 X 13	CC
CRM	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
CRM	11X 0331.6 A	2.71	2.05	0.0197	0.0473	1.144	14.03	1.13	0.011	6.57	. . . .	(0.0020)	. . .	0.025	0.0106	(0.0006)		35 X 6	CC

Note: items that are cast - 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 T	2.25	0.409	0.050	0.100	0.551	1.84	29.32	0.630	0.126	0.070	0.124	0.45	0.179	0.0067		40 x 15	CC
CRM	11X 15295 P	2.285	1.057	0.094	0.085	1.01	0.350	24.87	0.518	0.238	(0.045)	0.144	(0.20)	0.542	(0.010)		40 x 17	CC
	11X 15309 Q	3.14	1.52	0.028	0.006	1.10	0.01	25.03	<0.01	0.01	. . . .	. . . .	. . . .	. . . .	. . . .		40 x 15	C
CRM	11X 15310 A **	2.6	0.9	0.03	0.05	1.45	6.0	21.3	1.0	2.5	. . . .	0.07	0.14	0.07	. . . .	** provisional values		40 x 15	CC

Note: items that are cast - C - may contain some primary carbon.

1.2.2 Residuals in Mild Steel

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Co	Nb	Pb	Bi	Se	Sb	Zn	Size (mm) Ø x H	Form
CRM	12X 12746 U **	0.014	0.175	0.058	0.023	1.70	0.155	0.18	0.66	0.365	0.21	0.020	0.032	0.017	0.10	0.048	0.115	** provisional values			....	....	....	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 T	0.135	0.122	0.052	0.053	0.494	0.454	0.755	0.300	0.543	0.074	0.009	(0.003)	0.0464	0.056	0.145	0.280	....	....	....	....	....	....	42 x 15	W
CRM	12X 12749 V	0.138	0.549	0.080	0.036	1.531	0.609	0.549	0.224	0.269	0.0240	0.026	0.0361	0.0419	0.035	0.074	0.484	....	....	....	....	....	....	42 x 15	W
	12X 12750 S	0.202	0.57	0.058	0.022	0.54	0.70	0.70	0.11	0.11	0.22	0.27	0.11	....	....	0.12	0.61	....	....	....	....	....	....	40 x 15	C
CRM	12X 349 B	0.278	0.295	0.0326	0.0340	0.910	0.285	0.190	0.058	0.308	0.175	0.152	0.125	0.0158	0.053	0.0050	0.0211	....	....	....	....	....	....	42 x 15	W
CRM	12X 350 B **	0.140	0.67	0.036	0.029	0.70	0.165	0.40	0.150	0.153	0.030	0.33	0.095	0.028	0.28	0.052	0.022	** provisional values			....	....	....	40 x 15	W
CRM	12X 352 C	0.257	0.498	0.131	0.074	0.533	0.380	0.348	0.242	0.162	0.124	0.090	0.246	0.042	0.140	0.030	0.031	....	....	....	....	....	....	42 x 15	W
CRM	12X 353 C	0.194	0.142	0.025	0.0205	0.817	0.190	0.491	0.113	0.302	0.075	0.0070	0.057	0.0481	0.108	0.056	0.057	0.096	(0.018)	0.021	0.017	0.156	0.048	42 x 15	W

		C	Si	S	P	Mn	Al	V	Co	Sb	B	Nb	Zr	Size (mm) Ø x H	Form
	12X 354 A	0.27	0.19	0.015	0.066	0.86	0.01	0.02	0.03	0.05	....	0.07	0.03	38 x 15-20	W
	12X 355 A	0.20	0.48	0.024	0.028	0.62	<0.01	0.11	0.05	0.08	0.001	0.02	<0.01	38 x 15-20	W
	12X 356 A	0.36	0.37	0.031	0.049	0.44	0.05	0.09	0.12	0.02	0.007	0.02	0.01	38 x 15-20	W
	12X 357 A	0.45	0.23	0.062	0.016	0.24	0.06	0.19	0.21	<0.005	0.014	<0.001	<0.005	38 x 15-20	W

1.2.3 Low Alloy Steel

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Nb	Pb	Bi	Sb	B	Ta	N	Size (mm) Ø x H	Form
	12X LA1 A	0.06	0.73	0.045	0.013	1.32	0.21	0.95	<0.01	0.034	....	<0.01	0.41	....	....	....	....	....	....	....	....	....	....	40 x 15	W
CRM	12X LA2 C	0.182	1.023	0.0424	0.0268	0.415	0.788	0.757	0.179	0.383	....	1.60	0.0686	....	....	0.053	....	....	....	....	....	....	0.0108	42 x 15	W
	12X LA3 A	0.48	0.13	0.040	0.032	1.50	0.31	0.37	0.30	0.20	....	0.06	0.19	....	....	....	....	....	....	....	....	....	0.006	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
	12X LA5 A	0.81	0.67	0.015	0.057	0.98	0.13	0.12	0.19	0.09	....	0.19	0.58	....	....	....	....	....	....	....	....	....	....	40 x 15	W
	12X LA6 A	0.01	0.06	0.006	0.005	0.10	0.03	0.03	<0.01	0.01	....	<0.01	<0.01	....	....	....	....	....	....	....	....	....	....	40 x 15	W
CRM	12X 15217 Q **	0.18	1.38	0.072	0.055	0.65	0.86	1.22	0.36	0.24	0.073	0.015	0.68	0.12	....	0.25	0.10	....	** provisional values			....	0.025	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 **	0.047	0.26	0.050	0.022	0.82	2.05	0.87	0.25	0.15	0.045	0.075	0.34	....	....	0.155	0.09	....	** provisional values			0.06	0.020	40 x 15	W
CRM	12X 15253 R	0.240	0.387	0.054	0.066	1.162	0.527	1.492	0.538	0.431	0.216	0.187	0.248	0.332	....	0.093	0.49	....	....	....	....	....	0.043	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	....	....	....	....	....	0.018	40 x 15	W
	12X 15256 N	0.09	0.16	0.042	0.046	0.51	3.51	0.32	0.07	0.06	0.15	0.03	0.64	....	....	0.28	....	....	....	....	....	....	....	40 x 15	C
	12X 15259 N	0.67	1.83	0.110	0.043	0.31	3.97	0.47	0.42	0.54	0.089	0.26	0.40	1.04	0.051	0.110	0.06	0.007	(0.010)	(0.034)	0.011	(0.042)	0.005	40 x 15	C
CRM	12X 15260 V	0.446	0.456	0.094	0.031	2.20	0.573	3.69	0.130	0.231	0.0130	0.378	0.351	....	0.087	0.109	0.243	....	....	....	....	0.026	....	40 x 15	CC
CRM	12X 15266 T	0.454	0.667	0.0093	0.079	1.45	1.50	2.78	0.365	0.253	0.0160	0.453	0.089	....	0.063	0.235	1.481	....	....	....	....	0.20	....	40 x 15	CC
																						Ti			
CRM	12X 15254 Y **	0.26	0.82	0.048	0.045	1.15	0.87	2.08	0.74	0.14	0.050	1.15	0.30	0.36	....	0.475	0.32	....	** provisional values			0.26	....	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 S	0.819	1.46	0.064	(0.085)	0.688	0.104	0.511	1.35	0.282	0.023	1.32	0.087	0.188	....	0.289	0.773	....	....	....	....	0.471	....	40 x 15	CC

1.3.2 Austenitic Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Co	Nb	N	B	Bi	Ta	V	Sb	Ti	W	Zr	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 C ****	0.13	2.05	0.08	0.015	0.43	20.3	25.0	0.48	0.28	....	....	0.032	0.13	0.12	0.004	....	0.08	....	....	** provisional values			40 x 15	CC
	13X 18001 A	0.22	0.32	0.057	0.022	1.40	6.41	15.92	0.80	0.16	....	....	0.04	0.57	....	....	....	....	....	....	....	....	....	40 x 15	C
CRM	**13X 18002 B**	0.114	0.46	0.048	0.028	0.95	7.98	17.7	0.199	0.112	....	....	0.056	1.51	0.011	....	....	....	....	....	....	....	....	40 x 15	C
CRM	**13X 18003 B**	0.203	1.008	0.042	0.054	0.773	10.35	19.98	0.397	0.074	....	....	0.120	1.12	0.046	....	....	....	....	....	....	....	....	42 x 15	W
	13X 18004 A	0.07	1.44	0.012	0.094	2.1	12.55	21.64	0.63	0.04	....	....	0.18	0.83	....	....	....	....	....	....	....	....	....	40 x 15	C
CRM	**13X 19001 B ****	0.05	1.25	0.015	0.02	0.50	5.05	15.1	1.55	0.20	....	....	0.025	0.03	0.07	....	....	0.02	0.09	....	** provisional values			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	....	....	....	....	....	....	....	....	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
	13X 12533 Y	0.03	0.37	0.032	0.011	1.13	5.04	18.8	1.05	0.18	(0.03)	0.011	0.055	....	(0.014)	(0.01)	....	(0.17)	....	....	0.14	....	....	40 x 15	C
	13X 12534 T	0.07	0.81	0.043	0.014	0.54	8.10	17.56	2.02	0.10	....	0.02	0.05	....	....	....	....	....	....	....	0.21	....	....	40 x 15	C
CRM	**13X 12535 BD ****	0.25	1.3	0.065	0.075	0.50	14.8	17.0	4.00	0.085	0.018	0.26	0.72	....	0.015	0.015	....	....	0.11	....	1.2	** Provisional		40 x 15	CC
	13X 12536 R	0.165	0.65	0.13	0.053	0.47	11.9	14.8	2.53	0.048	0.018	0.11	0.09	....	....	0.022	....	0.15	....	....	0.47	....	....	40 x 15	C
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	....	....	40 x 17	CC
	13X 12853 J	0.050	0.99	0.016	0.016	1.17	11.92	17.2	2.74	0.114	....	....	0.06	....	(0.011)	0.003	(0.007)	0.03	....	0.02	0.027	0.12	0.009	40 x 15	C
CRM	**13X 12854 K**	0.055	1.10	0.0155	0.018	1.32	12.12	16.64	2.79	0.161	0.020	(0.058)	0.126	....	0.057	0.0090	0.019	0.065	0.118	0.114	0.051	0.153	0.010	40 x 15	W
CRM	**13X 12855 L ****	0.035	1.02	0.012	0.020	0.96	11.00	17.6	2.50	0.38	....	....	0.215	....	....	0.005	0.003	0.10	....	0.18	0.05	0.21	....	40 x 15	W

** provisional values

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 ****	0.025	0.48	0.028	0.025	0.24	17.6	0.38	4.20	0.15	0.66	9.00	0.005	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

** provisional values

1.3.4 Martensitic Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	As	Co	Nb	B	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	....	0.0511	42 x 15	W
	13X 12548 L	0,18	0,32	0,224	0,027	0,75	1,12	12,91	1.30	0.26	....	....	....	....	....	0.37	0.56	....	....	40 x 15	C
	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
	13X 15023 U	0.12	0.19	0.012	0.013	1.43	0.78	10.75	1.49	0.06	....	....	....	....	....	0.05	1.20	....	....	40 x 15	C
	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
	13X 15035 T	0.10	0.68	0.069	0.054	0.93	2.66	13.94	0.45	0.31	....	....	....	....	....	0.21	0.63	....	....	40 x 15	C
	13X 15059 N	0.057	0.48	0.020	0.015	1.22	1.30	15.97	0.63	0.14	(0.02)	....	....	0.06	....	0.26	0.81	....	0.049	40 x 15	C
CRM	**13X 8110L C**	0.697	0.788	0.0943	0.047	0.650	4.16	12.11	2.71	0.223	....	(0.004)	0.031	0.220	0.072	0.314	....	1.07	0.0200	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	N	Cd	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
	13X 12540 L	0.15	1.05	....	....	0.44	5.17	27.88	0.54	....	....	....	....	....	....	....	....	....	40 x 15	C
	13X 14207 J	0.06	1.55	0.011	0.011	1.04	12.48	19.97	0.23	0.24	....	....	....	3.05	0.01	0.26	....	....	40 x 15	C
	13X 14211 P	0.112	1.75	0.018	0.016	0.65	12.8	25.7	0.31	0.28	....	....	....	2.80	0.056	0.15	....	....	40 x 15	C
CRM	**13X 14212 Q**	0.069	2.50	0.041	0.058	0.66	10.33	20.90	0.540	5.56	(0.013)	(0.018)	0.152	3.32	0.241	0.612	0.121	0.0015	43 x 20	C
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
CRM	**13X 14216 N**	0.089	1.54	0.034	0.026	0.748	12.61	22.03	0.228	0.210	(0.004)	(0.005)	0.040	2.00	0.232	0.27	0,142	....	43 x 20	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

1.3.6 Precipitation Hardening Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Ti	Al	V	As	Co	Nb	B	Ta	N	Size (mm) Ø x H	Form
CRM	**13X PH1 M**	0.107	0.236	0.031	0.053	1.49	5.21	16.17	0.172	3.11	....	....	(0.006)	0.003	0.004	0.071	....	....	0.238	43 x 20	C
CRM	**13X PH2 L**	0.111	0.690	0.0251	0.027	1.140	3.67	16.77	0.500	4.08	0.083	0.051	0.119	....	0.116	0.336	0.0061	....	0.107	40 x 17	CC
CRM	**13X PH3 L**	0.167	1.70	0.039	0.023	0.399	6.03	7.47	0.996	7.06	....	....	0.066	....	0.398	0.65	0.0046	....	0.0291	43 x 20	C
CRM	**13X PH4 M**	0.0347	0.647	0.061	0.0152	0.728	4.39	13.73	0.323	5.42	....	....	0.582	....	0.655	0.338	(0.0037)	(0.049)	0.112	40 x 17	CC
	13X PH5 J	0.122	1.03	0.015	0.065	0.98	4.51	17.85	0.51	4.42	....	....	....	....	....	0.58	....	....	0.046	40 x 15	C
CRM	**13X PH6 E**	0.116	2.10	0.015	0.040	0.652	6.35	12.13	1.45	2.08	....	....	0.167	0.028	0.138	0.539	....	....	0.027	43 x 20	C
	13X PH7 E	0.10	1.40	0.021	0.031	1.49	5.58	13.15	2.53	0.79	....	....	....	....	....	0.29	....	....	0.060	40 x 15	C

1.3.7 High Nitrogen Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	V	W	Co	Nb	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 G**	0.142	0.805	0.0083	....	0.808	10.24	18.71	1.89	....	....	....	....	....	....	0.163	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 A**	0.0132	0.258	0.0086	0.0183	1.59	31.32	26.93	6.75	1.16	0.003	....	....	....	0.053	0.188	40 x 17	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	40 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 M**	0.350	0.90	0.0197	....	7.49	5.49	17.57	0.251	0.382	(0.010)	0.554	....	....	1.62	0.100	40 x 17	CC
CRM	**13X NSC2 N**	0.570	1.20	0.0233	....	8.36	4.00	20.14	0.782	1.040	(0.011)	0.293	....	....	2.25	0.269	40 x 17	CC
CRM	**13X NSC3 V**	1.492	1.89	0.0098	10.97	10.97	3.03	24.71	0.086	0.114	(0.028)	0.126	....	....	2.47	0.478	40 x 15	CC
CRM	**13X NSC4 C**	0.559	1.65	0.0100	....	8.98	6.94	31.88	1.28	0.197	(0.029)	0.197	0.192	0.215	3.15	0.896	40 x 17	CC
CRM	**13X NSC5 A**	0.493	1.16	0.0095	....	2.49	4.16	22.47	0.002	0.745	0.315	0.026	....	....	2.31	0.257	40 x 17	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 NSD1 B**	0.046	0.411	0.009	0.019	23.53	0.114	24.51	1.12	0.042	(0.013)	....	0.057	0.128	0.030	0.88	40 x 15	W

1.4.2 High Speed 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**	0.79	0.21	0.015	0.021	0.24	0.20	4.12	0.44	0.104	....	....	1.18	18.2	....	5.07	....	0.021	....	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	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
	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 14945 D	0.67	0.26	0.041	0.033	0.72	0.33	3.97	0.23	0.12	....	....	0.55	16.84	....	0.22	....	....	....		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 14948 C	0.83	0.26	0.017	0.011	0.65	0.29	4.04	0.14	0.04	....	....	0.65	18.8	....	0.16	....	....	....		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	Alloy Type	Size (mm) Ø x H	Form
CRM	**14X MN1 AG**	0.529	0.315	0.0111	0.0115	19.50	1.42	1.74	0.751	0.0603	0.0085	0.008	0.0150	0.319	....	....	0.027		40 x 17	CC
CRM	**14X MN2 Q**	0.788	1.27	0.0198	0.0228	9.57	0.501	0.381	1.56	(0.16)	0.0683	(0.008)	0.104	0.346	....	....	0.0148		40 x 17	CC
CRM	**14X MN3 R**	1.33	1.01	0.0263	0.053	11.14	2.11	1.17	0.459	0.357	0.0319	(0.026)	0.048	0.416	....	....	0.030		40 x 17	CC
CRM	**14X MN4 Y ****	1.08	0.91	0.010	0.024	13.6	1.11	2.05	0.79	0.29	0.027	0.12	0.03	0.085	0.38	0.022	0.030	** provisional values	40 x 17	CC
CRM	**14X MN5 R**	1.463	1.48	0.030	0.025	7.62	1.60	3.75	1.98	0.56	0.0111	(0.03)	0.0255	0.100	....	....	0.0274		40 x 17	CC
	14X 15195 P	1.64	1.45	0.018	0.062	12.06	0.09	0.11	0.30	0.12	0.05	0.08	0.33	....	....	....	....		40 x 15	C
	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 & Resulphurised Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	N	Size (mm) Ø x H	Form
CRM	**14X MSFM1 J**	0.0098	0.351	0.364	0.0778	1.109	0.0205	0.017	0.249	0.0056	0.0041	0.0024	0.0026	0.0019	0.0060	40 x 15	C
CRM	**14X MSFM2 J ****	0.21	0.50	0.26	0.050	1.85	0.068	0.57	0.29	0.023	0.010	0.01	0.037	0.013	0.005	** provisional values 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

2.1.2 Residuals in Nickel

		C	Si	Mn	Cu	Fe	Cr	Co	Ti	Al	Mg	S	Sn	Pb	B	N	Size (mm) Ø x H	Form
	21X 17518 H	0,007	0.05	0.43	<0.001	0,52	0.05	1,05	0.032	0.15	0.034	(0.001)	(0.002)	(0.002)	(0.002)	<0.001	40 x 15	C
	21X 17519 J	....	0,17	0.35	0.06	0.28	0.06	0.77	0.07	0.19	0.20	....	....	....	....	....	40 x 15	C
	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
	21X 17522 G	....	0.35	0.02	0.20	0.07	0.23	0.04	0.31	0.03	<0.005	....	....	....	....	....	40 x 15	C

2.2 Ni/Cr (Nimonic Type)

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Sn	Zr	V	Ag	Te	Bi	As	Sb	Pb	W	B	Size (mm) Ø x H	Form
	22X 754 D	0.07	0.66	0.53	0.21	2.22	19.65	0.21	0.23	0.49	0.18	0.002	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C
	22X 755 D	0.05	0.27	1.07	0.50	1.15	19.69	0.49	0.07	0.83	0.36	0.003	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C
	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 805 D	0.20	0.22	1.01	0.54	1.06	19.82	0.10	0.22	2.71	1.06	....	....	....	....	....	....	....	....	....	....	....	....	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
	22X 808 C	....	0.10	0.05	<0.01	0.11	19.73	<0.01	0.03	2.14	1.41	....	0.030	0.035	0.05	0.007	0.008	0.002	0.013	0.017	0.007	0.11	0.014	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
	22X 905 C	0.19	0.22	1.08	0.23	1.15	19.89	0.53	16.45	2.92	1.03	....	....	....	....	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
	22X 1054 B	0.22	0.59	0.23	0.11	0.88	14.44	4.66	19.13	1.24	4.95	0.004	....	....	....	40 x 15	C
CRM	**22X 1055 D**	0.274	0.24	0.03	0.02	1.26	14.9	3.87	19.9	0.52	3.97	(0.008)	0,009	....	....	40 x 15	C

2.3 Fe/Ni/Cr (Incoloy Type)

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ni	Size (mm) Ø x H	Form
CRM	**23X 8001 G**	0.130	0.191	1.29	0.078	(44.2)	20.28	0.540	0.982	0.650	0.55	0.0067	0.0067	30.98	40 x 15	C
	23X 8002 E	0.06	0.47	0.68	0.28	....	20.48	0.34	0.54	0.32	0.29	....	....	32.1	40 x 15	C
	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
	24X 10999 D	0.15	0.47	0.15	0.52	20.38	5.84	19.53	2.50	0.46	40 x 15	C
	24X 11005 E	0.36	0.63	0.26	0.79	19.84	6.10	18.72	2.44	0.58	40 x 15	C

2.4.1 Waspalloy, 720-types

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Sn	Ni	Pb	B	V	W	Zr	Nb	Size (mm) Ø x H	Form
	24X WASP1 B	0.01	0,59	0,13	0,08	2,16	16,64	6,14	12,8	3,13	1,64	. . . .	0,011	0,019	. . . .	. . . .	. . . .	0,007	0,03	0,18	0,12	0,055	40 x 15	C
	24X WASP2 B	0,09	0,35	0,24	0,11	1,66	18.50	4.22	14.6	3.53	1.00	. . . .	0,018	0,009	. . . .	. . . .	. . . .	0.008	0.06	0.14	0.07	0.12	40 x 15	C
CRM	**24X WASP3 D**	0.118	0.208	0.542	0.735	0.96	20.84	1.96	13.77	5.52	2.99	(0.002)	0.026	0.014	0.014	51.76	0.008	0.0087	0.123	0.064	0.059	0.163	43 x 20	C
~~CRM~~	~~**24X WASP4 C**~~	~~0.052~~	~~0.21~~	~~0.53~~	~~(0.004)~~	~~1.48~~	~~19.7~~	~~7.51~~	~~11.01~~	~~2.25~~	~~2.16~~	~~. . . .~~	~~(0.01)~~	~~<0.005~~	~~(0.005)~~	~~54.3~~	~~0.004~~	~~0.014~~	~~0.145~~	~~0.25~~	~~0.08~~	~~0.25~~	Sold out	~~C~~
CRM	**24X 7201 A**	0.0322	0.036	0.0022	. . . .	0.09	16.01	3.01	14.79	5.10	2.44	. . . .	0.0024	(0.002)	. . . .	57.10	. . . .	0.0242	. . . .	1.32	0.0433	. . . .	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 10225 G	0.25	0.29	0.12	0.55	18.27	5.95	0.30	1.74	7.00	40 x 15	C
	25X 10230 G	0.34	0.35	0.12	0.76	21.9	6.06	0.59	3.83	7.04	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 11383 D	0.29	0.19	0.08	0.49	22.50	9.37	0.05	2.84	0.67	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
	26X 14182 D	(0.01)	<0.005	0.006	0.09	21.61	10.11	0.06	2.75	0.76	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 14386 C	0.38	0.39	0.02	1.50	20.73	10.47	10.51	0.06	0.02	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	Sn	N	Nb	Ta	W	B	Ni		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 X7502 D	0.10	0.33	1.03	0.22	6.70	14.93	0.35	....	2.60	0.74	....	....	....	....	....	0.96	....	....	....	....		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
	28X X7505 D	0.11	0.34	1.04	0.22	6.25	16.08	0.33	....	2.33	0.80	....	....	....	....	....	1.07	....	....	....	....		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	....	0.0431	2.00	....	....	(0.0043)	63.36		40 x 17	CC
CRM	**28X 6252 M**	0.084	0.559	0.276	0.483	3.72	21.08	9.23	0.262	0.21	0.257	....	0.0138	(0.008)	....	0.173	3.96	....	....	0.0166	59.37		40 x 15	CC
CRM	**28X 6253 N**	0.048	(1.09)	0.519	0.272	5.90	21.78	7.46	0.429	0.564	0.210	....	0.018	0.014	....	0.057	4.63	....	....	0.026	56.92		43 x 20	C
CRM	**28X 6254 L**	0.047	(0.79)	0.457	0.044	3.33	22.71	8.92	0.195	0.179	(0.05)	....	0.0160	0.0097	....	0.0364	3.60	....	....	0.005	59.55		40 x 17	C
CRM	**28X 6255 L ****	0.035	0.590	0.230	0.700	1.89	19.30	8.00	0.240	0.410	0.325	....	0.015	0.008	....	0.098	4.08	0.195	....	....	63.5	** provisional values	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	....	0.007	3.75	....	....	....	65.4		40 x 13	HIP
	28X 7181 H	0.008	0.71	0.108	0.013	(19.5)	18.71	2.94	0.01	0.025	(0.007)	....	0.005	(0.003)	0.003	0.233	4.97	....	....	0.0010	52.6		45 x 18	C
CRM	**28X 7182 M**	0.021	0.390	0.310	0.134	(14.7)	19.98	3.59	0.632	0.98	0.41	....	0.0106	0.007	0.005	....	4.74	....	0.030	0.0047	53.86		43 x 20	C
CRM	**28X 7183 T**	0.119	0.309	0.41	0.319	17.2	18.4	3.49	(0.91)	1.23	0.90	....	0.0097	0.015	0.0056	0.019	5.57	0.022	0.076	0.0120	51.0		43 x 20	C
CRM	**28X 7184 J**	0.149	0.36	0.192	0.11	18.2	16.65	3.41	0.211	(0.28)	0.34	....	0.023	0.012	0.011	....	5.67	0.08	0.20	0.0062	54.00		43 x 20	C
CRM	**28X 7185 J**	0.050	0.13	0.34	0.30	16.95	21.80	2.54	0.320	(0.16)	0.32	0.021	0.0109	0.008	(0.004)	0.24	4.88	0.035	0.096	0.012	51.84		43 x 20	C
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	....	0.064	5.75	....	....	0.0097	55.06		40 x 15	CC

2.10 Ni/Co/Cr/Al/Ti

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	N	Zr	V	ppm Ag	ppm Mg	ppm Pb	ppm Sn	ppm Zn	ppm As	ppm Sb		Size (mm) Ø x H	Form
CRM	**210X 11775 G**	0.024	0.36	0.127	(0.008)	1.02	10.42	3.19	14.83	5.76	7.0	(0.003)	0.070	0.47	....	....	....	....	....	....	....	....	45 x 20	C
	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 11221 F	0.21	0.24	0.05	0.25	13.82	3.72	1.24	1.26	6.26	2.81	0.06	0.21	40 x 15	C
	211X 11222 F	0.23	0.32	0.11	0.17	14.18	4.03	0.12	1.05	5.47	2.89	0.08	0.12	40 x 15	C
	211X 11224 F	0.34	0.11	0.31	0.41	13.82	3.99	0.25	1.31	6.30	3.33	0.53	0.15	40 x 15	C
	211X 11233 E	0.14	0.20	0.21	0.39	12.67	4.10	0.63	1.32	6.03	2.61	0.23	0.13	40 x 15	C
	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	Pb	Nb	Cd	Ni		Size (mm) Ø x H	Form
CRM	212X 4001 N **	0.0455	0.99	2.35	27.65	1.035	0.143	....	0.104	0.335	0.30	0.155	0.020	0.0095	0.055	....	....	66.5	** provisional values	40 x 15	CC
	212X 4002 K	0.046	0.10	1.99	31.5	0.99	0.023	....	0.09	0.06	0.055	0.017	0.071	....	0.05	....	....	(64.8)		40 x 15	C
CRM	212X 4003 J	0.0051	0.293	1.00	30.48	1.24	0.073	0.023	0.029	(0.063)	0.086	0.035	0.0069	0.0054	0.0134	0.156	....	66.58		43 x 20	C
CRM	212X 4004 L **	0.11	0.80	0.70	29.0	4.5	0.100	....	0.085	1.00	0.43	....	0.008	....	0.025	0.98	0.002	(62.5)	** provisional values	40 x 15	CC
CRM	212X 4005 E	0.115	2.48	1.55	20.76	1.90	0.513	0.035	0.662	0.892	2.05	0.0304	0.0138	0.013	0.025	0.330	....	68.13		40 x 15	CC
CRM	212X 4006 G **	0.024	4.03	0.76	24.90	1.75	0.120	....	0.041	1.51	3.82	0.108	0.028	....	0.015	0.540	....	62.45	** provisional values	40 x 15	CC

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Pb	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
	212X NA3 G	0.37	3.66	0.52	29.2	1.42	....	....	....	....	....	0.74	0.008	0.022	....	0.05	....	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

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

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	B	N	V	W	Ni		Size (mm) Ø x H	Form
CRM	215X HB1 N	0.079	0.24	0.613	0.164	9.73	1.08	32.44	1.176	....	....	0.048	(0.014)	....	0.0207	0.454	....	....		40 x 17	C
CRM	215X HB2 F	0.045	0.48	0.925	(0.004)	2,43	1,63	32,1	0,51	....	....	0.039	0.011	....	0,006	0.52	....	61,2		45 x 20	C
CRM	215X HB3 G	0.0355	0.78	0.90	(0.027)	5.06	0.303	29.9	1.014	....	....	0.0195	0.0239	....	0.005	0.292	(0.023)	61.59		43 x 20	C
CRM	215X HB4 F	0.079	1.02	0.666	(0.024)	7.02	0.414	27.59	1.71	....	....	0.013	0.036	....	0.0028	0.115	(0.028)	61.21		43 x 20	C
CRM	215X HB5 L **	0.155	1.05	0.33	0.265	3.45	0.120	26.7	2.45	0.20	0.50	0.012	0.037	0.0025	0.006	0.137	....	65.3	** provisional values	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	....	0.059	0.090	2.66	....		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)	0.092	0.362	3.92	52.09		40 x 17	CC
CRM	215X HC3 K	0.197	1.11	0.920	0.319	7.87	17.05	17.90	0.99	0.35	0.188	0.055	0.022	0.0106	0.064	0.263	4.32	....		40 x 17	CC
CRM	215X HC4 J	0.146	0.264	0.548	0.052	6.18	18.17	16.46	0.500	0.149	(0.073)	0.0306	0.007	....	0.045	0.444	5.26	....		40 x 15	CC
CRM	215X HC5 T	0.169	0.805	0.249	0.642	6.34	19.71	15.59	0.159	0.06	(0.03)	0.034	0.038	....	0.096	0.498	5.34	....		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	....	....	0.0034	0.012	3.22	58.45		40 x 13	HIP

2.19 Various Nickel Alloys

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Y	Ta	W	Zr	B	Nb	Ni	N	Size (mm) Ø x H	Form
CRM	219X 20500 A	0.025	1.35	0.239	(0.007)	1.24	51.09	0.006	(0.008)	....	....	0.0052	(0.0026)	....	....	....	....	....	....	45.68	0.122	43 x 20	C
	219X 1837 A	0.004	0.053	0.003	....	0.10	9,98	3.00	10,04	5,28	5,63	0.001	0.002	....	<0.01	0.012	0.027	0.11	<0.01	....	....	40 x 15	C
CRM	219X 1867 C	0.086	0.203	0.205	0.45	0.285	7.69	5.95	9.98	1.97	6.43	0.0099	0.010	....	4.14	0.121	0.59	0.021	0.116	(61.92)	....	43 x 20	C

2.21 Ni/B Hardfacing Alloys

		C	Si	Mn	Cu	Fe	Cr	Mo	Co	W	S	Bi	Se	Sn	B		Size (mm) Ø x H	Form
	~~221X HF1 A~~	~~0.144~~	~~4.61~~	~~0.130~~	~~0.029~~	~~0.33~~	~~13.1~~	~~0.018~~	~~....~~	....	~~0.006~~	~~....~~	~~....~~	....	~~2.12~~	Sold out	~~40 x 15~~	~~C~~
CRM	221X HF2 B	0.117	3.08	0.387	0.231	3.08	2.96	0.130	0.494	....	0.0106	0.0098	0.0048	....	2.96		43 x 20	C
	221X HF3 B	0.71	5.5	0.14	0.16	3.44	7.7	0.05	0.25	1.13	0.011	0.005	0.002	0.10	1.69		43 x 20	C
	221X HF4 B	0.38	6.49	0.15	0.05	5.82	17.3	0.05	0.094	0.76	0.009	....	....	0.68	1.07		43 x 20	C

3.1 Brass - Cu/Zn Binaries

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	P	S	B	Cd	Cu		Size (mm) Ø x H	Form
CRM	**31X B1 N**	0.0234	0.039	43.76	0.0193	0.0089	0.0011	0.0141	0.0029	0.0022	0.0044	0.0040	....	....	0.0184	(0.0013)	0.0019	....	56.07		42 x 18	CC
CRM	**31X B2 L**	0.151	0.0129	39.57	0.0191	0.0125	0.0172	(0.007)	0.0222	0.0249	0.0107	0.0207	....	....	....	....	0.0056	....	60.13		42 x 18	CC
CRM	**31X B3 K**	0.0268	0.024	33.89	0.065	0.059	0.0114	0.017	0.0200	0.0187	0.0127	0.0096	....	....	....	....	0.0031	....	65.80		42 x 18	CC
CRM	**31X B4 L**	0.073	0.064	28.39	0.026	0.0571	....	0.025	0.046	0.0074	0.0076	0.0076	0.087	0.033	(0.023)	0.0091	....	0.0330	71.10		40 x 17	CC
~~CRM~~	~~**31X B5 J**~~	~~(0.015)~~	~~(0.016)~~	~~23.90~~	~~(0.015)~~	~~(0.015)~~	~~<0.002~~	~~<0.001~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	....	....	....	....	....	....	~~76.01~~	Sold out	~~40 x 15~~	~~CC~~
	31X B6 J	<0.005	<0.005	19,4	(0.01)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	....	....	....	....	....	....	80,6		40 x 15	CC
CRM	**31X B7 J**	0.101	0.010	15.01	0.018	0.020	<0.005	<0.005	0.0016	0.0002	0.066	0.0019	....	....	....	....	0.0030	....	84.80		42 x 17	CC
CRM	**31X B8 H**	0.035	0.072	9.52	0.0267	0.0083	(0.0013)	0.0051	0.0081	0.0012	0.031	0.0108	....	....	....	....	0.0021	....	90.28		42 x 17	CC
CRM	**31X B9 K**	(0.0025)	0.0051	4.79	0.0028	0.0101	<0.002	(0.0006)	(0.0005)	(0.0001)	<0.001	<0.001	....	....	....	....	(0.0007)	....	95.20		42 x 17	CC
	31X B95	0.45	<0.001	4.99	(0.007)	<0.001	<0.005	(0.01)	(0.008)	<0.001	(0.007)	<0.001	....	....	....	....	<0.001	....	94.4		40 x 15	CC

3.1.1 Alloyed Brass

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	B	Cr	Cd	Hg	Cu		Size (mm) Ø x H	Form
CRM	**31X B10 L**	0.0386	0.0161	35.36	1.25	1.572	0.472	0.034	0.0062	0.206	0.0086	0.0126	....	....	....	....	....	....	61.01		42 x 18	CC
CRM	**31X B11 G**	(0.010)	(0.041)	34.2	0.88	1.01	0.334	(0.001)	(0.003)	1.09	<0.001	<0.001	....	....	....	....	....	....	62.2		40 x 15	CC
CRM	**31X B12 F**	(0.008)	(0.053)	35.1	0.45	0.55	0.148	(0.001)	(0.002)	2.16	<0.001	<0.001	....	....	....	....	....	....	61.4		40 x 15	CC
~~CRM~~	~~**31X B13 F**~~	~~(0.005)~~	~~(0.033)~~	~~42.3~~	~~0.187~~	~~0.196~~	~~0.051~~	~~(0.001)~~	~~<0.001~~	~~2.75~~	~~<0.001~~	~~<0.001~~	....	....	....	....	....	....	~~54.4~~	Sold out	~~40 x 15~~	~~CC~~
CRM	**31X B14 F**	0.52	(0.025)	36.2	0.019	0.0049	4.22	0.055	<0.005	(0.0009)	<0.005	<0.002	....	....	....	....	....	....	58.9		42 x 18	CC
CRM	**31X B15 G**	1.04	(0.014)	37.7	0.018	0.005	3.19	0.095	<0.005	(0.0008)	<0.005	<0.002	....	....	....	....	....	....	57.8		42 x 18	CC
CRM	**31X B16 G**	2.17	(0.04)	37.4	(0.02)	(0.01)	2.04	0.20	(0.006)	(0.01)	<0.001	<0.001	....	....	....	....	....	....	58.0		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 P**	0.035	2.51	38.50	0.028	0.0127	(0.004)	0.004	0.0110	0.0055	0.0047	0.0134	0.031	(0.002)	....	....	....	....	58.85		40 x 17	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		42 x 18	CC
CRM	**31X B22 E**	0.209	0.209	17.32	0.168	0.166	0.125	0.171	0.169	0.097	0.193	0.173	0.157	0.104	0.0033	....	....	....	80.77		42 x 18	CC
	31X B23 C	0.055	0.039	(10.0)	0.049	0.041	0.081	0.05	0.056	0.057	0.058	0.054	0.046	0.055	....	....	....	....	89.1		40 x 15	CC
CRM	**31X B24 C**	0.016	0.017	4.17	0.017	0.021	0.010	(0.009)	0.021	0.013	0.022	0.020	0.010	0.051	....	....	....	....	95.5		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 D**	1.68	1.148	30.93	1.01	1.50	0.853	0.45	0.100	0.427	0.133	0.086	0.054	....	(0.0020)	....	....	....	61.54		42 x 18	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 ****	0.032	0.145	24.8	0.15	4.10	0.22	....	....	0.063	....	....	3.30	....	....	0.062	0.015	....	67.1	** provisional values	40 x 15	CC

3.1.2 Brass - Trace Elements

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Se	Cd	B	C	Cu		Size (mm) Ø x H	Form
CRM	**31X TB1 J ****	0.23	0.200	36.9	0.042	0.218	0.210	0.094	0.155	0.312	0.048	0.100	0.065	0.005	0.012	....	....	61.4	** provisional values	40 x 15	CC
CRM	**31X TB2 G**	0.105	0.107	37.16	0.072	0.093	0.084	0.042	0.101	0.088	0.031	0.051	....	....	....	<0.0005	0.0040	61.97		42 x 18	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		42 x 18	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		42 x 17	CC
CRM	**31X NB2 G**	1.06	0.293	28.82	0.095	0.065	0.085	0.096	0.105	0.116	0.052	0.115	0.091	<0.002	....	....	....	68.93		42 x 17	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		42 x 18	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		42 x 17	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	(00.0003)	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	Sb	P	S	Se	Cd	B	Cu		Size (mm) Ø x H	Form
CRM	**31X BIB1 C ****	1.95	0.49	0.21	bal	0.11	0.31	0.07	0.10	0.029	0.047	0.015	0.062	<0.005	0.005	0.0085	....	59.9	** provisional results	40 x 15	CC
CRM	**31X BIB2 B**	0.921	1.186	0.0617	33.85	0.379	0.466	0.411	0.322	0.084	0.0451	0.119	0.0358	(0.0014)	0.0142	0.0020	....	62.05		42 x 18	CC
CRM	**31X BIB3 B**	4.05	0.111	0.149	32.46	0.099	0.098	0.0298	0.061	0.057	0.243	0.0417	0.0175	(0.0005)	0.003	0.0029	....	62.48		40 x 17	CC
CRM	**31X BIB4 A**	0.980	0.400	0.091	36.89	0.148	0.175	0.358	0.0018	....	0.0039	0.0144	0.0064	(0.0007)	0.0162	0.0005	0.0008	60.88		42 x 18	CC

3.1.7 Leaded Brass

		Pb	Sn	Zn	Fe	Ni	Al	Si	As	Bi	Sb	P	S	Co	Se	Cd	B	Cu		Size (mm) Ø x H	Form
CRM	**31X 7835.1 Q**	2.75	0.382	34.04	0.135	0.136	0.067	0.029	0.0161	0.0118	0.0207	0.0221	....	0.0154	(0.003)	0.0018	0.0011	62.30		42 x 17	CC
CRM	**31X 7835.2 J**	2.08	0.211	31.86	0.094	1.35	0.172	0.0217	0.0225	0.0084	0.0240	0.0276	....	0.0279	0.003	0.0026	(0.0016)	64.03		42 x 18	CC
CRM	**31X 7835.3 G ****	1.25	0.090	35.4	0.300	0.281	0.38	0.020	0.100	0.026	0.100	0.044	....	0.0050	0.001	0.0033	0.001	62.0	** provisional results	40 x 15	CC
CRM	**31X 7835.4 H**	1.03	0.046	30.09	0.020	0.492	0.561	....	0.206	....	0.188	0.125	....	....	....	....	....	67.10		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		42 x 18	CC
CRM	**31X 7835.6 A**	1.498	0.080	38.05	0.091	0.0173	0.546	(0.001)	0.0006	0.0026	0.0127	<0.0005	0.0017	0.0005	0.0007	0.0010	0.0005	59.67		42 x 18	CC
CRM	**31X 7835.7 A ****	2.30	0.135	7.50	0.031	0.938	0.01	0.038	....	0.048	0.032	0.082	0.006	0.012	....	0.0051	....	88.8	** provisional results	40 x 15	CC

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	Cd	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		42 x 18	CC
CRM	**31X MNB2 C**	2.23	0.319	1.02	32.19	0.66	0.118	0.268	0.233	....	....	....	....	....	....	....	....	....	....	63.02		40 x 15	CC
CRM	**31X MNB3 D**	2.77	0.549	0.458	24.10	1.306	0.208	0.98	1.36	0.0052	....	0.0054	0.0170	....	0.048	....	0.0103	....	....	68.20		42 x 18	CC
CRM	**31X MNB4 E**	4.14	1.080	0.640	27.12	1.73	3.23	2.16	0.90	0.0068	....	(0.006)	0.0252	....	0.057	....	0.0171	....	....	58.95		42 x 18	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		42 x 17	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 17	CC
	~~**31X MNB6 B**~~	~~0.84~~	~~0.007~~	~~0.04~~	~~(28.0)~~	~~0.27~~	~~0.26~~	~~0.005~~	~~(0.007)~~	~~....~~	~~....~~	~~....~~	~~....~~	~~....~~	~~....~~	~~....~~	~~....~~	~~....~~	~~....~~	~~70.8~~	Sold out	~~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	0.0009	....	0.0046	(0.009)	57.36		42 x 18	CC
CRM	**31X MNB12 A**	17.88	0.231	1.99	22.12	0.335	0.491	0.749	0.013	0.0022	0.0021	0.0056	0.019	(0.0012)	0.0012	0.0012	....	0.0038	(0.011)	56.16		42 x 18	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 WSB1 J	0.525	0.435	6.14	0.557	0.229	0.957	4.58	0.063	0.964	0.0387	0.048	0.044	....	0.210	0.184	0.0258	0.0115	84.61	42 x 17	CC
CRM	31X WSB2 E	0.402	0.621	13.94	0.393	0.154	0.760	3.92	0.077	0.330	0.0102	0.0202	0.021	(0.0011)	0.174	0.096	0.0098	0.0015	79.22	43 x 20	C
CRM	31X WSB3 D	0.607	0.397	11.96	0.22	0.371	0.509	3.44	0.053	1.06	0.0195	0.028	0.033	(0.0024)	0.129	0.0480	(0.004)	0.0028	81.14	43 x 20	C
CRM	31X WSB4 P	0.802	0.204	5.61	0.592	0.228	0.290	4.40	0.0286	1.45	0.0318	0.0335	0.042	(0.002)	0.096	0.103	0.006	0.0012	86.09	43 x 20	C
CRM	31X WSB5 C	1.05	0.100	0.343	0.79	0.492	0.218	6.07	0.0284	0.496	0.030	0.124	0.080	0.0081	0.057	0.0087	0.0012	0.0047	90.06	43 x 20	C
CRM	31X WSB6 D	0.056	0.95	0.881	0.032	0.117	0.059	2.48	0.0051	0.248	0.0056	0.007	(0.020)	(0.002)	0.247	0.058	(0.001)	0.0071	94.74	43 x 20	C
CRM	31X WSB7 B	1.93	0.025	7.58	1.95	3.03	3.87	4.25	0.103	3.39	0.190	0.636	0.188	....	0.0118	0.0145	....	0.0077	72.74	42 x 17	CC

3.2.1 Phosphor-Bronze

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Mg	C	Se	Cu		Size (mm) Ø x H	Form
	32X PB4 H	9.75	0.114	0.107	0.014	0.081	(0.0005)	0.099	<0.01	1.17	....	(0.0032)	0.178	....	....	....	....	....	88.4		40 x 15	C
CRM	32X PB10 N	11.87	0.067	0.0494	0.014	0.054	<0.001	(0.004)	0.0138	0.0005	0.0128	0.0201	0.003	0.0162	....	0.004	....	0.0058	87.85		40 x 17	CC
CRM	32X PB11 E	3.75	0.900	1.43	0.75	0.768	(0.001)	0.099	0.199	0.111	0.0065	0.502	0.799	0.007	0.091	0.0022	....	....	90.55		40 x 17	CC
CRM	32X PB12 D	5.35	0.142	0.786	0.190	0.427	<0.001	0.150	0.109	0.334	0.094	0.272	0.473	0.012	....	(0.0004)	(0.0022)	....	91.67		42 x 18	CC
CRM	32X PB13 D	7.09	0.104	0.240	0.057	0.111	0.039	0.073	0.081	0.0300	0.0137	0.117	0.128	0.015	0.0052	0.0144	....	....	91.88		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 **	2.22	0.175	0.755	0.120	0.210	0.044	0.045	0.127	0.012	....	0.0265	0.085	....	0.051	0.028	....	....	96	** provisional values	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

3.2.2 Leaded Bronze

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Ag	Cu	Size (mm) Ø x H	Form
	32X LB3 G	10.71	9.96	0.051	0.095	1.54	(0.0006)	(0.0024)	0.021	0.025	0.0091	0.024	0.0050	(0.0015)	....	....	77.5	40 x 15	C
CRM	32X LB10 E	8.16	11.74	0.566	0.013	0.687	(0.001)	(0.001)	0.151	0.0004	0.0608	0.591	(0.001)	0.0116	0.0456	0.042	77.98	40 x 17	CC
CRM	32X LB11 C	11.01	10.56	0.306	0.036	0.672	(0.002)	(0.003)	0.088	0.0020	0.0293	0.109	0.033	(0.046)	0.0178	0.0121	76.97	42 x 18	CC
CRM	32X LB12 C	12.50	9.53	1.262	0.042	0.398	(0.0006)	0.0022	0.0064	0.0032	0.0245	0.314	0.173	0.085	0.078	0.0181	75.70	42 x 18	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 F	5.42	14.65	0.042	0.057	0.318	(0.0006)	0.006	0.052	0.0050	0.974	0.062	0.189	0.016	0.212	0.0619	78.08	40 x 17	CC
CRM	32X LB15 D	5.38	21.76	0.049	0.0089	0.104	(0.0004)	(0.002)	0.0222	0.0014	0.0173	0.092	0.0037	0.0136	0.0033	0.0312	72.52	40 x 17	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

3.2.3 Aluminium Bronze

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	P	Cr	Co	Mg	Ag	C	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 J	0.103	0.266	0.247	4.05	4.53	9.60	0.295	0.0066	0.056	0.048	0.0031	....	0.0035	....	....	80.70	42 x 18	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	....	....	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	....	....	84.61	42 x 18	CC
CRM	32X ALB6 J	0.147	0.096	0.685	2.53	5.31	8.05	0.295	0.012	0.904	0.0101	0.0097	....	0.0019	....	(0.002)	81.98	42 x 18	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 D	0.699	0.35	1.051	5.58	6.50	6.60	0.736	0.155	1.67	0.218	0.046	....	0.0152	....	0.018	76.29	42 x 18	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

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	B	Se	Cd	Cu	Size (mm) Ø x H	Form
CRM	32X SEB1 C	4.23	0.209	8.79	0.0293	0.101	0.043	5.31	0.355	0.0054	0.0011	0.0089	....	0.97	(0.0017)	79.96	40 x 17	CC
CRM	32X SEB2 C	9.34	0.424	3.73	0.078	0.028	0.0094	4.36	0.0120	0.013	....	0.0121	....	0.026	....	(81.8)	40 x 17	CC
CRM	32X SEB3 C ^	2.07	0.109	0.85	0.082	1.52	0.0161	(5.4)	0.054	0.040	....	0.025	0.0021	1.42	0.0016	(88.4)	40 x 17	CC
CRM	32X SEB4 C	9.26	0.011	8.60	0.366	0.0091	0.0012	2.65	0.0056	(0.006)	....	0.48	0.0021	0.105	0.0004	78.6	42 x 17	CC
CRM	32X SEB5 B	5.28	0.0149	6.64	0.360	0.308	0.0121	1.17	0.0344	0.183	....	0.0048	0.0028	0.512	0.0067	85.5	40 x 17	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	(0.0004)	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

^ Bi and Cu are inhomogeneous in this material (batch C).

3.2.9 Bronze

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Sb	P	S	Co	Cu	Size (mm) Ø x H	Form
CRM	32X SN1 E	11.55	5.32	0.401	0.006	1.69	(0.0003)	(0.0006)	0.0153	0.0002	0.0126	(0.0010)	00087	0.0100	80.94	42 x 17	CC
CRM	32X SN2 H	13.54	1.97	1.28	0.0332	0.104	0.0004	0.0028	....	0.0043	0.100	0.082	0.0326	....	82.80	42 x 18	CC
CRM	32X SN3 F	15.50	0.285	0.386	0.124	0.447	0.0120	0.005	0.0306	0.128	0.194	0.331	0.062	0.048	82.55	40 x 17	CC
CRM	32X SN4 A	18.80	1.059	0.342	0.060	0.556	0.034	(0.004)	0.0468	0.0065	0.102	0.988	0.040	0.151	77.88	42 x 18	CC
	32X 14953 C	1,37	....	....	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C
	32X 14954 B	3,15	....	....	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C
	32X 14955 B	5,25	....	....	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C
	32X 14956 B	7,35	....	....	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C

3.3 Gun Metal

		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Cr	Co	Ag	Cu	Size (mm) Ø x H	Form
CRM	33X GM4 AB	2.56	4.69	7.13	0.053	1.795	(0.001)	(0.001)	0.287	0.0007	0.084	0.0261	0.0088	0.112	....	0.259	0.0265	82.96	40 x 17	CC
CRM	33X GM5 L	5.22	5.13	4.19	0.136	1.008	(0.007)	(0.001)	0.059	0.0018	0.0225	0.093	0.0112	0.061	....	0.0662	0.0099	83.98	40 x 17	CC
CRM	33X GM6 J	6.56	3.90	2.01	0.0338	0.833	0.0098	0.069	0.180	0.0307	0.0313	0.279	0.0406	0.093	....	0.0056	0.0065	85.99	40 x 17	CC
CRM	33X GM7 H	9.97	0.97	2.29	0.0278	0.500	0.051	0.065	0.133	0.151	0.085	0.111	0.034	0.0139	0.0146	....	0.0574	85.49	42 x 18	CC
CRM	33X GM8 F	4.13	6.11	5.45	0.098	0.148	0.0005	(0.001)	0.0159	0.0008	0.0248	0.0146	0.0029	0.0119	(0.0004)	....	0.097	83.81	40 x 17	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

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 E	0,031	0.155	17.99	0.201	14.86	0.038	0.018	0.129	0.013	0.063	0.102	0.0022	0.111	0,0011	0.014	66.30	42 x 18	CC
CRM	34X NS4 E	0.020	0.152	15.58	0.351	16.96	....	(0.0009)	0.0100	0.0099	0.012	0.222	0.0005	0.0298	<0.0001	....	66.71	42 x 17	CC
CRM	34X NS5 F	0.194	1.29	(23.1)	0.717	17.16	0.674	0.158	0.127	0.067	....	0.197	0.0014	0.0102	0.704	....	55.11	42 x 17	CC

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 N	0.0578	0.160	0.412	2.15	10.11	0.006	0.089	1.80	....	0.0436	0.0070	0.154	0.0258	....	0.0013	(0.003)	....	....	....	....	84.90	40 x 17	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 L	0.063	0.053	0.80	1.07	19.95	0.0055	0.490	0.920	....	0.032	0.029	0.072	0.050	0.012	0.0064	0.035	....	0.15	....	0.0163	76,3	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 N	0.015	0.027	0.232	0.791	32.26	0.006	0.80	0.090	....	0.041	0.074	0.018	0.118	0.014	0.0091	0.0253	....	0.441	....	0.011	65,1	40 x 15	CC
CRM	36X CN6 G	0.0307	0.0066	0.026	0.878	33.46	(0.0023)	0.144	0.451	0.0058	0.031	0.0109	0.0440	1.10	....	(0.0016)	0.0180	0.0066	0.51	....	....	63.34	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 H	0.046	0.095	0.159	0.86	30.61	0.0009	0.132	0.881	0.103	0.046	0.022	0.104	1.28	0.021	0.0025	0.0225	....	0.18	....	....	65.51	40 x 15	CC
CRM	36X CN9 H	(0.015)	0.0497	....	1.62	27.86	0.030	0.625	1.22	0.020	0.028	0.0098	0.329	2.21	....	0.0204	0.0099	0.252	1.22	(0.011)	....	64.48	40 x 17	CC
CRM	36X CN10 A	(0.009)	0.004	0.026	4.28	29.3	1.23	1.02	0.262	0.014	(0.020)	0.055	0.081	1.59	0.0026	0.0029	0.064	0.03	0.89	(0.055)	....	61,01	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 17	W

		As	Ag	Cd	C																			
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	38 x 13 x 13	C

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

3.6.3 Cu/Mg

		Al	P	S	Co	Cr	Ag	Mg	Size (mm) Ø x H	Form
CRM	36X CMG11 A	0.043	0.079	0.0019	(0.0001)	<0.0005	0.151	0.771	36-40 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	Co	Cr	Ag	Mg	Cd	Zr	Cu	Size (mm) Ø x H	Form
CRM	36X CCR1 D	0.0049	0.0017	0.008	0.0378	0.0035	(0.001)	0.015	0.0010	0.0018	....	0.948	0.0016	0.0015	....	0.067	98.95	50 x 17	W
CRM	36X CCZ A	0.0045	0.0023	0.0076	0,033	0,0084	0.0003	0,0031	0.0008	0.0010	0.0012	0,667	0.0019	....	0.0027	0.049	99,22	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

3.6.7 Cu/Cd

		Sn	Zn	Ag	Cd	Size (mm) Ø x H	Form
CRM	36X CCD1 A	<0.001	(0.0017)	(0.0014)	1.01	30 x 15	W
CRM	36X CCD2 A	0.200	(0.0019)	(0.0012)	1.18	30 x 15	W
CRM	36X CCD3 A	0.473	(0.0018)	(0.0011)	1.10	30 x 15	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 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
	37X HK7 A #	2.30	5.32	0.38	1.72	30.7	....	....	....	....	....	....	....	....	....	59.3	40 x 10	CC
	37X HK8 A #	10.4	21.0	0.17	0.23	5.01	....	....	....	....	....	....	....	....	....	63.2	40 x 10	CC

These alloys are 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
	38X C1 A	0.7	0,4	1,5	2	0.8	7.8	<1.0	<1.0	0.2	<1.0	<1.0	<1.0	....	....	<0.1	0.4	0.7	....	....		Wire
	38X C1 B	<0.3	0.8	0.45	1.2	1.0	13	0.8	1.2	0.1	0.6	0.03	0.06	....	....	<0.01	0.3	....	....	....	3mm x 400mm	Wire
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
	38X C4	21	23	22	19	29	21	19	2,7	5	9	3	3	....	....	8	8	....	....	....	Each	Wire
	38X C6	120	111	40	107	166	104	98	0,3	22	45	33	1	....	....	32	30	....	....	....		Wire

3.9 Residuals in Pure Copper

All Elements ppm

		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 17866 AE	700	52	2680	102	503	11	156	541	47	56	113	102	510	395	284	252	11	55	51	30	270	518	40 x 18	CC
CRM	39X 17867 AB	53	58	(10)	9	339	(3)	10	417	3	122	145	(12)	41	3	(2)	173	(2)	117	120	87	104	29	40 x 17	CC
CRM	39X 17868 AF	(37)	460	(24)	15	211	2	....	196	23	202	200	(20)	56	2	....	23	....	323	129	120	240	9	40 x 17	CC
CRM	39X 17869 AD	197	455	1600	570	174	109	450	121	1120	660	416	449	107	119	290	37	68	432	366	300	380	158	40 x 17	CC
CRM	39X 17870 AF	44	296	48	(9)	65	(4)	....	84	1.3	334	337	14	44	25	(2)	36	(1)	456	484	208	52	31	40 x 17	CC
CRM	39X 17871 B	119	131	280	80	329	....	....	288	7	690	147	(5)	72	40	(5)	37	(5)	222	51	360	101	....	42 x 17	CC

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

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Tl	In	Si	Hg		Size (mm) Ø x H	Form
CRM	41X Z1 P **	0.0016	<0.0001	<0.0001	0.0006	0.0020	0.0005	0.0010	0.0003	0.0002	0.0002	0.0002	....	0.001	0.0003	....	<0.0005	** provis values	50 x 20	C
CRM	41X Z2 N **	0.0025	0.0001	0.0010	0.0017	0.0075	0.0015	0.0018	0.0010	0.0005	0.0005	0.0006	....	0.0015	0.0005	....	0.0005	** provis values	50 x 20	C
CRM	41X Z3 L	0.0080	0.0138	0.0164	0.0050	0.0022	0.0029	0.0066	0.0029	0.0029	0.0022	0.0045	....	0.0012	0.0010	....	(0.0013)		50 x 20	C
CRM	41X Z4 K	0.0091	0.0019	0.0096	0.0066	0.003	0.0070	0.0047	0.0069	0,0012	....	0,005	<0.0005	0.0037	0,0015	(0.0014)	....		50 x 20	C
CRM	41X Z5 M	0.0275	0.0098	0.041	0.0310	0.011	0.0275	0.0296	0.00054	0.0138	....	0.0098	0.00044	0.0073	0.0050	(0.002)	....		50 x 20	C
CRM	41X Z6 A	0.031	<0.0005	0.0096	0.0093	(0.002)	0.0038	0.0088	0.0002	0.0002	0.0122	....	....	0.0004	0.0228	....	....		50 x 20	C
CRM	41X Z11 A	0.0077	....	0.0261	0.0155	0.0019	0.0072	0.0116	....	....	0.0189	0.0026	....	(0.0010)	0.0345	....	(0.0009)		50 x 20	C

4.1.1 Zinc with Impurities

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Tl	In	Ag	As	Size (mm) Ø x H	Form
	41X 0336Zn1 K	0,95	0,0049	0,014	0,0056	0,0124	0,0053	0.0070	(0.0006)	0.0035	....	....	....	....	....	....	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 J	0.019	0.134	0.43	0.341	0.27	0.111	0.36	....	0.0058	....	....	....	....	....	....	50 x 20	C
CRM	41X 0336Zn4 B	2.87	0.179	1.39	0.638	(0.018)	2.38	0.874	0.0074	0.038	0.027	0.048	(0.004)	0.0035	0.0023	0.0005	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
CRM	41X 0336Zn6 A	1.82	0.0008	0.105	0.0140	0.08	0.0023	0.0203	0.0018	0.0010	0.123	0.234	0.0132	0.0123	0.0055	0.0020	50 x 20	C

		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Cr	Si	Co	Size (mm) Ø x H	Form
CRM	41X 4380Zn1 C	0.068	0.0011	0.055	0.376	0.01	0.049	0.175	0.0029	0.0015	0.0017	0.002	(0.001)	0.002	0.006	....	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 C	0.411	0.0043	0.0051	0.0423	0.018	0.110	0.022	0.00058	0.024	0.00109	0.0359	0.062	0.0022	....	....	50 x 20	C
CRM	41X 4380Zn7 C	1.25	0.0028	0.137	0.015	(0.0044)	0.0047	0.012	0,012	....	....	0.090	0,009	0.0045	....	....	50 x 20	C
CRM	41X 4380Zn8 C	0.73	0.007	0.225	0.0079	0.003	0.011	0.020	0.024	0.0015	0.011	0.016	0.012	0.0019	(0.005)	....	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

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 B	0.0391	....	0.197	0.0119	0.0140	0.0140	0.0191	0.0182	....	0.0046	(0.0003)	(0.0003)	....	....	....	50 x 20	C
CRM	41X GLV2 A	0.214	....	0.068	0.0025	0.048	0.003	0.0052	0.0070	....	0,017	0,006	<0.001	....	....	....	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 GLV5 A	0.0187	....	0.014	0.0138	0.076	0.020	0.0116	0.0030	....	0,0105	0,162	0,0041	....	....	....	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 A	0.0037	0.0012	0.263	0.0003	0.0062	0.0005	0.0139	0.0006	0.0012	0.0005	0.0057	....	0.0012	....	....	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 ZSC5 A**	0.0137	0.0502	0.147	<0.0002	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 H**	0.0022	0.0041	4.61	0.0005	0.0024	0.0006	0.0019	0.0017	0.0007	(0.0009)	<0.0005	0,0046	....	....	0,0027	0,0026	....	50 x 20	C
CRM	**42X Z2 H**	0.0052	0.0147	4.04	0.0010	0.0040	0.0021	0.0186	0.0051	0.0012	0,0026	0,0018	0,0089	....	....	0,0049	0,0044	....	50 x 20	C
CRM	**42X Z3 H**	0.0060	0.0288	3.72	0.0048	(0.047)	0.0030	0.159	0.0102	0.0252	0,003	0.0020	0,015	....	....	(0.0003)	(0.0003)	....	50 x 20	C
CRM	**42X Z4 H**	0.0113	0.058	3.55	0.0076	0.012	0.0060	0.063	0.0177	0.0077	(0.0029)	....	....	(0.003)	0.0016	0.020	0.020	....	50 x 20	C
CRM	**42X Z5 K**	0.0065	0.050	4.25	0.00264	(0.010)	0.0021	0.085	0.040	0.026	0.0130	0.0012	....	0.0064	0.0049	0.0183	0.0137	....	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 A**	0.0097	0.0095	4.39	0.030	0.027	0.012	0.0249	0.0067	0.0045	....	(0.0001)	0.006	....	....	0.053	0.047	....	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

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 J**	0.0017	0.0145	4.50	0.00037	0.0058	(0.0007)	0.501	0.0010	0.0005	0.0031	0.0016	0.0014	0.0009	(0.0037)	. . . .			50 x 20	C
CRM	**43X Z2 L**	0.0088	0.093	3.53	0.0044	0.012	0.0061	0.949	0.00037	0.0025	0.0015	0.0112	0.0010	(0.0001)	0.0102	. . . .			50 x 20	C
CRM	**43X Z3 L**	0.0132	0.0143	3.64	0.0132	0.061	0.0125	1.58	0.0061	0.0125	0.018	(0.0030)	. . . .	0.0045	0.005	. . . .			50 x 20	C
CRM	**43X Z4 B**	(0.0024)	0.043	4.76	0.0025	(0.064)	(0.0023)	3.21	0.0286	0.088	0.012	0.0043	0.0017	0.0063	(0.0065)	. . . .			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 A**	0.0016	0.0256	4.02	0.0016	0.019	0.0053	2.72	0.029	0.0006	0.0049	0.0045	0.0013	0.0006	0.012	. . . .			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 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 Z11 E**	0.0305	0.053	11.61	0.0224	0.0091	0.0206	0.515	0.0014	0.0089	0.0035	0.0091	0.013	0.0010	0.020	. . . .			50 x 20	C
CRM	**43X Z12 D**	0.0133	0.027	10.05	0.0114	0.047	0.0089	0.796	0.0035	0.0059	(0.002)	0.0039	0.0054	0.0023	(0.008)	. . . .			50 x 20	C
CRM	**43X Z13 D**	0.0125	0.0204	9.55	0.0100	0.05	0.0111	0.981	0.0109	0.0070	. . . .	0.009	. . . .	. . . .	(0.0048)	. . . .			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 C**	0.0060	0.022	27.4	0.0050	(0.36)	0.0061	2.32	0.027	0.0096	. . . .	. . . .	0.0065	0.019	0.038	. . . .			50 x 20	C
CRM	**43X Z23 D**	0.0045	0.0207	30.9	0.0043	0.16	0.0055	3.15	0.0156	0.0132	. . . .	. . . .	0.0030	0.0144	0.061	. . . .			50 x 20	C
CRM	**43X SC1 A ****	0.015	0.73	3.8	0.001	0.06	0.008	1.9	0.004	0.02	. . . .	. . . .	. . . .	0.006	0.015	. . . .	** provisional values.		50 x 20	C
CRM	**43X SC2 A ****	0.012	0.50	3.4	0.002	0.04	0.003	4.8	0.001	0.02	. . . .	. . . .	. . . .	0.02	0.008	. . . .	** provisional values.	spin-casting alloys	50 x 20	C
CRM	**43X SC3 A ****	0.008	0.25	3.2	0.003	0.03	0.007	3.0	0.003	0.035	. . . .	. . . .	. . . .	0.01	0.015	. . . .	** provisional values.		50 x 20	C
CRM	**43X SC4 A ****	0.007	0.095	4.5	0.006	0.08	0.005	1.1	0.006	0.045	. . . .	. . . .	. . . .	0.01	0.02	. . . .	** provisional values.		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	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 ZnAl3 B**~~	~~43~~	~~0.64~~	~~0.048~~	~~0.009~~	~~0.003~~	~~0.0065~~	~~<0.001~~	~~<0.001~~	~~0.021~~	~~<0.001~~	~~. . . .~~	~~bal.~~		temporarily withdrawn	~~60 x 6~~	~~CC~~
	45X ZnAl6 A	42.3	1.71	0.067	0.062	0.030	0.006	0.0010	. . . .	0.006	. . . .	0.011	(56.0)			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

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 C**	1.19	0.45	9.82	0.80	0.029	0.31	0.60	0.145	0.082	0.022	0.089	....	....	(0.0002)	....	....	....	(0.003)	....	....	....	40x13 or 50x17	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 17	C
	54X G231H3 B	0.43	0.08	13.5	0.63	0.55	0.11	0.26	<0.01	0.01	0,12	0.10	....	....	....	....	....	....	....	....	....	....	40 x 13	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 N**	0.327	0.179	11.27	0.500	0.445	0.295	0.072	0.065	0.050	0.084	0.069	0.021	0.010	....	....	....	0.0052	(0.0021)	0.010	....	(0.0004)	40x13 or 50x17	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	....	0,011	....	0.207	....	....	(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 or 50x17	C
CRM	**54X G13H4 N**	0.643	0.78	12.55	0.405	0.617	0.84	0.251	0.055	0.068	0.083	0.0264	(0.001)	....	0.0047	<0.001	0.045	....	0.026	....	0.021	....	40x13 or 50x17	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 17	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 R**	0.117	0.208	5.97	0.454	0.289	0.111	0.092	0.074	0.054	0.078	0.061	....	0.011	0.0032	....	....	....	....	0.016	....	....	40x15 or 50x20	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 or 50x20	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 ****	0.001	0.72	6.3	0.08	0.01	0.002	0.01	0.005	0.01	0.005	0.001	....	0.01	0.023	....	** provisional values			....	....	....	50 x 17	C

5.5 Al/Si/Cu

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Bi	Sb	Size (mm) Ø x H	Form
	55X G900J1 E	1,02	0,94	0,14	0.81	0.008	0.005	0.26	0.35	0.32	<0.005	0.002	....	....	....	....	40x15 or 50x20	C
CRM	**55X G900J2 F**	0.86	0.62	0.44	0.38	0.145	0.133	0.309	0.52	0.34	0.054	0.118	....	....	0.55	....	40 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	Ca	Ag	Li	P	Cd	Zr	Size (mm) Ø x H	Form
CRM	**55X G02D5 A ****	0.40	0.33	10.0	0.60	0.38	0.075	0.12	0.06	0.04	0.015	0.75	0.075	0.015	0.004	....	** provisional values			....	....	....	50 x 17	C
CRM	**55X G02D6 J**	0.487	0.336	12.3	1.27	0.65	0.027	0.083	0.46	<0.005	0.34	0.035	0.018	....	....	....	0.006	....	0.0055	(0.001)	....	....	40x13 or 50x17	C
CRM	**55X G02D7 L**	1.53	0.310	10.03	0.571	0.152	0.076	0.883	0.218	0.080	0.12	0.119	0.077	0.0110	0.0004	....	....	....	(0.003)	....	0.0032	....	50 x 18	C
CRM	**55X G02D8 J**	2.66	0.251	9.61	0.653	0.170	0.375	1.53	0.380	0.274	0.151	0.0521	0.079	0.0240	0.00024	....	....	....	....	....	0.0050	....	50 x 17	C
CRM	**55X G02D9 H**	3.42	0.206	8.61	0.81	0.114	0.62	2.46	0.106	0.177	0.091	0.109	0.053	0.0059	0.0010	....	....	....	(0.008)	....	....	....	40 x 13	C
CRM	**55X G02D10 K**	4.68	(0.006)	6.52	0.178	0.015	0.95	4.80	(0.0034)	0.87	(0.0020)	0.162	0.059	....	0.0023	0.10	(0.015)	....	....	....	....	....	40x13 or 50x17	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	(0.001)	0.0052	....	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	(0.001)	0.0102	....	0.0100	0.0032	0.0218	65 x 30	HIP

		Bi	Ca	Cd	Sr	Ga	Na	Li	P
CRM	**55X G04H2 D**	....	0.0010	....	0.0025	....	(0.0009)	....	(0.0020)
CRM	**55X G04H3 N**	....	0.0010	....	0.0022	....	(0.0009)	....	0.0021

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Ca	Ag	Li	P	Cd	Zr	Size (mm) Ø x H	Form
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 H**	3.34	0.17	5.39	0.663	0.410	0.35	1.28	0.166	0.075	0.18	0.051	0.021	0.0105	....	....	0.0056	....	(0.009)	....	....	....	40x15 or 50x20	C
CRM	**55X G04H9 D**	2.62	0.078	6.00	0.303	0.301	0.229	1.89	0.063	0.030	0.31	0.005	0.010	0.008	....	....	0.0015	....	....	....	....	....	40x15 or 50x20	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

		Be	Bi	Sb	Ca	Ag	Cd	Zr	P
CRM	**55X G04HX A**	0.0006	0.0058	0.0053	0.0011	0.0030	0.0048	0.0278	(0.002)

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Ca	Ag	Li	P	Cd	Zr	Size (mm) Ø x H	Form
	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

		Be	Sb	Cd	P
CRM	**55X G28J1 Z**	....	....	....	(0.0048)
CRM	**55X G28J2 T**	(0.0002)	0.030	0.0023	....
	55X G28J3 U	....	....	....	....
CRM	**55X G28J4 T**	....	....	....	(0.002)
	55X G28J5 Y	....	....	....	<0.005
CRM	**55X G28J6 A**	....	(0.007)	(0.038)	....

		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Ca	P	Size (mm) Ø x H	Form
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	0.015	....	(0.004)	40x13 or 50x17	C
CRM	**55X A30J3 J**	4.02	0.31	16.5	0.29	0.259	0.072	0.048	0.018	0.083	0.144	0.037	0.194	0.006	<0.0005	0.020	....	(0.002)	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	0.0100	0.0053	0.016	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		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
	56X G14H5 C	3.02	2.19	0.76	0.81	0,01	2.56	0.01	0,15	0.02	0.01	0.01	....	....	....	....	....	....	....	....		40 x 15	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** **	3.7	1.28	0.50	1.6	0.85	0.13	0.73	1.1	0.10	0.10	0.015	0.06	0.17	0.006	0.075	....	0.185	0.05	0.01	** provisional values	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

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	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
	57X G12H2 B	8.5	0.32	2.57	1.30	0,15	0.35	0.71	0.17	0.27	0,15	0.03	....	....	....	....	....	....	....	....	40 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 G12H4 B	12.8	0.18	1.26	0.37	0.58	0.17	0.40	0.01	0.04	0.06	0,07	....	....	....	....	....	....	....	....	40 x 15	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

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		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 E**	2.42	2.27	0.37	0.71	0.594	0.43	4.57	0.075	0.137	0.107	0.023	<0.005	0.006	0.046	0.0115	....	0.026	....	(0.002)	<0.001		40x15 or 50x20	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
	59X G77J5 D	0.122	0.72	0.30	1.32	0.030	1.38	7.57	(0.003)	<0.01	0.058	0.050	....	0.007	....	0.012	0.020	....	....	....	....		40x15 or 50x20	C
CRM	**59X G77J6 B ****	1.05	2.65	0.10	0.25	0.035	0.02	12.3	0.01	0.04	0.02	0.01	0.01	0.01	....	0.0015	....	0.25	0.009	....	** provisional values		50 x 20	C

5.11 Al/Mg		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Cd	Ga	Zr	Na	B	Li	As	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 G**	0.37	3.12	0.35	0.60	0.186	0.22	0.26	0.068	0.154	0.079	0.30	....	(0.001)	0.004	0.002	0.012	(0.002)	(0.002)	(0.024)	....	....	....	40x15 or 50x20	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	....	....	....	....	....	....	....	....	40x15 or 50x20	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
	511X G10H4 B	0.052	10.4	0.33	0.19	0.12	0.085	0.21	0.10	0.051	0.097	0.15	....	....	0.023	....	....	....	....	0.004	<0.0005	....	....	40 x 15	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	....	....	....	....	(0.006)	(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
	511X G3000B5 B	0.054	1.55	0,05	0.93	0.79	0.007	0.009	<0.01	0.008	0.19	0.003	....	(0.008)	....	....	....	....	....	....	....	....	....	40 x 15	C

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 50x20	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 50x20	C

5.15 Al/Sr Binaries		Sr	Size (mm) Ø x H	Form
	515X AlSr7 A	6.67	50 x 20	C

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	Size (mm) Ø x H	Form
CRM	61X MGP1 A ++	0.014	(0.002)	0.0035	<0.0005	0.0008	0,005	0,027	(0.001)	<0.001	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.001	<0.001	45 x 20	C
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	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

6.3 Mg/Mn

		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Be	Cd	Ti		Size (mm) Ø x H	Form
CRM	63X MGE1 D	0.056	0.0514	0.492	<0.001	0.0486	0.040	0.0045	0.0091	(0.014)	0.0033	0.0113	0.0197	0.0010	0.0006	0.00036	....	0.00012		40 x 15	C
CRM	63X MGE2 B pp	0.042	0.023	1.73	....	0.020	0.02	0.002	0.0035	0.001	0.002	0.002	0.009	....	....	....	0.001	....	pp provisional values	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	Pr			
CRM	64X MGQ1 A pp	1.08	0.23	0.38	0.083	0.06	0.003	0.004	0.019	0.019	0.0003	....	....	....	....	AZ10A	pp provisional values	40x15 or 50x20	C
CRM	64X MGQ2 A pp	4.50	0.105	0.385	0.015	0.04	0.004	0.0055	0.011	0.011	0.0012	....	....	....	....	AM50A	pp provisional values	40x15 or 50x20	C
CRM	64X MGQ3 A pp	8.70	0.004	0.205	0.032	0.07	0.009	0.003	0.002	0.002	0.0035	....	....	....	....	AM90A	pp provisional values	40x15 or 50x20	C
CRM	64X MGQ4 A pp	6.40	0.185	0.18	0.29	0.06	0.004	0.007	0.026	0.033	0.0003	....	....	....	....	AM60A	pp provisional values	40x15 or 50x20	C
CRM	64X MGQ5 A pp	5.70	0.045	0.27	0.0065	0.05	0.004	0.0010	0.0047	0.0055	0.0013	....	....	....	....	AM60B	pp provisional values	40x15 or 50x20	C
CRM	64X MGQ6 A pp	2.25	0.075	(0.35)	0.004	0.75	0.005	0.0025	0.006	0.006	0.0005	....	....	....	....	AS21A	pp provisional values	40x15 or 50x20	C
CRM	64X MGQ7 A pp	4.00	0.063	0.45	0.017	0.65	0.002	0.005	0.012	0.014	0.0004	....	....	....	....	AS41A	pp provisional values	40x15 or 50x20	C
CRM	64X MGQ8 A pp	1.02	0.045	0.71	0.0018	0.04	0.002	<0.001	0.002	0.001	0.0002	....	....	....	....	AZ10-mod	pp provisional values	40x15 or 50x20	C
CRM	64X MGQ9 A pp	2.15	0.24	0.070	0.010	0.32	0.005	0.002	0.007	0.010	0.0015	0.12	0.08	0.10	<0.01	AS21B	pp provisional values	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		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	....	....		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 MGA7 A	9.38	0.66	0.285	0.0010	0.006	0.0103	0.0009	<0.002	<0.002	....	....	<0.0005	....	....	....	0.015	....		40 x 17	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 pp	6.65	0.50	0.19	0.050	0.043	0.007	0.007	0.012	0.025	0.0005	....	....	....	....	....	....	....	pp provisional values	40x15 or 50x20	C
CRM	65X MGA19 A pp	8.90	2.15	0.32	0.042	0.18	0.010	0.0063	0.047	0.049	0.0002	....	....	....	....	....	....	....	pp provisional values	40x15 or 50x20	C
CRM	65X MGA20 A pp	5.90	1.30	0.065	0.012	0.050	0.007	0.002	0.030	0.0075	0.0013	....	....	....	....	....	....	....	pp provisional values	40x15 or 50x20	C
CRM	65X MGA21 A pp	12.3	5.10	0.077	0.0020	0.028	0.014	0.0007	0.006	0.004	0.0005	....	....	....	....	....	....	....	pp provisional values	40x15 or 50x20	C
CRM	65X MGA22 A pp	8.55	0.87	0.36	0.075	0.083	0.001	0.005	0.0028	0.0035	0.0003	....	....	....	....	....	....	....	pp provisional values	40x15 or 50x20	C
CRM	65X MGA23 A pp	9.65	0.55	0.13	0.015	0.025	0.008	0.0008	0.002	0.002	0.0021	....	....	....	....	....	....	....	pp provisional values	40x15 or 50x20	C

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

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
	65X MGB1 C [++]	2.34	1.71	0.61	0.195	0.14	0.006	0.012	0.001	0.012	0.013	0.03	0.010	0.010	0.0006	0.07	....	45 x 20	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 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)	45 x 20	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 MGC2 E**	<0.003	4.82	0.0036	0.47	0.037	(0.0013)	0.0009	0.0044	....	0.0007	0.0074	0.0048	0.0206	0.0164	....	<0.0001	....	40 x 15	C
CRM	**66X MGC3 B**	0.011	4.97	0.020	0.13	0.009	(0.003)	(0.001)	0.006	....	<0.002	0.003	0.001	....	....	....	....	....	40 x 15	C
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 MGD1 B** [pp]	0.141	1.18	0.120	....	0.065	0.07	0.003	0.016	....	0.025	0.026	....	0.06	0.03	0.055	....	....	40x15 or 50x20	C
	66X MGD2 A	0.30	1.13	0.74	<0.01	0.08	0.07	0.014	0.008	<0.005	0.011	0.012	....	....	....	....	....	....	40 x 15	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	....	45 x 20	C
CRM	**66X MGD4 B**	0.0012	2.77	0.0053	0.69	0.0041	<0.001	0.0010	....	....	(0.001)	(0.001)	(0.002)	0.015	0.014	....	<0.0002	....	40 x 15	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

[pp] provisional values

6.7 Mg/Rare Earth

		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Sn	Pb	Ag	La	Ce	Nd	Pr	Size (mm) Ø x H	Form
CRM	**67X MGF1 B**	0.0176	0.501	0.0039	0.022	0.0048	<0.005	0.0024	(0.0003)	<0.002	<0.001	<0.001	1.12	1.88	(0.05)	0.48	40 x 15	C
CRM	**67X MGF2 B**	0.0038	1.71	0.0047	0.30	0.0033	<0.002	(0.001)	0.0008	<0.002	0.019	<0.001	0.98	1.42	0.29	0.112	40 x 15	C
CRM	**67X MGF3 B**	<0.001	3.34	0.0040	0.53	0.0010	(0.001)	<0.002	....	<0.002	0.0140	<0.001	0.84	1.17	0.212	0.106	40 x 15	C
CRM	**67X MGF4 B**	0.079	5.04	0.0023	0.024	0.0302	(0.0014)	<0.002	....	<0.001	<0.001	<0.0005	0.47	0.81	0.048	0.195	40 x 15	C
CRM	**67X MGF5 B**	0.094	6.29	0.171	<0.001	0.0735	0.0026	0.0290	0.0004	<0.001	<0.0005	<0.0005	0.239	0.412	0.011	0.100	40 x 15	C

6.8 Mg/Ag/Rare Earth

		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	La	Ag	Ce	Nd	Pr	Total R.E.	Size (mm) Ø x H	Form
CRM	**68X MGH1 B**	<0.002	0.053	0.0027	0.47	0.0046	<0.005	<0.002	(0.0006)	....	<0.002	<0.002	0.034	3.21	0.040	3.05	(0.014)	....	40 x 17	C
CRM	**68X MGH2 B**	<0.002	0.123	0.0038	0.46	0.0050	<0.002	(0.0006)	(0.0006)	....	<0.005	(0.0021)	0.044	2.94	0.055	2.70	(0.013)	....	40 x 17	C
	68X MGH6 A	0.23	0.21	0.17	<0.01	0.11	0.01(5)	0,03	0,01	....	<0.002	<0.005	....	1.13	....	....	....	(1.0)	40 x 15	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.

6.9 Mg/Y/Rare Earth

		Al	Zn	Mn	Zr	Cu	Fe	Ni	Pb	Y	Li	Ce	La	Nd	Pr	Gd	Dy	Er	Ho	Lu	Sm	Tb	Yb	Size (mm) Ø x H	Form
CRM	**69X MGY1 A**	(0.0019)	0.121	0.0109	0.38	(0.0015)	0.0021	(0.0005)	0.014	4.64	0.119	0.029	0.166	2.26	0.059	0.284	0.313	0.13	0.065	0.007	0.09	0.045	0.078	40 x 16	C
CRM	**69X MGY2 A**	(0.0014)	0.354	0.0026	0.41	0.0013	0.0014	0.0011	(0.002)	1.98	0.012	0.047	0.0352	2.96	0.016	0.082	0.085	0.0174	0.0037	0.0005	0.013	0.0046	0.0094	40 x 15	C
CRM	**69X MGY3 A**	(0.0010)	0.315	0.0028	0.43	0.0010	0.0015	0.0012	(0.006)	3.46	0.014	0.020	0.023	2.82	0.015	0.221	0.225	0.041	0.0049	0.0005	0.020	0.0057	0.0168	40 x 16	C
CRM	**69X MGY4 A**	(0.0023)	0.495	0.0104	0.29	0.0011	0.0012	0.0009	(0.001)	....	....	0.011	0.0078	2.36	0.0056	1.54	....	....	....	....	0.0083	....	....	60 x 6	CC

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	S	In	Au	Te	Se	Ga	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 B**	0.0008	(0.0025)	0.0034	0.0113	0.0013	0.0008	0.0015	0.0034	0.0004	0.0197	0.0018	....	0.0047	0.0007	0.0009	0.0005	0.0027	0.0044	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 E**	0.043	0.060	0.061	0.112	0.060	0.0160	0.0435	0.0072	0.0192	0.0010	0.0209	(0.0023)	0.055	0.0084	0.030	0.0097	0.0166	0.144	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

7.2 Tin with Antimony

		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Size (mm) Ø x H	Form
	72X SA4R B	0,03	0,1	4.0	0,08	0,02	0,1	0,003	0,007	40 x 15	C
	72X SA5R B	0,02	0,005	5.0	0,025	0,005	0,003	0,02	0,001	40 x 15	C
	72X SA6R B	0,05	0,25	6.0	0,25	0,1	0,05	0,01	0,02	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 A**	0,035	0.62	3.07	0.029	1.06	0.030	0.036	0.003	0.0048	(0.002)	0.006	0.021	(0.002)	<0.001	....	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 A**	0,005	0.218	6.02	0.514	3.05	0.011	0.052	0.008	0.017	0.005	0.042	0.0035	0.011	(0.003)	....	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 A**	0.047	0.009	14.01	0.356	6.51	0.046	0.0018	(0.003)	0.008	0.001	0.006	0.0160	0.014	<0.001	....	40 x 15	C
CRM	**73X SC8 A**	0.121	0.037	9.65	0.037	3.89	0.073	0.133	(0.008)	0.014	0.004	(0.0015)	0.017	0.017	(0.011)	....	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 A**	0.024	0.020	8.05	0.024	7.72	0.051	0.625	0.020	0.384	<0.002	0.83	....	....	....	....	40 x 15	C

7.4 Tin Lead-Free Solders

		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	P	Se	Ge	Size (mm) Ø x H	Form
CRM	**74X AM E**	0.045	0.175	1.06	0.119	2.97	(0.016)	0.0072	(0.002)	0.0203	(0.008)	0.562	0.018	0.0115	....	40 x 15	C
CRM	**74X E E**	0.061	0.0170	0.060	0.0146	3.14	(0.004)	0.0029	(0.002)	0.0116	(0.002)	0.656	0.0029	0.0031	....	40 x 15	C
CRM	**74X HA F**	0.0020	0.061	2.06	0.084	0.612	0.009	0.0008	2.69	0.0108	0.0185	2.66	(0.002)	(0.0005)	....	40 x 15	C
CRM	**74X HB F**	0.028	(0.007)	5.40	0.036	4.56	0.014	0.0095	0.0117	1.27	0.0013	0.070	(0.002)	<0.001	....	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 E**	0.026	0.036	0.045	0.164	4.95	(0.054)	0.0145	0.0097	0.0034	0.0010	0.0110	(0.029)	0.092	....	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 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	S	P	In	Au	Se	Co	Hg	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 A**	0.0100	0.0329	0.0737	0.0331	0.782	0.0021	0.0010	0.0003	0.0308	0.0002	3.50	(0.005)	0.0055	0.0062	0.0014	0.0015	. . . .	0.0007	40 x 15	C
CRM	**74X CA4 B**	0.0094	0.061	0.039	0.080	0.502	0.0043	0.00075	(0.001)	0.0542	(0.002)	3.02	. . . .	(0.001)	0.0041	. . . .	0.0027	0.0085	. . . .	40 x 15	C
CRM	**74X CA5 A**	0.0353	0.0207	0.133	0.0116	1.098	0.0019	0.0025	0.0009	0.0147	(0.0003)	4.01	0.0006	0.0108	0.0111	0.0049	0.003	. . . .	0.0006	40 x 15	C
CRM	**74X CA6 A**	0.0086	0.008	0.0078	0.0176	0.629	0.0061	0.00033	0.0006	0.0194	0.0006	0.282	(0.0008)	0.0046	0.0218	0.0106	0.0007	. . . .	0.0064	40 x 15	C
CRM	**74X CA7 A**	0.0095	0.0081	0.0103	0.0965	0.333	0.0047	0.0045	. . . .	0.0007	. . . .	4.21	. . . .	0.003	0.0026	. . . .	. . . .	. . . .	0.053	40 x 15	C
CRM	**74X CA8 A**	0.0100	0.0032	0.0045	0.0403	0.947	0.0037	0.0103	. . . .	0.0007	. . . .	2.44	. . . .	0.0077	0.0041	. . . .	. . . .	. . . .	0.101	40 x 15	C

8.1 Pb/Sb & Pb/As Binaries

		Sb	As	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 D	3,53	....	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

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	Al	Te	Se	Au	Tl	Na	Hg	Pt	Size (mm) Ø x H	Form
CRM	83X PR1 J	0.0059	0.0048	0.0551	0.0039	0.0287	0.123	(0.0007)	0.006	0.0932	0.0356	0.0004	....	0.0016	(0.001)	....	....	....	....	(0.0016)	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 G	0.0112	0.0164	0.0187	0.0138	0.0054	0.0146	....	....	0.0083	0.0030	(0.0009)	....	0.0198	0.0053	(0.0023)	0.0033	....	0.044	....	40 x 15	C
CRM	83X PR5 C	0.00028	0.00023	0.0041	0.00038	0.0003	0.0008	....	0.0005	(0.0001)	0.00013	0.00046	....	0.00023	0.00018	....	....	....	0.00046	....	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 B	0.556	0.262	1.155	0.0695	0.0155	0.490	....	(0.0015)	0.220	0.664	0.0044	0.0008	0.0059	0.0038	0.0083	....	0.0057	0.049	....	40 x 15	C

8.4 Battery Alloys (Pb/Sn/Ca)

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	Ni	Al	Te	Se	Ca	Mn	Mg	S	Hg	Size (mm) Ø x H	Form
CRM	84X BA1 G	0.898	0.0010	0.0181	(0.0007)	<0.0005	0.0056	....	0.0036	0.0017	<0.0005	0.0189	<0.0005	....	0.106	....	....	....	....	40 x 15	C
CRM	84X BA2 C	0.490	0.0010	0.0319	0.0033	0.0008	0.0107	....	0.0129	0.0040	0.00025	0.0127	....	....	0.0754	....	....	....	(0.003)	40 x 15	C
CRM	84X BA3 C	0.341	0.010	0.0411	0.006	(0.0006)	0.0082	....	(0.0055)	0.0044	(0.0004)	0.0026	0.0004	....	0.0163	....	....	....	....	40 x 15	C
CRM	84X BA4 C **	0.048	0.008	0.025	0.006	0.004	0.002	....	0.006	0.009	<0.001	0.001	0.021	....	0.001	....	....	....	** provisional values	40 x 15	C
CRM	84X BA8 B	0.346	0.0009	0.0198	0.0009	0.0006	0.0064	....	0.0028	0.00096	0.00015	0.0298	....	....	0.141	....	....	....	(0.002)	40 x 15	C
CRM	84X BA9 B	2.92	0.0022	0.0186	0.0026	<00005	0.0017	....	0.0020	0.0010	(0.0003)	0.0154	<0.0005	....	0.109	....	....	....	....	40 x 15	C
CRM	84X BA10 A	1.51	0.0008	0.0190	0.0005	0.0005	0.0015	....	0.0003	0.0002	(0.0002)	0.0100	(0.0002)	....	0.0596	....	....	....	....	40 x 15	C
CRM	84X BA20 A	0.299	0.0030	0.0194	....	....	0.0290	....	0.0438	0.0057	....	0.0483	....	....	0.334	....	....	....	....	40 x 15	C
CRM	84X BA21 A	0.161	0.0091	0.0224	....	....	0.0122	....	0.0136	0.0057	....	0.0067	....	....	0.608	....	....	....	....	40 x 15	C
CRM	84X BA22 A	0.108	0.00114	0.0162	....	....	0.0059	....	0.0053	0.00139	....	0.033	....	....	0.911	....	....	....	....	40 x 15	C
CRM	84X BA23 A	0.170	0.0020	0.0163	....	....	0.0039	....	0.00218	0.00014	....	0.0229	....	....	1.21	....	....	....	....	40 x 15	C
CRM	84X BACM D	0.649	(0.0003)	0.0025	0.0003	(0.0001)	0.0004	<0.0005	0.0002	<0.0001	<0.0001	0.0124	(0.0002)	<0.0001	0.102	<0.0001	(0.00008)	<0.0001	....	55 x 12	C
CRM	84X BAHC E	<0.0005	(0.0001)	0.0130	0.0005	(0.00015)	0.0005	<0.0001	(0.00017)	<0.0001	<0.0001	0.0304	(0.0001)	<0.0001	0.139	<0.0001	(0.0001)	<0.0001	....	55 x 12	C

8.5 Various Lead Alloys

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	S	Hg		Size (mm) Ø x H	Form
CRM	**85X PSn2 B**	1.97	0.0269	0.0508	0.0344	0.0047	0.0033	....	0.0005	0.0012	....	0.0010	0.0041	0.0011	....	....	(0.0008)	....		40 x 15	C
CRM	**85X PSb3 F**	0.151	2.32	0.0234	0.0406	0.240	0.0057	....	(0.0006)	0.0045	....	0.0031	0.0049	0.0187	....	....	(0.0036)	....		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 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
CRM	**85X ANTH E**	1.45	6.05	0.0194	0.0291	0.217	0.0071	(0.010)	(0.0007)	0.0046	....	0.0062	0.0071	0.0149	....	....	(0.0036)	....		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	....		40 x 15	C
CRM	**85X CADL A ****	0.010	1.52	0.016	0.009	0.007	0.008	<0.001	0.001	1.71	....	0.0005	0.003	<0.001	....	....	....	....	** provisional values	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 SSBC A**	9.70	2.14	0.413	....	0.075	0.456	....	....	0.455	0.209	....	0.0037	0.00290	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 0494Pb2 B**	0.147	1.93	0.0174	0.0361	0.111	0.0302	(0.0010)	....	....	....	....	0.0051	0.0302	....	....	(0.0053)	....		40 x 15	C
CRM	**85X 0494Pb3 B**	0.344	3.10	0.0433	0.101	0.301	0.0142	(0.0007)	....	....	....	....	0.0151	0.077	....	....	(0.015)	....		40 x 15	C
CRM	**85X 0616Pb1 B**	0.065	1.756	0.0395	0.0496	0.077	0.0048	....	0.0005	0.0029	....	0.0009	0.0048	0.0149	....	....	....	(0.0003)		40 x 15	C

8.6 Lead Babbits

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Al	Pd	Size (mm) Ø x H	Form
CRM	**86X PSS1 A**	4.42	12.11	0.21	0.028	0.59	0.003	(0.0005)	<0.001	0.006	0.008	0.0014	<0.001	<0.0005	40 x 15	C
CRM	**86X PSS2 A**	6.33	8.16	0.054	0.118	1.42	0.004	<0.001	<0.002	0.069	(0.002)	0.0080	<0.0005	(0.001)	40 x 15	C
CRM	**86X PSS3 A**	9.01	14.02	0.031	0.608	0.10	0.006	(0.0016)	<0.001	0.020	0.004	0.0040	<0.001	(0.003)	40 x 15	C
CRM	**86X PSS4 A**	10.69	16.97	0.120	0.328	0.278	(0.006)	(0.0013)	<0.002	0.047	0.013	0.0031	<0.001	(0.007)	40 x 15	C

9.1 Tin / Lead Solders

		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Al	Te	Au	Hg	Size (mm) Ø x H	Form
	91X S10PR1 B	8,81	0,04	0,03	0,015	0,006	0,005	0,003	0,008	0,003	. . . .	0,009	. . . .	. . . .	. . . .	. . . .	40 x 15	C
	91X S10PR2 C	10,38	0,51	0,15	0,05	0,04	0,05	0,003	0,03	0,007	. . . .	0,003	. . . .	. . . .	. . . .	. . . .	40 x 15	C
	91X S10PR3 B	11,97	0,26	0,23	0,12	0,02	0,03	0,002	0,003	0,011	. . . .	(0.02)	. . . .	. . . .	. . . .	. . . .	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
	91X S30PR1 B	29.3	0.047	0.057	0.19	0.006	0.007	(0.08)	0.0013	0.0024	. . . .	0.0023	. . . .	. . . .	. . . .	. . . .	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
	91X S30P C	30.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	. . . .	<0.001	. . . .	. . . .	. . . .	. . . .	40 x 15	C
	91X S40PR1 B	39.1	0.059	0.060	0.20	0.006	0,005	<0.005	0.008	0,001	. . . .	0.002	. . . .	. . . .	. . . .	. . . .	40 x 15	C
	91X S40PR2 C	40.4	0.60	0,15	0.050	0.026	0.050	(0.003)	0.028	0.0057	. . . .	0.007	. . . .	. . . .	. . . .	. . . .	40 x 15	C
	91X S40PR3 B	41.8	0,25	0,25	0.094	0.018	0.022	0.01	0.002	0.010	. . . .	0.016	. . . .	. . . .	. . . .	. . . .	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
	91X S50PR3 C	51.4	0.26	0,25	0.10	0.015	0.020	0.009	0.008	0.002	. . . .	0.016	. . . .	. . . .	. . . .	. . . .	40 x 15	C
CRM	**91X S50PR4 A**	54.6	0.098	0.097	1.58	0.044	0.045	(0.0034)	0.0105	0.0118	0.052	0.0114	<0.001	. . .	0.029	. . . .	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 H**	62.38	0.479	0.147	0.0846	0.0262	0.0605	0.012	0.0041	0.0106	0.031	0.0080	(0.0012)	0.0016	0.0771	. . . .	40 x 17	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 H**	63.30	(0.003)	(0.006)	(0.003)	(0.007)	(0.001)	(0.002)	<0.0001	<0.0005	(0004)	(0.001)	<0.0005	. . . .	. . . .	. . . .	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
	93X S40APR1 A	38,5	2.70	0.06	0.23	0.011	0.007	(0.01)	0,002	0.002	. . . .	0.003	. . . .	40 x 15	C
	93X S40APR2 A	39.6	2.10	0.19	0.07	0.030	0.052	(0.02)	0.04	0.006	. . . .	0.006	. . . .	40 x 15	C
	93X S40APR3 A	41.4	1.70	0.26	0.12	0.024	0.021	(0.03)	0.022	0.011	. . . .	0.014	. . . .	40 x 15	C
	93X S50APR1 A	48.4	3.2	0.052	0.18	0.007	0.010	(0.01)	0,002	0.002	. . . .	0.002	. . . .	40 x 15	C
	93X S50APR2 A	49.6	2,8	0,15	0.049	0.027	0.055	0.01	0.042	0.006	. . . .	0.014	. . . .	40 x 15	C
	93X S50APR3 A	51.2	2,3	0,25	0.093	0.023	0.025	(0.02)	0.013	0.010	. . . .	0.010	. . . .	40 x 15	C

9.5 Fusible Alloys

	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Al	Pb	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 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

10.1		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
CRM	**101X Ti4 A**	3.95	0.072	0.044	0.301	0.070	0.0668	0.0688	0.125	0.779	0.0645	0.072	0.0079	0.115	....	0.0195	0.199	0.0050		
CRM	**101X Ti5 A**	5.33	2.09	0.0779	3.98	....	2.09	3.00	0.162	0.047	0.277	0.092	0.0111	0.089	0.0114	0.015	0.172	0.0039		
CRM	**101X Ti6 A**	5.99	0.067	3.95	0.064	0.0639	0.0653	0.0636	0.221	0.0421	0.0632	0.054	0.0087	0.0340	0.0061	0.0137	0.171	0.0043		

continued

Continuation	B	Co	Mn	P	Pd	Ru	Ta	W	Size (mm) Ø x H	Form
101X Ti4 A	0.0093	0.066	0.0653	0.0076	0.145	0.054	0.096	0.072	40 x 13	HIP
101X Ti5 A	0.0098	....	0.073	0.010	....	....	....	0.084	40 x 13	HIP
101X Ti6 A	0.0080	0.0621	0.0623	0.0069	0.141	0.062	0.084	0.066	40 x 13	HIP

Note: these products are available in other thicknesses on request

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
CRM	**111X 12667 M**	0.008	0.749	0.0068	(0.003)	0.52	(0.70)	21.79	8.22	1.36	0.161	1.50	0.145	0.005	0.047	0.085	....	....	43 x 20	C
	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
	111X 12672 J	0.126	0.78	0.014	....	0.72	0.71	21.8	9.3	1.87	0.29	1.87	0.09	0.27	0.14	....	0.01	0.034	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
	112X 14936 N	0.45	0.23	....	....	0.77	1.67	23.00	1.12	0.39	4.65	0.48	....	....	....	....	....		40 x 15	C
CRM	**112X 14937 S ****	0.340	1.18	0.024	0.007	0.415	2.85	25.2	2.83	2.28	7.12	0.011	0.016	0.192	0.092	0.012	0.142	** provisional values	42-48 x 15	C
	112X 14941 M	0.38	0.45	....	....	0.14	1.17	26.85	0.54	0.76	4.16	0.03	....	....	....	....	....		40 x 15	C
	112X 14942 M	0.090	1.02	....	....	0.46	0.29	28.47	1.67	1.09	6.22	0.18	....	....	....	....	....		40 x 15	C
CRM	**112X 14943 F**	0.200	(1.0)	0.054	0.015	1.08	0.221	30.5	0.050	0.53	8.12	(0.011)	....	0.117	0.29	0.011	0.088		43 x 20	C
CRM	**112X 14944 A**	0.225	0.71	0.0040	0,0017	0.744	0.128	29.24	<0.02	0.14	6.29	<0.01	....	<0.01	0,006	(0.0004)	0,148		40 x 19	W

11.3 Co/Cr/Ni/W (Stellite 31 Type)

		C	Si	S	P	Mn	Ni	Cr	W	Fe	B	Size (mm) Ø x H	Form
	113X X401 G	0.56	1.22	....	....	0.20	11.74	25.24	7.09	0.73	0.008	40 x 15	C
	113X X402 H	0.38	0.32	0.036	0.045	1.26	9.41	24.86	7.96	2.15	....	40 x 15	C
	113X X403 G	0.52	0.85	0.022	0.021	0.69	10.40	25.03	7.82	1.06	0.006	40 x 15	C
	113X X404 D	0.51	0.75	0.006	0.002	0.69	10.76	23.7	7.71	1.28	0.001	40 x 15	C
	113X X405 E	0.48	0.76	0.005	0.002	0.68	10.79	26.7	7.65	1.30	0.001	40 x 15	C

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 81601 B**	0.396	0.601	0.033	0.021	1.44	19.9	18.56	4.14	(5.37)	4.08	....	4.20	0.104	....	(0.012)	....	0.056	43 x 20	C
CRM	**119 X ST3 K**	2.39	0.794	0.063	....	1.09	2.55	29.8	12.1	3.10	0.353	0.078	....	....	....	....	0.148	0.040	40 x 15	CC

13.1 Silver with Impurities	All Elements ppm																				Size (mm)	Form
	Cu	Pb	Bi	Zn	As	Sb	Se	Hg	Au	Sn	Ir	Pt	Pd	Fe	Te	Mn	Ni	Cd	Ga	Si	Ø x H	
131X AGP1 A	522	465	485	312	308	465	287	<1	529	489	<1	514	517	150	483	242	....	....	....	....	25 x 3**	C
131X AGP2 A	137	112	113	77	48	93	68	<1	138	129	<1	127	130	73	121	20	....	....	....	....	25 x 3**	C
131X AGP3 A	44	31	29	20	19	24	17	<1	36	26	<1	32	32	46	30	12	....	....	....	....	25 x 3**	C
131X AGP4 A	20	5	6	7	5	6	<1	<1	10	<1	<1	10	8	24	7	2	....	....	....	....	25 x 3**	C
131X PAg1 A	75	40	40	50	12	50	35	....	120	40	<1	35	180	5	120	35	25	35	60	30	34 x 12	C
131X PAg2 A	400	12	12	550	8	12	10	....	20	14	<1	10	180	7	15	10	9	5	15	4	34 x 12	C

** Mounted in Bakelite 30mm diameter

13.3 Silver Quaternary Alloys						Size (mm)	Form
	Au	Cu	Pb	Ag		Ø x H	
133X AGQ1 A	0.266	2.611	0.214	bal.		25 x 3**	C
~~**133X AGQ2 A**~~	~~1.000~~	~~6.022~~	~~0.423~~	~~bal.~~	temporarily out of stock	~~25 x 3**~~	~~C~~
~~**133X AGQ3 A**~~	~~2.008~~	~~10.186~~	~~0.868~~	~~bal.~~	temporarily out of stock	~~25 x 3**~~	~~C~~

** Mounted in Bakelite 30mm diameter

15.1.1 Fe Binary

		C	Si	S	P	Mn	Ni	Cr	Mo	Al	Size (mm) Ø x H	Form
151X FC1 A	**Cr**	0,013	0,02	0,008	0.020	0,06	0,018	**0,45**	<0.005	0,067	40 x 15	C
151X FM1 A	**Mn**	0,019	0,01	0,008	0,011	**0,53**	0,015	0,015	<0.005	<0.005	40 x 15	C
151X FS1 B	**S**	0,07	0.10	**0,058**	0,013	0,26	0,015	0,03	0,01	0,02	40 x 15	C

15.1.2 Fe Binary

	Si	Mn	Ni	Cr	Mo	Al	Ti	V	W	Co	Nb	Size (mm) Ø x H	Form
151X 13604 E	0.57	....	....	....	....	....	....	....	....	....	....	40 x 15	C
151X 13606 F	3.12	....	....	....	....	....	....	....	....	....	....	40 x 15	C
151X 14045 E	....	0.49	....	....	....	....	....	....	....	....	....	40 x 15	C
151X 13937 G	....	1.14	....	....	....	....	....	....	....	....	....	40 x 15	C
151X 13589 J	....	....	49,6	....	....	....	....	....	....	....	....	40 x 15	C
151X 13765 G	....	....	....	19.9	....	....	....	....	....	....	....	40 x 15	C
151X 13754 G	....	....	....	....	11.10	....	....	....	....	....	....	40 x 15	C
151X 14931 D	....	....	....	....	....	19.7	....	....	....	....	....	40 x 15	C
151X 13759 E	....	....	....	....	....	....	0.23	....	....	....	....	40 x 15	C
151X 13762 E	....	....	....	....	....	....	0.41	....	....	....	....	40 x 15	C
151X 13700 D	....	....	....	....	....	....	....	0.59	....	....	....	40 x 15	C
151X 13674 D	....	....	....	....	....	....	....	....	1,81	....	....	40 x 15	C
151X 13670 D	....	....	....	....	....	....	....	....	14.66	....	....	40 x 15	C
151X 13584 D	....	....	....	....	....	....	....	....	....	1.00	....	40 x 15	C
151X 13603 E	....	....	....	....	....	....	....	....	....	3.51	....	40 x 15	C
151X 13601 D	....	....	....	....	....	....	....	....	....	5.59	....	40 x 15	C
151X 13602 D	....	....	....	....	....	....	....	....	....	7.71	....	40 x 15	C
151X 13767 E	....	....	....	....	....	....	....	....	....	....	0.65	40 x 15	C
151X 13664 E	....	....	....	....	....	....	....	....	....	....	1.11	40 x 15	C

16. Setting Up Samples

Updated: 11 June 2009

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.

16.2 Steel

	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Co	Nb	Pb	Bi	Sb	Zn	Zr	Size (mm) Ø x H	Form
162X FE SUS1	1.1	1.8	0.35	0.15	0.8	0.5	25.0	0.45	0.3	0.05	0.6	0.4	0.4	0.2	0.005	1.1	0.05	0.005	0.005	0.015	0.002	0.04	43 x 20	C

16.4.2 Aluminium

	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Sb	Ca	Sr	Ga	Zr	Ag	Size (mm) Ø x H	Form
164X AL SUS6	12	0,03	0,5	0.2	0,1	0,1	0,05	0,05	0,1	0,05	0,02	0,05	0,03	0,005	0,05	....	....	0,02	0,05	....	50 x 25	C
164X AL SUS7	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 AL SUS8	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 CU SUS1	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	Cd	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	C
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
165X WSB4 SUS	1.0	0.25	5.5	0.80	0.25	0.35	4.5	0.03	1.5	0.01	0.08	0.08	0.002	0.03	....	0.08	0.003	....	85	40 x 17	CC
165X GM4 SUS	2.7	5.2	6.5	0.03	1.9	0001	0.002	0.01	0.0005	0.01	0.01	0.005	0.12	0.0005	....	....	0.0002	....	83.6	40 x 17	CC

16.6 Magnesium

	Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Sr	Size (mm) Ø x H	Form
166X MG SUS1	0,04	6,8	0,17	<0.001	0,002	0,06	0,005	0,001	<0.001	0,02	0,003	0,007	0,0001	....	0,0001	40 x 40	C
166X MG SUS2	8	0,4	0,4	....	0,02	0,12	0,005	0,02	0,015	0,01	0,04	0,005	0,0015	0,004	0,0003	40 x 40	C

16. Setting Up Samples

Updated: 11 June 2009

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.

16.8 Lead

	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Tl	Au	S	Size (mm) Ø x H	Form
168X PB SUS1	1.6	6.1	0.07	0.04	0,4	0.015	<0.001	0.003	0.02	0.01	0.003	0.015	0.008	. . . .	0.003	0,002	45 x 35	C
168X PB SUS5	1.2	0.4	0,35	0.10	0.35	0.20	<0.001	0.001	0.10	0.15	0.002	0.005	0.002	0,005	0.001	0,0005	45 x 35	C
168X PB SUS6	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

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	Pt	Size (mm) Ø x H	Form
1611X SN SUS6	0.08	0.09	0.13	0.95	0.50	0.050	0.008	0.005	0.030	. . . .	0.08	0.015	0.005	0.003	0.001	0.001	0.005	. . . .	50 x 20	C
1611X SN SUS7	2.3	2.6	11.1	0.32	12.3	(0.05)	0.018	0.03	0.10	<0.001	0.12	0.0005	0.050	0.0005	0.005	0.003	0.03	0.0005	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	Zr	V	Co	Size (mm) Ø x H	Form
1612X CO SUS1	1.0	1.0	0.06	0.05	1.1	12	21	5.5	4.5	8.0	1.8	2.5	0.20	0.015	0.07	0.005	0.03	0.30	0.1	0.15	~40	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
CRM	**18X HCX A**	1.555	0.0103	0.0111	0.141	22% CR, 3% Mo, 3% W, 2% V, 1% Si	100
CRM	**18X M3/2 A**	0.994	0.0166	0.0269	0.105	4% Cr, 6% W, 6% Mo, 3% V	100
CRM	**18X M3/2-D A**	0.992	0.0178	0.0421	0.408	4% Cr, 6% W, 6% Mo, 3% V	100

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

C1. Iron Base — Cast Iron — Chippings

Updated: 15 June 2009

Some of the MBH range of solids are available as chippings.

See pages 6 and 7 for compositional information.

Please enquire for price and availability.

C1. Iron Base — Steels — Chippings

Most of the MBH range of solids are available as chippings.

See pages 8-11 for compositional information.

Please enquire for price and availability.

C2. Nickel Base — Chippings

Some of the MBH range of solids are available as chippings.

See pages 12-15 for compositional information.

Please enquire for price and availability.

C3. Copper Base — Chippings

Most of the MBH range of solids are available as chippings.

See pages 16-21 for compositional information.

Please enquire for price and availability.

C4. Zinc Base — Chippings

Most of the MBH range of solids are available as chippings.

See pages 22-24 for compositional information.

Please enquire for price and availability.

C5. Aluminium Base

Updated: 15 June 2009

Chippings

Most of the MBH range of solids are available as chippings.

See pages 25-28 for compositional information.

Please enquire for price and availability.

C6. Magnesium Base

Chippings

Most of the MBH range of solids are available as chippings.

See pages 29 and 30 for compositional information.

Please enquire for price and availability.

C7. Tin Base

Chippings

Most of the MBH range of solids are available as chippings.

See pages 31 and 32 for compositional information.

Please enquire for price and availability.

C8. Lead Base

Chippings

Most of the MBH range of solids are available as chippings.

See pages 33 and 34 for compositional information.

Please enquire for price and availability.

C9. Solders

Chippings

Most of the MBH range of solids are available as chippings.

See pages 35 and 36 for compositional information.

Please enquire for price and availability.

C10. Titanium Base

Updated: 15 June 2009

Chippings

All of the MBH range of solids are available as chippings.

See page 37 for compositional information.

Please enquire for price and availability.

C11. Cobalt Base

Chippings

Some of the MBH range of solids are available as chippings.

See page 38 for compositional information.

Please enquire for price and availability.

C13. Silver Base

Chippings

Some of the MBH range of solids are available as chippings.

See page 39 for compositional information.

Please enquire for price and availability.

	1.4.2 High Speed Steels	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	V	W	Co	N	Alloy Type	Size (mm) Ø x H	Form
CRM	14X HS10 A **	1.69	0.64	0.009	0.010	0.115	0.14	14.5	1.65	0.06	1.16	1.66	0.085	0.003	** provisional values	42 x 15	HIP
CRM	14X HS11 A **	1.73	0.78	0.010	0.012	0.21	0.18	19.0	1.50	0.055	1.05	2.22	0.075	0.003	** provisional values	42 x 15	HIP

	1.4.8 Free Machining & Resulphurised Steels	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	N	Alloy Type	Size (mm) Ø x H	Form
CRM	14X MSFM4 A **	0.225	0.45	0.22	0.04	0.96	6.05	1.65	0.96	0.43	0.015	0.005	0.015	0.025	0.025	** provisional values	40 x 15	CC

	3.2.2 Leaded Bronze	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Ag	Cu	Alloy Type	Size (mm) Ø x H	Form
CRM	32X LB16 A **	5.5	18	0.4	<0.001	0.77	<0.001	0.001	<0.001	<0.001	0.01	0.001	<0.001	<0.005	<0.001	0.002	bal.	** provisional values	32 x 17	W

	3.6.1 Cupro Nickel	Sn	Pb	Zn	Fe	Ni	Mn	P	Co	Cr	Mg	B	Ti	Cu	Alloy Type	Size (mm) Ø x H	Form
CRM	36X CN24 A **	0.002	0.002	7.8	0.15	15.4	23.5	0.002	0.010	0.005	0.001	0.050	0.045	53.0	** provisional values	38 x 12 x 10	C

	3.6.4 Cu/Be/Co	Sn	Pb	Zn	Fe	Ni	Al	Si	Co	Mg	Be	Cu	Alloy Type	Size (mm) Ø x H	Form
CRM	36X CBC3 D **	0.002	0.001	0.005	0.050	0.006	0.015	0.040	0.21	0.0045	1.85	97.8	** provisional values	40 x 15	W
CRM	36X CBC4 D **	0.002	0.31	0.005	0.027	0.003	0.015	0.045	0.21	0.006	1.85	97.5	** provisional values	40 x 15	W

3.9 Residuals in Pure Copper — All Elements %

	3.9 Residuals in Pure Copper	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 **	0.18	0.26	0.11	0.06	0.055	0.01	....	0.021	0.006	0.023	0.022	0.003	0.027	0.009	....	0.0015	....	0.022	0.002	0.011	0.026	0.026	42 x 15	C
CRM	39X 17873 A **	0.027	0.063	0.025	0.018	0.021	0.01	0.03	0.022	0.018	0.023	0.023	0.09	0.023	0.025	0.022	0.0055	0.011	0.025	....	0.012	0.010	0.024	42 x 15	C

** provisional values

	4.5 Zn/Al 'Galvalume'	Zn	Si	Fe	Cu	Sn	Pb	Mg	Ca	Ti	Li	Sr	Al	Alloy Type	Size (mm) Ø x H	Form
	45X ZnAl1 B **	24.5	3.1	0.22	0.057	0.016	0.022	0.043	0.002	0.015	0.0015	....	bal.	** provisional values	60 x 6	CC
	45X ZnAl3 B **	43	0.64	0.048	0.009	0.003	0.0065	<0.001	<0.001	0.021	<0.001	....	bal.	** provisional values	60 x 6	CC
	45X ZnAl6 A **	43	1.70	0.067	0.065	0.031	0.007	0.001	....	0.006	....	0.011	bal.	** provisional values	60 x 6	CC
	45X ZnAl11 A **	27.5	2.22	0.14	0.036	0.007	0.010	0.010	0.002	0.011	0.0010	....	bal.	** provisional values	60 x 6	CC

	5.7 Al/Cu/Si	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Cd	Zr	Alloy Type	Size (mm) Ø x H	Form
CRM	57X G12H6 A **	8.3	0.35	1.65	0.80	0.225	0.38	6.60	0.115	0.10	0.110	0.048	0.025	0.016	<0.001	0.0028	0.028	** provisional values	40 x 15	C

	5.8 Al/Zn	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	Be	Zr	Alloy Type	Size (mm) Ø x H	Form
CRM	58X G40H10 C **	0.18	1.35	0.23	0.39	0.28	0.11	4.7	0.04	0.036	0.18	0.50	0.055	<0.001	0.21	** provisional values	50 x 20	C

	7.4 Tin Lead-Free Solders	Pb	Cu	Cd	Ni	Al	Ag	Ge	Alloy Type	Size (mm) Ø x H	Form
CRM	74X GE1 A **	0.040	0.65	0.0055	0.030	0.065	0.03	0.045	** provisional values	38 x 13	C
CRM	74X GE2 A **	0.045	0.70	0.0085	0.035	0.075	0.05	0.45	** provisional values	38 x 13	C

	9.1 Tin / Lead Solders	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Al	Te	Au	Alloy Type	Size (mm) Ø x H	Form
CRM	91X S62AG2 A **	61.7	0.345	0.145	0.063	0.020	2.03	0.005	0.001	0.0015	....	0.001	0.001	....	0.002	** provisional values	40 x 15	C
CRM	91X S63Bi1 A **	62.1	0.465	0.600	0.105	<0.001	0.058	0.020	0.002	0.010	0.0065	0.013	0.001	0.001	0.071	** provisional values	40 x 15	C