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# MBH

## Reference Materials

# MBH

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**Please Note**

This catalogue details only the current Reference Materials produced exclusively by MBH Analytical Ltd.

**Certified Reference Materials**

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

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

**Listing of new materials added in this catalogue.**      **1 & 2**

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

# Listing of New Materials Added to this Catalogue.

January 2018

Blocks / Discs

1.2.2 Residuals in Mild Steel		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Co	Nb	N	Bi	Se	Sb	Size (mm) Ø x H	Form
CRM	12X 358 A	0.129	0.199	0.0142	0.0102	0.709	0.212	0.625	0.108	0.250	0.117	0.0616	0.0453	0.0261	0.123	0.0393	0.0355	0.104	0.0029	0.0102	0.097	0.128	40 x 15	W
1.2.3 Low Alloy Steel (continued)		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	N	Size (mm) Ø x H	Form							
CRM	12X 16604 A **	0.295	0.240	0.002	0.006	0.455	1.88	1.92	0.34	0.135	0.006	0.013	0.007	0.040	0.004	** provisional values	40 x 15	W						
1.3.2 Austenitic Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Co	Nb	N	V	W	Ca	Size (mm) Ø x H	Form				
CRM	13X 31400 A **	0.033	2.28	0.0005	0.025	1.60	18.8	24.3	0.24	0.21	...	0.021	0.133	0.02	0.029	0.095	0.013	0.0025	** provisional values	40 x 15	W			
CRM	13X 14828 A **	0.108	2.17	0.007	0.027	1.53	11.2	19.4	0.300	0.41	0.012	0.008	0.145	0.016	0.037	0.081	0.015	0.001	** provisional values	40 x 15	W			
1.3.4 Ferritic & Martensitic Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	Nb	W	N	Size (mm) Ø x H	Form					
CRM	13X 41800 A **	0.175	0.32	0.0005	0.017	0.335	2.05	12.3	0.07	0.105	0.005	0.005	0.021	0.036	0.004	2.80	0.029	** provisional values	38 x 15	W				
1.3.6 Precipitation Hardening Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Ti	Al	V	Co	Nb	B	N	Alloy Type	Size (mm) Ø x H	Form				
CRM	13X 46500 A **	0.003	0.075	0.001	0.002	0.005	10.9	11.7	0.94	0.039	1.53	0.067	0.006	0.008	0.005	0.0016	0.003	UNS S46500	** provisional values	32 x 20	W			
1.3.7 High Nitrogen Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	V	W	Co	Nb	B	N	Alloy Type	Size (mm) Ø x H	Form				
CRM	13X NSA13 A **	0.019	0.24	0.0005	0.025	0.75	6.75	25.35	3.70	0.155	0.007	0.072	0.030	0.033	0.025	0.0028	0.275	UNS S32750	** provisional values	40 x 15	W			
2.3 Fe/Ni/Cr (Incoloy Type)		C	Si	Mn	Cu	Cr	Mo	Co	Ti	Al	Ni	Fe	Nb	W	V	Mg	Sn	S	P	B	N	Size (mm) Ø x H	Form	
	23X 08811 A **	0.066	0.27	1.0	0.24	19.7	0.24	0.082	0.52	0.45	31.3	45.7	0.01	0.028	0.062	0.005	0.005	<0.001	0.023	0.005	0.010	** provisional	40 x 15	W
3.1.7 Leaded Brass		Pb	Sn	Zn	Fe	Ni	Mn	Al	Si	As	Sb	Ag	Cd	Cu	Size (mm) Ø x H	Form								
CRM	31X CZ122 A **	2.0	0.09	36.5	0.06	0.03	0.001	<0.001	0.005	0.15	0.01	0.005	0.001	[bal]	** provisional values	40 x 15	W							
CRM	31X CZ132 A **	2.1	0.15	40.5	0.16	0.05	...	0.001	0.005	0.01	0.005	0.005	0.001	[bal]	** provisional values	40 x 15	W							

List continues on page 2

# Listing of New Materials Added to this Catalogue.

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Blocks / Discs

3.2.1 Phosphor-Bronze		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Bi	Sb	S	Ag	Cu	Size (mm) Ø x H	Form			
CRM	<b>32X PB16 A **</b>	17.6	0.087	0.008	0.002	0.125	0.001	0.005	0.003	0.053	0.016	0.004	0.017	82	** provisional values	40 x 15	CC		
3.2.9 Bronze		Sn	Pb	Zn	Fe	Ni	Si	Bi	Sb	Ag	P	S	Cu	Size (mm) Ø x H	Form				
CRM	<b>32X 52480 A **</b>	10.4	0.325	0.39	0.02	0.36	0.002	0.0015	0.018	0.015	0.011	0.006	88.5	** provisional values	40 x 15	W			
3.3 Gun Metal		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Bi	Sb	P	Co	Ag	Cd	Cu	Size (mm) Ø x H	Form	
CRM	<b>33X GM9 A **</b>	3.0	7.0	13.7	0.09	0.73	0.005	0.002	0.025	0.075	0.18	0.055	0.08	0.025	0.007	[bal]	** provisional values	40 x 15	CC
3.6.4 Cu/Be/Co		Sn	Pb	Zn	Fe	Ni	Al	Si	Co	P	Ag	Mg	Zr	Be	Cu	Size (mm) Ø x H	Form		
CRM	<b>36X CBC6 A</b>	0.0041	0.0014	0.0010	0.0243	1.132	0.0490	0.0263	1.045	0.0016	0.0015	0.0070	0.0553	0.507	97.11	40 x 15	W		
4.2 Zn/Al		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Sb	Tl	In	Size (mm) Ø x H	Form				
CRM	<b>42X Z10 A **</b>	0.006	0.0021	4.90	0.0032	0.0008	0.0035	0.31	0.010	0.018	<0.001	<0.001	0.0022	** provisional values	50 x 20	c			
8.5 Various Lead Alloys		Sn	Sb	Bi	Cu	As	Ag	Cd	Ni	Te	Se	Size (mm) Ø x H	Form						
CRM	<b>85X PSB6 A</b>	0.065	6.51	0.0270	0.0651	0.111	0.0459	0.0046	0.0021	0.0108	0.0018	40 x 15	c						
9.5 Fusible Alloys		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Al	Pb	Size (mm) Ø x H	Form				
	<b>95X PBS40P1 A</b>	42.6	0.016	13.8	0.025	0.005	0.011	(0.0006)	0.0010	0.0043	0.005	(0.0006)	(43.6)	40 x 15	c				

In addition to the above new materials we have also re-made many of our existing range and the new batches are detailed in the following pages.

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

Whilst every effort has been made to detail the latest information, it is possible that products will be remade or replaced and values and dimensions changed. This catalogue can therefore only be a snapshot of the information available at the time of publication. Please check on our website at [www.mbh.co.uk](http://www.mbh.co.uk) for more up to date information on availability and new materials.

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

**The majority of materials are certified to current ISO/REMCO guide-lines, and those meeting the definition for Certified Reference Materials are clearly identified as CRM.**

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

<b>CRM</b>	This material is classified by MBH as a Certified Reference Material. Where the catalogue entry is not preceded with CRM the material is considered to be only of Reference Material (RM) status.
( )	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 <b>Cast</b> product
CC or (2xCC)	Material is <b>Chill Cast</b> product or ( <b>Double Chill Cast</b> )
HIP	Material is made from <b>Hot Isostatically Pressed</b> powder
SC	Material is a <b>Spray Cast</b> product
W	Material is a <b>Wrought</b> product
R	Material has been cut from <b>Rolled</b> strip
** provisional values	This material is made 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 the lifetime of this catalogue, but may differ slightly from those shown here. Please enquire .
Sold Out'	Materials where data is struck through (for example <del>14X-MN2-Q</del> etc.) and indicated as 'sold out' will be remade later; please enquire.

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

# 1. Iron Base

## Irons

Updated: 18th January 2018

Blocks / Discs

1.1.3 High Phosphorus														Size (mm)	Form
	C	Si	S	P	Mn	Cr	Mo	Cu	Nb	Ni	Ti	V		Ø x H	
CRM 11X HPC1 H	3.29	3.27	0.0035	0.808	0.620	1.056	0.060	....	....	....	....	....		40 x 15	CC
CRM 11X HPC2 L	3.18	2.20	0.0418	1.51	1.005	1.509	0.0354	0.0460	0.0354	0.388	0.0502	0.0350		40 x 15	CC
CRM 11X HPC3 J	3.38	1.63	0.0473	2.01	1.287	1.48	0.120	....	....	2.18	....	....		40 x 15	CC
CRM 11X HPC5 A	3.68	1.175	0.223	0.246	1.028	1.42	....	....	....	....	....	....		40 x 15	CC

  

1.1.4 Spheroidal Graphite														Size (mm)	Form	
	C	Si	S	P	Mn	Ni	Cr	Cu	Al	Ti	Mg	As	Zn	Ø x H		
CRM 11X SG1 A	3.53	2.96	0.0095	0.0363	0.278	0.042	0.0299	0.0194	0.0187	0.0150	0.040	0.0021	0.041	Note: Both these products contain free carbon; use for the measurement of grey irons only	40 x 15	concast
CRM 11X SG2 A	3.48	3.03	0.0075	0.0353	0.297	0.0263	0.0304	0.0245	0.0238	0.0146	0.055	0.0022	0.040		40 x 15	concast

  

1.1.7 Low Alloy																						Size (mm)	Form
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	Nb	Co	W	As	Sb	Bi	Se	Zn	Ø x H	
CRM 11X C1 R	2.91	1.49	0.057	0.102	1.350	0.557	0.250	0.0278	0.132	0.0391	0.0195	0.112	0.109	0.09	0.0694	0.100	0.0141	0.046	0.011	0.0050	0.0097		
CRM 11X C2 U	3.414	1.081	0.093	0.268	1.203	1.702	0.882	0.111	0.1085	0.046	0.053	0.094	0.314	(0.030)	0.226	0.062	0.0288	0.104	0.0055	0.0199	....		
CRM 11X C3 AB	3.408	0.849	0.201	0.451	0.447	3.20	2.02	0.216	0.295	0.209	0.0090	0.040	0.692	(0.19)	0.241	0.0520	0.098	0.245	0.0144	0.0193	0.0386		
CRM 11X C4 R	1.86	2.92	0.098	0.108	0.493	2.02	1.531	0.101	0.345	0.0102	0.040	0.080	0.0208	0.0373	0.0316	0.120	0.0050	0.015	0.0144	0.021	0.0083		
CRM 11X C5 Y **	2.77	1.92	0.095	0.090	0.76	1.15	0.95	0.53	0.43	0.035	0.060	0.094	0.074	0.018	0.048	0.007	0.021	0.030	0.002	0.007	0.010		continued
CRM 11X C7 P	3.24	0.604	0.0081	0.0587	2.214	0.0273	0.61	0.0401	0.072	0.0110	0.029	0.064	0.0081	0.0195	0.0068	0.053	0.0110	0.009	....	....	0.0152		
CRM 11X C8 V **	2.58	1.60	0.21	1.00	0.400	0.27	0.145	0.150	0.305	0.105	0.085	0.24	0.063	0.020	0.13	0.026	0.081	0.065	0.015	0.021	0.006		
CRM 11X C9 D	3.24	1.462	0.0260	0.069	1.886	2.79	1.206	0.155	0.581	0.040	0.051	(0.062)	0.359	0.0766	0.1301	0.304	0.068	0.149	....	....	0.009		
CRM 11X C10 C	3.48	2.10	0.050	0.103	0.696	2.673	0.302	0.335	1.54	0.0458	0.104	0.0709	0.0589	....	....	0.327	0.0200	0.0095	....	....	....		

  

Continuation from above														Size (mm)	Form
	Pb	B	Zr	Te	Ag	N								Ø x H	
11X C1 R	0.005	0.0357	0.0030	....	....	0.0091								40 x 15	CC
11X C2 U	0.023	0.0213	....	....	....	0.0110								40 x 15	CC
11X C3 AB	0.022	0.0054	....	....	....	0.0095								40 x 15	CC
11X C4 R	0.019	0.0086	0.0031	....	....	0.0078								40 x 15	CC
11X C5 Y **	0.010	0.0055	0.002	0.002	....	0.010					** provisional values			40 x 15	CC
11X C7 P	0.0106	0.0099	....	....	(0.026)	0.0153								40 x 15	CC
11X C8 V **	0.005	0.037	0.006	0.005	....	0.0065					** provisional values			40 x 15	CC
11X C9 D	0.0052	0.0049	....	0.011	....	....								40 x 15	CC
11X C10 C	0.0050	....	....	....	....	0.0096								40 x 15	CC

  

1.1.8 Abrasion Resistant														Size (mm)	Form			
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	Co	W	Nb	Pb	Ø x H	
CRM 11X AR5 K	3.20	1.695	0.0215	0.0405	0.535	5.15	8.83	0.149	0.0517	0.120	0.062	0.0533	0.34	0.073	0.027	0.0035	40 x 15	CC

1.1.9 Corrosion Resistant																	Size (mm)	Form	
	C	Si	S	P	Mn	Ni	Cr	Cu									Ø x H		
CRM 11X S/1 Cr3 J	2.91	1.07	0.023	0.072	0.861	14.53	1.61	9.01									40 x 13	CC	
																	Size (mm)	Form	
	C	Si	S	P	Mn	Ni	Cr	Cu									Ø x H		
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	
Note: items that are cast (form C) may contain some primary carbon.																			
CRM 11X 0331.1 J	2.82	2.50	0.13	0.069	1.646	12.43	0.607	0.120	7.59	0.1117	0.1099	....	0.149	0.122	0.0439	0.0327	40 x 13	CC	
CRM 11X 0331.2 K	2.64	2.32	0.119	0.049	1.272	14.26	1.025	0.0644	6.47	0.161	0.14	0.0158	0.104	0.191	0.0205	0.0205	40 X 13	CC	
CRM 11X 0331.3 H **	2.10	1.80	0.050	0.047	0.75	16.6	1.43	0.036	7.05	0.125	0.075	0.040	0.07	0.033	0.012	....	** provisional values	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	....	....	....	....	0.018	0.121	0.0056	40 X 13	CC	

1.1.11 With Chromium																	Size (mm)	Form	
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	V	W	Co	Nb	Ti	Sn	Pb	Ø x H		
CRM 11X 15294 V	2.29	0.399	0.031	0.093	0.467	0.649	30.82	0.325	0.134	0.117	0.293	0.124	....	....	0.0560	0.0084	40 x 15	CC	
CRM 11X 15295 R	2.52	0.589	0.0413	0.0504	0.491	0.304	27.53	0.391	0.197	0.201	0.195	1.510	(0.036)	....	0.047	(0.015)	40 x 15	CC	
CRM 11X 15309 S	3.05	1.398	0.086	0.040	1.506	0.919	23.26	0.249	0.505	0.056	0.015	0.032	0.0192	0.0156	....	....	40 x 15	CC	
CRM 11X 15310 A	2.74	0.892	0.0278	0.054	1.45	5.66	24.22	0.980	2.64	0.074	0.137	0.0709	....	....	....	....	Sold Out	40 x 15	CC

# 1. Iron Base

# Steels

Updated: 18th January 2018

Blocks / Discs

1.2.2 Residuals in Mild Steel																						Size (mm) Form			
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Co	Zn	Nb	N	Bi	Se	Sb	Ø x H	Form
CRM	12X 10180 B	0.169	0.114	0.0056	0.0101	0.722	0.0333	0.0451	0.0062	0.0544	0.0065	0.043	....	....	....	0.0059	....	0.0079	....	0.0071	....	....	....	40 x 20	W
CRM	12X 10180 C	0.171	0.147	0.0200	0.0150	0.803	0.0284	0.0793	0.0047	0.0500	0.0024	0.0198	....	....	....	0.0029	....	0.0005	....	0.0051	....	....	....	40 x 20	W
CRM	12X 10400 A	0.420	0.220	0.0305	0.0137	0.754	0.0631	0.139	0.0169	0.140	0.0127	0.0323	....	....	....	0.0068	....	0.0033	....	0.0133	....	....	....	40 x 15	W
CRM	12X 10550 A	0.549	0.281	0.0055	0.0184	0.685	0.0247	0.338	0.0086	0.0290	0.0018	0.0325	....	....	....	0.0059	....	(0.002)	....	0.0051	....	....	....	40 x 20	W
CRM	12X 15180 A	0.170	0.212	0.0022	0.0110	1.196	0.1030	0.118	0.0231	0.141	0.0115	0.018	....	....	....	0.0117	....	0.0016	....	0.0051	....	....	....	40 x 20	W
CRM	12X 15240 A	0.201	0.198	0.0201	0.0152	1.496	0.0761	0.1032	0.0166	0.200	0.0153	0.0188	....	0.0020	....	0.0106	....	0.0020	....	0.0070	....	....	....	40 x 20	W
CRM	12X 12700 A	0.365	0.238	0.0116	0.0205	0.636	0.0197	0.070	0.0345	0.0342	....	0.055	....	0.0033	....	0.0060	0.0047	0.0120	....	0.0073	....	....	....	50 x 20	C
CRM	12X 12701 A	0.330	0.308	0.0124	0.0218	0.636	0.0557	0.235	0.0163	0.0346	....	0.0426	....	0.0040	....	0.0060	0.0058	0.0014	....	0.0072	....	....	....	50 x 20	C
CRM	12X 12746 U	0.0132	0.183	0.064	0.0247	1.70	0.161	0.182	0.654	0.368	0.202	0.021	0.0283	0.0160	0.101	0.049	0.115	....	....	....	....	....	....	40 x 15	W
CRM	12X 12747 V **	0.200	0.295	0.026	0.063	1.24	0.500	0.57	0.63	0.235	0.145	0.028	0.10	0.027	0.027	0.008	0.21	....	....	....	**provisional values			40 x 15	CC
CRM	12X 12748 U	0.106	0.221	0.050	0.0309	0.902	0.376	0.401	0.329	0.347	0.080	0.111	0.105	0.0499	0.0464	0.129	0.323	....	....	....	....	....	....	40 x 15	W
CRM	12X 12749 W	0.132	0.298	0.101	0.0257	1.250	0.485	0.554	0.224	0.311	0.040	0.004	0.031	0.069	0.034	0.071	0.436	....	....	....	....	....	....	40 x 15	W
CRM	12X 12750 U	0.258	0.599	0.0053	0.0078	0.510	0.786	0.792	0.088	0.106	0.110	0.253	0.159	0.102	0.100	....	0.581	....	0.111	....	....	....	....	40 x 15	W
CRM	12X 349 D	0.194	0.201	0.0232	0.0162	0.498	0.289	0.268	0.123	0.106	0.153	0.149	0.101	0.0172	0.049	0.0096	0.021	....	....	....	....	....	....	40 x 15	W
CRM	12X 350 C **	0.16	0.45	0.04	0.03	0.77	0.16	0.35	0.15	0.19	0.035	0.30	0.075	0.012	0.25	0.055	0.03	....	....	....	**provisional values			40 x 15	CC
CRM	12X 352 D	0.298	0.338	0.125	0.066	0.627	0.334	0.423	0.257	0.144	0.105	0.146	0.285	0.0584	0.223	0.0095	0.0504	....	....	....	....	....	....	40 x 15	W
CRM	12X 353 G	0.111	0.207	0.0147	0.0099	0.726	0.214	0.701	0.1063	0.232	0.113	0.0485	0.0387	0.0189	0.135	0.0461	0.0240	....	0.0641	0.0027	0.0246	0.0192	0.138	40 x 15	W
CRM	12X 354 B	0.252	0.200	0.0105	0.0478	5.03	0.082	0.0487	0.0328	0.0679	0.0154	0.0150	0.0248	0.0204	0.0248	0.023	0.0237	....	0.0802	0.0027	....	....	....	40 x 15	W
CRM	12X 355 C	0.159	0.494	0.0241	0.0214	0.508	0.0710	0.113	0.1010	0.657	0.0564	0.1104	0.153	0.1265	0.037	0.0331	0.0495	....	0.023	0.0023	....	0.0395	0.0796	40 x 15	W
CRM	12X 356 C	0.211	0.0662	0.0341	0.0526	0.199	0.0349	0.253	0.0294	0.449	0.0365	0.0338	0.0252	0.0588	0.107	0.0253	0.1499	0.0099	0.0030	0.0061	0.0072	0.0059	0.0291	40 x 15	W
CRM	12X 357 C	0.270	0.153	0.0590	0.0101	0.220	0.0954	0.094	0.0105	0.265	0.0188	0.208	0.0569	0.166	0.0194	0.0147	0.199	0.0094	0.0051	0.0079	0.0058	(0.004)	0.0140	40 x 15	W
CRM	12X 358 A	0.129	0.199	0.0142	0.0102	0.709	0.212	0.625	0.108	0.250	0.117	0.0616	0.0453	0.0261	0.123	0.0393	0.0355	....	0.104	0.0029	0.0102	0.097	0.128	40 x 15	W

1.2.3 Low Alloy Steel																			Size (mm) Form					
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Zn	Zr	N	Ø x H	Form			
CRM	12X LA1 B	0.104	0.777	0.060	0.0090	1.262	0.210	1.026	0.068	0.0572	....	0.0104	0.448	....	0.0213	0.0144	....	....	0.0144	....	....	....	40 x 15	W
CRM	12X LA2 E	0.195	0.678	0.0263	0.0241	0.57	0.783	0.813	0.136	0.786	0.0066	1.381	0.0990	....	0.282	0.0306	....	....	0.0173	....	....	....	40 x 15	W
CRM	12X LA3 C	0.500	0.163	0.0442	0.0274	1.693	0.280	0.375	0.303	0.213	....	0.0410	0.157	....	0.0301	0.0475	0.004	0.0197	0.0039	....	....	....	40 x 15	W
CRM	12X LA4 B	0.537	0.335	0.039	0.0363	0.303	0.521	0.499	0.489	0.334	....	0.057	0.328	0.091	....	0.105	....	....	0.0222	....	....	....	42 x 15	W
CRM	12X LA5 C	0.783	0.493	0.0261	0.0577	0.726	0.484	0.678	0.305	0.158	0.0100	0.10	0.579	....	0.0085	0.166	0.0091	....	....	....	....	....	40 x 15	W
CRM	12X LA6 C	0.048	0.088	0.0103	0.0054	0.0957	0.0549	0.1592	0.0154	0.0240	....	0.152	0.0064	....	....	0.0045	0.0083	....	0.0059	....	Sold Out		40 x 15	W



# 1. Iron Base

# Steels

Updated: 18th January 2018

Blocks / Discs

1.2.3 Low Alloy Steel (continued)		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Nb	Ti	Ta	Zr	N	Size (mm) Ø x H	Form	
CRM	12X 15217 R **	0.165	1.36	0.083	0.065	0.92	0.85	1.05	0.32	0.26	0.060	0.084	0.60	0.100	....	0.19	0.100	....	....	....	0.015	** provisional	40 x 15	CC
CRM	12X 15251 U	1.017	2.05	0.0215	0.0253	0.910	0.896	0.612	0.205	0.1194	0.0108	0.1085	0.391	0.0393	....	0.228	0.266	....	....	....	0.0031		40 x 15	W
CRM	12X 15252 Q	0.0478	0.265	0.0580	0.0213	0.818	2.03	0.887	0.248	0.154	0.0448	0.074	0.330	....	....	0.154	0.10	....	(0.054)	....	0.0218		40 x 15	W
CRM	12X 15253 T **	0.225	0.350	0.083	0.090	1.20	1.00	2.03	1.02	0.270	0.31	0.024	0.270	0.280	0.023	0.265	0.365	....	0.007	....	0.030	** provisional	40 x 15	CC
CRM	12X 15255 Q	0.351	1.02	0.070	0.104	1.191	0.296	1.509	0.1193	0.279	0.101	0.073	0.475	0.150	0.0193	0.0502	0.152	0.0377	....	....	0.027		40 x 15	W
CRM	12X 15256 Q	0.123	0.190	0.0163	0.0125	0.492	5.33	0.362	0.0740	0.0550	0.107	0.1300	0.619	0.101	....	0.493	0.0509	....	....	....	0.0056		40 x 15	W
CRM	12X 15259 Q	0.603	1.81	0.0704	0.0401	0.401	4.02	0.512	0.407	0.200	0.053	0.1488	0.139	0.49	....	0.141	0.249	....	....	....	0.0151		40 x 15	W
CRM	12X 15260 W	0.352	0.485	0.074	0.0275	2.08	0.453	2.98	0.098	0.152	0.0094	0.191	0.442	....	0.055	0.0884	0.254	....	(0.016)	....	....		40 x 15	W
CRM	12X 15266 V	0.455	0.674	0.0258	0.0344	1.240	1.317	3.49	0.298	0.226	0.0082	0.526	0.106	....	0.0640	0.286	1.438	....	0.116	....	....		40 x 15	W
CRM	12X 15254 AA **	0.31	0.82	0.045	0.068	1.15	0.32	1.80	0.72	0.085	0.045	0.62	0.29	0.32	....	0.50	0.32	0.29	....	....	** provisional values		40 x 15	CC
CRM	12X 15258 P **	0.39	1.00	0.033	0.068	1.25	0.50	0.64	0.37	0.11	0.07	0.092	0.37	0.125	....	0.31	0.13	0.09	....	....	** provisional values		40 x 15	CC
CRM	12X 15261 X	0.546	1.513	0.0518	0.090	0.483	0.0985	0.496	1.594	0.308	0.0172	1.648	0.122	0.269	0.0051	0.333	0.601	0.385	....	0.0297	....		40 x 15	W

1.2.3 Low Alloy Steel (continued)		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	Ti	As	Zn	Pb	N	Alloy Type	Size (mm) Ø x H	Form
CRM	12X 11572 A	0.111	0.649	0.0025	0.0069	0.498	0.0977	1.107	0.499	0.0576	0.0049	0.0290	....	....	....	0.0030	0.0009	....	0.0058		38 x 15	W
CRM	12X 14072 A	0.430	0.322	0.0061	0.0151	0.680	0.136	1.061	0.573	0.203	(0.011)	0.0039	0.301	0.0098	....	....	....	....	0.0103		38 x 15	W
CRM	12X 16604 A **	0.295	0.240	0.002	0.006	0.455	1.88	1.92	0.34	0.135	0.006	0.013	0.007	0.040	....	....	....	....	0.004	** provisional values	40 x 15	W
CRM	12X 19965 A	0.936	0.247	0.0081	0.0196	0.600	0.141	1.713	0.210	0.148	0.0070	0.0256	0.0087	....	....	....	0.0008	....	0.0087		38 x 15	W
CRM	12X 21590 A	0.139	0.211	0.0059	0.0128	0.457	0.144	2.10	0.935	0.283	0.0190	0.0202	0.0032	....	0.0011	0.0091	0.0045	....	0.0134	ASTM A182 F22	40 x 15	W
CRM	12X 32550 A	0.257	1.59	0.0054	0.0061	1.350	1.750	0.377	0.417	0.108	0.0206	0.0178	0.0222	....	....	0.0054	....	....	0.0101		38 x 15	W
CRM	12X 41300 A	0.319	0.183	0.0156	0.0082	0.551	0.084	0.996	0.217	0.131	0.0060	0.027	....	....	....	0.0043	0.0012	....	0.0095		38 x 15	W
CRM	12X 41400 A	0.418	0.221	0.0210	0.0138	0.795	0.127	1.003	0.211	0.238	0.0181	0.0195	....	....	....	0.0088	....	....	0.0101		38 x 20	W
CRM	12X 41450 A	0.446	0.261	0.0032	0.0093	1.011	0.187	1.194	0.340	0.1318	0.0090	0.0220	0.0385	....	....	0.0053	....	....	0.0080		38 x 15	W
CRM	12X 43400 A	0.422	0.259	0.0284	0.0164	0.592	1.378	1.181	0.223	0.177	0.007	0.013	....	....	....	0.0084	0.0027	....	0.0089		40 x 15	W
CRM	12X 44220 A	0.417	1.662	0.0009	0.0050	0.874	1.89	0.846	0.401	0.031	0.0019	0.029	0.0764	....	....	0.0026	....	....	0.0030		38 x 15	W
CRM	12X 46150 A	0.160	0.24	0.0074	0.0162	0.471	1.590	0.0348	0.243	0.0158	0.0012	0.0116	0.0019	....	....	0.0016	0.0067	0.0012	0.0082		45 x 15	W
CRM	12X 52986 A	1.023	0.246	0.0011	0.0049	0.372	0.0411	1.418	0.0169	0.077	0.0063	0.0258	0.0615	....	....	(0.002)	....	....	(0.002)		38 x 15	W
CRM	12X 61500 A	0.530	0.240	0.0102	0.0104	0.912	0.0976	1.023	0.0195	0.157	0.0114	(0.007)	0.110	....	....	0.0067	0.0055	....	....		38 x 15	W
CRM	12X 86200 A	0.198	0.299	0.0104	0.0110	0.849	0.598	0.602	0.224	0.213	0.0100	0.0305	0.0045	....	....	0.0051	....	....	0.0091		38 x 15	W
CRM	12X 93106 A	0.122	0.206	0.0103	0.0071	0.605	3.255	1.107	0.0879	0.199	0.0094	0.0246	0.0030	....	....	0.0050	....	....	0.0098		38 x 15	W
CRM	12X 24065 A	0.370	0.218	0.0044	0.0129	0.502	0.271	1.412	0.1716	0.216	0.0120	1.035	0.0040	....	0.0028	0.0074	0.0033	....	0.0076		40 x 15	W

# 1. Iron Base

# Low Alloy Steels

Updated: 18th January 2018

Blocks / Discs

1.2.3 Low Alloy Steel (continued)																				Size (mm)	Form
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	Ti	As	Zn	Ca	N	Ø x H	
CRM	12X 4330V A	0.327	0.303	0.0030	0.0062	0.857	1.99	0.922	0.470	0.0954	0.0071	0.0311	0.0507	....	....	0.0059	....	....	0.0078	45 x 15	W
CRM	12X 15CDV6 A	0.171	0.152	0.0086	0.0056	0.839	0.044	1.397	0.875	0.0231	0.0011	0.019	0.242	....	....	0.0041	....	....	0.0069	40 x 15	W
CRM	12X 40CDV12 A	0.401	0.250	0.0013	0.0060	0.604	0.1062	3.29	0.946	0.0978	0.0049	0.0208	0.198	0.0197	....	0.0040	....	....	0.0155	38 x 15	W
CRM	12X 605M36 A	0.373	0.283	0.0317	(0.009)	1.504	0.146	0.243	0.292	0.199	0.0101	0.0105	....	0.0151	....	0.0102	....	0.0033	0.0095	38 x 15	W
CRM	12X 722M24 A	0.236	0.262	0.0199	0.0135	0.510	0.208	3.094	0.497	0.200	0.0116	0.0187	0.0080	....	....	0.0075	0.0028	....	....	38 x 15	W
CRM	12X 826M40 A	0.395	0.248	0.0025	0.0094	0.529	2.408	0.649	0.510	0.1294	0.0085	0.0404	....	....	....	0.0056	....	....	0.0089	38 x 15	W
CRM	12X 835M30 A	0.275	0.198	0.0157	0.0071	0.457	4.01	1.119	0.213	0.195	0.0101	0.004	0.0029	....	0.0012	0.0068	....	....	0.0087	45 x 15	W
CRM	12X 19MNV56 A	0.174	0.357	0.0245	0.0114	1.563	0.110	0.1087	0.0270	0.203	0.0214	0.0101	0.0939	....	....	....	....	....	0.0210	38 x 15	W

# 1. Iron Base

# Stainless Steels

Updated: 31st January 2018

Blocks / Discs

1.3.2 Austenitic Stainless Steels																				Size (mm)	Form			
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Co	Nb	N	B	Ta	V	Ti	W	Ca	Ø x H		
CRM	13X 17001 C	0.0769	0.215	0.0134	0.055	1.543	6.31	14.83	0.0967	0.0161	....	0.0312	0.0979	0.546	....	0.0085	0.0124	....	....	....	....	40 x 15	concast	
CRM	13X 17002 E	0.112	0.486	0.0250	0.0409	0.801	7.87	17.45	0.204	0.1012	....	(0.030)	0.0702	0.487	0.061	0.0012	(0.012)	0.0587	....	....	....	40 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	
	<del>13X 17004 A</del>	0.06	1.32	0.048	0.024	0.62	16.06	24.78	0.34	0.44	....	....	0.05	0.23	....	....	....	....	....	....	....	40 x 15	C	
CRM	13X 17005 E **	0.022	1.77	0.043	0.003	0.21	20.1	24.8	0.60	0.115	....	0.05	0.025	0.10	0.010	0.0028	0.015	....	0.008	....	** provisional values	40 x 15	W	
CRM	13X 30300 A	0.041	0.424	0.312	0.0199	1.84	8.55	17.59	0.333	0.0252	....	....	0.0259	....	0.0350	0.0035	....	0.092	....	....	....	40 x 15	W	
CRM	13X 30403 A	0.0201	0.284	0.0248	0.0297	1.488	7.92	18.25	0.192	0.217	....	....	0.101	(0.019)	0.081	....	....	0.113	....	0.018	....	40 x 15	W	
CRM	13X 30908 A	0.0560	0.320	0.0011	0.0267	1.638	12.05	22.51	0.221	0.269	....	0.0035	0.120	0.0142	0.0652	0.0027	....	0.128	....	....	....	38 x 15	W	
CRM	13X 31400 A **	0.033	2.28	0.0005	0.025	1.60	18.8	24.3	0.24	0.21	....	0.021	0.133	0.02	0.029	....	....	0.095	....	0.013	0.0025	** provisional	40 x 15	W
CRM	13X 32100 A	0.0463	0.498	0.0011	0.0298	1.52	9.32	17.39	0.282	0.415	0.0115	0.0247	0.105	0.0191	0.0115	0.0025	....	0.106	0.376	0.021	....	38 x 15	W	
CRM	13X 34700 A	0.016	0.480	(0.0005)	0.0276	1.283	9.32	17.22	0.392	0.165	0.0053	0.025	0.132	0.329	0.0163	0.0007	....	0.123	....	0.144	....	38 x 15	W	
CRM	13X 14828 A **	0.108	2.17	0.007	0.027	1.53	11.2	19.4	0.300	0.41	0.012	0.008	0.145	0.016	0.037	....	....	0.081	....	0.015	0.001	** provisional	40 x 15	W
CRM	13X 18001 B	0.207	0.203	0.0786	0.0090	0.463	6.13	15.92	0.816	0.149	....	0.0157	0.0231	0.612	0.0347	....	....	0.0996	....	....	....	40 x 15	W	
CRM	13X 18002 D	0.159	0.352	0.0487	0.0245	0.722	7.92	17.77	0.209	0.116	....	0.0617	0.0514	1.531	0.072	....	....	0.0542	....	....	....	40 x 15	W	
CRM	13X 18003 C	0.113	0.805	0.0245	0.0545	1.000	10.08	19.56	0.401	0.0433	....	0.0292	0.100	1.042	0.090	....	....	0.0750	....	....	....	40 x 15	W	
CRM	13X 18004 B	0.099	1.21	0.0191	0.068	1.400	12.67	21.57	0.601	0.050	....	0.0111	0.211	0.749	0.061	....	....	0.161	....	....	....	40 x 15	W	
CRM	13X 19001 B	0.055	1.20	0.0174	0.0151	0.460	5.10	15.07	1.51	0.202	....	....	0.025	0.032	0.070	....	(0.019)	0.083	....	....	....	40 x 15	W	
CRM	13X 19003 C	0.047	0.497	0.046	0.0382	1.138	12.46	18.99	2.50	0.171	....	....	0.105	0.120	0.077	....	....	0.0486	....	....	....	40 x 15	W	
CRM	13X 19004 C	0.075	0.356	0.0135	0.074	2.017	17.90	22.77	3.43	0.0112	(0.001)	0.030	0.0501	0.152	....	(0.001)	0.011	0.0417	....	....	....	40 x 15	concast	

# 1. Iron Base

# Stainless Steels

Updated: 5th February 2018

Blocks / Discs

1.3.2 Austenitic Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Co	Nb	N	B	Ta	V	Sb	Ti	W	Ca	Size (mm) Ø x H	Form
CRM	13X 12533 Z	0.110	0.440	0.0156	0.0149	0.812	5.06	18.80	1.05	0.131	0.0097	0.059	0.0299	....	0.073	0.0100	....	0.181	....	0.147	....	....	40 x 15	CC
CRM	13X 12534 X	0.0716	0.811	0.0086	0.0192	0.589	8.50	17.71	2.04	0.0586	....	0.0485	0.0602	0.201	....	....	0.031	0.110	....	0.348	0.010	....	40 x 15	W
CRM	13X 12535 BE	0.229	1.407	0.0591	0.0400	0.342	14.79	16.95	4.09	0.130	0.0194	0.194	0.146	....	0.029	0.0051	(0.020)	0.252	....	0.625	....	....	40 x 15	CC
CRM	13X 12536 S	0.149	0.865	0.136	0.052	0.406	12.07	15.30	2.54	0.065	0.018	0.049	0.298	....	0.062	0.0274	0.091	....	....	0.105	....	....	40 x 15	CC
CRM	13X 12537 T	0.0889	1.151	0.0206	0.0382	1.116	10.71	20.43	3.05	0.248	0.0401	(0.062)	0.1520	0.102	0.048	0.0029	0.0194	0.0908	....	0.273	....	....	40 x 15	CC
CRM	13X 31603 C	0.023	0.350	0.0245	0.0263	1.879	10.03	16.83	2.02	0.306	0.0053	(0.005)	0.148	0.0197	0.080	....	....	0.0895	....	....	0.0427	0.0029	30 x 20	W
CRM	13X 31635 A	0.0254	0.487	0.0301	0.0352	1.807	10.80	16.98	2.089	0.404	....	0.0054	0.174	0.010	0.020	....	....	0.0584	....	0.149	0.031	....	40 x 15	W
CRM	13X 12853 L **	0.070	1.00	0.006	0.005	1.16	12.30	17.1	2.73	0.098	....	0.18	0.045	0.185	0.008	0.002	0.036	....	....	0.045	0.088	** provisional	40 x 15	W
CRM	43X 12854 L	0.053	1.308	0.0278	0.024	1.300	11.60	15.77	2.50	0.306	....	....	0.33	0.689	0.0550	0.0076	(0.06)	....	....	0.065	0.16	Sold Out	40 x 15	CC
CRM	13X 12855 M	0.182	1.10	0.0233	0.0240	1.162	10.80	17.13	2.86	0.446	....	....	0.226	....	....	0.0099	0.050	....	0.210	0.061	0.201	....	40 x 15	CC

  

1.3.3 Maraging Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Al	Ti	Co	N	Size (mm) Ø x H	Form
CRM	13X 14934 Q	0.0254	0.502	0.0288	0.024	0.254	17.60	0.388	4.22	0.15	0.694	9.03	0.006	40 x 15	CC
CRM	13X 14935 T	0.0105	0.441	0.055	0.036	0.494	18.96	0.745	5.61	(0.007)	0.106	7.17	0.0102	40 x 15	CC

  

1.3.4 Ferritic & Martensitic Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	As	Co	Nb	W	Sb	Sb	Ca	N	Size (mm) Ø x H	Form
CRM	13X 12547 M	0.238	0.344	0.0746	0.0441	1.191	1.492	17.49	1.006	0.531	0.030	....	....	0.1021	....	0.302	0.347	....	....	....	....	0.099	40 x 15	CC
CRM	13X 12548 M	0.189	0.421	0.218	0.0260	0.576	1.08	12.98	1.33	0.228	....	....	....	....	....	0.352	0.585	0.033	0.022	0.022	....	0.0508	40 x 15	CC
CRM	13X 12549 L	0.1025	0.344	0.124	0.0052	0.354	1.203	12.01	1.311	0.492	....	....	....	0.0144	....	0.492	0.19	....	....	....	....	0.0393	40 x 15	concast
CRM	13X 14775 S	0.006	0.552	0.154	0.047	1.405	1.949	17.78	0.529	0.167	0.0007	0.0301	....	0.0287	(0.002)	0.153	0.691	....	....	....	....	....	40 x 15	concast
CRM	13X 15023 W	0.089	0.340	0.0053	0.0078	1.75	0.947	11.05	0.961	0.0312	....	(0.004)	....	0.0308	....	0.0501	1.440	0.0396	....	....	....	0.0081	40 x 15	concast
CRM	13X 15024 X	0.166	0.749	0.0294	0.0284	0.610	2.99	14.65	0.299	0.332	....	0.0049	....	0.150	....	0.1059	0.099	0.039	....	....	....	0.0156	40 x 15	W
CRM	13X 15035 U	0.115	0.636	0.0456	0.0415	0.674	2.38	14.00	0.399	0.204	....	(0.093)	....	0.160	....	0.199	0.500	0.048	....	....	....	0.0584	40 x 15	CC
CRM	43X 15059 P	0.084	0.495	0.0133	0.0130	0.995	1.584	15.85	0.600	0.105	(0.02)	....	0.038	0.070	....	0.266	0.430	0.081	....	Sold Out	....	0.113	40 x 15	CC
CRM	13X 14122 A	0.356	0.449	0.0021	0.0177	0.480	0.632	15.91	0.855	0.066	0.0041	(0.002)	....	0.101	....	0.0224	0.006	0.004	....	....	....	0.0290	40 x 15	W
CRM	13X 14418 A	0.0450	0.291	0.0108	0.0265	0.819	4.65	15.44	0.847	0.173	0.005	(0.003)	....	0.0539	....	0.1004	(0.009)	0.013	....	....	....	0.0423	40 x 15	W
CRM	13X 14923 A	0.205	0.330	0.0031	0.0197	0.501	0.452	11.26	0.819	0.0563	0.004	0.003	....	0.295	....	0.0207	0.005	....	....	....	0.0044	0.0321	40 x 15	W

# 1. Iron Base

# Stainless Steels

Updated: 18th January 2018

Blocks / Discs

## 1.3.4 Ferritic & Martensitic Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	As	Co	Nb	W	B	Mg	Ca	N	Size (mm)	Form
																							Ø x H	
CRM	13X 14713 A	0.0446	0.911	0.0080	0.0203	0.495	0.122	7.17	0.0266	0.0368	0.0034	0.551	0.0056	0.0411	....	0.0110	....	....	....	0.0016	....	0.0065	40 x 15	W
CRM	13X 14742 A	0.084	0.910	0.0008	0.0214	0.714	0.449	17.60	0.0968	0.1267	0.0046	0.804	0.0051	0.0463	....	0.0186	0.0202	....	....	0.0022	....	0.0209	40 x 15	W
CRM	13X 14762 A	0.082	1.069	0.0007	0.0275	0.662	0.346	24.38	0.0553	0.0801	0.0048	1.318	0.0058	0.0993	....	0.0293	0.0277	....	....	0.0024	0.0025	0.0285	40 x 15	W
CRM	13X 41001 A	0.136	0.298	0.0037	0.0142	0.464	0.0939	12.06	0.0102	0.056	0.0051	(0.004)	....	0.079	....	0.0143	....	....	....	....	0.0010	0.0316	41 x 15	W
CRM	13X 41500 A	0.0385	0.402	0.0101	0.021	0.596	3.52	13.00	0.504	0.1296	....	....	0.0012	0.091	....	0.0999	0.0405	....	....	....	....	0.0504	40 x 15	W
CRM	13X 41800 A **	0.175	0.32	0.0005	0.017	0.335	2.05	12.3	0.07	0.105	0.005	0.005	....	0.021	....	0.036	0.004	2.80	** provisional values			0.029	38 x 15	W
CRM	13X 42000 A	0.208	0.496	0.0253	0.0241	0.679	0.295	12.56	0.0398	0.202	0.0073	....	....	0.046	....	0.0161	....	....	0.0013	....	....	0.0273	38 x 15	W
CRM	13X 42200 A	0.220	0.314	0.0012	0.0182	0.651	0.738	11.41	1.042	0.136	0.0052	0.0020	....	0.246	....	0.0114	0.0203	1.177	....	....	....	0.0585	38 x 15	W
CRM	13X 43100 A	0.166	0.535	0.0050	0.0199	0.378	2.10	16.39	0.0768	0.134	0.004	....	....	0.0577	....	0.0239	0.006	0.004	....	....	....	0.075	38 x 15	W
CRM	13X 44004 A	1.052	0.363	0.0178	0.0214	0.346	0.207	16.74	0.462	0.0548	....	0.0305	....	0.076	....	0.0188	....	0.030	....	....	....	0.0247	40 x 15	W
CRM	13X 41600 A	0.111	0.442	0.302	0.0253	0.627	0.331	13.23	0.0499	0.160	0.0066	(0.004)	....	0.0888	....	0.0216	0.0053	(0.003)	....	....	....	0.0245	41 x 15	W
CRM	13X 43020 A	0.147	0.415	0.189	0.0246	1.439	0.517	16.07	0.226	0.0687	....	0.0047	....	0.0542	....	0.0191	0.0102	0.0108	(0.003)	....	....	0.0212	40 x 15	W
CRM	13X 8110L D	0.750	0.812	0.068	0.052	0.446	4.62	12.30	2.81	0.344	....	(0.071)	0.0108	0.211	0.074	0.31	....	....	0.989	....	....	0.0286	40 x 15	CC

## 1.3.5 Special Stainless Steels

		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	W	Co	Nb	Ta	N	B	Alloy Type	Size (mm)	Form	
																					Ø x H		
	13X 12538 J	0.04	0.64	....	....	0.78	6.07	23.72	1.53	....	....	....	....	....	....	....	....	....	....	....		40 x 15	C
CRM	13X 12540 M	0.131	0.805	0.0512	0.051	0.800	4.975	27.44	0.993	0.181	....	....	0.210	0.097	0.109	0.107	....	0.054	....			40 x 15	CC
CRM	13X 14207 L **	0.040	1.45	0.006	0.006	0.60	12.45	19.7	0.58	0.19	0.020	0.012	0.005	3.00	0.009	0.255	0.08	0.010	....	** provisional values		40 x 15	W
CRM	13X 14211 Q	0.064	1.64	0.0146	0.0157	0.766	12.55	25.70	0.325	0.161	(0.11)	0.220	....	3.24	0.071	0.161	....	....	....			40 x 15	CC
CRM	13X 14212 S	0.119	2.47	0.0386	0.032	0.166	8.81	21.64	0.520	0.611	....	....	0.1175	3.68	0.1090	0.550	....	0.0055	....			40 x 15	concast
CRM	13X 14215 L	0.136	0.596	0.0068	0.0050	1.110	15.86	22.89	0.0048	0.0110	....	....	0.0480	3.02	0.0057	0.0196	....	....	....			40 x 15	concast
CRM	13X 14216 P	0.0424	1.566	0.0070	0.0048	0.663	12.06	23.44	0.209	0.231	....	....	0.0722	2.25	0.248	0.248	....	0.0152	....			40 x 15	concast
CRM	13X 14219 K	0.0997	1.504	0.0456	0.0401	0.482	12.66	21.46	0.169	0.138	....	....	0.0188	4.17	0.0475	0.140	....	....	....			40 x 15	concast
CRM	13X 31008 A	0.063	0.503	0.0040	0.0302	1.234	19.34	24.48	0.338	0.159	....	....	0.078	0.165	0.078	0.013	....	0.063	....		UNS S31008	38 x 15	W
CRM	13X 64152 A	0.114	0.224	0.0020	0.0123	0.666	2.50	11.34	1.567	0.0622	0.0315	....	0.275	....	0.0185	....	....	0.0339	....		UNS S64152	38 x 15	W
CRM	13X 66286 A	0.035	0.216	(0.0006)	0.0172	1.173	25.21	14.99	1.185	0.195	0.193	1.92	0.262	0.098	0.083	....	....	0.0040	0.0044		UNS S66286	38 x 15	W

# 1. Iron Base

# Stainless Steels

Updated: 18th January 2018

Blocks / Discs

1.3.6 Precipitation Hardening Steels (continued)																		Alloy	Size (mm)	Form	
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Ti	Al	V	Co	Nb	W	B	N	Type	Ø x H		
CRM 13X PH2 M	0.0598	0.502	0.0419	0.0201	1.184	3.56	16.80	1.009	4.03	0.049	0.0419	0.1028	0.0927	0.143	....	0.0047	0.052		40 x 15	W	
CRM 13X PH3 M	0.184	1.60	0.0208	0.0188	0.395	3.08	15.86	0.751	5.99	....	....	0.176	0.420	0.394	....	0.0049	0.070		40 x 15	CC	
CRM 13X PH4 N	0.0400	0.747	0.0166	0.0285	0.793	4.00	14.87	0.247	5.24	0.100	0.094	0.500	0.600	0.303	....	0.0033	0.078		40 x 15	W	
CRM 13X PH7 F	0.118	1.402	0.0057	0.0283	1.487	5.41	13.16	2.52	0.777	0.0196	0.012	0.043	0.0493	0.241	....	....	0.044		40 x 15	W	
CRM 13X PH13800 A	0.0386	0.081	0.0030	0.0064	0.0332	8.04	12.52	2.10	0.0449	0.0122	1.075	0.0188	0.0220	....	....	....	0.0041	UNS S13800	38 x 15	W	
CRM 13X PH17400 A	0.0200	0.349	0.0215	0.0202	0.829	4.52	15.74	0.061	3.09	....	....	0.112	0.0411	0.184	....	....	0.0342	UNS S17400	41 x 15	W	
CRM 13X PH17700 A	0.0732	0.551	0.0008	0.0181	0.496	6.98	16.88	0.340	0.146	0.051	1.172	0.0390	0.0464	0.0201	0.009	0.0033	0.0192	UNS S17700	38 x 15	W	
CRM 13X PH2S143 A	0.044	0.479	0.0021	0.0212	0.546	5.20	13.46	1.326	1.61	....	....	0.087	0.0483	0.225	0.018	....	0.0246		32 x 15	W	
CRM 13X FV520B A	0.0181	0.342	0.0016	0.0221	0.655	5.29	13.73	1.334	1.462	....	....	0.080	0.030	0.301	0.020	....	0.0197		40 x 15	W	
CRM 13X 45500 A	0.0041	0.059	0.0020	0.0049	0.0263	8.36	11.39	0.0185	2.20	1.187	0.073	0.0689	0.0152	0.250	....	....	0.0030	UNS S45500	38 x 15	W	
CRM 13X 46500 A **	0.003	0.075	0.001	0.002	0.005	10.9	11.7	0.94	0.039	1.53	0.067	0.006	0.008	0.005	....	0.0016	0.003	** provisional	UNS S46500	32 x 20	W

  

1.3.7 High Nitrogen Stainless Steels																		Alloy	Size (mm)	Form
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	V	W	Co	Nb	B	N	Type	Ø x H		
CRM 13X NSA3 J	0.16	0.57	....	....	1.07	12.0	16.1	2.8	....	....	....	....	....	....	....	0.20			40 x 15	W
CRM 13X NSA4 B	0.115	0.519	0.0095	0.0302	5.55	17.62	23.85	4.32	0.595	0.0048	....	....	....	0.154	....	0.446			40 x 15	CC
CRM 13X NSA5 A	0.063	0.284	0.0242	(0.010)	4.27	9.52	20.73	2.32	0.098	(0.012)	....	....	....	0.574	....	0.340		Sold Out	40 x 15	CC
CRM 13X NSA6 B	0.0467	0.64	0.0113	0.060	1.607	31.13	26.14	7.03	1.52	(0.08)	....	....	....	0.149	....	0.245			40 x 15	CC
CRM 13X NSA7 A	0.0209	0.359	0.0009	0.022	0.951	5.67	25.91	3.25	1.42	(0.009)	....	....	....	0.015	....	0.247		UNS S32550	42 x 15	W
CRM 13X NSA8 A	0.0240	(0.40)	0.0008	0.0216	0.656	6.29	25.93	3.60	0.903	....	0.060	0.586	0.0374	(0.004)	....	0.239		UNS S32760	44 x 15	W
CRM 13X NSA9 A	0.019	0.469	(0.0007)	0.0248	1.592	5.44	22.57	3.11	0.240	....	0.068	0.024	0.072	0.012	....	0.156		UNS S31803	40 x 15	W
CRM 13X NSA10 A	0.016	0.375	0.0006	0.0207	5.23	12.96	20.69	2.636	0.175	....	0.151	0.061	0.061	0.142	(0.0029)	0.343		UNS S20910	38 x 15	W
CRM 13X NSA11 A	0.0159	0.275	<0.001	0.0186	0.640	23.89	20.19	6.16	0.187	(0.02)	0.0513	0.038	0.0981	0.150	....	0.203		UNS N08367	38 x 15	W
CRM 13X NSA12 A	0.0192	0.492	0.0007	0.0267	1.272	24.84	19.63	4.20	1.485	0.0169	0.0660	0.047	0.090	0.0088	0.0020	0.0662		UNS N08904	40 x 15	W
CRM 13X NSA13 A **	0.019	0.24	0.0005	0.025	0.75	6.75	25.35	3.70	0.155	0.007	0.072	0.030	0.033	0.025	0.0028	0.275	** provisional values	UNS S32750	40 x 15	W
CRM 13X 21800 A	0.0765	4.03	0.0011	0.032	8.00	8.32	16.81	0.325	0.431	0.012	0.0619	....	0.0943	0.007	(0.001)	0.125		Nitronic 60/UNS S21800	38 x 15	W
CRM 13X 31254 A	0.0185	0.400	0.0011	0.0191	0.590	18.34	20.11	6.13	0.575	0.0134	0.0595	0.017	0.125	....	0.0025	0.205		254SMO/UNS S31254	40 x 15	W
CRM 13X 31726 A	0.0124	0.415	0.0012	0.0218	1.849	13.56	17.62	4.56	0.206	0.0208	0.0426	0.0384	0.0502	0.009	....	0.135		317LMN/UNS S31726	40 x 15	W
CRM 13X 32101 A	0.0325	0.777	(0.0004)	0.0194	4.913	1.476	21.12	0.0970	0.295	0.0122	0.0830	....	0.0347	0.0070	0.0014	0.241		UNS S32101	38 x 15	W
CRM 13X 32900 A	0.0251	0.556	0.0269	0.0276	1.478	5.57	24.91	1.310	0.354	0.007	0.0938	0.017	0.0724	....	0.0028	0.097		UNS S32900	40 x 15	W
CRM 13X NSB1 D	0.17	0.58	....	....	0.44	10.0	19.1	0.11	....	....	....	....	....	....	....	0.04			40 x 15	W
CRM 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

# 1. Iron Base

# Stainless Steels

Updated: 18th January 2018

Blocks / Discs

1.3.7 High Nitrogen Stainless Steels																		Size (mm)	Form
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	V	W	Co	Nb	B	N	Ø x H	
CRM	13X NSC1 P	0.316	0.788	0.0097	....	6.53	5.06	18.76	0.196	0.391	....	0.501	0.100	....	1.499	....	0.0877	40 x 15	CC
CRM	13X NSC2 P	0.560	0.997	0.0117	....	8.70	4.20	21.98	0.850	1.026	....	0.321	0.062	....	2.21	....	0.341	40 x 15	CC
CRM	13X NSC3 Z	0.895	1.28	0.0110	....	10.15	2.96	23.02	0.060	0.100	0.105	0.110	....	....	2.81	....	0.498	40 x 15	CC
CRM	13X NSC4 F	0.513	1.52	0.0071	....	7.97	7.03	32.58	1.390	0.162	0.119	0.219	0.204	0.218	2.41	....	0.942	40 x 15	CC
CRM	13X NSC5 B	0.558	1.19	0.0155	....	2.22	4.34	22.10	(0.01)	0.787	0.21	0.0461	....	....	2.38	....	0.296	40 x 15	CC
CRM	13X NSC6 A	0.0266	0.523	0.0055	0.0049	8.85	6.52	20.47	(0.002)	0.0064	(0.009)	0.0052	....	....	....	....	0.235	40 x 13	HIP
CRM	13X NSC7 A	0.410	0.803	0.0091	0.0155	3.80	7.41	23.63	0.448	0.144	(0.1)	0.123	0.052	0.308	0.509	....	0.337	40 x 15	CC

# 1. Iron Base

# Special Steels

Updated: 18th January 2018

Blocks / Discs

1.4.2 Tool Steels																			Alloy Type	Size (mm)	Form	
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Nb	N	Pb	Type	Ø x H	
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 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 72305 A	1.085	0.206	0.0028	0.0128	0.349	0.089	0.425	0.0231	0.149	0.0101	0.0049	0.0045	....	....	....	....	0.0068	....	W-5	40 x 15	W
	14X 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

  

1.4.5 High Manganese Steels																		Size (mm)	Form
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Nb	Ti	Ta	N	Ø x H	
CRM	14X MN1 AL	0.597	0.944	0.0054	0.053	22.08	0.692	1.321	0.499	0.178	0.0393	(0.23)	0.0226	0.096	0.0346	(0.011)	0.0585	40 x 15	CC
CRM	14X MN2 R	0.701	1.48	0.0098	0.0198	9.65	0.530	0.355	1.546	0.081	0.061	0.120	0.121	0.294	0.179	....	0.0125	40 x 15	CC
CRM	14X MN3 T	0.994	1.00	0.0091	0.039	11.03	0.497	0.749	0.259	0.153	0.0195	0.041	0.0198	0.407	....	....	0.034	40 x 15	CC
CRM	14X MN4 AC	0.938	0.900	0.0194	0.073	13.62	1.052	1.983	0.796	0.270	0.0634	0.20	0.0332	0.153	0.075	....	0.0450	40 x 15	CC
CRM	14X MN5 U	1.36	1.47	0.0273	0.0552	8.78	2.10	3.18	1.93	0.691	0.0228	0.0257	0.0490	0.102	0.93	(0.007)	0.0231	40 x 15	CC
CRM	14X MN5 V	1.42	2.27	0.0207	0.057	8.02	3.09	3.28	2.26	0.551	0.0278	0.145	0.0810	0.041	0.51	0.004	0.0146	40 x 15	CC

# 1. Iron Base

# Special Steels

Updated: 18th January 2018

Blocks / Discs

1.4.8 Free Machining & Resulturised Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	As	Pb	B	N	Size (mm) Ø x H	Form
CRM	14X MSFM1 L	0.143	0.404	0.414	0.0689	1.155	0.147	0.89	0.264	0.1073	0.0289	(0.08)	0.0154	0.0509	....	....	....	0.026	40 x 15	CC
CRM	14X MSFM2 K	0.272	0.353	0.248	0.0491	1.568	0.235	0.996	0.355	0.162	0.0218	0.123	0.0324	0.104	....	....	....	0.028	40 x 15	CC
CRM	14X MSFM3 G	0.438	0.292	0.147	0.0297	1.809	0.161	0.454	0.390	0.205	0.0378	(0.18)	0.0199	0.0494	....	....	0.0043	0.0206	40 x 15	CC
CRM	14X MSFM4 A	0.226	0.469	0.224	0.0386	1.141	6.22	1.69	0.974	0.429	0.0141	(0.007)	0.0151	0.0253	....	....	....	0.0220	40 x 15	CC
CRM	14X 11170 A	0.154	0.151	0.120	0.0133	1.129	0.0877	0.1126	0.0317	0.1101	0.0110	0.0023	....	....	0.0044	0.0011	....	0.0112	38 x 15	W
CRM	14X 11390 A	0.419	0.198	0.191	0.0342	1.040	0.0239	0.0609	0.0067	0.0395	0.0022	0.0026	....	....	0.0028	....	....	0.0042	38 x 15	W
CRM	14X 12144 A	0.0800	0.0093	0.325	0.0630	1.227	0.0162	0.0807	0.0089	0.0106	....	0.0034	....	....	0.0022	0.328	....	0.0066	38 x 15	W
CRM	14X 12130 A	0.0871	0.022	0.305	0.061	1.219	0.0345	0.0505	0.0102	0.0201	0.0054	0.0024	....	....	0.0016	....	....	0.0097	38 x 15	W
CRM	14X 606M36T A	0.378	0.167	0.196	0.0159	1.574	0.0931	0.163	0.272	0.179	0.0103	0.0071	....	....	0.0085	....	....	0.0096	38 x 15	W

1.4.11 High-Ni Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Co	Ti	Mg	N	Alloy Type	Size (mm) Ø x H	Form
CRM	14X FeNi6 A	0.100	0.0750	0.0275	0.0150	0.331	6.09	0.0732	....	0.0287	0.0247	....	....	....	0.0056		40 x 15	W
CRM	14X FeNi 8 A	0.0974	0.099	0.0284	0.0151	0.333	8.11	0.251	....	0.0304	0.030	....	....	....	0.0062		40 x 15	W
CRM	14X FeNi10 A	0.094	0.061	0.0275	0.0151	0.274	10.10	0.070	....	0.0281	0.0251	....	....	....	0.0052		40 x 15	W
CRM	14X FeNi20 B	0.0137	1.12	0.0089	0.010	0.0284	20.06	0.102	....	0.074	0.018	0.994	....	....	....		37 x 13	CC
CRM	<del>14X FeNi25 B</del>	<del>0.0084</del>	<del>0.019</del>	<del>0.58</del>	<del>0.011</del>	<del>0.0121</del>	<del>25.10</del>	<del>0.0334</del>	<del>....</del>	<del>0.035</del>	<del>0.103</del>	<del>0.746</del>	<del>....</del>	<del>....</del>	<del>....</del>	Sold Out	40 x 15	CC
CRM	14X FeNi35 D	0.035	0.255	0.146	0.0400	0.303	34.17	0.409	....	0.0363	(0.004)	0.400	....	....	....		40 x 15	concast
CRM	14X FeNi40 B	0.0450	0.030	(1.09)	0.0185	0.081	40.57	0.0446	....	0.0517	1.18	0.858	....	....	....	low stock	40 x 15	CC
CRM	14X FeNi45 C **	0.007	0.78	0.0015	0.029	0.021	45.8	0.075	....	0.090	1.00	0.58	....	....	....	** provisional values	40 x 15	CC
CRM	14X FeNi50 C **	0.026	0.15	0.16	0.017	0.058	51.7	0.067	....	0.088	0.32	0.42	....	....	....	** provisional values	40 x 15	CC
CRM	14X 93603 A	0.0101	0.153	0.0045	0.0050	0.339	35.79	0.024	0.0145	0.0460	0.0404	0.0974	0.0011	0.0019	0.0057	Invar/UNS K93603	40 x 15	W
CRM	14X 94100 A	0.0055	0.103	0.0027	0.0051	0.443	41.00	0.0265	0.0053	0.0628	....	0.0208	0.0011	0.0021	0.0016	UNS K94100	40 x 15	W

## 2. Nickel Base

Updated: 18th January 2018

Blocks / Discs

2.1.2 Residuals in Nickel																	Size (mm)	Form							
	Si	Mn	Cu	Fe	Cr	Co	Ti	Al	Mg								Ø x H								
<b>21X 17520 H</b>	0.20	0.18	0.09	0.25	0.10	0.48	0.08	0.04	0.06								40 x 15	C							
2.2 Ni/Cr (Nimonic Type)																	Size (mm)	Form							
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Zr	Pb	W	B			Ø x H							
<b>22X 801 D</b>	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						
<b>22X 804 D</b>	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						
<b>22X 806 D</b>	0.007	0.10	0.09	0.004	0.18	19.66	0.01	0.03	2.48	1.35	....	0.004	0.007	0.02	0.004			40 x 15	C						
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	B			Size (mm)	Form							
																Ø x H									
<b>22X 904 C</b>	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							
<b>22X 1052 C</b>	0.19	0.51	0.26	0.13	0.65	15.7	4.48	18.6	1.09	4.08	0.002	....	....	....			40 x 15	C							
2.3 Fe/Ni/Cr (Incoloy Type)																	Size (mm)	Form							
	C	Si	Mn	Cu	Cr	Mo	Co	Ti	Al	Ni	Fe	Nb	W	V	Mg	Sn	S	P	B	N			Ø x H		
<b>23X 08811 A **</b>	0.066	0.27	1.0	0.24	19.7	0.24	0.082	0.52	0.45	31.3	45.7	0.01	0.028	0.062	0.005	0.005	<0.001	0.023	0.005	0.010	** provisional			40 x 15	W
<b>23X DS4 E</b>	0.06	2.01	1.02	0.30	16.83	0.29	0.48	0.20	0.037	37.15												40 x 15	C		
<b>23X DS5 E</b>	0.080	1.98	1.04	0.30	18.64	0.30	0.50	0.17	0.083	36.57												40 x 15	C		
2.4.1 Waspalloy, 720-types																	Size (mm)	Form							
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ni	B	W	Zr	Nb	N			Ø x H				
<b>CRM 24X 07001 C</b>	0.0360	0.042	0.024	0.0118	1.023	19.62	4.31	13.20	3.14	1.476	0.0005	0.0023	56.92	0.0062	0.041	0.060	0.050	....			32 x 20	W			
<b>CRM 24X 7201 A</b>	0.0326	0.039	0.0022	....	0.09	15.99	3.01	14.79	5.11	2.47	0.0027	0.0030	57.09	0.0246	1.29	0.0432	....	0.0043			40 x 13	HIP			
2.5 Ni/Cr/Nb/Mo																	Size (mm)	Form							
	Si	Mn	Cu	Fe	Cr	Mo	Co	W	Nb												Ø x H				
<b>25X 10221 F</b>	0.45	0.28	0.11	0.62	20.0	6.57	0.26	2.23	7.43												40 x 15	C			
2.6 Ni/Cr/Mo																	Size (mm)	Form							
	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al												Ø x H				
<b>26X 11384 E</b>	0.15	0.13	0.12	0.98	20.5	10.2	0.30	2.6	0.50												40 x 15	C			



## 2. Nickel Base

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Blocks / Discs

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

  

2.8 Ni/Cr/Fe (Inconel Type)		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Ta	B	Ni	N	Size (mm) Form Ø x H		
28X 6001 G		....	0.95	0.12	0.83	6.33	16.38	....	1.02	0.58	0.02	0.01	....	....	....	....	....	....	....	40 x 15	C	
28X 6002 F		....	0.25	0.65	0.02	8.24	16.23	....	0.22	0.12	0.18	0.004	....	....	....	....	....	....	....	40 x 15	C	
28X 6003 E		....	0.74	0.47	0.42	7.1	15.56	....	0.62	0.22	0.025	0.01	....	....	....	....	....	....	....	40 x 15	C	
28X 6004 E		....	0.65	0.38	0.42	7.17	16.21	....	0.77	0.27	0.05	0.008	....	....	....	....	....	....	....	40 x 15	C	
28X 6005 E		....	0.60	0.39	0.39	6.98	16.93	....	0.62	0.28	0.06	0.002	....	....	....	....	....	....	....	40 x 15	C	
28X X7504 D		0.03	0.39	1.09	0.22	6.42	14.22	0.46	....	2.59	0.70	....	....	....	0.95	....	....	....	....	40 x 15	C	
CRM 28X 6251 M		0.002	0.252	0.069	0.057	4.21	20.24	9.58	0.0078	0.0097	0.006	....	0.0013	0.0023	2.64	0.0111	0.0040	62.95	....	40 x 15	concast	
CRM 28X 6252 Q **		0.077	1.0	0.32	0.23	4.75	20.4	8.7	0.27	0.11	0.13	....	0.015	0.01	3.15	0.005	....	....	0.086	** provisional values	40 x 15	CC
CRM 28X 6253 T		0.116	1.32	0.490	0.306	5.62	21.91	7.82	0.39	0.247	(0.19)	....	0.0106	0.0242	4.50	0.039	....	(56.8)	0.092		40 x 15	CC
CRM 28X 6254 M		0.047	(0.79)	0.457	0.044	3.33	22.71	8.92	0.195	(0.15)	(0.01)	....	0.0160	0.0097	3.60	....	0.005	59.55	0.0364	Sold Out	40 x 15	CC
CRM 28X 6255 M		0.0343	0.447	0.203	0.0646	2.03	19.63	8.31	0.164	0.348	0.337	....	0.0081	0.0104	4.09	0.093	0.0101	64.2	....		40 x 15	concast
CRM 28X 6256 A		0.0173	0.041	0.0004	0.018	(0.034)	21.29	8.81	....	0.266	0.301	....	(0.002)	0.0033	3.75	....	....	65.4	0.007		40 x 13	HIP
CRM 28X 06625 A		0.020	0.273	0.090	0.0288	0.917	21.94	9.15	0.031	0.238	0.184	....	0.0037	(0.002)	3.52	....	0.0009	63.49	0.0219		40 x 15	W
CRM 28X 7181 J		0.0198	0.811	0.150	0.042	18.98	18.42	3.25	(0.014)	0.125	0.070	....	0.0089	0.0146	4.88	....	0.0021	53.10	0.038	Sold Out	40 x 15	CC
CRM 28X 7182 P		0.0840	0.706	0.420	0.125	18.04	19.22	2.59	0.515	0.691	(0.30)	....	0.0125	0.0110	4.54	0.025	0.0042	52.6	0.064		40 x 15	CC
CRM 28X 7183 U		0.104	0.903	0.534	0.321	15.48	18.38	3.66	0.986	0.959	0.499	....	0.0217	0.0213	5.66	....	0.0114	(52.3)	0.0420	low stock	40 x 15	CC
CRM 28X 7184 K		0.085	0.403	0.215	0.123	18.22	16.91	3.07	0.44	0.633	0.620	....	0.0158	0.0103	5.07	0.077	0.0052	54.16	0.084	low stock	40 x 15	CC
CRM 28X 7185 K		0.060	0.882	0.286	0.203	18.44	20.77	2.74	0.220	0.284	0.359	....	0.0089	0.0189	4.61	0.115	0.0107	50.67	0.172	Sold Out	40 x 15	CC
CRM 28X 7186 K		0.0237	0.562	0.238	0.109	15.97	17.55	3.16	0.301	0.910	0.664	....	0.0096	0.0192	5.07	....	0.0048	(55.3)	0.040		40 x 15	CC
CRM 28X 07718 A		0.026	0.076	0.055	0.038	19.55	18.62	3.01	0.172	0.945	0.544	....	0.0015	0.0063	5.05	....	0.0034	51.99	0.0056		38 x 15	W

  

2.10 Ni/Co/Cr/Al/Ti		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Zr	V	Ni	Size (mm) Form Ø x H	
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	(Rem.)	40 x 15	C

## 2. Nickel Base

Updated: 18th January 2018

Blocks / Discs

2.12 Ni/Cu (Monel Type)		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Pb	Sn	Zn	Cd	Bi	Se	Ni	Size (mm) Ø x H	Form	
CRM	212X 4001 Q	0.0130	1.48	2.95	28.92	0.503	0.0795	....	0.111	(0.094)	(0.038)	0.0016	0.0206	0.0198	0.100	0.0703	(0.056)	....	....	....	....	65.49	40 x 15	CC	
CRM	212X 4002 L	0.0369	0.090	1.68	32.41	1.022	0.084	....	0.064	0.0421	0.084	0.0222	0.0019	....	0.0348	0.0373	....	....	....	....	....	64.33	Sold Out	40 x 15	CC
CRM	212X 4003 K	0.036	0.245	1.105	30.13	2.63	0.097	0.0317	0.0286	0.0204	0.010	0.050	0.0257	0.0059	0.150	0.053	....	....	....	....	....	(65.3)	Sold Out	40 x 15	CC
CRM	212X 4004 M	0.081	0.557	0.953	29.0	3.68	0.822	0.197	0.0758	0.652	0.71	....	0.0110	0.0400	0.949	0.0206	0.0596	....	0.0010	....	....	62.1	Low Stock	40 x 15	CC
CRM	212X 4005 G	0.0494	2.52	1.437	21.53	1.053	0.20	0.102	0.156	1.005	1.399	(0.003)	0.0038	0.0106	0.341	0.0091	....	....	....	....	....	(70.1)		40 x 15	CC
CRM	212X 4006 H	0.065	3.94	0.907	24.56	2.29	0.123	....	0.0327	1.507	3.99	0.041	0.0256	....	0.497	0.0310	0.0290	0.0708	....	....	....	61.96	Sold Out	40 x 15	CC
CRM	212X 4007 B	0.0483	2.18	1.08	28.95	2.02	0.498	0.048	0.0205	0.099	0.0307	0.050	0.0039	0.025	2.40	0.0192	0.0110	(0.093)	(0.003)	0.040	0.019	[bal]		40 x 15	CC
		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Zr	Pb	B	N	Ni	Size (mm) Ø x H	Form			
	212X NA2 G	0.07	2.50	1.06	29.8	1.53	....	....	....	....	....	0.008	0.023	0.019	....	....	0.02	....	....	....	....		40 x 15	C	
CRM	212X 04400 A	0.157	0.253	1.027	32.47	2.065	0.166	0.0307	0.0432	0.0193	0.030	0.053	(0.002)	0.0033	....	....	....	0.0019	0.0005	63.69			40 x 15	W	
CRM	212X 05500 A	0.135	0.167	0.634	29.91	1.162	0.073	....	(0.009)	0.632	3.00	0.0098	0.0010	0.0031	....	0.0343	....	0.0015	0.0010	64.3			38 x 15	W	
2.15 Ni/Co/Cr/Fe/Mo (Hastelloy Type)		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	B	Nb	V	W	Mg	Zr	N	Ni	Size (mm) Ø x H	Form		
	215X HB1 P	0.0422	0.150	0.697	0.0718	5.78	1.090	33.04	0.252	....	....	0.0506	0.0056	....	0.203	0.504	....	....	0.0156	58.00			40 x 15	CC	
	215X HB2 G	0.049	0.390	0.800	0.0526	4.20	0.689	31.84	0.584	0.13	0.19	0.0196	0.0084	....	0.248	0.480	....	....	0.0108	60.2			40 x 15	CC	
	215X HB3 H	0.069	0.799	0.61	0.134	6.32	2.35	27.17	1.03	0.21	0.23	0.0156	0.0197	....	0.699	0.287	....	....	0.0271	(60.1)			40 x 15	CC	
	215X HB4 G	0.0843	1.005	0.597	0.0192	5.94	0.375	27.94	1.703	0.0338	0.0159	0.0313	0.049	....	0.056	0.212	(0.096)	....	0.0013	61.80			40 x 15	concast	
	215X HB5 L	0.151	1.05	0.335	0.268	3.45	0.123	26.1	2.49	0.192	0.49	0.0113	0.038	0.003	....	0.136	....	....	0.006	65.3	Sold Out		40 x 15	CC	
	215X HC1 M	0.0255	0.493	1.272	0.024	4.03	15.62	19.72	2.49	0.267	0.008	(0.002)	....	....	0.149	3.59	....	....	0.0040	....			40 x 15	concast	
	215X HC2 K	0.0456	1.22	0.909	....	2.97	16.46	18.44	1.70	0.181	0.005	0.0163	....	....	0.282	4.02	....	....	0.0091	(53.8)			40 x 15	concast	
	215X HC3 M	0.0897	0.944	0.685	0.0988	4.84	17.86	17.38	0.973	0.150	0.111	0.0131	0.0211	....	0.399	4.63	....	....	0.0066	....			40 x 15	concast	
	215X HC4 M	0.141	1.15	0.441	0.331	6.01	18.44	16.93	0.709	(0.094)	(0.052)	0.0222	0.0390	....	0.491	4.99	....	....	0.071	(50.3)			40 x 15	CC	
	215X HC5 V	0.201	1.379	0.100	0.485	8.15	20.05	16.03	0.0460	0.198	0.721	0.038	0.054	....	0.607	6.19	....	....	0.0081	(45.9)			40 x 15	concast	
	215X 10276 A	0.008	0.029	0.498	0.0423	5.79	15.56	15.96	0.182	0.0186	0.203	(0.001)	0.0027	....	0.031	0.196	3.59	0.0090	0.009	0.0099	57.81			38 x 15	W

## 2. Nickel Base

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Blocks / Discs

2.19 Various Nickel Alloys																					Size (mm)	Form		
		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ta	V	W	Nb	Zr	B	Mg	Ni	N	Ø x H	
CRM	<b>219X 20500 C</b>	0.0212	1.29	0.300	0.0101	1.515	51.1	0.0103	0.0110	....	....	0.0137	0.0048	....	....	0.0086	0.0117	....	....	....	45.45	0.199	40 x 15	CC
CRM	<del>219X 1867 D</del>	0.092	0.187	0.134	0.308	0.244	7.78	6.00	9.80	4.355	6.05	0.0055	0.0054	4.05	....	0.066	0.052	0.273	0.0152	....	63.84	Sold Out	40 x 15	CC
CRM	<b>219X 08825 A</b>	0.015	0.232	0.499	1.87	31.82	21.94	3.01	0.0646	1.192	0.149	(0.001)	0.0189	....	0.038	....	(0.007)	0.0021	0.0028	(0.003)	39.12	....	40 x 15	W
CRM	<b>219X 20004 A</b>	0.224	0.916	14.07	0.319	9.48	13.63	0.104	(0.104)	0.52	....	0.0028	0.0147	0.077	....	....	1.53	....	....	....	59.1	....	40 x 15	CC
CRM	<del>219X 86182 A</del>	0.148	0.807	7.68	0.150	7.88	15.88	0.078	0.047	0.421	....	0.0034	0.0098	0.031	....	....	2.17	....	....	....	64.7	Sold Out	40 x 13	CC

### 3. Copper Base

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3.1 Brass - Cu/Zn Binaries		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	P	Ag	S	B	Cd	Te	Cu	Size (mm) Ø x H	Form
CRM	31X B1 Q	0.0279	0.0155	44.82	0.0223	0.0200	(0.001)	(0.007)	0.0070	0.0079	0.0183	0.0075	0.0091	0.0015	0.0385	....	....	0.0007	0.0018	....	54.99	40 x 15	CC
CRM	31X B3 M **	0.02	0.03	35.5	0.025	0.03	....	....	0.02	0.03	0.015	0.02	....	0.01	0.04	0.025	....	0.0025	0.005	0.01	[bal]	40 x 15	CC
CRM	31X B3 N **	0.04	0.10	35.5	0.04	0.02	....	....	0.01	0.03	0.015	0.015	....	0.005	0.04	0.015	....	0.003	0.005	[bal]	40 x 15	CC	
CRM	31X B4 M	0.053	0.045	28.97	0.111	0.0649	0.0011	(0.002)	0.0516	0.0011	0.0103	0.0118	0.0038	0.0263	0.0302	....	0.0114	....	0.0236	....	70.60	40 x 15	CC
CRM	31X B5 L **	0.265	0.083	24.0	0.037	0.027	0.015	0.005	0.036	0.002	0.009	0.016	<0.001	0.026	....	....	....	0.001	0.004	....	75.5	40 x 15	CC
CRM	31X B6 K	0.0029	0.0122	19.93	0.0097	0.0066	0.0010	0.015	0.0009	0.0039	0.0010	0.0011	<0.0005	0.0063	....	....	....	0.0023	0.0037	....	79.90	40 x 15	CC
CRM	31X B7 L	0.089	0.0416	15.34	0.099	0.0351	0.0435	0.018	0.0054	0.0088	0.0607	0.0196	....	0.0044	....	....	....	0.0013	0.0064	(0.002)	84.22	40 x 15	CC
CRM	31X B8 J	0.0311	0.082	10.23	0.132	0.0421	(0.001)	(0.002)	0.0074	0.0006	0.030	0.0254	(0.001)	0.0072	0.0026	....	0.045	....	0.0155	....	89.37	40 x 15	CC
CRM	31X B9 M	0.062	0.090	4.92	0.0361	0.0379	(0.001)	....	0.0103	0.0006	0.0059	0.0089	....	....	0.0047	0.0065	....	(0.001)	....	0.0181	94.81	40 x 15	CC

\*\* provisional values

3.1.1 Alloyed Brass		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	B	Co	Cr	Cd	Ag	Te	Cu	Size (mm) Ø x H	Form	
CRM	31X B10 M	0.0310	0.0274	36.05	(1.39)	1.475	0.358	0.0389	0.0087	0.205	0.0215	0.0124	....	....	....	0.0390	0.0192	....	....	....	60.18	40 x 15	CC	
CRM	31X B11 H	0.0117	0.0134	36.65	0.802	1.033	0.0262	0.0063	0.0061	0.653	0.0054	0.0057	....	....	....	....	....	....	....	....	60.72	40 x 15	CC	
CRM	31X B12 G	0.0229	0.0244	36.67	0.430	0.491	0.081	0.0207	0.0181	1.720	0.0198	0.0194	....	....	....	....	....	....	....	....	60.51	40 x 15	CC	
CRM	31X B13 G	0.0127	0.0188	36.67	0.182	0.212	0.0148	0.032	0.0120	2.84	0.0116	0.0056	....	....	....	....	....	....	....	....	60.03	40 x 15	CC	
CRM	31X B14 G	0.486	0.0104	36.52	0.0183	0.0190	4.02	0.051	0.0091	0.0117	0.0103	0.0139	....	....	....	0.0109	....	....	0.0130	....	58.85	40 x 15	CC	
CRM	31X B15 H	0.944	0.0073	36.80	0.0176	0.0102	2.98	0.109	0.0048	0.0122	0.0074	0.0111	....	....	....	0.0046	....	....	0.0071	....	59.07	40 x 15	CC	
CRM	31X B16 H	2.13	0.0295	37.18	0.0162	0.0076	1.98	0.197	0.0056	0.0029	0.0042	0.0126	....	....	....	0.0023	....	....	0.0052	....	58.37	40 x 15	CC	
CRM	31X B17 F	0.010	(0.05)	(33.9)	(0.02)	(0.01)	6.05	(0.007)	(0.015)	<0.001	<0.001	<0.001	....	....	....	....	....	....	....	....	60.0	40 x 15	CC	
CRM	31X B18 K	0.0117	1.018	39.41	0.0237	0.0233	0.0193	0.019	0.0215	0.0207	0.0196	0.0205	0.0195	....	....	0.0015	(0.013)	0.0254	0.0143	0.017	59.37	40 x 15	CC	
CRM	31X B19 R	0.0324	2.49	37.78	0.0295	0.0218	0.087	0.0392	0.0129	0.0109	0.0208	0.0105	0.0630	0.0019	....	....	....	0.0048	....	(0.002)	59.33	40 x 15	CC	
CRM	31X B20 N	0.0244	4.43	37.03	0.024	0.021	0.0025	(0.005)	0.0028	0.0005	0.0025	0.0039	0.0230	(0.004)	....	....	....	....	....	....	58.53	40 x 15	CC	
CRM	31X B21 E	0.101	0.113	29.55	0.126	0.117	0.0244	0.059	0.0908	0.0603	0.104	0.105	0.1269	(0.002)	....	....	....	....	....	....	69.32	40 x 15	CC	
CRM	31X B22 F	0.160	0.152	15.92	0.158	0.154	0.0402	0.047	0.165	....	0.17	0.161	0.207	0.030	0.0043	0.139	....	0.0117	....	....	82.47	40 x 15	CC	
CRM	31X B23 D	0.060	0.046	9.97	0.060	0.047	0.0048	0.0046	0.0482	0.0053	0.0463	0.0448	0.030	0.053	....	0.0472	....	0.0010	....	....	89.57	40 x 15	CC	
CRM	31X B24 D	1.93	0.050	1.99	0.0342	0.134	(0.002)	....	0.0116	0.0030	0.0126	0.118	0.0065	0.050	....	....	....	0.0008	....	....	95.65	40 x 15	CC	
CRM	31X B25 B	0.613	0.298	40.83	0.056	0.236	0.470	0.254	0.0284	0.127	0.0594	0.0843	0.093	....	(0.0045)	....	....	....	....	....	56.95	Sold Out	40 x 15	CC
CRM	31X B26 F	1.476	0.930	30.30	0.650	1.397	1.005	0.252	0.126	0.408	0.106	0.098	0.0593	....	....	0.1197	....	0.0147	0.053	....	62.93	40 x 15	CC	
CRM	31X B27 B	0.985	0.492	17.65	0.111	0.0315	0.0015	0.0044	0.048	0.0059	0.0320	0.0243	0.0150	0.0080	(0.0005)	....	....	....	....	....	80.65	40 x 15	CC	
CRM	31X B29 A	0.0328	0.146	24.75	0.144	4.11	0.219	....	....	0.0625	....	....	3.33	....	....	....	0.062	0.0144	....	....	67.08	40 x 15	CC	

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3.1.2 Brass - Trace Elements		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	Cd	B	Te	Ag	Cu	Size (mm) Ø x H	Form	
CRM	31X TB1 K	0.134	0.207	35.17	0.171	0.0619	0.493	0.080	0.111	0.280	0.0414	0.105	....	0.0500	0.0118	0.0010	....	0.0455	63.08		40 x 15	CC
CRM	31X TB2 J **	0.130	0.067	35.9	0.058	0.076	0.030	0.050	0.017	0.145	0.017	0.050	0.0055	0.015	0.0014	....	0.022	0.015	63.8	** provisional values	40 x 15	CC
CRM	31X TB3 K	0.089	0.169	37.92	0.0282	0.0637	0.0045	0.016	0.0454	0.0244	0.0030	0.0222	....	....	0.0043	(0.0005)	....	....	61.58		40 x 15	CC
CRM	31X TB4 G	0.0197	0.0246	33.64	0.0340	0.0133	0.0041	0.0203	0.0106	0.0013	0.0058	0.0095	....	0.0067	0.0032	(0.0004)	0.0035	....	66.07		40 x 15	CC
CRM	31X TB5 B **	0.133	0.570	35.6	0.097	0.105	0.070	0.112	0.390	0.285	0.290	0.230	0.003	0.020	0.47	....	....	0.22	61.5	** provisional values	40 x 15	CC

3.1.3 Naval Brass		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	B	Ag	Cu	Size (mm) Ø x H	Form	
CRM	31X NB1 H	0.535	0.504	29.73	0.037	0.520	(0.0004)	0.004	0.161	0.051	0.0065	0.0057	0.0223	0.0024	(0.0006)	....	....	68.35		40 x 15	CC
CRM	31X NB2 H	1.009	0.239	35.47	0.112	0.0578	0.168	0.107	0.0970	0.151	0.100	0.099	0.0139	0.0019	....	....	....	62.21		40 x 15	CC
CRM	31X NB3 J **	1.40	0.13	25	0.07	0.06	0.14	0.13	0.055	0.12	0.08	0.20	0.20	....	....	0.003	0.04	[ball]	** provisional values	40 x 15	CC
CRM	31X NB4 J	2.01	0.067	32.57	0.235	0.230	0.178	0.203	0.0062	0.0053	0.104	0.450	0.230	(0.0032)	....	0.0009	....	63.71		40 x 15	CC
CRM	31X CZ112 A	1.130	0.458	37.07	0.0488	0.0150	(0.001)	(0.003)	0.0052	0.0010	....	0.0043	0.0136	....	....	....	0.0043	61.24		41 x 15	W

3.1.5 High Tensile Brass		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Sb	P	S	C	B	Cu	Size (mm) Ø x H	Form	
CRM	31X HT31 B	0.079	0.0139	17.06	3.01	0.226	6.82	0.0443	0.0005	5.69	....	0.0030	0.0007	0.0057	0.0014	67.00		40 x 15	W
CRM	31X HT37 A	0.0116	0.623	34.69	0.0344	0.0105	0.0004	1.38	0.0011	2.88	0.0007	0.003	<0.0005	0.003	....	60.33		40 x 18	W
CRM	31X HT38 A	0.039	0.051	36.66	0.0530	0.0242	0.960	0.869	0.0008	2.60	(0.0006)	0.0024	(0.001)	0.003	....	58.77		50 x 18	W

3.1.6 Bismuth Brass		Bi	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Co	Sb	P	S	Se	Cd	B	Cu	Size (mm) Ø x H	Form	
CRM	31X BIB1 D	1.87	0.463	0.157	37.20	0.053	0.255	0.124	0.169	0.0303	0.0273	....	0.0106	0.0451	(0.001)	0.0031	0.0100	....	59.57		40 x 15	CC
CRM	31X BIB2 E	1.031	1.267	0.118	35.01	0.143	0.550	0.504	0.151	0.0224	....	0.0437	0.087	0.0232	<0.001	0.0027	0.0055	....	61.12		40 x 15	CC
CRM	31X BIB3 C	4.04	0.198	0.181	31.83	0.0510	0.127	0.154	0.0516	0.0476	....	0.0032	0.0321	0.0626	0.0018	0.0047	0.0014	....	63.18		40 x 15	CC
CRM	31X BIB4 C	0.851	0.85	0.092	34.69	0.123	0.199	0.412	0.203	0.0131	0.0146	0.0291	0.0477	0.0373	....	0.0133	0.0028	0.0017	62.45		40 x 15	CC

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3.1.7 Leaded Brass		Pb	Sn	Zn	Fe	Ni	Mn	Al	Si	As	Bi	Sb	P	S	Co	Ag	Se	Cd	B	Cu	Size (mm) Ø x H	Form
CRM	31X 7835.1 T	2.72	0.349	33.49	0.157	0.1224	....	0.0083	(0.008)	0.0059	0.0075	(0.008)	0.0112	....	0.0021	0.0056	....	0.0020	....	63.09	40 x 15	CC
CRM	31X 7835.2 K	2.07	0.152	32.94	0.0309	0.0462	....	0.060	0.0193	0.0280	0.0099	0.0358	0.0226	....	0.0290	0.0102	....	0.0020	0.0023	64.49	40 x 15	CC
CRM	31X 7835.3 J	1.501	0.1032	35.57	0.246	0.294	....	0.142	(0.009)	0.1023	0.0282	0.0916	0.0307	....	0.0046	0.0159	....	0.0031	....	61.81	40 x 10	CC
CRM	31X 7835.4 J	1.049	0.070	30.36	0.0350	0.477	....	0.525	....	0.142	0.0169	0.068	0.121	....	0.0027	....	....	0.0088	0.0021	67.13	40 x 15	CC
CRM	31X 7835.5 A	1.64	0.116	6.23	0.126	0.249	....	0.078	....	0.104	....	0.114	0.018	....	....	....	....	....	....	91.25	40 x 15	CC
CRM	31X 7835.6 C	1.422	0.548	36.60	0.0211	0.021	....	0.573	0.0214	0.0152	0.0043	....	0.0253	(0.0016)	0.0048	0.0044	0.0010	0.0017	0.0045	60.70	40 x 15	CC
CRM	31X 7835.7 A	2.29	0.137	7.50	0.030	0.943	....	0.0084	0.039	....	0.048	0.0327	0.080	0.0075	0.0120	....	....	0.0047	....	88.87	40 x 15	CC
CRM	31X 7835.8 B	3.22	0.451	21.55	0.0446	0.157	0.0102	0.219	....	0.151	0.101	0.110	0.154	....	0.313	0.549	....	0.0944	....	72.7	40 x 15	CC
CRM	31X 7835.9 B **	1.10	1.60	15.8	0.20	0.20	0.005	0.12	0.05	0.10	0.95	0.45	0.065	....	0.12	2.0	0.30	0.06	....	[bal]	40 x 15	CC
CRM	31X 7835.10 A	1.419	0.234	34.36	0.408	0.159	0.0318	0.648	0.010	0.0635	0.0202	0.0216	0.0417	....	0.0203	....	....	....	....	62.55	40 x 15	CC
CRM	31X 7835.11 A	1.695	0.1522	30.98	0.192	0.1007	0.0101	0.908	0.010	0.143	0.011	0.0122	0.024	....	0.0065	....	....	....	....	65.75	40 x 15	CC
CRM	31X CZ114 A	1.219	0.511	38.25	0.740	0.0183	1.475	0.714	(0.006)	....	0.0107	(0.003)	0.0018	....	....	....	....	....	....	57.10	38 x 15	W
CRM	31X CZ115 A	1.169	0.729	39.20	0.601	0.0143	1.095	0.0007	(<0.005)	0.0008	....	0.0020	0.0091	....	....	0.0041	....	....	....	57.19	41 x 15	W
CRM	31X CZ121 A	3.01	0.1940	38.57	0.167	0.1028	0.0052	0.0034	(0.003)	0.0299	0.0046	0.0050	0.0028	....	....	0.0060	....	....	....	57.84	41 x 15	W
CRM	31X CZ122 A **	2.0	0.09	36.5	0.06	0.03	0.001	<0.001	0.005	0.15	....	0.01	....	....	....	0.005	....	0.001	....	[bal]	40 x 15	W
CRM	31X CZ132 A **	2.1	0.15	40.5	0.16	0.05	....	0.001	0.005	0.01	....	0.005	....	....	....	0.005	....	0.001	....	[bal]	40 x 15	W
3.1.8 Manganese Brass		Mn	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Bi	Sb	P	S	Co	Ag	Cr	C	Cu	Size (mm) Ø x H	Form	
CRM	31X MNB1 C	0.188	0.105	4.44	29.37	0.268	0.053	0.599	0.128	....	....	....	....	....	....	....	....	....	67.77	Sold Out	40 x 15	CC
CRM	31X MNB2 D	2.05	0.289	0.983	31.30	0.548	0.118	0.272	0.579	0.0201	....	0.0177	0.0246	....	0.0086	0.041	....	....	63.75	40 x 15	CC	
CRM	31X MNB3 E	3.08	0.459	0.504	25.97	4.15	0.348	0.584	4.53	0.0179	....	0.0056	0.0259	....	0.0556	0.0162	....	....	66.48	Sold Out	40 x 15	CC
CRM	31X MNB4 F	2.97	0.547	0.221	25.59	1.728	0.347	3.91	0.103	0.0125	....	0.0189	0.0274	....	0.0312	0.0131	....	....	64.62	40 x 15	CC	
CRM	31X MNB5 Q	0.137	1.60	0.243	37.12	0.013	0.996	2.96	0.44	0.0100	....	0.0118	(0.008)	....	0.0155	0.0063	0.19	....	56.18	40 x 15	CC	
CRM	31X MNB5 R	0.175	1.228	0.157	37.11	0.898	1.32	3.24	0.528	0.0021	....	(0.006)	0.0399	....	0.066	0.0195	0.0116	....	55.14	40 x 15	CC	
CRM	31X MNB6 C	0.871	0.0310	0.016	28.53	0.0697	0.261	0.0148	0.0196	0.0107	....	0.0128	0.0226	....	0.0107	0.0509	....	....	70.01	40 x 15	CC	
CRM	31X MNB11 B **	12.5	0.20	0.34	21.2	0.42	4.70	1.15	0.054	0.006	0.005	0.008	0.036	....	0.063	....	0.0046	(0.009)	59.3	** provisional values	40 x 15	CC
CRM	31X MNB12 B	18.37	0.194	1.96	21.76	0.313	0.497	0.70	0.0487	0.0077	0.0204	0.0072	0.0521	(0.0006)	0.0040	....	0.0013	0.0125	56.03	40 x 15	CC	
3.1.9 Silicon Brass		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Sb	P	Co	Cd	Ag	B	Cu	Size (mm) Ø x H	Form			
CRM	31X WSB6 E	0.071	0.225	0.450	0.088	0.1114	0.0311	3.60	0.0048	0.900	0.0022	0.0206	0.0079	0.0004	....	....	94.47	40 x 15	CC			
CRM	31X WSB6 F	0.0142	0.0310	0.0506	0.158	0.0509	(0.001)	3.13	0.0110	0.924	0.0406	0.0179	0.0095	0.0039	0.0131	0.0054	95.40	40 x 15	CC			

### 3. Copper Base

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3.2.1 Phosphor-Bronze		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Mg	C	Ag	Cu	Size (mm) Ø x H	Form	
CRM	32X PB10 P	12.37	0.0182	0.256	0.0043	0.0130	(0.002)	(0.001)	0.0126	<0.001	0.034	0.0134	0.0030	0.0144	0.0062	....	....	....	87.14	40 x 15	CC	
CRM	32X PB11 G	3.306	0.995	1.71	0.399	0.898	0.081	0.123	0.198	0.132	0.0310	0.584	0.946	0.0148	0.090	0.0091	....	....	90.44	40 x 15	CC	
CRM	32X PB12 F	5.03	0.0436	0.130	0.053	0.205	(0.001)	(0.002)	0.0512	0.0014	0.0647	0.1822	0.076	0.0108	0.0150	....	....	0.0155	94.16	40 x 15	CC	
CRM	32X PB13 F **	6.35	0.075	0.37	0.055	0.10	0.005	0.01	0.03	0.02	0.03	0.11	0.12		0.01	....	....	0.015	[bal]	** provisional values	40 x 15	CC
CRM	32X PB14 E	9.65	0.0354	0.103	0.0211	0.103	0.0201	(0.003)	0.0235	0.0141	0.146	0.0433	0.128	0.070	0.0047	....	....	0.0152	89.70	40 x 15	CC	
CRM	32X PB15 A	2.21	0.174	0.76	0.116	0.212	0.045	0.043	0.123	0.0125	....	0.026	0.0873	....	0.0509	0.0275	....	....	96.07	40 x 15	CC	
CRM	32X PB16 A **	17.6	0.087	0.008	0.002	0.125	0.001	0.005	0.003	....	0.053	0.016	....	0.004	....	....	....	0.017	82	** 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 51000 A	4.86	0.0031	0.0112	0.0025	0.0083	(0.001)	....	....	....	....	....	0.300	0.0021	....	....	....	0.0024	94.84	38 x 15	W	
CRM	32X 52100 A	7.72	0.0031	0.0028	(0.001)	0.0110	0.0008	....	0.0009	....	0.0019	....	0.147	0.0007	....	....	....	0.0011	92.08	38 x 15	W	
3.2.2 Leaded Bronze		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Cd	Ag	Cu	Size (mm) Ø x H	Form		
CRM	32X LB10 F	8.26	42.46	0.426	0.0045	0.695	0.0488	0.008	0.446	....	0.0563	0.557	0.0063	0.040	0.0395	....	0.0459	77.23	Sold Out	40 x 15	CC	
CRM	32X LB11 D	10.87	10.17	0.124	0.0025	0.565	0.0022	(0.002)	0.0315	(0.0003)	0.0338	0.111	0.007	0.053	0.0202	....	0.118	77.97		40 x 15	CC	
CRM	32X LB12 D	9.52	9.06	0.584	0.0223	0.433	(0.001)	<0.001	0.0897	....	0.0231	0.442	0.383	0.094	0.0751	....	....	79.27		40 x 15	CC	
CRM	32X LB13 C	5.80	7.59	0.520	0.0160	0.828	0.0011	(0.0035)	0.131	0.0005	0.0721	0.0186	0.0161	0.115	0.0293	....	0.0063	84.87		40 x 15	CC	
CRM	32X LB14 G	5.63	15.42	0.586	0.0094	0.254	0.0006	(0.001)	0.0500	0.0005	0.720	0.0750	0.0589	0.0176	0.089	....	0.120	77.02		40 x 15	CC	
CRM	32X LB15 E	4.51	21.42	0.064	0.0012	0.123	(0.001)	0.0008	0.0273	....	(0.13)	0.127	0.0035	0.032	0.0051	....	0.0217	73.60		40 x 15	CC	
CRM	32X LB16 A	5.55	18.78	0.458	0.0040	0.793	(0.001)	....	....	....	0.0119	(0.001)	(0.002)	0.0012	....	....	0.0016	74.42		32 x 17	W	
CRM	32X LB17 A	5.97	9.83	0.634	0.488	0.465	0.388	....	1.51	0.296	0.220	4.10	0.051	....	0.0083	0.151	0.911	74.83		40 x 15	CC	
CRM	32X 93700 A	9.95	8.38	0.78	0.0011	0.307	....	....	....	....	....	0.0051	(0.0015)	0.0017	0.0004	....	....	80.43		42 x 15	concast	

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3.2.3 Aluminium Bronze																				Size (mm)	Form				
	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	P	Cr	Co	Mg	Nb	Sb	Ag	Bi	Se	Be	Cu	Ø x H				
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	-----	-----	-----	Sold Out	81.85	40 x 15	CC		
CRM	32X	ALB2	L	0.0806	0.0685	0.671	4.628	4.515	10.48	0.198	0.0062	0.401	0.031	0.052	0.198	0.0088	0.070	-----	0.018	-----	-----	78.50	40 x 15	CC	
CRM	32X	ALB3	S	0.1209	0.118	1.314	3.718	3.51	10.43	0.155	0.0213	0.243	0.0345	0.0392	0.0760	0.0659	0.018	-----	0.0272	-----	-----	80.01	40 x 15	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	-----	-----	-----	Sold Out	79.61	40 x 15	CC		
CRM	32X	ALB5	K	0.0293	0.0512	0.80	2.04	3.92	7.21	0.107	-----	1.417	(0.05)	0.192	0.0606	0.179	0.181	-----	0.0061	-----	-----	83.71	40 x 15	CC	
CRM	32X	ALB6	K	0.120	0.0749	0.126	2.71	5.42	9.69	0.073	0.0116	0.787	(0.006)	-----	0.139	0.0104	-----	-----	0.0082	-----	-----	80.77	40 x 15	CC	
CRM	32X	ALB7	C	0.30	0.029	0.527	4.82	4.96	4.01	0.399	0.056	0.383	0.057	0.061	-----	0.0039	-----	-----	-----	-----	-----	84.40	40 x 15	CC	
CRM	32X	ALB8	F **	0.435	0.045	1.4	5.4	6.15	6.2	0.53	0.19	1.6	0.26	0.085	0.43	0.20	-----	0.026	0.100	** provisional values	77	40 x 15	CC		
CRM	32X	ALB9	C	0.0601	0.267	0.142	3.12	0.628	13.52	0.235	0.0163	0.159	0.096	0.0206	0.0027	0.090	-----	-----	0.0417	-----	-----	81.64	40 x 15	CC	
CRM	32X	ALB10	B	0.201	0.152	0.961	3.63	7.21	12.11	0.158	0.0194	1.626	0.069	0.0152	0.0984	0.0122	-----	-----	0.0144	-----	-----	73.64	40 x 15	CC	
CRM	32X	ALB11	A	0.0289	0.118	0.576	3.81	4.33	8.80	0.069	-----	1.13	0.045	-----	0.089	0.075	-----	0.093	-----	0.120	0.006	0.0194	80.58	40 x 15	CC
CRM	32X	ALB11	B	0.0062	0.0316	0.508	3.99	4.44	8.85	0.015	-----	1.290	0.0249	-----	0.0180	0.072	-----	0.203	-----	-----	Sold Out	80.38	40 x 15	CC	

  

3.2.3 Aluminium Bronze (continued)																	Size (mm)	Form		
	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	Cr	Co	Mg	Ag	C	Cu	Ø x H				
CRM	32X	ALB12	A	0.310	0.0018	0.0625	1.094	6.33	8.29	0.0202	0.958	0.0101	-----	0.0056	0.0013	0.044	-----	82.90	41 x 15	W
CRM	32X	ALB13	A	0.0072	(0.001)	0.0194	1.171	1.381	7.09	0.086	5.39	0.009	-----	0.0011	-----	-----	-----	84.96	35 x 15	W
CRM	32X	61400	A	0.301	(0.001)	0.060	2.74	0.0242	6.81	0.0124	0.082	0.0008	-----	-----	0.0050	0.0010	-----	89.99	42 x 15	W
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	0.0009	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	0.0010	(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	0.0008	0.006	82.24	42 x 18	W



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3.2.4 Bismuth Bronze (Sebiloy Type)		Sn	Pb	Zn	Fe	Ni	As	Bi	Sb	P	S	Co	Al	Se	In	Ag	Cd	Cu	Size (mm) Ø x H	Form
CRM	32X SEB1 D	4.26	0.197	7.81	0.071	0.102	0.0402	4.25	0.305	0.0021	0.0052	0.0478	....	0.812	....	....	0.0033	81.88	40 x 15	CC
CRM	32X SEB2 D	6.96	0.104	1.40	0.074	0.0449	0.0160	4.57	0.0222	0.036	0.030	0.0133	....	0.044	0.074	0.0443	0.0255	86.56	40 x 15	CC
CRM	32X SEB3 E	2.96	0.296	0.887	0.0113	1.214	0.0325	6.47	0.108	0.0139	0.0180	0.0491	....	1.30	....	....	0.0095	86.47	40 x 15	CC
CRM	32X SEB4 E	10.05	0.0357	7.02	0.093	0.0199	0.0065	2.48	0.0343	0.0043	....	0.308	0.0007	0.119	....	....	0.0017	79.82	40 x 15	CC
CRM	32X SEB5 C	5.18	0.268	5.30	0.0430	0.317	....	1.056	0.0334	0.072	0.050	0.0156	(0.001)	0.471	....	....	0.0051	87.21	40 x 15	CC
CRM	32X SEB6 C	7.14	0.0463	4.55	0.151	0.860	0.083	0.615	0.235	0.0118	....	0.231	....	0.322	....	....	0.0036	85.66	40 x 15	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	40 x 15	CC

  

3.2.9 Bronze		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Cr	Co	Bi	Sb	Cd	Au	Ag	P	S	Cu	Size (mm) Ø x H	Form	
CRM	32X SN1 F	11.65	5.66	0.259	0.0014	1.931	(0.001)	(0.001)	0.0111	<0.001	....	0.0136	....	0.0274	....	....	....	0.0022	0.0126	80.34	40 x 15	CC	
CRM	32X SN2 J	14.22	2.06	0.940	0.041	1.025	(0.002)	0.009	0.0119	0.0246	....	0.0343	0.119	0.106	....	....	0.0107	0.220	0.0106	81.17	40 x 15	CC	
CRM	32X SN3 G	16.14	0.159	0.150	0.14	0.464	(0.14)	0.0247	0.0323	0.067	....	0.0460	....	0.362	....	....	....	0.646	0.035	81.7	40 x 15	CC	
CRM	32X SN4 B	18.96	0.864	0.496	0.0811	0.607	0.0513	0.0223	0.0651	0.0148	....	0.100	0.0150	0.143	....	....	0.495	1.208	0.0132	76.87	40 x 15	CC	
CRM	32X SN5 B	15.90	0.860	0.604	1.009	0.667	0.215	....	0.0557	0.528	0.0238	0.129	0.124	0.702	0.130	0.0102	0.095	....	....	78.97	40 x 15	CC	
CRM	32X SN6 B **	6.75	1.65	2.0	0.37	0.295	0.058	....	0.800	0.09	0.016	0.76	0.125	0.305	0.024	0.003	0.99	....	....	85.8	** provisional	40 x 15	CC
CRM	32X SN7 A	12.60	2.60	1.96	(0.06)	0.175	0.052	....	1.071	0.0010	....	0.443	0.052	0.263	0.0385	0.0005	0.305	0.056	....	80.30	40 x 15	CC	
CRM	32X CSN1 A	0.306	....	0.0039	0.0020	....	....	....	....	....	....	....	....	....	....	....	....	0.0007	....	....	20 x 22	W	
CRM	32X 52480 A **	10.4	0.325	0.39	0.02	0.36	....	0.002	....	....	....	....	0.0015	0.018	....	....	0.015	0.011	0.006	88.5	** provisional	40 x 15	W

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3.3 Gun Metal		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Se	Cr	Co	Ag	Cd	Cu	Size (mm) Ø x H	Form		
CRM	33X GM4 AD	3.02	5.27	5.90	0.0932	1.482	0.0015	0.0010	0.0228	0.0006	0.0442	0.0568	0.0034	0.034	....	....	0.0077	0.0206	....	84.02	40 x 15	CC		
CRM	33X GM5 N	5.18	4.80	4.16	0.194	0.802	0.070	0.070	0.0408	....	0.0510	0.0654	0.0098	0.063	....	....	0.0207	0.049	0.0111	84.56	40 x 15	CC		
CRM	33X GM6 K	6.58	3.94	1.409	0.0256	0.890	0.0012	(0.001)	0.158	0.0022	0.0359	0.259	0.0041	0.090	....	....	0.0100	0.0148	....	86.51	40 x 15	CC		
CRM	33X GM7 J	9.64	4.449	2.72	0.050	0.544	0.0410	(0.003)	0.403	0.0088	0.149	0.1092	0.082	0.064	....	....	0.095	0.050	....	85.40	Sold Out	CC		
CRM	33X GM8 G	4.03	6.21	5.71	0.033	0.1491	....	....	0.0114	....	0.062	0.0237	0.0062	0.0083	....	....	0.0222	0.1018	....	83.64	40 x 15	CC		
CRM	33X GM9 A **	3.0	7.0	13.7	0.09	0.73	0.005	0.002	0.025	....	0.075	0.18	0.055	....	....	....	0.08	0.025	0.007	[bal]	** provisional	40 x 15	CC	
CRM	33X GM20 A	4.07	0.106	3.87	0.570	0.999	(0.001)	....	0.196	0.219	0.031	2.004	0.063	....	....	0.015	0.0382	0.141	0.0229	87.58	40 x 15	CC		
CRM	33X GM21 A	4.55	6.99	5.05	0.754	0.129	0.255	0.0156	0.464	....	0.452	1.049	0.050	0.080	0.194	....	....	0.694	0.255	78.90	Sold Out	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	40 x 15	CC		
CRM	33X RB2 B	4.65	2.99	9.01	0.503	0.330	0.0078	(0.002)	0.0395	0.0076	0.091	0.0494	0.0435	0.069	....	....	0.0326	0.105	....	82.02	40 x 15	CC		
CRM	33X 54400 A	3.97	4.69	3.87	0.072	0.244	0.0009	....	0.0156	....	....	0.0362	0.243	0.0251	....	....	0.0013	0.0124	....	86.79	38 x 15	W		
3.4 Nickel Silver		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	S	Co	Cr	Ag	Mg	C	Cu	Size (mm) Ø x H	Form					
CRM	34X NS3 F	0.056	0.178	19.96	0.285	14.96	<0.001	(0.002)	0.0377	0.0295	0.0028	0.0922	....	0.100	<0.001	....	64.16	40 x 15	CC					
CRM	34X NS5 G	0.142	0.896	23.87	0.247	16.55	0.085	0.122	0.1103	0.104	....	0.211	....	0.0096	....	....	57.53	40 x 15	CC					
CRM	34X 79830 A	0.1158	2.033	41.80	0.079	9.76	0.0012	....	0.311	0.0047	(0.001)	(0.001)	....	0.0028	....	(0.005)	45.88	38 x 15	W					
3.6.1 Cupro Nickel		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Bi	P	S	Co	Cr	Mg	B	C	Ti	Nb	Zr	Be	Cu	Size (mm) Ø x H	Form
CRM	36X CN1 P	0.227	0.035	0.351	1.856	9.27	0.055	0.104	1.77	....	0.0574	0.0071	0.114	0.156	0.0321	....	0.0106	....	0.0236	....	....	(85.9)	40 x 15	CC
CRM	36X CN2 K **	0.025	0.046	1.02	0.04	11.4	0.001	0.05	0.70	....	0.04	0.010	0.195	0.004	0.03	....	0.0013	0.036	0.02	....	....	86.3	40 x 15	CC
CRM	36X CN3 M	0.190	0.223	1.014	0.996	19.55	....	0.349	0.726	....	0.049	0.0153	0.0701	0.0259	0.075	(0.002)	0.020	....	0.030	....	0.0042	76.60	40 x 15	CC
CRM	36X CN4 L	0.0093	0.0193	0.164	0.548	25.58	0.040	0.448	0.529	0.0096	0.0140	0.0075	0.0305	0.0273	0.008	....	(0.005)	....	0.461	....	....	72.09	40 x 15	CC
CRM	36X CN5 P	0.0090	0.0120	0.209	0.347	31.03	....	0.689	0.217	....	0.034	0.088	0.0238	0.141	0.0106	0.0053	(0.008)	0.0203	0.430	....	0.0035	66.67	40 x 15	CC
CRM	36X CN6 J	....	0.0165	0.147	0.481	32.51	0.079	0.150	0.567	0.0260	0.0187	0.0097	0.0433	2.17	....	....	0.0198	0.0510	0.271	0.0228	....	63.41	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 15	CC
CRM	36X CN8 J	0.0502	0.037	0.107	1.65	28.94	(0.030)	0.309	0.951	0.0518	0.019	0.0119	0.121	1.38	....	0.005	0.013	(0.038)	0.585	....	....	65.78	40 x 15	CC
CRM	36X CN9 K	0.0351	0.070	....	1.262	26.40	0.051	0.406	1.005	0.0197	(0.021)	0.0105	0.0785	2.02	....	....	0.005	0.111	1.37	0.102	....	66.94	40 x 15	CC
CRM	36X CN10 B	0.0164	0.013	0.058	4.76	28.35	1.346	0.906	0.552	....	(0.009)	0.030	0.122	1.498	....	(0.012)	0.0107	0.227	0.450	0.080	....	61.63	40 x 15	CC

\*\* provisional values

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Blocks / Discs

3.6.1 Cupro Nickel continued																					Size (mm)	Form		
		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Bi	P	S	Co	Cr	Mg	B	C	Ti	Nb	Zr	Be	Cu	Ø x H	
CRM	36X CN11 A	(0.002)	(0.003)	(0.006)	0.992	14.96	1.457	0.083	4.34	....	(0.002)	0.0012	0.0049	0.380	0.0241	....	(0.001)	....	0.124	....	....	77.56	40 x 15	W
CRM	36X CN12 A	(0.001)	0.0037	0.157	0.105	13.05	2.41	0.040	0.402	....	0.0011	....	0.0056	....	0.072	0.0055	0.0101	....	0.0010	....	....	83.79	40 x 15	W
CRM	36X CN13 A	(0.001)	(0.001)	0.0017	0.870	14.52	2.65	0.012	0.442	....	0.0011	(0.002)	(0.001)	....	0.0039	(0.002)	(0.003)	....	....	....	....	81.46	38 x 15	W
CRM	36X 70600 A	0.0090	0.0086	0.115	1.619	10.65	(0.001)	....	0.759	....	0.0062	0.0136	0.0087	....	....	....	(0.002)	....	....	....	....	86.70	40 x 15	W
CRM	36X 71500 A	0.0113	0.0114	0.150	0.888	31.24	(0.001)	....	0.850	....	0.0074	0.0454	0.0163	....	....	0.0049	0.0240	....	....	....	....	66.74	40 x 15	W
		Sn	Pb	Zn	Fe	Ni	Al	Mn	P	Co	Cr	As	Ag	Cd	C	Cu	Size (mm)	Form						
																	Ø x H							
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 15	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 15	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 15	CC						
																					Size (mm)	Form		
																					W x D x H			
CRM	36X CN24 A	(0.002)	0.0056	8.00	0.127	15.41	(0.001)	23.60	0.0037	0.0096	0.0065	(0.001)	0.0466	....	0.0436	52.56	Block	38 x 13 x 13	concast					
3.6.1a Cu/Ni/Sn (Spinodal Alloy)																					Size (mm)	Form		
		Sn	Ni	Cu	Zn	Fe	Al	Si	Mn	Bi	Sb	P	S	Ag	Pb	Mg	Co	B	Ti	Nb	Ø x H			
CRM	36X SP1 A	5.75	8.33	84.90	0.344	0.45	0.0020	0.004	0.084	0.0039	0.0177	(0.003)	0.005	0.005	0.0115	....	0.057	0.0007	(0.0004)	(0.031)	40 x 15	CC		
CRM	36X SP2 A	8.92	15.72	74.91	0.029	(0.09)	0.0003	(0.0023)	0.0019	(0.0027)	0.006	(0.0006)	0.0030	0.0181	0.026	0.0002	0.119	0.0005	(0.0008)	....	40 x 15	CC		
3.6.4 Cu/Be/Co																					Size (mm)	Form		
		Sn	Pb	Zn	Fe	Ni	Al	Si	Co	P	Ag	Mg	Zr	Be	Cu	Ø x H								
CRM	36X CBC2 F	(0.001)	(0.001)	0.0018	0.0076	0.121	0.0097	0.0257	2.22	0.0067	0.0013	0.0036	(0.001)	0.439	97.15	40 x 15	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 E	0.002	0.329	0.003	0.0274	0.0080	0.0258	0.048	0.215	0.0027	....	0.0035	....	1.869	97.47	40 x 15	W							
CRM	36X CBC5 B	0.0013	0.0015	0.0010	0.0108	1.905	0.0104	0.004	0.0084	....	0.0011	0.0009	....	0.404	97.61	41 x 15	W							
CRM	36X CBC6 A	0.0041	0.0014	0.0010	0.0243	1.132	0.0490	0.0263	1.045	0.0016	0.0015	0.0070	0.0553	0.507	97.11	40 x 15	W							

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3.6.5 Cu/Cr		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	S	P	Co	Cr	Ag	As	Mg	Zr	Cu	Size (mm) Ø x H	Form
CRM	36X CCR1 E	0.0018	0.0008	(0.001)	0.0170	0.0111	0.0013	....	....	0.0016	0.0223	....	0.652	0.0042	0.0007	(0.0003)	0.079	99.24	50 x 17	W
CRM	36X 274 B	(0.001)	0.0011	(0.001)	0.0164	2.59	0.0011	0.645	0.0004	....	0.0015	0.0042	0.333	0.0016	....	....	....	96.44	40 x 15	W

  

3.7.1 Various Copper Alloys		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	S	Cr	Co	C	Cu	Size (mm) Ø x H	Form
CRM	37X 218 B	0.0032	0.0014	0.0054	0.0209	1.892	0.0018	0.564	0.0022	....	....	0.176	....	....	97.29	38 x 15	W
CRM	37X 65500 A	0.0426	0.0034	0.0353	0.035	0.0059	0.0028	3.13	0.960	0.0046	0.0010	0.0029	....	(0.004)	95.75	38 x 15	W

  

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

  

3.9 Residuals in Pure Copper		Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Bi	Sb	All Elements ppm										Size (mm) Ø x H	Form		
		Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Bi	Sb	P	S	Co	Cr	Cd	Ag	Au	Se	Te	In	Mg	Ge	Size (mm) Ø x H	Form
CRM	39X 17866 AG	1710	280	470	(20)	608	(10)	547	17	128	65	16	520	325	....	52	77	24	72	224	364	....	....	40 x 15	CC
CRM	39X 17867 AD	1150	196	325	....	410	....	387	....	153	143	15	410	194	....	110	79	75	67	78	130	41	62	40 x 15	CC
CRM	39X 17868 AH **	310	190	5400	220	280	100	140	190	230	320	110	120	50	250	270	200	....	110	270	190	100	260	40 x 15	CC
CRM	39X 17869 AG **	690	700	250	365	110	180	100	320	400	390	250	60	80	180	26	400	22	210	380	25	100	40	40 x 15	CC
CRM	39X 17870 AH	54	328	285	740	555	1440	23	596	494	415	535	18	21	12	22	556	17	118	500	102	330	....	40 x 15	CC
CRM	39X 17871 C	48	65	27	(6)	344	44	207	....	530	124	....	54	9	....	58	249	37	287	82	47	Sold Out	....	40 x 15	CC
		** provisional values																							
CRM	39X 27866 A	448	54	287	30	487	....	383	....	47	52	147	469	308	12	139	57	16	28	32	437	....	29	38 x 20	W
CRM	39X 27869 A	106	225	65	30	190	....	98	....	376	362	119	112	36	(2)	28	349	80	127	153	90	....	123	38 x 20	W

  

		Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Bi	Sb	All Elements %										Size (mm) Ø x H	Form
		Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Bi	Sb	P	S	Co	Cr	Cd	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 B	0.0247	0.059	0.0160	0.0052	0.0280	....	0.0197	0.0005	0.0254	0.0202	0.0009	0.0095	0.0004	(0.0003)	0.0023	0.0291	....	0.0143	0.0144	0.0040	40 x 15	CC

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

  

4.1.1 Zinc with Impurities																		Size (mm)	Form	
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Tl	As	Cr	Co	Ag	Ti	Ø x H	
CRM	41X 0336Zn1 L	1.007	0.0062	0.0177	0.0067	0.0106	0.0051	0.0088	0.0009	0.0102	....	....	....	0.0008	....	....	....	....	50 x 20	C
CRM	41X 0336Zn2 N	0.492	0.0568	1.000	0.147	0.0283	0.0547	0.216	0.0047	0.0227	0.0043	0.0019	0.0016	....	....	0.0190	0.0131	....	50 x 20	C
CRM	41X 0336Zn3 K	0.0282	0.147	0.336	0.341	0.0456	0.127	0.353	0.0022	0.0106	....	....	....	0.0003	....	....	....	....	50 x 20	C
CRM	41X 0336Zn5 A	0.91	<0.0005	0.035	0.056	0.016	0.21	0.023	(0.0005)	(0.0001)	(0.001)	0.008	....	....	....	....	....	....	50 x 20	C
CRM	41X 4380Zn1 D	0.0618	0.0032	0.039	0.394	0.0276	0.0510	0.178	0.0058	0.0006	0.0021	0.0019	....	....	0.0007	....	0.0012	0.0004	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	....	....	0.0027	....	....	0.0251	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	....	....	0.0029	....	....	0.125	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	....	....	0.0029	0.0018	....	(0.0003)	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	....	....	0.0075	....	....	0.339	50 x 20	C
CRM	41X 4380Zn6 D	0.427	0.0044	0.0260	0.0466	0.0307	0.101	0.0327	0.0073	0.200	0.0047	(0.002)	....	....	0.0064	0.0091	0.0030	0.0029	50 x 20	C
CRM	41X 4380Zn7 D	1.18	0.0029	0.277	0.0156	0.0018	0.0036	0.0133	0.0120	0.0036	....	0.086	....	....	....	....	....	0.0065	50 x 20	C
CRM	41X 4380Zn8 D	0.700	0.0054	0.232	0.0097	0.0074	0.0177	0.0208	0.0445	0.0081	0.0156	0.0151	....	....	(0.0001)	....	0.0140	0.0020	50 x 20	C
CRM	41X 4380Zn9 A	0.0139	0.0153	0.295	0.0032	0.0113	0.0008	0.0416	0.0009	0.0018	0.00046	0.0060	....	....	0.0015	....	....	....	50 x 20	C
CRM	41X 4380Zn10 A	0.0043	0.184	0.0004	0.0007	0.49	0.0014	0.0022	0.063	....	....	0.0005	....	....	0.117	....	....	....	50 x 18	C

  

4.1.2 Galvanising Alloys																		Size (mm)	Form	
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	As	Cr	Co	V	Sr	Ø x H		
CRM	41X GLV1 E **	0.017	0.0022	0.285	0.009	0.0005	0.005	0.018	0.0022	....	0.005	0.0015	<0.001	....	0.0008	....	....	** provisional values	50 x 20	C
CRM	41X GLV2 C	0.0248	0.0006	0.0905	0.0037	0.0155	0.0097	0.0057	0.0053	0.0218	0.0158	0.0049	0.0017	0.0015	0.0055	....	....	....	50 x 20	C
CRM	41X GLV3 C	0.0249	0.0014	0.326	0.0183	0.0014	0.0031	0.0332	0.0335	0.0185	0.0031	0.0555	0.0036	0.0003	0.0034	....	....	....	50 x 20	C
CRM	41X GLV4 D	0.0058	0.0025	0.503	0.0013	0.008	0.0035	0.0246	0.0078	0.164	0.0047	0.0235	0.0002	0.0010	0.0061	....	....	....	50 x 20	C
CRM	41X GLV5 B	0.0166	0.0014	0.0139	0.0136	0.0443	0.0172	0.0103	0.0025	....	0.0098	0.148	0.00044	....	0.0011	....	....	....	50 x 20	C
CRM	41X GLV6 B	0.097	....	0.441	0.0051	0.0020	0.0155	0.0371	0.0007	0.00235	0.0254	0.0122	....	0.0007	0.0061	....	....	....	50 x 20	C
CRM	41X GLV7 A	0.082	....	0.399	0.00056	0.0031	(0.0006)	0.023	0.0060	0.0025	0.0108	0.0031	0.0016	0.0010	(0.0001)	<0.0001	....	....	50 x 20	C
CRM	41X GLV8 B	0.0039	0.0009	0.258	0.0004	0.0080	0.0005	0.0111	0.0023	0.0035	0.0006	0.0062	....	(0.0001)	....	....	....	....	50 x 20	C
CRM	41X GLV9 A	0.0043	0.0014	0.547	0.0028	0.0039	0.0028	0.0037	0.0009	0.0027	0.0019	0.0048	....	....	0.0005	....	....	....	50 x 20	C
CRM	41X GLV10 A	0.0066	0.0040	0.969	0.0030	0.0051	0.0062	0.0073	0.0022	0.0062	0.0031	0.0009	....	....	0.0002	....	....	....	50 x 20	C
CRM	41X GLV11 A	0.0057	0.0009	0.463	0.0010	0.0027	0.0009	0.0017	0.0008	0.0008	0.0009	0.168	....	....	(0.0001)	....	(0.0004)	....	50 x 20	C

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4.1.3 Zn/Mn, Zn/Mg, Zn/Ni & Zn/Sb Binaries												Size (mm)	Form
	Pb	Al	Cd	Fe	Cu	Ni	Mn	Mg	Sb	Sn	Bi	Ø x H	
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
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												Size (mm)	Form
	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Ti	Cr	Ø x H	
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						Size (mm)	Form
	Pb	Cd	Hg	Cr		Ø x H	
CRM 41X ZSC1 A	0.0621	0.0288	0.026	0.0039		50 x 20	C
CRM 41X ZSC2 A	0.111	0.0016	0.0053	0.0036		50 x 20	C
CRM 41X ZSC3 A	0.0273	0.119	0.0021	0.0148		50 x 20	C
CRM 41X ZSC4 A	0.156	0.0131	0.050	0.0299		50 x 20	C
CRM 41X ZSC6 A	0.0077	0.215	0.029	<0.0002		50 x 20	C

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4.2 Zn/Al		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Sb	Cr	Si	Ti	In	Ce	La	Zr	Size (mm) Ø x H	Form
CRM	42X Z1 J	0.0017	0.0009	4.66	0.0014	0.013	0.0007	0.0050	0.0014	0.0038	0.0011	0.0004	(0.002)	....	....	0.0011	(0.0008)	....	50 x 20	C
CRM	42X Z2 K	0.0029	0.0146	3.79	0.0017	0.0055	0.0011	0.0300	0.0155	0.0274	0.0010	(0.0001)	0.0011	....	....	0.0055	0.0026	....	50 x 20	C
CRM	42X Z3 J	0.0068	0.0503	3.84	0.0065	0.0145	0.0048	0.135	0.0071	0.0090	0.0006	....	(0.002)	....	....	0.0032	0.0013	....	50 x 20	C
CRM	42X Z4 J	0.0133	0.0663	3.52	0.0065	0.019	0.0052	0.0752	0.0170	0.0083	....	(0.0002)	0.006	....	0.0025	0.0361	0.0183	....	50 x 20	C
CRM	42X Z5 M	0.0030	0.0508	4.33	0.0013	(0.05)	0.0012	0.111	0.041	0.0049	....	(0.0002)	....	0.0017	0.0047	0.0328	0.0150	....	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 C	0.0097	0.0095	4.39	0.030	0.027	0.012	0.0249	0.0067	0.0045	....	(0.0001)	0.006	....	....	0.072	0.061	....	50 x 20	C
CRM	42X Z8 A	0.0025	0.0033	7.03	0.0003	0.013	(0.002)	0.0215	0.0019	0.0014	....	(0.0002)	0.013	....	....	0.0081	0.0079	....	50 x 20	C
CRM	42X Z9 A	0.0021	0.0464	5.58	0.0054	0.032	(0.0004)	0.0070	(0.0003)	0.0006	....	....	(0.004)	....	....	0.0047	0.0044	0.011	50 x 20	C
CRM	42X Z10 A **	0.006	0.0021	4.90	0.0032	0.0008	0.0035	0.31	0.010	0.018	<0.001	....	....	<0.001	0.0022	....	....	** provisional values	50 x 20	C
CRM	42X Z11 A	0.0058	0.0329	3.19	0.0020	(0.036)	0.0017	0.093	0.0241	0.0196	0.0047	0.0016	....	0.0047	0.0037	0.0014	(0.0009)	....	50 x 20	C
CRM	42X Z12 A	0.0079	0.0488	4.72	0.00277	0.046	0.0022	0.156	0.0413	0.0483	0.0070	0.00063	....	0.0076	0.0068	0.0116	0.0084	....	50 x 20	C
CRM	42X Z15 A	0.0074	0.0026	9.99	0.0023	0.026	0.0006	0.0028	0.0017	0.0037	0.0006	0.0003	....	....	0.0024	....	....	....	50 x 20	C
CRM	42X Z16 A	0.0090	0.105	12.28	0.0045	0.033	0.0034	0.235	0.0039	0.0028	....	0.0007	0.011	(0.003)	0.0051	....	....	....	50 x 20	C

4.3 Zn/Al/Cu		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Cr	Si	Be	Ag	Sr	Size (mm) Ø x H	Form
CRM	43X Z1 L **	0.001	0.034	4.4	<0.001	0.0008	<0.001	0.72	0.0067	0.007	<0.001	<0.001	....	....	....	....	0.004	** provisional values	50 x 20	C
CRM	43X Z2 P **	0.005	0.063	4.05	0.0032	0.0013	0.003	1.02	0.010	0.015	0.005	0.0012	....	....	....	....	0.010	** provisional values	50 x 20	C
CRM	43X Z3 M	0.0077	0.114	3.40	0.0109	(0.042)	0.0058	1.499	0.0062	0.0013	0.0092	0.0029	....	0.0046	....	....	....	....	50 x 20	C
CRM	43X Z4 C	0.0062	0.0480	4.79	0.0033	0.0017	0.0030	2.69	0.0258	0.0153	0.0113	(0.002)	....	....	(0.001)	....	....	....	50 x 20	C
CRM	43X Z5 B	0.0029	0.0144	3.164	0.0030	0.10	(0.0004)	5.92	0.0056	0.0061	0.0148	0.065	....	....	....	....	0.0254	(0.0013)	50 x 20	C
CRM	43X Z6 B	0.005	0.0238	4.51	0.0031	0.024	0.0052	2.85	0.0027	0.0022	0.0054	0.0044	....	0.0005	....	....	....	....	50 x 20	C
CRM	43X Z7 A	0.0058	0.062	3.68	0.00092	0.029	0.0031	3.14	0.0005	0.0025	(0.001)	0.0016	0.067	0.0003	....	0.0194	....	Beric type Alloy	50 x 20	C
CRM	43X Z8 A	0.0027	0.00155	2.51	0.00090	(0.002)	(0.0005)	0.481	0.00033	0.00021	....	....	....	0.00024	....	....	....	....	50 x 20	C
CRM	43X Z9 A	0.0078	0.0472	3.17	0.0034	0.073	0.0020	4.82	0.0027	0.0108	0.0033	0.0033	0.0012	0.0034	....	0.0010	....	....	50 x 20	C
CRM	43X Z10 A	0.0046	0.0403	3.99	0.0014	0.007	0.0012	2.97	0.0036	0.0050	....	....	....	0.0003	0.009	....	....	....	50 x 20	C

# 4. Zinc Base

Updated: 18th January 2018

Blocks / Discs

4.3 Zn/Al/Cu (continued)																Size (mm)	Form	
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Cr	Si	Sr	Ø x H	
CRM	43X Z11 F	0.0202	0.0357	11.12	0.0175	0.015	0.0145	0.335	0.0014	0.0032	0.0046	0.0009	....	(0.0003)	0.0013	....	50 x 20	C
CRM	43X Z12 E	0.0041	0.0287	10.38	0.0045	0.037	0.0017	0.791	0.0033	0.0026	0.0021	0.0032	0.0050	0.0008	(0.002)	....	50 x 20	C
CRM	43X Z13 E	0.0086	0.0198	9.01	0.0072	0.0045	0.0056	1.113	0.0036	0.0025	0.0014	0.0020	....	0.0004	(0.001)	....	50 x 20	C
CRM	43X Z14 F	0.0019	0.0123	7.98	0.00567	0.0025	0.0005	1.238	0.0058	<0.001	0.0106	0.0105	<0.001	0.0037	<0.001	....	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 D	0.0087	0.0142	23.9	0.0010	0.0067	0.0007	2.68	0.0021	0.0022	....	....	....	....	0.0191	(0.0005)	50 x 20	C
CRM	43X Z22 D	0.0053	0.0099	27.4	0.0043	0.068	0.0020	2.11	0.0101	0.0057	....	....	0.0073	0.0010	0.019	....	50 x 20	C
CRM	43X Z23 E	0.0112	0.0242	30.7	0.0042	0.055	0.0115	3.22	0.0236	0.0090	....	....	0.0045	0.0147	0.077	....	50 x 20	C
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Cr	Si	Ce	La			Size (mm)	Form
																Ø x H		
CRM	43X SC1 A	0.0150	0.740	3.75	0.0011	0.073	0.0082	1.903	0.0161	0.0201	0.0082	0.022	....	....			50 x 20	C
CRM	43X SC2 A	0.0097	0.498	3.41	0.0018	0.046	0.0031	4.80	0.0096	0.0183	0.023	0.0133	....	....			50 x 20	C
CRM	43X SC3 A	0.0066	0.257	3.14	0.0028	0.018	0.0078	3.03	0.0261	0.0337	0.0108	0.022	....	....			50 x 20	C
CRM	43X SC4 A	0.0064	0.093	4.35	0.0058	0.022	0.0056	1.122	0.0249	0.044	0.009	0.022	....	....			50 x 20	C
CRM	43X GALF1 A	0.0505	0.0999	4.68	0.0499	0.061	0.0514	4.39	....	....	....	....	0.0569	0.0284			50 x 20	C
CRM	43X GALF2 A	0.0050	0.0504	5.40	0.0043	0.032	0.0040	0.0585	....	....	....	....	0.0318	0.0158			50 x 20	C
CRM	43X GALF3 A	0.0032	0.0099	8.37	0.0018	0.018	0.0025	0.507	....	....	....	....	0.0152	0.0076			50 x 20	C
CRM	43X GALF4 A	0.0122	0.0062	10.71	0.0108	0.074	0.0110	2.470	....	....	....	....	0.079	0.041			50 x 20	C
CRM	43X GALF5 A	0.0084	0.0016	15.03	0.0080	(0.072)	0.0081	0.0114	....	....	....	....	0.0041	0.0019			50 x 20	C
4.5 Zn/Al 'Galvalume'		Zn	Si	Fe	Cu	Ni	Sn	Pb	Mg	Ca	Ti	Li	Sr	Al			Size (mm)	Form
																Ø x H		
	45X ZnAl3 B	45.2	0.606	0.047	0.0088	....	0.0034	0.0062	(0.0002)	0.0004	0.020	(0.0004)	....	(bal)			55 x 6	CC
	45X ZnAl7 C	47.5	1.59	0.077	0.0050	0.0049	0.0096	0.010	0.0070	....	0.0049	....	(0.0004)	(bal)			55 x 6	CC
	45X ZnAl7 D	43.6	1.56	0.170	0.0100	0.0032	(0.0005)	0.0042	0.0005	....	0.028	....	(0.007)	(bal)			55 x 6	CC
Note these are not CRMs																		



# 5. Aluminium Base

Updated: 18th January 2018

Blocks / Discs

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)	....	....	....	....	40 x 15	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 C **	0.048	0.055	0.025	0.083	0.077	0.033	0.200	0.021	0.028	0.030	0.060	0.028	0.011	0.022	0.021	0.025	0.007	0.027	0.025	0.001	0.001	50 x 20	C
CRM	51X G00H5 B	0.227	0.110	0.739	0.490	0.196	0.161	0.479	0.130	0.201	0.100	0.0249	0.0005	0.045	0.0295	0.11	0.130	0.056	0.0103	0.0122	(0.0005)	<0.001	50 x 20	C
CRM	51X A1350 A	0.0016	0.0032	0.0232	0.0968	0.0019	0.0071	0.0148	(0.001)	0.0005	0.0029	0.0024	0.0007	0.0005	0.0042	....	....	....	....	0.0137	....	....	50 x 20	W
5.4 Al/Si		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Cd	Sr	Ga	Zr	Li	Ca	Size (mm) Ø x H	Form
CRM	54X G231H1 E	1.141	0.336	10.52	0.945	0.0568	0.349	0.726	0.096	0.156	0.0233	0.107	....	....	0.0018	....	....	(0.009)	....	....	....	....	50 x 15	C
CRM	54X G231H1 F **	1.05	0.35	9.5	0.90	0.011	0.30	0.62	0.15	0.165	0.030	0.115	....	....	<0.001	....	....	0.0042	** provisional values	0.007	....	....	65 x 30	HIP
CRM	54X G231H2 C	0.868	0.159	11.6	0.131	0.191	0.171	0.397	0.082	0.127	0.085	0.0469	....	....	0.0146	....	....	(0.0006)	....	....	....	....	50 x 15	C
CRM	54X G231H3 C	0.420	0.039	13.17	0.393	0.477	0.0932	0.130	0.0080	0.0139	0.128	0.0630	....	....	0.0003	....	....	....	....	....	....	....	50 x 15	C
CRM	54X GS20J1 E	0.308	0.186	18.8	0.79	0.097	0.159	0.43	0.120	0.130	0.129	0.115	....	....	(0.0001)	....	....	<0.0001	....	....	....	....	40x13 or 50x17	C
CRM	54X GS20J2 E	0.168	0.178	18.7	0.56	0.059	0.091	0.305	0.066	0.075	0.082	0.066	....	....	<0.0001	....	....	<0.0001	....	....	....	....	40x13 or 50x17	C
CRM	54X GS20J3 D	0.079	0.118	23.9	0.328	0.302	(0.003)	0.030	0.077	(0.012)	0.0055	0.0017	....	....	<0.0001	....	....	<0.0001	....	....	....	....	40x13 or 50x17	C
CRM	54X GS20J4 D	(0.0037)	0.0050	25.5	0.227	0.146	0.265	0.224	0.0014	(0.0021)	0.107	0.194	....	....	0.0017	....	....	(0.002)	....	....	....	....	40x13 or 50x17	C
CRM	54X G06H1 R	0.630	0.489	8.43	1.08	0.022	0.611	0.60	0.082	0.133	0.248	0.084	0.015	0.010	....	0.006	0.0074	....	....	....	<0.001	....	40 x 13	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)	....	40 x 13	C
CRM	54X G06H3 P	0.322	0.202	9.94	0.510	0.345	0.214	0.0270	0.0203	0.0488	0.079	0.0530	0.0208	0.0278	....	0.0067	0.0048	....	....	....	....	....	50 x 15	C
CRM	54X G06H4 R	0.128	0.123	11.96	0.262	0.502	0.124	0.124	0.040	0.0057	0.121	0.0132	0.117	0.0604	....	....	0.0028	0.0024	0.0057	....	0.0018	0.0024	65 x 20	HIP
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)	....	40 x 13	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	....	<0.001	....	<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)	....	....	40 x 13	C
CRM	54X G13H4 P	0.688	0.644	12.41	0.534	0.227	0.789	0.443	0.062	0.060	0.109	0.0283	0.0048	....	0.0048	....	....	0.045	....	0.0165	Sold Out	....	50 x 15	E
CRM	54X G13H4 Q	0.688	0.644	12.41	0.534	0.227	0.789	0.443	0.062	0.060	0.109	0.283	0.0048	....	0.0018	....	....	(0.037)	....	0.0165	....	(0.0015)	~50 x 15	C
CRM	54X G13H5 L	0.216	0.092	13.26	0.715	0.119	0.115	0.070	0.013	0.009	0.032	0.044	0.0016	....	0.0049	....	....	(0.033)	....	....	....	....	50 x 15	C
CRM	54X G25D1 L	0.010	0.67	3.37	0.721	0.815	0.262	0.359	(0.0033)	<0.005	0.099	0.140	....	0.016	0.0011	0.112	....	....	....	(0.004)	....	....	40x15 or 50x20	C
CRM	54X G25D2 K	0.130	0.59	3.93	0.576	0.479	0.139	0.169	0.073	0.042	0.152	0.150	0.105	(0.006)	0.049	0.22	0.011	....	....	....	....	....	40x15 or 50x20	C
CRM	54X G25D3 S	0.119	0.386	6.29	0.379	0.253	0.0353	0.102	0.050	0.046	0.067	0.0413	0.0086	0.0047	0.0022	....	....	(0.045)	....	....	....	....	50 x 15	C
CRM	54X G25D4 P	0.148	0.151	7.22	0.14	0.195	0.0665	0.207	0.142	0.076	0.0978	0.043	0.0204	0.0542	0.0067	0.0705	0.0070	....	....	....	....	....	50 x 15	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	....	....	....	....	....	....	Low Stock	40 x 15	C
CRM	54X G25D6 A	0.0021	0.715	5.97	0.080	0.0096	0.0044	0.0050	(0.003)	(0.002)	0.0071	0.0009	....	0.0133	0.0220	....	....	....	0.0027	....	....	....	50 x 15	C
CRM	54X G25DX A	0.0200	0.402	7.20	0.0792	0.0302	0.0084	0.0354	0.0018	0.0011	0.1519	0.0053	....	0.0080	....	....	....	....	0.0209	0.0065	....	0.0048	65 x 30	HIP

# 5. Aluminium Base

Updated: 18th January 2018

Blocks / Discs

5.5 Al/Si/Cu		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Bi	Sb	Zr	Be	Li	Size (mm) Ø x H	Form			
CRM	55X G900J1 F	0.91	0.966	0.127	0.549	0.0133	0.0048	0.152	0.202	0.348	0.0056	0.0012	....	0.0108	0.071	....	0.0236	0.0011	....	50 x 15	C			
CRM	55X G900J2 G	0.726	0.594	0.227	0.504	0.192	0.083	0.295	0.217	0.240	0.079	0.080	....	....	0.366	0.0374	0.0637	0.0035	(0.007)	50 x 15	C			
	55X G900J3 F	0.41	0.38	0.82	0.29	0.56	0.21	0.39	0.14	0.15	0.16	0.25	0.070	....	....	(0.029)	....	....	....	40 x 15	C			
CRM	55X G900J4 F	0.249	0.459	1.39	0.306	0.75	0.351	0.149	0.088	0.153	0.171	0.343	....	(0.010)	0.285	....	....	....	....	40x15 or 50x20	C			
	55X G900J5 E	0.024	0.009	1.65	0.18	1.16	0.41	0.023	0.014	0.006	0.33	0.46	....	....	....	....	....	....	....	40x15 or 50x20	C			
		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Sb	Ag	Ca	P	Cd	Zr	Size (mm) Ø x H	Form
CRM	55X G02D5 A	0.406	0.331	10.03	0.557	0.391	0.0652	0.131	0.067	0.051	0.0180	0.760	0.0752	0.0129	0.0037	....	0.031	....	....	....	0.0182	....	50 x 15	C
CRM	55X G02D6 K	0.510	0.376	11.55	0.528	0.300	0.0511	0.577	0.0580	0.0355	0.055	0.366	0.0195	0.0182	0.0026	....	0.0150	....	....	....	0.0115	....	50 x 15	C
CRM	55X G02D7 P **	1.48	0.35	10.2	1.00	0.49	0.21	0.90	0.35	0.165	0.215	0.057	0.039	0.025	<0.001	....	0.0015	....	....	....	0.0007	....	65 x 30	HIP
CRM	55X G02D8 M	2.481	0.1517	9.24	0.776	0.256	0.406	1.415	0.201	0.201	0.1535	0.0756	0.0107	0.0536	0.0008	....	0.0112	....	....	....	0.0029	....	65 x 30	HIP
CRM	55X G02D9 K	3.51	0.093	8.49	0.423	0.269	0.494	2.48	0.10	0.187	0.096	0.185	0.0074	0.0223	0.0035	0.033	0.049	....	....	....	0.0012	....	50 x 15	C
CRM	55X G02D10 L	4.59	0.0206	7.33	0.975	0.0524	0.645	2.77	0.022	0.138	0.0302	0.128	0.0544	0.0341	0.0389	....	0.0086	....	....	....	0.0012	....	50 x 15	C
CRM	55X G02DX B **	2.18	0.110	9.4	0.77	0.245	0.205	1.00	0.031	0.028	0.055	0.031	0.009	0.012	....	0.017	0.002	0.0045	0.002	0.002	0.0007	0.010	65 x 30	HIP
CRM	55X G02DY A	3.67	0.309	11.31	0.591	0.107	0.109	0.153	0.0620	0.0747	0.0687	0.063	0.0195	0.0250	0.0012	0.0100	....	0.0102	(0.001)	(0.01)	0.0032	0.0218	65 x 30	HIP
CRM	55X G04HX A	3.40	0.063	5.78	0.280	0.193	0.302	0.492	0.0125	0.0112	0.176	0.0165	0.0060	0.0183	0.0006	0.0058	0.0053	0.0030	0.0011	(0.002)	0.0048	0.0278	65 x 30	HIP
	** provisional values																							
		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Bi	Ca	Cd	Sr	Ga	Na	Li	P	Size (mm) Ø x H	Form
CRM	55X G04H2 D	3.21	0.360	5.22	0.349	0.203	0.0104	0.185	0.0159	0.0049	0.0553	0.0108	....	....	....	0.0010	....	0.0025	....	(0.0009)	....	(0.0020)	45 x 20	C
CRM	55X G04H3 N	3.67	0.173	5.56	0.643	0.362	0.0100	0.507	0.025	0.0047	0.109	0.0136	....	....	....	0.0010	....	0.0022	....	(0.0009)	....	0.0021	45 x 20	C
CRM	55X G04H6 E	5.56	0.151	3.30	0.83	0.028	0.77	0.199	0.221	0.181	0.126	0.126	0.0024	0.014	0.029	....	0.0039	....	....	....	0.019	....	40x15 or 50x20	C
CRM	55X G04H7 E	4.65	0.263	4.43	0.633	0.212	0.500	0.537	0.227	0.174	0.0476	0.035	0.030	0.0057	0.022	....	0.0073	....	....	....	0.0066	....	40x15 or 50x20	C
CRM	55X G04H8 J	2.86	0.126	4.96	0.529	0.255	0.197	0.998	0.128	0.0809	0.179	0.0301	0.0160	0.0214	0.007	....	0.0055	....	....	....	0.0033	....	50 x 15	C
CRM	55X G04H9 E	2.70	0.043	6.60	0.393	0.436	0.160	1.70	0.101	0.0563	0.117	0.0172	0.0114	0.0188	(0.0037)	....	0.0018	....	....	....	(0.0028)	....	50 x 15	C
CRM	55X G04H10 D	1.36	0.004	7.21	0.512	0.532	0.0232	2.26	(0.0074)	<0.01	0.0097	0.090	0.043	0.008	0.029	....	....	....	0.011	....	(0.001)	....	50 x 15	C

# 5. Aluminium Base

Updated: 18th January 2018

Blocks / Discs

5.5 Al/Si/Cu (continued)																	Size (mm)	Form				
		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Bi	Cd	Ø x H					
	<b>55X G26H1 F</b>	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	<b>55X G26H2 F</b>	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)	40 x 15	C				
	<b>55X G26H3 F</b>	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	<b>55X G26H4 D</b>	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	<b>55X G26H5 E</b>	1.40	1.41	11.38	0.199	0.495	1.13	0.008	0.0108	0.035	0.018	0.0394	0.015	0.0169	0.0201	....	50 x 20	C				
		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Sb	Cd	P	Bi	Ca	Size (mm)	Form
																				Ø x H		
	<b>55X G28J1 Z</b>	1.82	1.26	14.33	0.678	0.024	2.47	0.258	0.0036	0.182	0.104	0.319	0.119	0.0095	....	....	....	(0.0048)	....	....	40x13 or 50x17	C
	<b>55X G28J2 T</b>	1.44	0.0902	15.04	0.516	0.231	1.63	0.292	0.058	0.136	0.065	0.088	0.0029	0.0221	(0.0002)	0.030	0.0023	....	....	....	50 x 20	C
	<b>55X G28J3 U</b>	1.45	1.30	21.6	0.43	0.33	1.47	0.30	0.07	0.11	0.07	0.09	....	....	....	....	....	....	....	....	40x13 or 50x17	C
	<b>55X G28J4 T</b>	0.82	0.60	20.4	0.52	0.45	0.84	0.32	0.094	0.041	0.28	0.040	0.079	0.010	....	....	....	(0.002)	....	....	40x13 or 50x17	C
	<b>55X G28J5 Y</b>	0.69	0.73	27.6	0.26	0.67	0.43	0.015	0.18	0.03	0.24	0.009	....	....	....	....	....	<0.005	....	....	40 x 13	C
CRM	<b>55X G28J6 A</b>	(0.035)	(0.032)	27.15	(0.26)	(0.12)	<0.01	(0.052)	(0.008)	<0.002	(0.024)	(0.006)	....	....	....	(0.007)	(0.038)	....	....	....	65 x 30	SC
CRM	<b>55X A30J1 H</b>	5.75	1.03	14.6	1.07	0.132	0.014	0.233	0.135	0.006	0.194	0.031	0.091	0.0114	0.0043	....	....	(0.004)	0.015	....	40 x 15	C
CRM	<b>55X A30J4 G</b>	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	<b>55X A30J5 A</b>	4.51	0.722	17.08	0.727	0.213	0.209	0.693	0.084	0.0776	0.070	0.069	0.0396	....	0.0029	....	....	0.016	0.0100	0.0053	65 x 30	HIP

# 5. Aluminium Base

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5.6 Al/Cu		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Bi	Sb	Zr	Ag	Li	Ca	Size (mm) Ø x H	Form
CRM	56X G14H4 C	3.82	1.72	0.504	0.251	0.122	2.37	0.091	0.050	0.037	0.069	0.0309	0.0288	0.0252	....	....	....	....	....	....	....	50 x 20	C
CRM	56X G250J1 C	3.82	0.075	0.26	0.41	0.040	1.33	0.28	0.101	0.125	0.008	0.0067	0.008	0.102	<0.0005	....	(0.003)	(0.003)	....	....	....	40x15 or 50x20	C
CRM	56X G250J2 D	4.81	0.060	0.211	0.346	0.225	1.10	0.155	(0.0016)	(0.004)	0.210	0.063	0.195	0.018	....	....	0.324	0.247	....	....	....	40x15 or 50x20	C
CRM	56X G250J3 C	4.90	(0.001)	0.11	0.079	0.278	0.92	0.103	0.024	0.031	0.162	0.024	0.264	0.036	0.0014	....	0.35	0.275	....	....	....	40x13 or 50x18	C
CRM	56X G250J5 D	4.36	0.022	0.205	0.535	0.150	1.77	0.086	0.076	0.097	0.051	0.047	0.34	0.021	0.0022	....	0.076	0.22	....	....	....	40x15 or 50x20	C
CRM	56 X G2000J1 C	3.29	1.70	0.099	0.086	1.27	0.0046	0.864	0.022	0.099	0.0053	0.0007	0.00044	0.0097	....	0.008	....	0.293	0.0048	(0.0001)	....	40x15 or 50x20	C
CRM	56 X G2000J2 C	3.73	1.292	0.517	1.38	0.937	0.149	0.711	1.114	0.092	0.096	0.0200	0.056	0.170	0.0054	0.078	....	0.188	0.0446	0.0112	....	50 x 20	C
CRM	56 X G2000J3 C	4.78	1.018	0.773	0.382	0.589	0.091	0.114	0.375	0.0157	0.196	0.0573	0.108	0.0099	0.0039	0.152	....	0.0268	0.0105	0.0019	....	40x15 or 50x20	C
CRM	56 X G2000J4 C	5.02	0.505	1.33	0.705	0.271	0.089	0.0131	0.879	0.0092	0.135	0.053	0.0247	0.0132	....	0.0049	....	0.105	0.0122	0.0025	....	40x15 or 50x20	C
CRM	56 X G2000J5 C	5.52	0.39	0.321	0.98	0.007	0.204	0.368	0.69	<0.005	0.063	0.0078	0.077	0.027	0.0050	0.136	....	0.064	0.234	0.009	....	40x15 or 50x20	C
CRM	56X G2007 A	3.699	0.663	0.328	0.252	0.605	0.0087	0.386	0.889	0.0676	0.0236	0.0354	....	....	....	0.147	....	0.0020	....	....	0.0051	50 x 20	W
CRM	56X G2011 A	5.70	0.0102	0.089	0.632	0.0183	0.0044	0.0188	0.332	0.0037	0.0121	0.0031	....	....	....	0.527	....	....	....	....	....	50 x 20	W
CRM	56X G2014 A	4.41	0.453	0.611	0.243	0.572	0.0070	0.195	0.0110	(0.0047)	0.0244	0.0766	....	....	....	0.0013	....	0.135	....	....	....	50 x 20	W
CRM	56X G2024 A	4.34	1.509	0.122	0.178	0.658	0.0055	0.0446	0.0010	0.0010	0.0099	0.0389	....	0.0070	....	....	....	0.0053	....	....	....	50 x 20	W
CRM	56X G2618 A	2.45	1.625	0.175	1.057	0.0394	0.953	0.0139	0.0020	0.0007	0.069	0.0165	....	0.0162	....	....	....	0.0011	....	....	0.0020	50 x 20	W

  

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

  

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

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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)	....	....	....	40 x 15	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	B	Size (mm) Ø x H	Form	
CRM	59X G77J1 G	2.810	4.52	0.1015	0.209	0.810	0.205	2.289	0.158	0.148	0.251	0.297	0.0104	0.0064	0.0578	0.0351	0.010	0.0484	....	....	65 x 30	HIP	
CRM	59X G77J2 E	2.37	3.04	0.206	0.293	0.239	0.527	3.25	0.127	0.0054	0.0156	0.0966	....	0.0153	....	0.0023	....	0.152	....	....	40x15 or 50x20	C	
CRM	59X G77J3 F	1.30	2.53	0.647	0.70	0.246	0.402	4.72	0.108	0.122	0.148	0.150	0.032	0.0181	0.0297	0.0095	....	0.0144	....	....	50 x 20	C	
CRM	59X G77J4 E	0.81	1.47	0.59	1.04	0.224	0.0037	5.30	0.073	0.219	0.119	0.071	....	0.0067	....	0.00054	....	0.080	....	....	40x15 or 50x20	C	
CRM	59X G77J5 E	0.0203	0.851	0.562	1.37	0.0398	1.002	7.82	0.0194	0.0140	0.0255	0.0301	0.0373	0.052	....	0.0142	....	0.0194	0.0036	....	50 x 15	C	
CRM	59X G77J6 B	1.08	2.60	0.094	0.293	0.0318	0.0248	12.02	0.0123	0.0267	0.020	0.0127	0.0087	0.0107	....	0.0015	....	0.261	0.0079	....	50 x 20	C	
CRM	59X G7020 A	0.0320	1.313	0.049	0.178	0.200	0.0051	4.82	0.0018	0.0022	0.0261	0.192	....	0.0107	....	....	....	0.146	....	0.0025	50 x 20	W	
CRM	59X G7022 A	0.631	2.69	0.126	0.120	0.127	0.0030	5.17	0.0019	0.0006	0.0160	0.140	....	....	....	....	....	0.0016	....	....	50 x 20	W	
CRM	59X G7050 A	2.119	2.030	0.045	0.0745	0.0047	0.0041	6.18	0.0010	0.0010	0.0242	0.0097	....	0.0092	....	....	....	0.100	....	0.0011	50 x 20	W	
CRM	59X G7068 A	1.676	2.70	0.051	0.117	0.0156	0.0056	7.96	0.0020	(0.001)	0.0419	0.0324	....	....	....	....	....	0.088	....	....	50 x 20	W	
CRM	59X G7075 B **	1.22	2.23	0.06	0.125	0.023	0.0025	5.45	0.0015	0.001	0.024	0.19	....	0.0057	....	....	0.010	0.0008	....	(0.002)	** provisional values	50 x 20	W

  

5.11 Al/Mg		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	V	Be	Cd	Ga	Zr	B	Li	Size (mm) Ø x H	Form	
CRM	511X G05H1 J **	0.32	2.0	0.41	0.75	0.012	0.125	0.23	0.015	0.20	0.21	0.24	0.065	....	0.007	0.007	0.002	....	....	** provisional values	65 x 30	HIP
CRM	511X G05H2 H	0.188	3.58	0.299	0.641	0.124	0.157	0.372	0.049	0.0495	0.068	0.172	0.0248	0.0018	0.0023	....	0.0105	0.0083	....	....	50 x 15	C
	511X G05H3 H	0.093	3.97	0.21	0.41	0.40	0.090	0.092	0.107	0.096	0.25	0.095	....	0.0074	....	....	....	....	....	....	40 x 15	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	....	....	....	....	....	....	40 x 15	C
CRM	511X G05H5 G **	0.037	9.00	0.06	0.08	1.26	0.012	0.130	0.24	0.011	0.025	0.030	0.021	<0.001	0.012	....	0.105	0.001	....	** provisional values	50 x 20	C
CRM	511X G10H4 C	0.163	10.24	0.244	0.193	0.228	0.117	0.117	0.080	0.075	0.155	0.083	....	0.0061	....	....	....	....	....	....	50 x 20	C
CRM	511X G10H5 B	0.0227	13.97	0.050	0.057	0.098	0.036	0.029	0.165	0.013	0.0052	0.0017	....	0.0274	....	....	....	....	0.0032	....	50 x 20	C

## 5. Aluminium Base

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5.11 Al/Mg		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	V	Be	Cd	Ga	Li	Mo	Size (mm) Ø x H	Form
CRM	511X G3000B1 C	0.287	0.253	0.788	0.669	0.752	0.142	0.0347	0.145	0.163	0.0327	0.0972	....	0.054	....	....	0.051	....	....	40x15 or 50x20	C
CRM	511X G3000B2 B	0.20	0.68	0.23	0.335	0.81	0.063	0.098	0.137	0.105	0.111	0.200	0.007	<0.005	0.0017	(0.0007)	0.012	0.017	(0.059)	40x15 or 50x20	C
CRM	511X G3000B3 B	0.120	0.80	0.35	0.376	1.06	0.116	0.140	0.062	0.028	0.22	0.056	0.008	<0.005	0.005	(0.001)	0.014	....	(0.093)	40 x 15	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
		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	V	Zr	Bi	Ga			Size (mm) Ø x H	Form	
CRM	511X G5083 A	0.042	3.98	0.22	0.363	0.592	0.0094	0.0488	0.0069	0.0015	0.0294	0.237	0.0092	0.0011	0.0016	....			50 x 20	W	
CRM	511X G6061 A	0.260	0.896	0.696	0.304	0.0721	0.0044	0.0105	0.0014	0.0012	0.0204	0.200	0.0138	....	....	0.0160			50 x 20	W	
CRM	511X G6063 A	0.0014	0.437	0.412	0.185	0.0239	0.0021	0.0062	0.0011	(0.001)	0.011	0.0021	0.0087	....	....	....			50 x 20	W	
CRM	511X G6082 A	0.0184	0.759	0.753	0.081	0.534	0.0035	0.054	0.0012	0.0011	0.0278	0.0606	....	....	....	....			50 x 20	W	
CRM	511X G6082 B	0.0141	0.660	0.910	0.180	0.566	0.0044	0.0016	(0.001)	(0.001)	0.0158	0.0055	....	....	(0.0007)	....			50 x 20	W	
5.11 Al/Mg with Bi, Sn and Pb		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Bi	Zr	Be	V	B	Ga	Size (mm) Ø x H	Form	
CRM	511X G6012	0.114	1.10	1.35	0.285	0.910	0.0154	0.255	1.10	0.040	0.016	0.269	0.552	0.032	0.0072	....	....	....	50 x 17	C	
CRM	511X G6012A	0.351	0.712	0.768	0.71	0.424	0.048	0.060	0.211	1.88	0.197	0.0223	0.701	0.0480	0.0110	....	....	....	50 x 17	C	
CRM	511X G6023 A	0.451	0.512	1.21	0.51	0.556	0.036	0.0260	0.0110	1.037	0.0117	0.0054	0.353	0.0110	0.0020	....	....	....	50 x 17	C	
CRM	511X G6026 A	0.413	0.692	0.898	0.470	0.703	0.0075	0.0775	0.277	0.0043	0.0255	0.0706	0.498	0.0030	....	0.0066	0.0017	0.0092	50 x 20	W	
CRM	511X G6065 A	0.214	1.180	0.495	0.74	0.131	0.0144	0.164	0.0310	0.0251	0.112	0.0759	1.27	0.144	0.0011	....	....	....	50 x 17	C	
CRM	511X G6262 A	0.267	0.881	0.649	0.58	0.163	0.028	0.198	0.0081	0.539	0.045	0.121	0.444	0.0051	0.0011	....	....	....	50 x 17	C	
CRM	511X G6262 B	0.243	0.829	0.557	0.329	0.0737	0.0034	0.0209	0.499	(0.001)	0.0194	0.0666	0.424	....	....	....	....	....	50 x 20	W	
5.14 Al/Mn		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Zr							Size (mm) Ø x H	Form
CRM	514X 9091.1 C	0.046	(0.001)	0.035	0.081	6.93	(0.0026)	0.029	0.016	0.013	0.0017	<0.005	0.184							40 x 13	C

## 5. Aluminium Base

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5.17 Sacrificial Anode		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	In	Ga	Cd	Hg	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				
	517 GO LF30	0.023	....	....	0.01	....	....	4.1	....	....	0.027	....	0.034	0.020	0.028	....	55 x 4	CC				
	517 GO LF31	0.013	....	0.07	0.06	....	....	4.3	....	....	0.020	....	0.029	0.010	0.019	....	55 x 4	CC				
	517 GO LF32	....	....	0.09	0.11	....	....	4.6	....	....	0.010	....	0.021	0.005	0.010	....	55 x 4	CC				
	517 GO LF33	....	....	0.14	0.20	....	....	5.1	....	....	0.005	....	0.014	0.002	0.005	....	55 x 4	CC				
	517 GO LF34	0.008	....	0.05	0.05	....	....	0.32	0.007	....	....	....	....	....	....	0.030	55 x 4	CC				
	517 GO LF35	0.014	....	0.10	0.19	....	....	0.84	0.018	....	....	....	....	....	....	0.037	55 x 4	CC				
	517 GO LF36	0.002	....	0.18	0.10	....	....	1.32	0.014	....	....	....	....	....	....	0.029	55 x 4	CC				
	517 GO LF37	0.009	....	0.05	0.15	....	....	2.03	0.008	....	....	....	....	....	....	0.044	55 x 4	CC				
	517 GO LF39	0.006	....	0.02	0.05	....	....	3.25	....	....	....	....	....	....	....	0.065	55 x 4	CC				
	517 GO LF40	0.004	....	0.16	0.09	....	....	4.47	....	....	....	....	....	....	....	0.036	55 x 4	CC				
	517 GO LF41	0.024	....	0.02	....	....	....	5.55	0.025	....	....	....	....	....	....	0.055	55 x 4	CC				
Note these are not CRMs																						
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. Magnesium Base

Updated: 5th February 2018

Blocks / Discs

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

  

6.3 Mg/Mn		Al	Zn	Mn	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Size (mm) Ø x H	Form
CRM	63X MGE1 E	(0.088)	0.083	0.860	0.0503	0.052	0.0014	0.0162	....	0.0053	0.011	0.0195	(0.0002)	0.0017	40x15 or 50x20	C
CRM	63X MGE2 B	0.0432	0.0245	1.75	0.0203	0.019	0.0020	0.0035	0.0015	0.0024	0.0020	0.0090	....	0.0009	40x15 or 50x20	C
CRM	63X MGE3 C	(0.056)	0.0101	1.62	0.0072	0.014	0.0005	0.0028	....	0.006	0.0046	0.0041	<0.0001	0.0046	40x15 or 45x20	C

  

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

  

6.5 Mg/Al/Zn		Al	Zn	Mn	Cu	Si	Fe	Ni	Sn	Pb	Be	Ca	Ag	Ce	La	Cd	Sr	Hg	Size (mm) Ø x H	Form
CRM	65X MGA1 J **	5.45	1.26	0.060	0.221	0.20	0.021	0.021	0.072	0.012	0.006	0.029	0.012	0.009	0.007	0.013	** unsuitable for use with glow-discharge systems		45 x 20	C
CRM	65X MGA5 A	8.00	0.411	0.401	0.0195	0.110	0.006	0.0201	0.0124	0.042	0.0013	(0.014)	0.0050	....	....	0.0035	0.0004	....	50 x 20	C
CRM	65X MGA11 B	3.63	1.59	0.047	0.0496	(0.024)	0.0048	0.0134	0.093	0.0183	0.0022	(0.09)	(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 B	9.09	0.685	0.282	0.0102	0.080	0.0084	0.0082	0.0085	0.0061	0.0029	....	0.0016	0.0120	0.0111	0.0014	....	(0.08)	50 x 15	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



# 6. Magnesium Base

Updated: 18th January 2018

Blocks / Discs

6.5	Mg/Al/Zn (continued)											Typical alloy type	Size (mm)		Form
		Al	Zn	Mn	Cu	Si	Fe	Ni	Sn	Pb	Be		Ø x H		
CRM	65X MGA18 A	6.75	0.502	0.192	0.052	0.043	0.0081	0.0074	0.0114	0.0244	0.00051		AZ61A	40x15 or 50x20	C
CRM	65X MGA19 A	8.97	2.17	0.322	0.0426	0.196	0.0085	0.0065	0.0489	0.0489	0.00025		AZ92A	40x15 or 50x20	C
CRM	65X MGA20 A	5.87	1.32	0.067	0.0131	0.052	0.0078	0.0025	0.0320	0.0075	0.0018		AZ61A	40x15 or 50x20	C
CRM	65X MGA21 A	12.37	5.11	0.0777	0.0020	0.028	0.0140	0.0010	0.0063	0.0048	0.0006		AZ125A	40x15 or 50x20	C
CRM	65X MGA22 A	8.62	0.89	0.40	0.078	0.085	0.0060	0.0058	0.0033	0.0038	0.0006		AZ91A	40x15	C
CRM	65X MGA23 A	9.75	0.555	0.130	0.0155	0.027	0.0085	0.0011	0.0024	0.0019	0.0024		AZ91D	40x15 or 50x20	C

  

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

## 6. Magnesium Base

Updated: 18th January 2018

Blocks / Discs

6.6 Mg/Zn		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Nd	Be	Sr	Size (mm) Ø x H	Form
CRM	66X MGC4 C	0.039	6.81	0.166	<0.001	0.0024	0.06	0.006	0.0009	....	0.021	0.0030	0.0074	....	....	....	(0.0001)	(0.00014)	40x15 or 50x20	C
CRM	66X MGC5 A	0.072	6.61	1.17	....	0.0286	0.026	0.0008	0.0111	....	0.0051	0.0281	....	....	....	....	....	....	40x15 or 50x20	C
CRM	66X MGD1 B	0.147	1.19	0.125	....	0.066	(0.073)	0.0029	0.0162	....	0.026	0.026	....	0.065	0.031	0.064	....	....	40x15 or 50x20	C
CRM	66X MGD5 A	0.040	6.25	0.307	....	2.88	0.134	0.008	0.0120	(0.030)	0.104	0.097	0.044	....	....	....	<0.0005	....	40x15 or 50x20	C

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

# 7. Tin Base

Updated: 18th January 2018

Blocks / Discs

7.1 Tin with Impurities		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	Cr	Co	In	Au	Te	Se	P	Ga	Ge	Hg	Size (mm) Ø x H	Form	
CRM	71X PB3 A	0.0022	0.0103	0.0024	2.77	0.0074	....	0.0008	0.0016	....	....	0.0011	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
CRM	71X PB4 A	0.0045	(0.002)	0.0059	4.00	0.0014	....	0.0027	0.0063	....	....	0.0047	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
CRM	71X SR0 C	0.0005	0.0029	0.0055	0.0457	0.0073	0.0040	0.0024	0.0053	0.0025	0.0414	0.0024	....	0.0004	0.0088	0.0012	0.0021	0.0006	0.0004	0.0054	0.0021	0.0099	40 x 15	C	
CRM	71X SR1 F **	0.004	0.010	0.018	0.024	0.001	0.002	0.011	0.013	0.006	<0.005	0.015	....	0.002	0.009	0.002	0.002	0.003	....	0.0049	0.01	(0.02)	40 x 15	C	
CRM	71X SR2 F	0.0070	0.0403	0.074	0.151	0.116	0.0133	0.0351	0.0058	0.0183	0.0022	0.0305	0.0031	....	0.0597	0.0077	0.0246	....	....	....	0.009	0.140	40 x 15	C	
CRM	71X SR3 F	0.097	0.123	0.128	0.306	0.121	0.0203	0.100	0.054	0.0371	(0.0014)	0.050	....	....	0.104	0.0145	0.070	0.0031	....	0.0339	....	0.115	40 x 15	C	
		** provisional values																							
7.3 Tin White Metals (Pewter, Babbitt)		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	....	Sold Out					40 x 15	C		
CRM	73X SC2 B	0.0355	0.602	3.05	0.0457	1.028	0.0037	0.0282	(0.0007)	0.0156	....	0.0318	0.0217	0.0099	....	....						40 x 15	C		
CRM	73X SC3 A	0.029	0.020	4.60	0.040	0.222	0.017	0.024	0.0014	0.0136	0.001	0.013	0.006	0.031	(0.002)	....						40 x 15	C		
CRM	73X SC4 B	0.0268	0.153	5.94	0.429	2.63	0.0014	0.0085	(0.001)	0.0130	(0.002)	0.0525	0.0020	0.0143	....	0.005						40 x 15	C		
CRM	73X SC5 A	0.013	0.43	7.03	0.136	0.57	0.004	0.008	0.001	0.0058	0.003	0.063	0.011	0.036	(0.001)	....						40 x 15	C		
CRM	73X SC6 A	0.204	0.115	0.092	0.100	5.17	0.007	0.0125	0.01	0.013	(0.003)	0.08	0.0050	0.058	(0.004)	....						40 x 15	C		
CRM	73X SC7 B	0.059	0.013	13.86	0.32	5.71	(0.043)	0.0019	0.0033	0.0160	(0.001)	0.0059	0.0143	0.0194	(0.001)	....						40 x 15	C		
CRM	73X SC8 B	0.11	0.0531	5.52	0.110	3.78	0.055	0.098	0.004	0.0351	(0.001)	0.0253	0.0267	0.0325	0.004	....						40 x 15	C		
CRM	73X SC9 B	0.117	0.0825	8.31	0.305	8.03	0.053	0.0506	....	0.0084	(0.001)	0.0055	0.0051	0.0059	....	....						40 x 12	C		
CRM	73X SC11 C	0.248	0.554	12.98	0.0630	11.51	0.0052	1.72	0.005	0.110	....	(0.056)	....	....	....	0.025						40 x 12	C		
CRM	73X SC12 B	(0.034)	0.0301	7.50	0.091	6.03	0.024	0.758	0.0210	0.115	0.0015	0.842	0.0210	....	....	....						40 x 15	C		
CRM	73X SC13 A	0.054	0.0188	4.21	0.259	4.19	0.053	0.0021	0.0126	....	(0.01)	....	....	....	....	(0.02)						40 x 15	C		
		....																							
7.4 Tin Lead-Free Solders		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	P	Se	Au	Co	Ge	In						Size (mm) Ø x H	Form
CRM	74X AM F	0.0038	0.190	1.064	0.126	3.07	(0.001)	0.0061	(0.006)	0.0260	(0.001)	0.496	(0.002)	(0.001)	....	....	....	0.0082						40 x 15	C
CRM	74X E F	0.0092	0.0099	0.0168	0.0248	2.94	0.0008	0.0003	(0.005)	0.0069	(0.001)	0.667	(0.001)	0.0008	....	....	....	0.0074						40 x 15	C
CRM	74X HA G	0.0032	0.0639	2.10	0.077	0.629	0.0029	0.0018	2.73	0.0133	(0.002)	2.80	(0.001)	(0.001)	....	....	....	0.0090						40 x 15	C
CRM	74X HB G	0.045	0.038	4.81	0.056	4.49	0.0138	0.0103	(0.02)	1.22	(0.003)	0.086	(0.002)	0.0038	....	....	....	0.0179						40 x 15	C
CRM	74X HN E	0.010	0.122	0.037	0.0404	3.82	0.010	0.0057	(0.0009)	0.185	0.005	0.143	(0.002)	0.0016	....	....	....	....						40 x 15	C
CRM	74X TC F	0.024	0.106	0.124	0.183	4.99	0.0031	0.0150	0.004	0.0167	(0.001)	0.039	(0.002)	0.0473	....	....	....	0.0215						40 x 15	C
CRM	74X BZ1 A	0.0119	3.03	0.031	0.0238	0.026	0.011	0.0012	8.27	0.0097	0.0021	0.004	....	....	....	....	....	....						40 x 15	C
CRM	74X AB1 A	0.0280	0.997	0.0111	0.0353	0.0285	0.0435	0.0199	....	0.0036	....	3.58	....	....	0.0010	0.0032	....	0.0262						40 x 15	C
CRM	74X GE1 A	....	....	....	0.0339	0.662	....	0.0059	....	0.0289	0.065	0.052	....	....	....	....	0.046	....						38 x 13	C
CRM	74X GE2 A	....	....	....	0.0467	0.713	....	0.0086	....	0.031	0.068	0.079	....	....	....	....	0.479	....						38 x 13	C

# 7. Tin Base

Updated: 18th January 2018

Blocks / Discs

7.4 Tin Lead-Free Solders		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	P	In	Au	Se	Co	Hg	Ge	Cr	Size (mm) Ø x H	Form
CRM	74X OA A	0.080	1.065	0.0098	0.128	3.41	0.007	0.00063	(0.002)	0.0025	(0.001)	0.100	0.0072	0.0034	(0.0001)	....	....	....	....	....	40 x 15	C
CRM	74X WS A	0.0105	0.0063	1.49	0.037	4.58	(0.004)	0.00140	0.0009	0.0048	(0.001)	0.298	0.0122	0.0032	(0.0002)	....	....	....	....	....	40 x 15	C
CRM	74X CA1 B	....	0.0131	0.0169	0.077	0.682	....	0.0071	....	....	0.0262	0.440	....	....	0.0053	....	....	....	....	....	40 x 15	C
CRM	74X CA2 C **	0.015	0.031	0.080	0.055	0.80	0.003	0.004	(0.002)	0.033	(0.001)	3.5	(0.003)	0.007	0.001	0.001	0.003	(0.003)	0.01	** provisional values	40 x 15	C
CRM	74X CA3 B	0.0039	0.0156	0.0266	0.0491	0.0869	0.006	0.00045	0.0009	0.0077	0.0010	2.98	0.031	0.0042	0.007	....	....	....	0.0093	....	40 x 15	C
CRM	74X CA4 C	0.0076	0.0608	0.0709	0.0800	0.545	0.0052	0.0018	(0.006)	0.0872	0.0005	3.01	....	0.0057	....	(0.001)	0.0052	0.0054	....	0.0094	40 x 12	C
CRM	74X CA5 B	0.0125	0.0050	0.124	0.044	1.189	0.0021	0.0023	(0.002)	0.0149	(0.001)	4.09	(0.011)	0.0129	0.0091	0.0004	....	0.0030	....	....	40 x 15	C
CRM	74X CA6 B	0.0133	0.0098	(0.010)	0.0287	0.602	0.0120	0.0005	(0.0005)	0.0246	(0.0003)	0.305	(0.001)	0.0243	0.0048	(0.0005)	....	0.0039	....	....	40 x 15	C
CRM	74X CA7 B	0.0085	0.0102	0.0194	0.107	0.347	0.007	0.0059	0.0501	0.0315	....	4.02	....	0.0053	....	....	(0.002)	0.049	....	0.0045	40 x 15	C
CRM	74X CA8 B	0.0144	0.0172	0.0180	0.084	0.950	0.0043	0.0101	....	0.0020	....	2.47	0.010	0.0062	....	....	0.0202	0.101	0.0020	....	40 x 15	C
CRM	74X CA9 A	0.0173	0.0364	0.076	0.038	0.097	0.0085	0.0015	0.0010	0.0039	0.0007	1.002	0.011	0.0165	0.0025	....	....	....	0.0049	....	40 x 15	C

## 8. Lead Base

Updated: 18th January 2018

Blocks / Discs

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

  

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

  

8.3 Lead with Impurities		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	Na	Hg	Pt	S	Size (mm) Ø x H		Form
CRM	83X PR1 K	0.016	0.0100	0.0508	0.0465	0.0338	0.1029	....	(0.002)	0.074	0.0080	(0.0004)	0.0058	0.0008	0.0019	....	....	....	....	....	40 x 15	C	
CRM	83X PR2 G	0.0948	0.0499	0.0404	0.0309	0.0233	0.055	....	0.0005	0.0020	0.0010	0.0006	0.0100	0.0005	0.0005	(0.0017)	0.0013	0.003	....	....	40 x 15	C	
CRM	83X PR3 G	0.0417	0.0888	0.144	0.0694	0.0011	0.0029	....	(0.0007)	0.0462	0.0093	0.0116	0.0039	0.0166	0.0036	0.0033	(0.004)	0.0008	....	....	40 x 15	C	
CRM	83X PR4 H	....	0.0050	0.0150	0.0454	0.0003	0.0114	....	....	0.0081	....	0.0029	0.0229	(0.004)	0.0021	0.0021	....	0.019	....	....	40 x 15	C	
CRM	83X PR5 G	0.0010	0.0006	0.0086	0.0006	0.0004	0.0011	....	(0.0002)	0.0003	0.0002	(0.0002)	0.0003	0.0004	....	(0.0001)	....	(0.0001)	....	....	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 D	0.604	0.257	1.18	0.0448	0.134	0.497	....	0.0004	0.199	0.293	0.0008	0.0014	(0.0003)	0.0106	....	....	0.086	....	....	40 x 15	C	
CRM	83X PR11 A	0.119	0.497	0.0117	0.0551	0.0095	0.0030	(0.0003)	....	0.0008	....	0.0011	....	(0.0001)	....	0.0042	....	....	....	0.009	40 x 15	C	
CRM	83X PR12 A	0.0005	0.0011	0.0119	0.0353	(0.0003)	0.0030	(0.0003)	....	0.0011	....	0.0009	....	(0.0002)	....	0.0051	....	....	....	(0.0002)	40 x 15	C	
CRM	83X CU06 A	(0.0004)	(0.0008)	0.0134	0.0554	(0.0001)	0.0019	....	(0.0003)	(0.0001)	....	0.0003	(0.0002)	(0.0005)	....	....	....	....	....	0.0011	40 x 15	C	

# 8. Lead Base

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Blocks / Discs

8.3 Lead with Impurities - continued												Size (mm)	Form
	Sn	Ag	Zn	Cd	Al	Li	Na	Mg	Ca	Ba		Ø x H	
83X PR9-1 A	0.054	0.003	0.0007	0.0004	0.0001	0.004	0.015	0.006	0.096	0.033		40 x 13	C
83X PR9-2 A	0.015	0.003	0.0002	0.0004	0.0001	0.002	0.007	0.002	0.046	0.015	these are not CRMs	40 x 13	C

  

8.4 Battery Alloys (Pb/Sn/Ca)														Size (mm)	Form
	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Al	Ca	Ni	Te		Ø x H	
CRM 84X BA1 K	0.888	0.0009	0.0146	(0.0013)	0.0005	0.0098	0.0068	0.0014	0.0336	0.120	(0.0001)	(0.0003)		40 x 15	C
CRM 84X BA2 D	0.544	(0.003)	0.0230	(0.002)	0.0004	0.0044	0.0273	0.0040	0.0183	0.0756	(0.0004)	(0.0003)		40 x 15	C
CRM 84X BA3 D	0.324	(0.006)	0.0351	0.0061	<0.001	0.0062	0.0032	0.0047	0.0043	0.0212	....	....		40 x 15	C
CRM 84X BA4 C	0.0480	0.0078	0.0260	0.0064	(0.003)	0.0020	0.0065	0.0092	0.0015	0.0014	(0.0004)	0.0205	Sold Out	40 x 15	C
CRM 84X BA7 B	0.594	0.0022	0.0140	0.0020	(0.0004)	0.0015	0.0024	0.0004	0.0085	0.0391	(0.0003)	(0.0002)		40 x 15	C
CRM 84X BA8 D	0.325	0.0043	0.0147	0.0008	0.0005	0.0035	0.0018	0.0004	0.0359	0.136	0.0002	(0.0002)		40 x 15	C
CRM 84X BA9 C	2.94	(0.005)	0.0145	0.0021	(0.0005)	0.0023	0.0017	0.0011	0.0207	0.118	(0.0001)	(0.0003)		40 x 15	C
CRM 84X BA11 B	1.289	(0.005)	0.0159	0.0017	0.0006	0.0025	0.0006	0.0006	0.0207	0.0546	....	....		40 x 15	C
CRM 84X BA12 C	1.460	0.0029	0.0146	0.0014		0.0051	0.0032	0.0012	0.0158	0.0647	....	....		40 x 15	C
CRM 84X BA13 B	1.685	0.0018	0.0282	0.0010	0.0004	0.0076	0.0079	0.0014	0.0363	0.0725	....	....		40 x 15	C
CRM 84X BA14 A	0.959	(0.002)	0.0162	0.0016	(0.0004)	0.0103	0.0057	0.0015	0.0188	0.076	(0.0002)	(0.0002)		40 x 15	C
CRM 84X BA15 A	0.941	0.0047	0.0140	0.0011	0.0005	0.0095	0.0062	0.0013	0.0161	0.0865	....	....		38 x 15	C
CRM 84X BA20 B	0.370	0.0038	0.0144	....	....	0.0295	0.0435	0.0051	0.065	0.368	....	....		38 x 15	C
CRM 84X BA21 B	0.162	0.0028	0.0173	....	....	0.0102	0.0155	0.0007	0.0125	0.553	....	....		40 x 15	C
CRM 84X BA22 B	0.128	0.0022	0.0138	....	....	0.0044	0.0053	0.0018	0.074	0.799	....	....		38 x 15	C
CRM 84X BA23 B	0.237	0.0061	0.0134	....	....	0.0024	0.0026	0.00012	0.0569	1.052	....	....		38 x 15	C

  

8.5 Various Lead Alloys															Size (mm)	Form
	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Ni	Te	Se	S	Co		Ø x H	
CRM 85X PSn2 C	2.06	0.0239	0.0154	0.0128	0.0048	0.0048	(0.0004)	0.0007	0.0003	0.0045	0.0042	(0.0009)	0.0004		40 x 15	C
CRM 85X PSb3 J	0.161	2.26	0.0214	0.0308	0.293	0.0042	(0.0008)	0.0028	0.0016	0.0055	0.0317	(0.0008)	....		40 x 15	C
CRM 85X PSb5 E	0.285	4.51	0.0134	0.0593	0.149	0.0018	0.00057	0.0016	0.0015	0.0029	0.014	0.018	....		38 x 15	C
CRM 85X PSb5 F	0.207	4.69	0.0267	0.0361	0.221	0.0038	0.0009	0.0011	0.0018	0.0007	0.0077	0.0056	....		40 x 15	C
CRM 85X PSb6 A	0.065	6.51	0.0270	0.0651	0.111	0.0459	....	0.0046	0.0021	0.0108	0.0018	....	....		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

## 8. Lead Base

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Blocks / Discs

8.5 Various Lead Alloys		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	S	Hg	Co	Size (mm) Ø x H	Form	
CRM	85X ANTH F	1.25	6.25	0.0196	0.0072	0.183	0.0070	(0.0004)	0.0005	0.0039	....	0.0045	0.0067	0.014	....	....	0.0026	....	0.0006		40 x 15	C
CRM	85X CADH C **	0.11	1.85	0.015	0.013	0.09	0.010	0.0005	....	1.9	....	0.001	0.0035	....	....	....	<0.0005	....	....	** provisional values	40 x 15	C
CRM	85X CADL A	0.010	1.54	0.0169	0.0093	0.0065	0.0076	(0.0006)	(0.0018)	1.69	....	(0.0005)	0.0030	(0.0011)	....	....	....	....	....	....	40 x 15	C
CRM	85X CADL B	0.0182	2.00	0.0489	0.0384	0.102	0.0132	0.0008	(0.011)	1.22	....	0.0002	<0.001	....	....	....	....	....	....	....	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 S744 A	0.237	1.532	0.0182	0.0366	0.125	0.0046	<0.001	0.0002	0.0003	....	0.0005	....	0.0253	....	....	0.0028	....	....	....	40 x 15	C
CRM	85X A16 A	0.0356	1.57	0.0165	0.0006	0.0503	0.0297	(0.0001)	0.0001	0.0001	....	0.0006	....	0.0218	....	....	(0.0003)	....	....	....	38 x 15	C
CRM	85X M2 A	0.071	1.847	0.0141	0.0281	0.259	0.0016	(0.0002)	(0.0001)	0.0003	....	0.0005	....	0.0247	....	....	(0.0008)	....	....	....	38 x 15	C
CRM	85X MS2X A	0.392	1.367	0.0188	0.0277	0.176	0.0043	(0.0001)	0.0003	0.0002	....	0.0004	....	0.0334	....	....	(0.0002)	....	....	....	38 x 15	C
CRM	85X N35 A	0.044	3.42	0.0130	0.0246	0.201	0.0011	(0.0001)	0.0001	0.00013	....	0.0006	....	0.0004	....	....	0.007	....	....	....	38 x 15	C
CRM	85X SB28 A	0.051	2.87	0.0140	0.0035	0.162	0.0025	(0.0002)	(0.0001)	(0.0001)	....	0.0012	....	0.0223	....	....	0.0010	....	....	....	38 x 15	C
CRM	85X SM31 A	0.0274	2.98	0.0114	0.0084	0.0581	0.0009	(0.0001)	0.0002	(0.0001)	....	0.0006	....	0.0183	....	....	0.0003	....	....	....	38 x 15	C
CRM	85X YUM A	0.0046	2.47	0.0137	0.0234	0.306	0.0018	....	(0.0002)	0.0002	....	0.0007	0.0005	0.0008	....	....	0.0062	....	....	....	40 x 15	C
CRM	85X 2.5LA A	0.068	2.48	0.0142	0.0372	0.334	0.0017	....	0.0002	(0.0002)	....	0.0005	0.0004	0.0006	....	....	(0.0006)	....	....	....	40 x 15	C
CRM	85X SSBC A	9.70	2.14	0.413	....	0.075	0.456	....	....	0.455	0.209	....	0.0037	0.0029	0.0079	0.0196	(0.0008)	....	....	....	40 x 15	C
CRM	85X 0494Pb1 A	0.051	0.95	0.0017	0.012	0.049	....	....	....	....	....	....	....	0.004	....	....	....	....	....	....	40 x 15	C
CRM	85X 9494Pb2 C	0.124	1.928	0.0387	0.0227	0.102	0.0279	<0.001	....	....	....	....	0.0038	0.0272	....	....	0.0052	....	....	....	40 x 15	C
CRM	85X 0494Pb3 D	0.221	2.99	0.126	0.0974	0.245	0.0186	0.0005	....	....	....	....	0.0155	0.049	....	....	0.0185	....	....	....	40 x 15	C
CRM	85X 0616Pb1 D	(0.002)	1.539	0.0365	0.0158	0.0600	0.0089	....	(0.001)	0.0018	....	0.0007	0.0082	0.0047	....	....	....	(0.001)	....	....	40 x 15	C
8.6 Lead Babbitts		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Pd	Te						Size (mm) Ø x H	Form	
CRM	86X PSS1 B	4.29	11.54	0.195	0.0249	0.554	0.0049	0.0018	0.0030	0.0057	0.0074	0.0100	0.0023	....						40 x 15	C	
CRM	86X PSS2 B	7.00	8.04	0.0646	0.127	1.43	0.0179	(0.001)	0.031	0.066	0.0059	0.0165	0.0049	....						40 x 15	C	
CRM	86X PSS3 B	9.39	14.13	0.0273	0.489	0.409	0.0140	0.0025	0.0030	0.0170	0.0111	0.0009	....	0.0050						40 x 15	C	
CRM	86X PSS4 C **	10.4	16.2	0.115	0.12	0.22	0.028	0.001	0.016	0.057	0.021	0.0005	....	0.008						** provisional values	40 x 15	C

# 9. Lead/Tin Solders

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Blocks / Discs

9.1 Tin / Lead Solders		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Al	Te	Au	Se	Hg	Size (mm) Ø x H	Form
CRM	91X S10PR1 C	9.10	0.0278	0.0277	0.0097	0.0045	0.0078	(0.0016)	<0.001	0.0029	....	0.0006	....	....	....	....	....	40 x 15	C
CRM	91X S10P D	10.07	(0.002)	(0.006)	(0.001)	(0.001)	(0.001)	<0.001	<0.0001	<0.0001	<0.001	<0.001	<0.001	....	....	....	....	40 x 15	C
CRM	91X S30PR2 C	30.17	0.619	0.158	0.095	0.028	0.060	0.009	0.016	0.0060	....	0.0077	<0.0005	....	0.0017	....	....	40 x 15	C
CRM	91X S30PR3 C	30.88	0.269	0.294	0.102	0.0126	0.024	0.0016	(0.003)	0.0115	0.0085	0.0269	....	....	0.0063	....	....	40 x 15	C
CRM	91X S40PR2 D	40.68	0.596	0.154	0.085	0.010	0.086	0.0096	0.0275	0.0046	....	0.0050	....	....	....	....	....	40 x 15	C
CRM	91X S40P D	40.00	(0.002)	(0.005)	(0.001)	(0.007)	(0.001)	(0.001)	<0.0001	<0.0001	(0.002)	<0.001	<0.0005	....	....	....	....	40 x 15	C
CRM	91X S50PR4 B	53.06	0.132	0.114	1.184	0.0364	0.0704	0.0025	0.032	0.0123	0.0502	0.0171	(0.0006)	...	0.0355	0.003	....	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 K	61.84	0.531	0.175	0.0841	0.0094	0.0528	0.0053	0.0032	0.0089	0.0157	0.0027	0.0005	0.0036	0.082	....	....	40 x 15	C
CRM	91X S63PR3 G	64.01	0.243	0.254	0.101	0.0264	0.0193	0.0078	0.0061	0.0009	0.0097	0.0085	....	0.0068	0.169	....	(0.038)	40 x 15	C
CRM	91X S63Bi1 A	61.9	0.470	0.597	0.105	<0.002	0.0592	0.0204	(0.002)	0.0095	0.0067	0.0131	(0.0015)	0.0012	0.074	....	....	40 x 15	C
CRM	91X S63P J	62.96	0.011	0.0056	0.0156	(0.001)	0.0170	0.0015	(0.0003)	(0.0001)	0.0064	0.0003	(0.0003)	(0.0002)	(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



# 9. Other Solders

Note: All these listed below are RMs not CRMs

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Blocks / Discs

9.5 Fusible Alloys																	Nominal Melting	Size (mm)	Form
	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Al	Pb	Co	Ni	Au	Temperature °C	Ø x H		
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 10	C	
95X BIS40P1 B	42.3	0.092	57.4	0.0670	0.0101	0.035	(0.001)	....	0.0050	0.0164	....	0.043	....	....	....	138	40 x 15	C	
95X BIS40P2 A	44.7	0.005	55.3	0.003	0.002	0.005	0.001	0.002	0.0008	0.005	0.002	0.020	0.001	0.002	0.0006	....	40 x 15	C	
95X BIS50P1 A	50.0	....	49.8	....	....	....	0.051	0.006	0.022	....	....	....	....	0.025	....	....	40 x 15	C	
95X BIS50P2 A	50.3	....	49.6	....	0.002	0.090	0.007	....	....	....	0.005	....	....	....	0.015	....	40 x 15	C	
95X BIS50P3 A	48.6	....	49.8	....	0.073	1.50	0.003	0.002	0.015	....	....	....	....	....	0.0025	....	40 x 15	C	
95X BIS70P1 A	69.1	....	29.6	....	0.025	1.10	0.010	....	....	0.040	<0.001	....	....	0.029	0.0004	....	40 x 15	C	
95X BIS70P2 A	65.0	....	32.8	....	....	2.01	....	0.001	....	0.049	<0.001	....	....	....	....	....	40 x 15	C	
95X PBS40P1 A	42.6	0.016	13.8	0.025	0.005	0.011	(0.0006)	0.0010	0.0043	0.005	(0.0006)	(43.6)	....	....	....	....	40 x 15	C	
95X SC34 A	34.05	....	....	....	....	....	....	....	(65.99)	....	....	....	....	....	....	....	40 x 15	C	
95X SC36 A	36.09	....	....	....	....	....	....	....	(63.98)	....	....	....	....	....	....	....	40 x 15	C	

# 11. Cobalt Base

Updated: 18th January 2018

Blocks / Discs

11.1 Co/Cr/W (Alloy WI 52 Type)																	Size (mm)	Form
	Si	Mn	Ni	Cr	W	Fe	Nb										Ø x H	
CRM 111X 12671 J	0.51	0.61	0.88	20.5	11.8	1.45	1.95										40 x 15	C
11.2 Co/Cr/Mo (Stellite 8 / BS 3531 Type)																	Size (mm)	Form
	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Al	Nb	Cu	Ta	B	N	Ø x H	
CRM 112X 14943 H	0.190	0.201	0.0197	0.0043	1.008	0.151	31.00	0.051	0.763	7.96	(0.13)	0.099	0.203	(0.014)	0.0045	0.0284	40 x 15	CC
11.9 Various Cobalt Alloys																	Size (mm)	Form
	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Cu	Nb	Al	B	N			
CRM 119 X COB1 H	0.0518	0.492	0.0099	0.0195	0.513	22.11	24.62	11.99	15.14	0.416	0.0607	0.398	0.056	....	0.094	40 x 15 CC		
CRM 119X ST3 L	2.36	0.807	0.0260	....	0.887	2.15	29.9	12.6	3.42	0.163	0.032	....	....	0.127	0.053	Sold Out 40x15 CC		

# 13. Noble Metals

Note: All these listed below are RMs not CRMs

Updated: 18th January 2018

Discs

13.1 Silver with Impurities		All Elements ppm																		Size (mm)	Form		
		Cu	Pb	Bi	Zn	As	Sb	Se	Au	Sn	Pt	Pd	Fe	Te	Mn	Cd	Ni	Si	Ga	Al	Ø x H		
131X AGP1 B		815	420	523	502	145	485	299	521	505	505	332	57	435	404	377	276	....	....	....	25 x 3	R	
131X AGP2 B		193	75	96	109	29	107	65	114	95	112	105	(20)	90	49	56	57	....	....	....	25 x 3	R	
131X AGP3 B		66	12	12	34	6	21	16	26	22	23	16	(11)	18	3	6	12	....	....	....	25 x 3	R	
131X AGP4 B		41	5	7	20	3	12	6	9	6	7	7	(23)	5	3	2	6	....	....	....	25 x 3	R	
R = Samples prepared from rolled strip																							
131X PAg1 A		75	40	40	50	12	50	35	120	40	35	180	5	120	35	35	25	30	60	8	34 x 12	concast	
131X PAg2 A		400	12	12	40	8	12	10	20	10	10	180	7	15	10	5	9	4	15	2	34 x 12	concast	
		All Elements ppm							Size (mm)	Form													
		Bi	Se	Fe	Cu	Cr	Si	Al	Ø x H														
131X AgSe1 A		304	162	23	....	....	....	....	40 x 10	C													
131X AgSe2 A		790	465	22	1333	37	39	43	40 x 10	C													
C = Samples cast																							
13.2 Silver Copper Alloys		All Elements %			Size (mm)	Form																	
		Ag	Cu	Zn	Ø x H																		
132X AGB75 C		75.11	24.53	....	36 x 10	C																	
132X AGB85 C		84.87	15.09	....	36 x 10	C																	
132X AGB87 B		87.13	12.67	....	36 x 10	C																	
132X AGB90 B		89.73	10.24	....	36 x 10	C																	
132X AGB93 B		92.70	7.27	....	36 x 10	C																	
132X AGB100 C		99.94	0.0090	....	36 x 10	C																	
C = Samples cast																							
132X 925Zn1 B		92.70	6.09	1.39	Unmounted	25 x 3 R																	
132X 925Zn3 B		92.64	4.53	2.88	Unmounted	25 x 3 R																	
R = Samples prepared from rolled strip																							
13.3 Silver Alloys		These Elements in %							These Elements in ppm											Size (mm)	Form		
		Au	Cu	Pb	Zn	Sn	Bi	Sb	Fe	Al	As	Cd	Co	Mn	Ni	Pd	Pt	Se	Te	Ge	In	Ø x H	
133X AGA1 A		1.48	19.95	0.207	0.211	0.291	0.194	0.050	0.039	96	255	165	406	61	118	54	67	169	271	107	37	Unmounted	25 x 3 R
133X AGA2 A		0.507	10.00	1.02	0.502	0.520	0.113	0.192	0.027	19	144	113	163	115	264	76	114	78	98	47	65	Unmounted	25 x 3 R
133X AGA3 A		0.258	4.91	1.89	0.816	0.921	0.048	0.459	(0.015)	(20)	80	42	50	98	450	156	256	44	54	45	134	Unmounted	25 x 3 R
133X AGQ1 C		0.251	2.532	0.245	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	Unmounted	25 x 3 R
133X AGQ2 C		0.978	5.808	0.469	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	Unmounted	25 x 3 R
133X AGQ3 C		1.975	9.612	0.921	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	Unmounted	25 x 3 R
R = Samples prepared from rolled strip																							

# 16. Setting Up Samples

Updated: 18th January 2018

Blocks / Discs

All of these samples have been prepared to meet the daily setting up requirements of laboratories using Direct Reading Spectrometers.

Analytical Data are supplied with each sample but are not certified as accurate as these are not intended to be used as Primary Reference Materials, and should not be used for calibration..

16.4.2 Aluminium																			Size (mm) Form	
	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	Be	Sb	Ca	Sr	Zr	Ag	Ø x H	
<b>164X ALSUS7</b>	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
<b>164X ALSUS8</b>	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

  

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

  

16.6 Magnesium														Size (mm) Form	
	Al	Zn	Mn	Cu	Si	Fe	Ni	Ti	Sn	Pb	Ag	Be	Cd	Ø x H	
<b>166X MGSUS3</b>	0.4	0.09	0.8	0.07	0.01	<0.005	0.02	....	0.005	0.04	0.02	0.0005	0.005	50 x 15	C

## 16. Setting Up Samples

Updated: 18th January 2018

Blocks / Discs

All of these samples have been prepared to meet the daily setting up requirements of laboratories using Direct Reading Spectrometers.

Analytical Data are supplied with each sample but are not certified as accurate as these are not intended to be used as Primary Reference Materials, and should not be used for calibration.

16.8 Lead																		Size (mm)	Form	
	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Tl	Au	S	Hg	Ø x H		
168X PBSUS1	1.3	6.2	0.04	0.03	0.37	0.01	0.002	0.001	0.015	0.01	0.003	0.01	0.01	0.001	0.001	0.002	....	45 x 30	C	
168X PBSUS5	0.9	0.35	0.35	0.06	0.35	0.2	<0.001	....	0.09	0.08	0.001	0.003	....	0.002	0.0005	0.0005	0.02	50 x 25	C	
168X PBSUS6	0.15	0.12	0.22	0.10	0.025	0.04	<0.001	0.002	0.015	0.01	0.003	0.0005	0.003	0.03	0.001	0.0005	....	45 x 35	C	
16.8.1 Lead for fire assay																		Size (mm)	Form	
	ppm Pt	ppm Pd	ppm Au	ppm Rh	ppm Ru	ppm Ir	ppm Ag	ppm Fe	ppm Bi	ppm Cu	ppm Ni	ppm Te	ppm As	ppm Sb	ppm Tl	ppm S		Ø x H		
168X PBSUS PM1	55	20	35	12	0.1	2	40	1	100	5	3	1	2	1	10	2		48 x 28	C	
16.11 Tin																		Size (mm)	Form	
	As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	Co	In	Au	Se	Te	Tl	Ge	Ø x H	
1611X SNSUS6	0.3	0.08	0.15	1.0	0.4	0.03	0.01	0.005	0.03	....	0.1	0.02	0.005	0.001	0.003	0.001	0.005	....	50 x 20	C
1611X SNSUS7	1.9	2.4	11	0.35	11	(0.06)	0.02	(0.001)	0.09	<0.001	0.15	0.01	0.05	0.005	0.005	0.005	0.025	0.002	50 x 20	C

## 18. Gases in Metals

Updated: 18th January 2018

Powders

18.1 Gases in Tool Steels					Approximate Matrix Composition	Size grams
	C	S	N	O		
CRM 18X D7 A	2.32	0.0111	0.0124	0.072	12% Cr, 4% V, 1% Mo	100
This material is supplied in powder form - particle size approximately <200u						

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

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

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

**Please enquire to confirm availability, bottle quantity and price.**

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

## Definitions

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

Certified Reference Material (CRM)	"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 <b>CRM</b> in the left hand margin against the catalogue number.
Reference Material (RM)	"A material or substance one or more of whose property values are sufficiently homogeneous and well established to be used for the calibration of an apparatus, the assessment of a measured method, or for assigning values to materials."
Setting Up Samples (SUS)	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 not 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 this catalogue indicates 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.**

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

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		<b>Email:      sales@mbh.co.uk</b>

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

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

## Insurance & Freight

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

## Payment Terms

Payment should be in the currency stated on the invoice and made to the corresponding currency account, free of all local/senders bank charges.

MBH will only accept our own bank's charges.

Payments must be sent for the full amount **after** deduction of all transmission fees (including senders fee & intermediary bank fees {if any}).

Payment may be made by any of the following methods.

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

Payment will be requested by our card processor via a link we will send to you. Please do not send your card details to MBH.

continues.....

**Payment Terms**

.... continued.

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

Our bank details for payments are:

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

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

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

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

**Please ensure you send your payment to the correct currency account as currency losses may be incurred on your account when moving payment to the correct MBH a/c resulting in under payment preventing us proceeding with your order.**

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

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All materials sold are subject to our standard Conditions of Sale. These are printed on pages 55 & 56.

**MBH Analytical Ltd.**

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VAT registration No. GB873 1047 32

# Periodic Table of the Elements

1 <b>H</b> Hydrogen 1.008																	18 <b>He</b> Helium 4.003
3 <b>Li</b> Lithium 6.941	4 <b>Be</b> Beryllium 9.012											5 <b>B</b> Boron 10.811	6 <b>C</b> Carbon 12.011	7 <b>N</b> Nitrogen 14.007	8 <b>O</b> Oxygen 15.999	9 <b>F</b> Fluorine 18.998	10 <b>Ne</b> Neon 20.180
11 <b>Na</b> Sodium 22.990	12 <b>Mg</b> Magnesium 24.305											13 <b>Al</b> Aluminum 26.982	14 <b>Si</b> Silicon 28.086	15 <b>P</b> Phosphorus 30.974	16 <b>S</b> Sulfur 32.066	17 <b>Cl</b> Chlorine 35.453	18 <b>Ar</b> Argon 39.948
19 <b>K</b> Potassium 39.098	20 <b>Ca</b> Calcium 40.078	21 <b>Sc</b> Scandium 44.956	22 <b>Ti</b> Titanium 47.867	23 <b>V</b> Vanadium 50.942	24 <b>Cr</b> Chromium 51.996	25 <b>Mn</b> Manganese 54.938	26 <b>Fe</b> Iron 55.845	27 <b>Co</b> Cobalt 58.933	28 <b>Ni</b> Nickel 58.693	29 <b>Cu</b> Copper 63.546	30 <b>Zn</b> Zinc 65.38	31 <b>Ga</b> Gallium 69.723	32 <b>Ge</b> Germanium 72.631	33 <b>As</b> Arsenic 74.922	34 <b>Se</b> Selenium 78.971	35 <b>Br</b> Bromine 79.904	36 <b>Kr</b> Krypton 84.798
37 <b>Rb</b> Rubidium 84.468	38 <b>Sr</b> Strontium 87.62	39 <b>Y</b> Yttrium 88.906	40 <b>Zr</b> Zirconium 91.224	41 <b>Nb</b> Niobium 92.906	42 <b>Mo</b> Molibdenum 95.95	43 <b>Tc</b> Technetium 98.907	44 <b>Ru</b> Ruthenium 101.07	45 <b>Rh</b> Rhodium 102.906	46 <b>Pd</b> Palladium 106.42	47 <b>Ag</b> Silver 107.868	48 <b>Cd</b> Cadmium 112.414	49 <b>In</b> Indium 114.818	50 <b>Sn</b> Tin 118.711	51 <b>Sb</b> Antimony 121.760	52 <b>Te</b> Tellurium 127.6	53 <b>I</b> Iodine 126.904	54 <b>Xe</b> Xenon 131.29
55 <b>Cs</b> Cesium 132.905	56 <b>Ba</b> Barium 137.328	57-71 Lanthanides	72 <b>Hf</b> Hafnium 178.49	73 <b>Ta</b> Tantalum 180.948	74 <b>W</b> Tungsten 183.84	75 <b>Re</b> Rhenium 186.207	76 <b>Os</b> Osmium 190.23	77 <b>Ir</b> Iridium 192.217	78 <b>Pt</b> Platinum 195.085	79 <b>Au</b> Gold 196.967	80 <b>Hg</b> Mercury 200.592	81 <b>Tl</b> Thallium 204.383	82 <b>Pb</b> Lead 207.2	83 <b>Bi</b> Bismuth 208.980	84 <b>Po</b> Polonium [208.982]	85 <b>At</b> Astatine 209.987	86 <b>Rn</b> Radon 222.018
87 <b>Fr</b> Francium 223.020	88 <b>Ra</b> Radium 226.025	89-103 Actinides	104 <b>Rf</b> Rutherfordium [261]	105 <b>Db</b> Dubnium [262]	106 <b>Sg</b> Seaborgium [266]	107 <b>Bh</b> Bohrium [264]	108 <b>Hs</b> Hassium [269]	109 <b>Mt</b> Meitnerium [268]	110 <b>Ds</b> Darmstadtium [269]	111 <b>Rg</b> Roentgenium [272]	112 <b>Cn</b> Copernicium [277]	113 <b>Uut</b> Ununtrium unknown	114 <b>Fl</b> Flerovium [289]	115 <b>Uup</b> Ununpentium unknown	116 <b>Lv</b> Livermorium [298]	117 <b>Uus</b> Ununseptium unknown	118 <b>Uuo</b> Ununoctium unknown

57 <b>La</b> Lanthanum 138.905	58 <b>Ce</b> Cerium 140.116	59 <b>Pr</b> Praseodymium 140.908	60 <b>Nd</b> Neodymium 144.243	61 <b>Pm</b> Promethium 144.913	62 <b>Sm</b> Samarium 150.36	63 <b>Eu</b> Europium 151.964	64 <b>Gd</b> Gadolinium 157.25	65 <b>Tb</b> Terbium 158.925	66 <b>Dy</b> Dysprosium 162.500	67 <b>Ho</b> Holmium 164.930	68 <b>Er</b> Erbium 167.259	69 <b>Tm</b> Thulium 168.934	70 <b>Yb</b> Ytterbium 173.055	71 <b>Lu</b> Lutetium 174.967
89 <b>Ac</b> Actinium 227.028	90 <b>Th</b> Thorium 232.038	91 <b>Pa</b> Protactinium 231.036	92 <b>U</b> Uranium 238.029	93 <b>Np</b> Neptunium 237.048	94 <b>Pu</b> Plutonium 244.064	95 <b>Am</b> Americium 243.061	96 <b>Cm</b> Curium 247.070	97 <b>Bk</b> Berkelium 247.070	98 <b>Cf</b> Californium 251.080	99 <b>Es</b> Einsteinium [254]	100 <b>Fm</b> Fermium 257.095	101 <b>Md</b> Mendelevium 258.1	102 <b>No</b> Nobelium 259.101	103 <b>Lr</b> Lawrencium [262]

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