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# MBH

## Reference Materials

# MBH

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where copies can be downloaded.

The MBH catalogues are periodically re-issued to include the latest information.  
Please ensure you have the latest version to hand.

## Index

	Page
Index	1
Introduction & Abbreviations.	2
Information - Definitions etc.	3
Conditions of Sale - Ordering procedure.	4
Conditions of Sale - Prices & payment terms.	5

### Please Note

This catalogue is issued to manufacturers and agent/distributors. It details all the materials currently produced exclusively by MBH. Prices are correct at the time of publication only. Please also see our full catalogue for other materials we can supply.

## Certified Reference Materials

	Pages
<b>Section 1</b>	<b>Iron Base</b>
<b>Section 2</b>	<b>Nickel Base</b>
<b>Section 3</b>	<b>Copper Base</b>
<b>Section 4</b>	<b>Zinc Base</b>
<b>Section 5</b>	<b>Aluminium Base</b>
<b>Section 6</b>	<b>Magnesium Base</b>
<b>Section 7</b>	<b>Tin Base</b>
<b>Section 8</b>	<b>Lead Base</b>
<b>Section 9</b>	<b>Lead/Tin Solders</b>
<b>Section 10</b>	<b>Titanium Base</b>
<b>Section 11</b>	<b>Cobalt Base</b>

	Pages
<b>Section 13</b>	<b>Noble Metals</b>
<b>Section 15</b>	<b>Binary Alloys (Fe base)</b>
<b>Section 16</b>	<b>Setting Up &amp; Control Samples</b>
<b>Section 18</b>	<b>Gases in Metals</b>
<b>Chippings</b>	<b>44</b>
Most of the MBH range of discs are available in chippings form. Please see the sections for general composition information.	
Please enquire for availability and price.	
<i>Note: Chippings are made to order, and are non-returnable</i>	
<b>Listing of new materials added in this catalogue.</b>	<b>45 - 46</b>

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

## Introduction

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

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

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

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

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

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

## Information

### Abbreviations

CRM	This material is classified by MBH as a Certified Reference Material
( )	The concentration value stated within the brackets is not certified and is provided for information purposes only
R.E.	Rare Earth
ppm	Parts per Million (w/w)
<u>Form</u>	
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 <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 or <sup>PP</sup> provisional values	This material is in production and is currently available for purchase and will be supplied with a provisional certificate. However the values presented are the result of an incomplete analysis programme. The final certified values are expected to be available within 8 months, but may differ. A copy of the final certificate will be mailed to you as soon as available. Please enquire .
Sold Out	Materials whose data are struck through (for example 12X-352-B etc.) and indicated as sold out will be remade later; please enquire. Material listed in previous editions and now no longer listed herein should be considered no longer available and are not likely to be remade.

## Information

### Definitions

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

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

**Note:** Products that are 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 the following pages indicate actual values for the batch currently available. However some materials may be remade during the lifetime of this catalogue and the values achieved for the replacements may differ from those stated.

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

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

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

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

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

## **Conditions of Sale - Ordering procedure.**

### **General Conditions**

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

- 1 All items listed in this catalogue or otherwise offered for sale are subject to availability and any delivery dates that may be quoted are conditional on supplies. We are unable to accept liability for delay and if any item becomes unavailable during the life of a catalogue we will advise on suitable alternatives where appropriate.
- 2 Unless credit facilities have been agreed with us (in which case payment is due on a net monthly basis), payment for items is due either against a Pro Forma invoice at the time of ordering or by Confirmed Irrevocable Letter of Credit through a British Clearing Bank payable on presentation of invoice and despatch documents.
- 3 We draw the attention of all customers to the notes in our catalogue relating to definitions, analyses and calibration procedures.
- 4 To the extent that the law may permit, the following condition stands in substitution for all conditions and warranties as to merchantability and fitness for purpose as implied by statute, common law or otherwise.
  - a. It is the responsibility of the customer to decide on the suitability and fitness for purpose of all items purchased
  - b. Any items claimed to be defective must be returned to us (within 3 months of delivery) for examination and analysis. No claims can be entertained if this is not done.
  - c. We may, at our option, replace any item shown to be defective or refund the price paid. Our liability in respect of any such item will not in any circumstances exceed the amount paid for the item in question and no liability is accepted for consequential losses however arising.
- 5 These conditions shall apply to all contracts entered into by us to the exclusion of all other conditions and notwithstanding any items that may appear on any printed stationery of any customer. No variation of these conditions shall be effective unless confirmed by us in writing on or prior to formal acceptance by us of any order.
- 6 Until such a time as we have received full payment, items supplied to customers shall remain our property notwithstanding delivery to the customer and we shall be entitled to enter upon the customer's premises to recover the property if the customer shall go into liquidation, or if a receiver is appointed .
- 7 This contract shall be governed by English Law and any disputes shall be referred to the exclusive jurisdiction of the English Courts.

### **Ordering Procedure**

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

Send your order to:	<b>MBH Analytical Ltd</b> Holland House Queens Road Barnet, Herts, EN5 4DJ United Kingdom	Tel:	<b>++44 (0)208 441 2024</b>
		Fax	<b>++44 (0)208 449 0810</b>
		Email:	<b><a href="mailto:sales@mbh.co.uk">sales@mbh.co.uk</a></b>

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

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

## **Conditions of Sale - Prices, VAT and payment terms.**

### **Prices**

The prices given in this catalogue are stated in £stg and are correct at the time of publication and include packing.

Freight and Insurance are additional and are charged extra at cost.

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

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

### **Value Added Tax (VAT)**

All orders delivered to a UK address are subject to VAT at the rate applicable at the time of despatch. European Union customers are also subject to UK VAT and unless we are advised of your VAT number at the time of placing your order VAT will be charged at the current rate.

### **Payment**

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

Payment may be made by any of the following methods.

- Visa Purchasing Card or major credit/charge card (Visa, Mastercard or American Express). Please note we can only invoice/collect . payment in Sterling. The amount billed on your card will reflect your card company's currency conversion cost.
- Sterling (or stated currency) prepayment with your order against our Proforma invoice by bankers draft or automated bank transfer.
- Irrevocable Letter of Credit through a London bank, payable at sight upon presentation of documents (minimum order value applies).
- Established customers may apply to receive strictly Net Monthly Account terms, subject to satisfactory bank and trade references.

Our bank details are:

Name of Banker: **National Westminster Bank plc**  
Branch Address: **181 Darkes Lane  
POTTERS BAR  
Herts EN6 1XT England**

Account Name: **MBH Analytical Ltd**  
Account No: **(Sterling) 13140922** (IBAN) GB10NWBK60174913140922  
Bank Sort Code: **60 17 49**  
BIC (Swift code): **NWBKGB2L**

If paying in Euro or US Dollars please remit payment in the currency stated on the invoice to the corresponding currency account below.

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

# 1. Iron Base

## Irons

Updated: 17 January 2011

## Blocks / Discs

1.1.3 High Phosphorus															Size (mm)	Form	Price									
	C	Si	S	P	Mn	Cr									Ø x H											
CRM	11X HPC1 G	3.22	2.60	0.0311	0.75	0.499	....								40 x 15	CC										
CRM	11X HPC2 K	2.85	2.19	0.066	1.55	0.775	2.05								40 x 17	CC										
CRM	11X HPC3 H	3.77	1.58	0.0513	1.96	1.316	....								40 x 15	CC										
CRM	11X HPC4 P	3.15	1.08	0.094	2.03	0.804	1.57								40 x 17	CC										
CRM	11X HPC5 A	3.68	1.175	0.223	0.246	1.028	1.42								40 x 17	CC										
1.1.7 Low Alloy															Size (mm)	Form	Price									
	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 CC21 A	3.12	2.19	0.083	0.0246	0.785	0.107	0.351	0.0357	0.153	0.0078	0.0024	0.0259	0.0083	....	....	....	0.0101	....	....	....	....	45 x 6	2xCC		
CRM	11X CC22 A	3.70	1.82	0.080	0.033	.690	0.060	0.319	0.021	0.712	0.012	(0.002)	0.029	0.0087	....	....	....	0.009	....	....	....	....	45 x 6	2xCC		
CRM	11X C1 P	2.85	1.483	0.0383	0.105	1.262	0.696	0.538	0.075	0.164	0.032	0.0193	(0.14)	0.101	0.170	0.082	....	0.018	0.064	0.0060	0.010	0.0208				
CRM	11X C2 S	3.54	1.281	0.086	0.200	0.961	1.006	0.794	0.096	0.133	0.065	0.049	0.042	0.289	0.084	0.113	0.098	0.029	0.068	0.007	(0.009)	0.0020				
CRM	11X C3 Z	3.27	0.944	0.152	0.387	0.797	4.14	2.43	0.235	0.431	0.236	(0.015)	0.071	0.796	0.186	0.376	(0.054)	0.120	0.264	(0.002)	0.0026	0.0111				
CRM	11X C4 Q	1.89	3.02	0.138	0.111	0.651	2.41	1.50	0.114	0.342	0.0207	0.032	0.091	0.0233	0.072	0.0175	0.122	0.0103	0.011	0.0050	(0.0030)	0.0112				
CRM	11X C5 U	2.49	1.78	0.103	0.097	0.791	2.05	1.15	0.497	2.71	0.021	0.006	0.079	0.0537	(0.088)	0.105	(0.083)	0.0225	0.037	0.006	0.0046	0.011		continued		
CRM	11X C6 V	3.76	0.487	0.0567	0.069	1.088	0.060	0.606	1.561	0.890	0.0585	(0.018)	0.049	0.0608	0.023	0.094	....	0.0499	0.037	0.005	0.007	0.025				
CRM	11X C7 N	2.51	0.829	0.0101	0.0266	1.942	0.0303	0.507	0.071	0.075	0.0114	0.0127	0.022	0.036	0.051	0.0335	0.066	0.0159	0.025	0.0137	....	0.0226				
CRM	11X C8 T	3.03	1.61	0.189	0.843	0.486	0.320	0.501	0.158	0.317	0.091	0.016	0.115	0.0637	(0.082)	0.174	0.0175	0.077	0.068	0.041	(0.073)	0.007				
CRM	11X C9 B	2.82	1.19	0.0306	0.032	1.88	2.58	1.31	0.158	0.299	0.052	0.005	0.054	0.475	0.062	0.132	0.286	0.046	0.152	(0.011)	0.0091	0.010				
CRM	11X C10 B **	3.60	1.685	0.144	0.112	0.632	0.240	0.253	0.327	0.659	0.035	0.018	0.031	0.027	....	0.340	0.014	0.0065	....	....	....	....	** provisional values			
Continuation from above															Size (mm)	Form	Price									
	Pb	B	Zr	Te	Cd	N									Ø x H											
11X C1 P	0.011	0.052	0.005	....	....	0.0044									40 x 15	CC										
11X C2 S	0.015	0.0072	....	....	....	0.0057									40 x 15	CC										
11X C3 Z	(0.008)	(0.003)	....	0.0024	....	....									40 x 17	CC										
11X C4 Q	0.0155	0.018	0.006	0.0010	0.0014	....									40 x 17	CC										
11X C5 U	0.023	0.0172	(0.004)	0.005	....	....									40 x 17	CC										
11X C6 V	0.006	0.0053	0.005	....	....	0.0152									40 x 15	CC										
11X C7 N	0.0106	0.0097	(0.003)	....	....	0.025									40 x 15	CC										
11X C8 T	0.023	0.0409	....	0.0043	....	0.0075									40 x 15	CC										
11X C9 B	0.0044	0.0058	....	0.015	....	....									40 x 17	CC										
11X C10 B **	0.007	....	....	....	....	0.0076									40 x 15	CC										
1.1.8 Abrasion Resistant															Size (mm)	Form	Price									
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	Nb	Pb	Ø x H											
CRM	11X AR5 J	3.10	1.70	0.0316	0.0299	0.57	5.16	9.73	0.12	0.032	(0.018)	0.0147	0.0586	0.030	(0.003)	40 x 17	CC									

# 1. Iron Base

## Irons

Updated: 17 January 2011

## Blocks / Discs

1.1.9 Corrosion Resistant												Size (mm) Ø x H	Form	Price					
	C	Si	S	P	Mn	Ni	Cr	Cu											
CRM	11X S/1Cr5 F	2.54	4.27	0.035	0.107	0.75	16.3	3.36	6.34	sold out - no remake planned									
	11X S/2Cr1 E	2.83	2.85	0.011	0.31	1.68	16.5	2.48	0.02				40 x 15	CC					
	11X S/2Cr2 D	3.03	1.23	0.046	0.14	0.53	18.0	2.35	0.23				40 x 15	CC					
	11X S/2Cr4 D	2.82	2.59	0.010	0.049	0.97	20.7	1.10	0.24				40 x 15	CC					
	11X S/2Cr5 D	3.01	2.51	0.042	0.14	0.83	19.5	3.99	0.24				40 x 15	CC					
	11X S/2Cr6 D	2.65	3.59	0.009	0.254	0.81	18.0	4.39	0.27				40 x 15	CC					
	11X S/3Cr1 D	2.61	2.52	0.011	0.046	0.70	31.7	0.15	0.19				40 x 15	CC					
	11X S/3Cr2 C	2.30	2.59	0.010	0.045	0.85	31.0	2.62	0.21				40 x 15	CC					
	11X S/3Cr3 B	2.49	2.44	0.050	0.053	0.66	29.4	4.06	0.23				40 x 15	CC					
	11X S/3Cr4 C	2.51	2.37	0.056	0.081	0.65	29.5	5.30	0.23				40 x 15	CC					
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Co	Sn	Al	Ti	V	Pb	Size (mm) Ø x H	Form	Price	
	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 - C - may contain some primary carbon.																			
CRM	11X 0331.1 H	2.831	2.10	0.137	0.111	1.353	13.75	2.022	0.111	7.68	0.154	0.048	(0.030)	0.094	....	0.030	40 x 13	CC	
CRM	11X 0331.2 H	2.54	2.78	0.126	0.062	1.32	15.61	1.50	0.085	7.42	....	0.0220	0.049	....	....	0.029	40 X 13	CC	
CRM	11X 0331.3 F	2.10	2.46	0.061	0.040	1.08	18.03	2.57	0.061	6.49	....	0.0091	0.055	....	....	0.0112	40 X 13	CC	
CRM	11X 0331.5 C	2.73	2.93	0.217	0.164	0.893	14.52	0.582	0.117	7.74	....	0.121	0.018	....	....	0.0056	40 X 13	CC	
CRM	11X 0331.6 A	2.71	2.05	0.0197	0.0473	1.144	14.03	1.13	0.011	6.57	....	(0.0020)	...	0.025	0.0106	(0.0006)	35 X 6	CC	
																Size (mm) Ø x H	Form	Price	
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	V	W	Co	Pb					
CRM	11X 15294 T	2.25	0.409	0.050	0.100	0.551	1.84	29.32	0.630	0.126	0.070	0.124	0.45	0.179	0.0067		40 x 15	CC	
CRM	11X 15295 P	2.285	1.057	0.094	0.085	1.01	0.350	24.87	0.518	0.238	(0.045)	0.144	(0.20)	0.542	(0.010)		40 x 17	CC	
CRM	11X 15309 R	3.273	0.562	0.0110	0.0340	1.196	2.05	23.30	0.982	1.142	....	0.096	(0.057)	0.068	....		40 x 15	CC	
CRM	11X 15310 A	2.71	0.892	0.0278	0.051	1.45	5.66	21.22	0.980	2.64	....	0.071	0.137	0.0709	....		40 x 15	CC	

# 1. Iron Base

## Steels

Updated: 10 January 2011

Blocks / Discs

1.2.2 Residuals in Mild Steel																			Size (mm)	Form	Price		
	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
CRM 12X 10180 A	0.170	0.221	0.0336	0.0104	0.806	0.101	0.095	0.0220	0.176	0.0143	0.0243	....	....	....	0.0058	....	0.0031	....	0.0106	....	....	....	40 x 20 W
CRM 12X 12700 A	0.365	0.238	0.0116	0.0205	0.636	0.0197	0.070	0.0345	0.0342	....	0.055	....	0.0033	....	0.0060	0.0047	0.0120	....	0.0073	....	....	....	50 x 20 C
CRM 12X 12701 A	0.330	0.308	0.0124	0.0218	0.636	0.0557	0.235	0.0163	0.0346	....	0.0426	....	0.0040	....	0.0060	0.0058	0.0014	....	0.0072	....	....	....	50 x 20 C
CRM 12X 12746 U	0.0132	0.183	0.064	0.0247	1.70	0.161	0.182	0.654	0.368	0.202	0.021	0.0283	0.0160	0.101	0.049	0.115	....	....	....	....	....	....	40 x 15 W
CRM 12X 12747 U	0.149	0.337	0.041	0.029	2.02	0.391	0.443	0.500	0.437	0.167	0.015	0.072	0.0375	0.030	0.0114	0.200	....	....	....	....	....	....	42 x 15 W
CRM 12X 12748 T	0.135	0.122	0.052	0.053	0.494	0.454	0.755	0.300	0.543	0.074	0.009	(0.003)	0.0464	0.056	0.145	0.280	....	....	....	....	....	....	42 x 15 W
CRM 12X 12749 V	0.138	0.549	0.080	0.036	1.531	0.609	0.549	0.224	0.269	0.0240	0.026	0.0361	0.0419	0.035	0.074	0.484	....	....	....	....	....	....	42 x 15 W
CRM 12X 12750 T	0.202	0.383	0.0082	0.0106	0.248	1.012	0.853	0.119	0.0215	0.227	0.285	0.116	0.0961	0.105	....	0.670	....	0.120	....	....	....	....	40 x 15 W
CRM 12X 349 B	0.278	0.295	0.0326	0.0340	0.910	0.285	0.190	0.058	0.308	0.175	0.152	0.125	0.0158	0.053	0.0050	0.0211	....	....	....	....	....	....	42 x 15 W
CRM 12X 350 B	0.138	0.672	0.0363	0.029	0.706	0.162	0.392	0.149	0.150	0.0298	0.341	0.099	0.0286	0.275	0.053	0.0206	....	....	....	....	....	....	40 x 15 W
CRM 12X 352 C	0.257	0.498	0.131	0.074	0.533	0.380	0.348	0.242	0.162	0.124	0.090	0.246	0.042	0.140	0.030	0.031	....	....	....	....	....	....	42 x 15 W
CRM 12X 353 D	0.128	0.143	0.0049	0.0075	0.533	0.191	0.524	0.108	0.259	0.072	0.0490	0.066	0.0258	0.098	0.052	0.045	0.0185	0.058	0.0047	0.0104	0.018	0.088	40 x 15 W
12X 354 A																			Size (mm)	Form	Price		
C Si S P Mn Al V Co Sb B Nb Zr																			Ø x H				
12X 354 A	0.27	0.19	0.015	0.066	0.86	0.01	0.02	0.03	0.05	....	0.07	0.03	....	....	....	....	....	....	38 x 15-20	W			
12X 355 A	0.20	0.48	0.024	0.028	0.62	<0.01	0.11	0.05	0.08	0.001	0.02	<0.01	....	....	....	....	....	....	38 x 15-20	W			
12X 356 A	0.36	0.37	0.031	0.049	0.44	0.05	0.09	0.12	0.02	0.007	0.02	0.01	....	....	....	....	....	....	38 x 15-20	W			
12X 357 A	0.45	0.23	0.062	0.016	0.24	0.06	0.19	0.21	<0.005	0.014	<0.001	<0.005	....	....	....	....	....	....	38 x 15-20	W			
1.2.3 Low Alloy Steel																			Size (mm)	Form	Price		
C Si S P Mn Ni Cr Mo Cu Sn Al V W As Co Nb Ti Ta N																			Ø x H				
CRM 12X LA1 A	0.06	0.73	0.045	0.013	1.32	0.21	0.95	<0.01	0.034	....	<0.01	0.41	....	....	....	....	....	....	....	40 x 15	W		
CRM 12X LA2 C	0.182	1.023	0.0424	0.0268	0.415	0.788	0.757	0.179	0.383	....	1.60	0.0686	....	....	0.053	....	....	....	0.0108	42 x 15	W		
CRM 12X LA3 A	0.48	0.13	0.040	0.032	1.50	0.31	0.37	0.30	0.20	....	0.06	0.19	....	....	....	....	....	....	0.006	40 x 15	W		
CRM 12X LA4 B	0.537	0.335	0.039	0.0363	0.303	0.521	0.499	0.489	0.334	....	0.057	0.328	0.091	....	0.105	....	....	....	0.0222	42 x 15	W		
CRM 12X LA5 A	0.81	0.67	0.015	0.057	0.98	0.13	0.12	0.19	0.09	....	0.19	0.58	....	....	....	....	....	....	....	40 x 15	W		
CRM 12X LA6 A	0.01	0.06	0.006	0.005	0.10	0.03	0.03	<0.01	0.04	....	<0.01	<0.01	....	....	....	....	....	....	....	sold out - to be remade	40 x 15	W	
CRM 12X 15217 Q	0.176	1.390	0.073	0.058	0.652	0.864	1.24	0.358	0.231	0.0737	(0.021)	0.662	0.121	....	0.248	0.131	....	....	0.0253	40 x 15	W		
CRM 12X 15251 T	1.17	2.27	0.0258	0.0284	1.003	1.035	0.792	0.205	0.110	0.0047	0.050	0.405	0.053	....	0.259	0.29	....	....	0.0232	42 x 15	W		
CRM 12X 15252 Q	0.0478	0.265	0.0580	0.0213	0.818	2.03	0.887	0.248	0.154	0.0448	0.074	0.330	....	....	0.154	0.10	(0.054)	....	0.0218	40 x 15	W		
CRM 12X 15253 R	0.240	0.387	0.054	0.066	1.162	0.527	1.492	0.538	0.431	0.216	0.187	0.248	0.332	....	0.093	0.49	....	....	0.043	40 x 15	W		
CRM 12X 15255 P	0.473	1.13	0.0225	0.111	1.170	0.405	1.99	0.111	0.395	0.100	0.13	0.541	0.209	....	0.051	0.145	....	....	0.018	40 x 15	W		
CRM 12X 15256 P	0.082	0.137	0.0134	0.0177	0.553	5.70	0.970	0.130	0.050	0.123	0.129	0.554	0.103	....	0.546	0.101	....	....	0.0273	40 x 15	W		
CRM 12X 15259 P	0.740	1.90	0.099	0.0401	0.314	4.01	0.554	0.434	0.161	0.070	0.192	0.165	1.04	....	0.123	0.377	....	....	0.0132	40 x 15	CC		
CRM 12X 15260 V	0.446	0.456	0.094	0.031	2.20	0.573	3.69	0.130	0.231	0.0130	0.378	0.351	....	0.087	0.109	0.243	....	0.026	....	....	40 x 15	CC	
CRM 12X 15266 T	0.454	0.667	0.0093	0.079	1.45	1.50	2.78	0.365	0.253	0.0160	0.453	0.089	....	0.063	0.235	1.481	....	0.20	....	....	40 x 15	CC	
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 15254 Y	0.261	0.753	0.0476	0.043	1.19	0.886	2.09	0.788	0.130	0.047	1.136	0.296	0.358	....	0.470	0.322	0.260	....	....	....	40 x 15	W	
CRM 12X 15258 N	0.548	1.020	0.070	0.0439	1.434	0.327	0.465	0.215	0.0934	0.0453	0.032	0.218	0.102	....	0.272	0.103	0.120	....	....	....	42 x 15	W	
CRM 12X 15261 W	0.689	1.606	0.079	0.111	0.437	0.113	0.495	1.508	0.252	0.0157	1.013	0.114	0.256	....	0.363	0.691	0.397	....	....	....	40 x 15	CC	

# 1. Iron Base

## Stainless Steels

Updated: 14 January 2011

Blocks / Discs

1.3.2 Austenitic Stainless Steels																	Size (mm)	Form	Price						
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Co	Nb	N	B	Bi	Ta	V	Sb	Ti	W	Zr	Ø x H		
CRM	13X 17001 B	0.114	0.34	0.016	0.080	1.73	6.05	14.89	0.12	0.037	0.030	0.01	0.15	0.76	0.040	0.008	....	....	....	....	....	....	40 x 15	C	
	13X 17002 D	0.117	0.664	0.050	0.056	1.38	7.84	17.62	0.222	0.085	(0.0024)	(0.0046)	0.103	0.487	0.047	....	....	....	....	....	....	....	42 x 15	W	
	13X 17003 A	0.10	0.78	0.035	0.037	0.85	11.90	11.89	0.27	0.08	....	....	0.07	0.34	....	....	....	....	....	....	....	....	40 x 15	C	
CRM	13X 17004 A	0.06	1.32	0.048	0.024	0.62	16.06	21.78	0.31	0.11	....	....	0.05	0.23	....	....	....	....	....	....	....	....	40 x 15	C	
	13X 17005 C	0.128	2.03	0.090	0.0166	0.446	20.19	24.96	0.472	0.283	....	....	0.033	0.125	0.118	0.0035	(0.11)	....	....	....	....	....	....	40 x 15	CC
CRM	13X 18001 A	0.22	0.32	0.057	0.022	1.40	6.41	15.92	0.80	0.16	....	....	0.04	0.57	....	....	....	....	....	....	....	....	40 x 15	C	
	13X 18002 C **	0.15	0.62	0.02	0.02	0.80	7.9	18.0	0.23	0.085	....	0.06	0.06	1.6	0.055	....	....	0.06	....	** provisional values	....	....	40 x 15	CC	
	13X 18003 B	0.203	1.008	0.042	0.054	0.773	10.35	19.98	0.397	0.074	....	....	0.120	1.12	0.046	....	....	....	....	....	....	....	42 x 15	W	
CRM	13X 18004 A	0.07	1.44	0.012	0.094	2.1	12.55	21.64	0.63	0.04	....	....	0.18	0.83	....	....	....	....	....	....	....	....	40 x 15	C	
	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	
	13X 19003 B	0.0132	0.550	0.0390	0.0406	1.273	12.22	18.56	2.47	0.068	....	....	0.121	0.122	0.020	....	....	....	....	....	....	....	42 x 15	W	
CRM	13X 19004 B	0.066	0.36	0.014	0.069	1.96	17.9	22.8	3.62	0.022	....	....	0.18	....	....	....	....	....	....	....	....	....	40 x 15	C	
	13X 12533 Y	0.03	0.37	0.032	0.011	1.13	5.04	18.8	1.05	0.18	(0.03)	0.011	0.055	....	(0.014)	(0.01)	....	(0.17)	....	....	0.14	....	40 x 15	C	
	13X 12534 U	0.0303	0.988	0.0209	0.0309	0.604	10.24	18.76	2.32	0.079	....	(0.04)	0.064	....	0.078	....	0.037	....	....	0.159	....	....	40 x 15	CC	
CRM	13X 12535 BD	0.276	1.31	0.069	0.072	0.495	14.73	16.89	3.91	0.086	0.0182	0.267	0.711	....	0.0141	0.0135	....	0.090	....	1.18	....	....	40 x 15	CC	
	13X 12536 R	0.165	0.65	0.13	0.053	0.47	11.9	14.8	2.53	0.048	0.018	0.11	0.09	....	....	0.022	....	0.15	....	0.47	....	....	40 x 15	C	
	13X 12537 S	0.090	1.18	0.048	0.092	1.174	11.10	19.32	3.12	0.659	0.049	(0.011)	0.114	....	0.043	0.007	(0.15)	....	0.053	....	....	40 x 17	CC		
CRM	13X 12853 J	0.050	0.99	0.016	0.016	1.17	11.92	17.2	2.74	0.114	....	....	0.06	....	(0.011)	0.003	(0.007)	0.03	....	0.02	0.027	0.12	0.009	40 x 15	C
	13X 12854 L	0.053	1.308	0.0278	0.024	1.300	11.60	15.77	2.50	0.306	....	....	0.33	0.689	0.0550	0.0076	0.019	(0.06)	....	....	0.065	0.16	....	40 x 15	CC
	13X 12855 L	0.0361	1.029	0.0123	0.0210	0.939	10.98	17.55	2.56	0.379	....	....	0.207	....	....	0.0036	0.0030	(0.11)	....	0.177	0.044	0.201	....	40 x 15	W
1.3.3 Maraging Steels																	Size (mm)	Form	Price						
	C	Si	S	P	Mn	Ni	Cr	Mo	Al	Ti	Co	N					Ø x H								
CRM	13X 14933 R	0.008	0.05	0.014	0.023	0.17	16.8	0.022	3.83	<0.005	0.029	11.4	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
	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	
	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 Martensitic Stainless Steels																	Size (mm)	Form	Price						
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	As	Co	Nb	W	B	N		Ø x H				
CRM	13X 12547 L	0.335	0.246	0.110	0.062	1.16	0.58	16.43	0.741	0.544	0.0232	....	....	0.098	....	....	....	....	....	0.0511	....	....	42 x 15	W	
	13X 12548 M **	0.2	0.4	0.22	0.03	0.6	1.0	13	1.3	0.25	....	....	....	....	0.35	0.6	0.03	....	0.05	** provisional values	....	....	40 x 15	CC	
	13X 12549 K	0.16	0.43	0.29	0.092	0.34	1.26	11.70	1.49	0.10	....	....	....	....	0.52	0.23	....	....	....	....	....	....	40 x 15	C	
CRM	13X 14775 R	0.05	0.63	0.054	0.053	1.37	1.75	17.7	0.47	0.21	....	....	....	....	....	0.15	0.75	....	....	....	....	....	40 x 15	C	
	13X 15023 U	0.12	0.19	0.012	0.013	1.43	0.78	10.75	1.49	0.06	....	....	....	....	0.05	1.20	....	....	....	....	....	....	40 x 15	C	
	13X 15024 W	0.12	0.77	0.028	0.030	0.57	2.84	14.94	0.24	0.36	....	....	....	....	0.10	0.10	....	....	....	....	....	....	40 x 15	C	
CRM	13X 15035 T	0.10	0.68	0.069	0.054	0.93	2.66	13.94	0.45	0.31	....	....	....	....	0.21	0.63	....	....	....	....	....	....	40 x 15	C	
	13X 15059 N	0.057	0.48	0.020	0.015	1.22	1.30	15.97	0.63	0.14	(0.02)	....	....	0.06	....	0.26	0.81	....	....	0.049	....	....	40 x 15	C	
	13X 44004 A	1.052	0.363	0.0178	0.0214	0.346	0.207	16.74	0.462	0.0548	....	0.0305	....	0.076	....	0.0188	....	0.030	....	0.0247	....	....	40 x 15	W	
CRM	13X 8110L C	0.697	0.788	0.0943	0.047	0.650	4.16	12.11	2.71	0.223	....	(0.004)	0.031	0.220	0.072	0.314	....	....	1.07	0.0200	....	....	40 x 15	CC	

# 1. Iron Base

## Stainless Steels

Updated: 14 January 2011

Blocks / Discs

1.3.5 Special Stainless Steels																	Size (mm)	Form	Price				
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	W	Co	Nb	N	Cd	Ø x H					
CRM	13X 12538 J	0.04	0.64	....	....	0.78	6.07	23.72	1.53	....	....	....	....	....	....	....	....	40 x 15	C				
	13X 12540 L	0.15	1.05	....	....	0.44	5.17	27.88	0.54	....	....	....	....	....	....	....	....	40 x 15	C				
	13X 14207 K **	0.12	1.5	0.05	0.02	0.9	12.5	20.0	0.3	0.25	....	....	....	3.2	0.03	0.25	0.10	** provisional values	40 x 15	CC			
	13X 14211 P	0.112	1.75	0.018	0.016	0.65	12.8	25.7	0.31	0.28	....	....	....	2.80	0.056	0.15	....		40 x 15	C			
	13X 14212 Q	0.069	2.50	0.041	0.058	0.66	10.33	20.90	0.540	5.56	(0.013)	(0.018)	0.152	3.32	0.241	0.612	0.121		43 x 20	C			
	13X 14215 K	0.126	0.56	0.016	0.016	1.08	15.70	23.8	0.046	0.03	....	0.08	0.06	2.89	0.016	(0.016)	....		40 x 15	C			
	13X 14216 N	0.089	1.54	0.034	0.026	0.748	12.61	22.03	0.228	0.210	(0.004)	(0.005)	0.040	2.00	0.232	0.27	0.142		43 x 20	C			
	13X 14219 J	0.08	1.48	0.048	0.047	0.48	12.39	21.71	0.19	0.23	....	....	....	4.07	....	0.19	....	40 x 15	C				
1.3.6 Precipitation Hardening Steels																	Size (mm)	Form	Price				
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Ti	Al	V	As	Co	Nb	B	Ta	N	Ø x H				
CRM	13X PH2 L	0.111	0.690	0.0251	0.027	1.140	3.67	16.77	0.500	4.08	0.083	0.051	0.119	....	0.116	0.336	0.0061	....	0.107	40 x 17	CC		
CRM	13X PH3 L	0.167	1.70	0.039	0.023	0.399	6.03	7.47	0.996	7.06	....	....	0.066	....	0.398	0.65	0.0046	....	0.0291	43 x 20	C		
CRM	13X PH4 M	0.0347	0.647	0.061	0.0152	0.728	4.39	13.73	0.323	5.42	....	....	0.582	....	0.655	0.338	(0.0037)	(0.049)	0.112	40 x 17	CC		
	13X PH5 J	0.122	1.03	0.015	0.065	0.98	4.51	17.85	0.51	4.42	....	....	....	....	....	0.58	....	....	0.046	40 x 15	C		
CRM	13X PH6 E	0.116	2.10	0.015	0.040	0.652	6.35	12.13	1.45	2.08	....	....	0.167	0.028	0.138	0.539	....	....	0.027	sold out, being remade	43 x 20	G	
	13X PH7 E	0.10	1.40	0.021	0.031	1.49	5.58	13.15	2.53	0.79	....	....	....	....	....	0.29	....	....	0.060		40 x 15	G	
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	41 x 15	W		
1.3.7 High Nitrogen Stainless Steels																	Size (mm)	Form	Price				
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	V	W	Co	Nb	N	Ø x H							
CRM	13X NSA1 E	0.07	0.41	....	....	0.42	7.9(6)	20.3	2.47	....	....	....	....	....	0.040	....	....	....	40 x 15	C			
	13X NSA2 G	0.142	0.805	0.0083	....	0.808	10.24	18.71	1.89	....	....	....	....	....	0.163	....	....	....	40 x 15	CC			
	13X NSA3 J	0.16	0.57	....	....	1.07	12.0	16.1	2.8	....	....	....	....	....	0.20	....	....	....	40 x 15	W			
	13X NSA4 A	0.0262	0.44	0.0130	0.0281	5.59	17.11	23.79	4.19	0.487	(0.016)	....	....	....	0.079	0.532	....	....	40 x 17	CC			
	13X NSA5 A	0.063	0.281	0.0212	(0.010)	4.27	9.52	20.73	2.32	0.098	(0.012)	....	....	....	0.574	0.340	....	....	40 x 17	CC			
	13X NSA6 A	0.0132	0.258	0.0086	0.0183	1.59	31.32	26.93	6.75	1.16	0.003	....	....	....	0.053	0.188	....	....	40 x 17	CC			
	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	....	....	42 x 15	W			
	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	....	....	44 x 15	W			
	13X NSB1 D	0.17	0.58	....	....	0.44	10.0	19.1	0.11	....	....	....	....	....	0.04	....	....	....	40 x 15	W			
	13X NSB2 D	0.06	0.66	....	....	0.62	11.1	18.2	0.21	....	....	....	....	....	0.095	....	....	....	40 x 15	W			
	13X NSB3 G	0.121	0.471	....	....	0.632	9.26	15.22	0.630	....	....	....	....	....	0.198	....	....	....	42 x 15	W			
	13X NSC1 M	0.350	0.90	0.0197	....	7.49	5.49	17.57	0.251	0.382	(0.010)	0.554	....	....	1.62	0.100	....	....	40 x 17	CC			
	13X NSC2 N	0.570	1.20	0.0233	....	8.36	4.00	20.14	0.782	1.040	(0.011)	0.293	....	....	2.25	0.269	....	....	40 x 17	CC			
	13X NSC3 W	1.34	1.81	0.0086	....	9.48	3.01	22.91	0.0939	0.130	0.08	0.150	....	....	2.43	0.469	....	....	40 x 15	CC			
	13X NSC4 D	0.522	1.50	0.0097	....	8.37	6.51	31.48	1.57	0.193	0.016	0.206	0.181	0.228	1.97	1.030	....	....	40 x 15	CC			
	13X NSC5 A	0.493	1.16	0.0095	....	2.49	4.16	22.47	0.002	0.745	0.315	0.026	....	....	2.31	0.257	....	....	40 x 17	CC			
	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		
	13X NSD1 B	0.046	0.411	0.009	0.019	23.53	0.114	24.51	1.12	0.042	(0.013)	....	0.057	0.128	0.030	0.88	....	....	....	40 x 15	W		

# 1. Iron Base

## Special Steels

Updated: 11 January 2011

Blocks / Discs

1.4.2 High Speed Steels															Size (mm)	Form	Price				
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Nb	N	Pb	Alloy 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
CRM	14X HS2 C	0.780	0.216	0.0146	0.021	0.240	0.190	4.10	0.445	0.106	....	....	1.17	18.09	....	5.06	....	0.0211	....	T-4	40 x 15
CRM	14X HS3 L	0.855	0.318	0.046	0.035	0.621	0.706	5.25	1.24	0.200	0.288	....	1.79	17.93	0.044	10.64	....	0.087	0.010	T-5/6	40 x 17
CRM	14X HS9 A	2.14	0.406	0.0126	0.0222	0.259	0.239	12.40	1.11	0.039	....	(0.022)	4.06	0.011	....	0.037	(0.011)	0.032	....	D-7	42 x 15
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
CRM	14X HS11 A	1.739	0.794	0.0107	0.0133	0.237	0.188	19.34	1.52	0.0562	....	....	1.032	2.24	....	0.074	....	(0.002)	....		48 x 13
	14X 14944 D	0.62	0.17	0.011	0.016	0.23	0.19	2.87	0.14	0.10	....	....	1.00	15.5	....	0.15	....	....	....		40 x 15
	14X 14945 D	0.67	0.26	0.041	0.033	0.72	0.33	3.97	0.23	0.12	....	....	0.55	16.84	....	0.22	....	....	....		40 x 15
	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
	14X 14948 C	0.83	0.26	0.017	0.011	0.65	0.29	4.04	0.14	0.04	....	....	0.65	18.8	....	0.16	....	....	....		40 x 15
	14X 14952 D	0.90	0.32	0.054	0.054	0.64	0.34	4.93	0.32	0.02	....	....	1.24	18.0	....	0.02	....	....	....		40 x 15
	14X 14890 K	0.81	0.69	0.028	(0.012)	0.58	0.08	3.60	5.59	0.09	....	....	1.99	5.30	....	0.32	....	....	....		40 x 15
	14X 14892 K	0.83	0.23	0.047	0.054	0.23	0.23	3.99	4.99	0.20	....	....	1.76	6.30	....	0.16	....	....	....		40 x 15
1.4.5 High Manganese Steels															Size (mm)	Form	Price				
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Nb	Ti	Ta	N	Ø x H				
CRM	14X MN1 AH	0.427	0.260	0.0030	0.0191	19.64	0.694	1.291	0.535	0.044	0.0064	0.149	0.021	0.143	0.133	(0.005)	0.0366			40 x 15	
CRM	14X MN2 Q	0.788	1.27	0.0198	0.0228	9.57	0.501	0.381	1.56	(0.16)	0.0683	(0.008)	0.104	0.346	....	....	0.0148			40 x 17	
CRM	14X MN3 R	1.33	1.01	0.0263	0.053	11.14	2.11	1.17	0.459	0.357	0.0319	(0.026)	0.048	0.416	....	....	0.030			40 x 17	
CRM	14X MN4 Z **	1.2	0.85	0.008	0.025	13.3	1.06	2.1	0.75	0.24	0.018	0.06	0.03	0.08	0.15	0.01	0.022	** provisional values			40 x 15
CRM	14X MN5 R	1.463	1.48	0.030	0.025	7.62	1.60	3.75	1.98	0.56	0.0111	(0.03)	0.0255	0.100	....	....	0.0274			40 x 17	
	14X 15195 P	1.64	1.45	0.018	0.062	12.06	0.09	0.11	0.30	0.12	0.05	0.08	0.33	....	....	....	....			40 x 15	
	14X 15196 S	1.08	1.64	0.012	0.037	10.16	0.25	0.26	0.22	0.22	0.10(5)	0.13(5)	0.21	....	....	....	....			40 x 15	
1.4.8 Free Machining & Resulphurised Steels															Size (mm)	Form	Price				
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	N	Ø x H						
CRM	14X MSFM1 J	0.0098	0.351	0.364	0.0778	1.109	0.0205	0.017	0.249	0.0056	0.0041	0.0024	0.0026	0.0019	0.0060					40 x 15	
CRM	14X MSFM1 K	0.062	0.490	0.382	0.078	1.07	0.036	0.319	0.196	0.0101	0.0253	(0.021)	0.0116	0.0578	0.005					40 x 15	
CRM	14X MSFM2 J	0.210	0.477	0.256	0.049	1.84	0.0667	0.568	0.287	0.0225	0.0095	(0.016)	0.0359	0.0137	0.0049					40 x 15	
	14X MSFM3 F	0.55	0.52	0.087	0.060	2.10	....	....	0.27	....	....	....	....	....	....					40 x 15	
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	
1.4.11 High-Ni Calibration Series															Size (mm)	Form	Price				
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Co	Ø x H									
CRM	14X FeNi20 B **	0.012	1.13	0.008	0.009	0.025	20.0	0.103	0.073	0.020	1.01				40 x 15	CC					
CRM	14X FeNi25 B **	0.007	0.018	0.63	0.011	0.012	25.1	0.035	0.031	0.11	0.760				40 x 15	CC					
CRM	14X FeNi35 B **	0.041	0.245	0.13	0.028	0.163	35.4	0.090	0.040	0.038	0.355			** provisional values	40 x 15	CC					
CRM	14X FeNi40 B **	0.045	0.028	1.0	0.018	0.081	40.6	0.048	0.052	1.22	0.860				40 x 15	CC					
CRM	14X FeNi45 B **	0.004	0.57	0.035	0.041	0.014	45.2	0.050	0.077	0.55	0.66				40 x 15	CC					
CRM	14X FeNi50 B **	0.050	0.20	0.25	0.025	0.11	50.4	0.092	0.102	0.055	0.50				40 x 15	CC					

## 2. Nickel Base

Updated: 17 January 2011

Blocks / Discs

2.1.2 Residuals in Nickel															Size (mm)	Form	Price							
	C	Si	Mn	Cu	Fe	Cr	Co	Ti	Al	Mg	S	Sn	Pb	B	N	Ø x H								
21X-17518-H	0.007	0.05	0.43	<0.001	0.52	0.05	1.05	0.032	0.15	0.034	(0.001)	(0.002)	(0.002)	(0.002)	<0.001	sold out - no remake planned								
21X 17519 J	....	0.17	0.35	0.06	0.28	0.06	0.77	0.07	0.19	0.20	....	....	....	....	....	40 x 15	C							
21X 17520 H	....	0.20	0.18	0.09	0.25	0.10	0.48	0.08	0.04	0.06	....	....	....	....	....	40 x 15	C							
21X 17521 J	....	0.28	0.11	0.16	0.24	0.16	0.26	0.12	0.03	0.03	....	....	....	....	....	40 x 15	C							
21X 17522 G	....	0.35	0.02	0.20	0.07	0.23	0.04	0.31	0.03	<0.005	....	....	....	....	....	40 x 15	C							
2.2 Ni/Cr (Nimonic Type)																								
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Sn	Zr	V	Ag	Te	Bi	As	Sb	Pb	W	B		
22X 754 D	0.07	0.66	0.53	0.21	2.22	19.65	0.21	0.23	0.49	0.18	0.002	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
22X 755 D	0.05	0.27	1.07	0.50	1.15	19.69	0.49	0.07	0.83	0.36	0.003	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
22X 801 D	0.14	0.51	0.56	0.22	0.57	20.75	0.25	0.25	2.19	1.33	0.03	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
22X 803 E	0.06	1.05	0.22	0.007	0.33	19.85	0.50	0.50	1.93	1.60	0.0002	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
22X 804 D	0.07	0.56	0.54	0.21	0.66	19.72	0.09	0.20	2.34	1.33	0.004	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
22X 805 D	0.20	0.22	1.01	0.54	1.06	19.82	0.10	0.22	2.71	1.06	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
22X 806 D	0.007	0.10	0.09	0.004	0.18	19.66	0.01	0.03	2.48	1.35	....	....	0.004	....	....	....	....	0.007	0.02	0.004	....	40 x 15	C	
22X 808 C	....	0.10	0.05	<0.01	0.11	19.73	<0.01	0.03	2.14	1.41	....	0.030	0.035	0.05	0.007	0.008	0.002	0.013	0.017	0.007	0.11	0.014	40 x 15	C
2.3 Fe/Ni/Cr (Incoloy Type)															Size (mm)	Form	Price							
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	B	Ø x H									
22X 902 B	0.15	0.50	0.51	0.13	0.61	18.80	0.22	17.08	2.26	1.31	0.02	....	....	....	....	....	40 x 15	C						
22X 903 C	0.08	1.09	0.25	0.01	0.83	19.84	0.07	17.60	1.86	1.67	0.002	....	....	....	....	....	40 x 15	C						
22X 904 C	0.08	0.52	0.50	0.10	0.25	19.9	0.21	16.9	2.26	1.29	0.005	....	....	....	....	....	40 x 15	C						
22X 905 C	0.19	0.22	1.08	0.23	1.15	19.89	0.53	16.45	2.92	1.03	....	....	....	....	....	....	40 x 15	C						
CRM 22X 1051 D	0.166	0.58	0.206	0.115	0.575	15.95	4.50	18.98	1.078	4.35	0.0186	0.0015	0.0040	0.0009	....	....	....	40 x 15	C					
CRM 22X 1052 C	0.19	0.51	0.26	0.13	0.65	15.7	4.48	18.6	1.09	4.08	0.002	....	....	....	....	....	40 x 15	C						
CRM 22X 1055 D	0.274	0.24	0.03	0.02	1.26	14.9	3.87	19.9	0.52	3.97	(0.008)	0.009	....	....	....	....	....	40 x 15	C					
CRM 23X 8001 G	0.130	0.191	1.29	0.078	(44.2)	20.28	0.540	0.982	0.650	0.55	0.0067	0.0067	30.98	....	....	....	....	40 x 15	C					
CRM 23X 8002 E	0.06	0.47	0.68	0.28	....	20.48	0.34	0.54	0.32	0.29	....	....	....	32.1	....	....	....	40 x 15	C					
CRM 23X 8004 E	0.06	0.53	0.70	0.30	....	19.72	0.33	0.53	0.34	0.31	....	....	....	31.8	....	....	....	40 x 15	C					
CRM 23X 8005 E	0.07	0.46	0.73	0.28	....	20.81	0.34	0.50	0.35	0.22	....	....	....	32.2	....	....	....	40 x 15	C					

## 2. Nickel Base

Updated: 17 January 2011

Blocks / Discs

2.3 Fe/Ni/Cr (Incoloy Type) continued												Size (mm) Ø x H	Form	Price					
	C	Si	Mn	Cu	Cr	Mo	Co	Ti	Al	Ni									
23X DS2 E	0.06	2.07	1.00	0.30	17.81	0.30	0.48	0.17	0.04	37.4		40 x 15	C						
23X DS4 E	0.06	2.01	1.02	0.30	16.83	0.29	0.48	0.20	0.037	37.15		40 x 15	C						
23X DS5 E	0.080	1.98	1.04	0.30	18.64	0.30	0.50	0.17	0.083	36.57		40 x 15	C						
2.4 Ni/Cr/Co/Mo												Size (mm) Ø x H	Price						
	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al										
24X 14939 E	0.42	0.63	0.52	0.57	21.0	6.62	19.58	1.88	0.76			40 x 15	C						
24X 11005 E	0.36	0.63	0.26	0.79	19.84	6.10	18.72	2.44	0.58			40 x 15	C						
2.4.1 Waspalloy, 720-types												Size (mm) Ø x H	Form	Price					
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ni	B	V	W	Zr	Nb	Pb
24X WASP1 B	0.01	0.59	0.13	0.08	2.16	16.64	6.14	12.8	3.13	1.64	0.011	0.019	....	0.007	0.03	0.18	0.12	0.055	....
24X WASP2 B	0.09	0.35	0.24	0.11	1.66	18.50	4.22	14.6	3.53	1.00	0.018	0.009	....	0.008	0.06	0.14	0.07	0.12	....
CRM 24X WASP3 E	0.102	0.403	0.650	0.470	1.197	19.76	3.98	13.77	3.904	1.54	0.0171	0.018	53.51	0.0102	0.082	(0.111)	0.146	0.149	....
CRM 24X WASP4-C	0.052	0.24	0.53	(0.004)	4.48	19.7	7.54	11.04	2.25	2.16	(0.01)	<0.005	54.3	0.014	0.445	0.25	0.08	0.25	0.004
CRM 24X 07001 A	0.040	0.090	0.0269	0.0138	1.007	19.55	4.25	13.05	3.05	1.40	(0.0005)	0.0030	57.45	0.0075	....	....	0.0591	0.0500	....
CRM 24X 7201 A	0.0322	0.036	0.0022	....	0.09	16.01	3.01	14.79	5.10	2.44	0.0024	(0.002)	57.10	0.0242	....	1.32	0.0433	....	....
2.5 Ni/Cr/Nb/Mo												Size (mm) Ø x H	Form	Price					
	Si	Mn	Cu	Fe	Cr	Mo	Co	W	Nb										
25X 10221 F	0.45	0.28	0.11	0.62	20.0	6.57	0.26	2.23	7.43			40 x 15	C						
25X 10225 G	0.25	0.29	0.12	0.55	18.27	5.95	0.30	1.74	7.00			40 x 15	C						
25X 10230 G	0.34	0.35	0.12	0.76	21.9	6.06	0.59	3.83	7.04			40 x 15	C						
25X 10231 D	0.14	0.13	0.06	0.55	20.58	6.00	0.11	2.67	6.76			40 x 15	C						
25X 10235 E	0.56	0.53	0.26	1.26	19.87	5.85	0.53	3.14	7.25			40 x 15	C						
2.6 Ni/Cr/Mo												Size (mm) Ø x H	Form	Price					
	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al										
26X 11381 D	0.30	0.43	0.008	0.70	19.76	9.47	(0.047)	2.48	0.41			40 x 15	C						
26X 11383 D	0.29	0.19	0.08	0.49	22.50	9.37	0.05	2.84	0.67			40 x 15	C						
26X 11384 E	0.15	0.13	0.12	0.98	20.5	10.2	0.30	2.6	0.50			40 x 15	C						
26X 14182 D	(0.01)	<0.005	0.006	0.09	21.61	10.11	0.06	2.75	0.76			40 x 15	C						
2.7 Ni/Cr/Mo/Co												Size (mm) Ø x H	Form	Price					
	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al										
27X 14184 F	0.41	0.40	0.09	0.40	21.8	10.7	10.5	0.02	0.02			40 x 15	C						
27X 14188 D	0.33	0.30	(0.003)	0.44	21.17	10.3	10.4	0.03	<0.01			40 x 15	C						
27X 14386 C	0.38	0.39	0.02	1.50	20.73	10.47	10.51	0.06	0.02			40 x 15	C						
27X 14387 E	0.28	0.27	<0.005	1.11	20.2	10.8	10.0	<0.005	<0.005			40 x 15	C						

## 2. Nickel Base

Updated: 17 January 2011

Blocks / Discs

2.8 Ni/Cr/Fe (Inconel Type)																	Size (mm) Ø x H	Form	Price			
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Sn	Nb	Ta	W	B	Ni	N		
28X 6001 G	....	0.95	0.12	0.83	6.33	16.38	....	1.02	0.58	0.02	0.01	....	....	....	....	....	....	....	....	40 x 15	C	
28X 6002 F	....	0.25	0.65	0.02	8.24	16.23	....	0.22	0.12	0.18	0.004	....	....	....	....	....	....	....	....	40 x 15	C	
28X 6003 E	....	0.74	0.47	0.42	7.1	15.56	....	0.62	0.22	0.025	0.01	....	....	....	....	....	....	....	....	40 x 15	C	
28X 6004 E	....	0.65	0.38	0.42	7.17	16.21	....	0.77	0.27	0.05	0.008	....	....	....	....	....	....	....	....	40 x 15	C	
28X 6005 E	....	0.60	0.39	0.39	6.98	16.93	....	0.62	0.28	0.06	0.002	....	....	....	....	....	....	....	....	40 x 15	C	
28X X7502 D	0.10	0.33	1.03	0.22	6.70	14.93	0.35	....	2.60	0.74	....	....	....	....	0.96	....	....	....	....	40 x 15	C	
28X X7504 D	0.03	0.39	1.09	0.22	6.42	14.22	0.46	....	2.59	0.70	....	....	....	....	0.95	....	....	....	....	40 x 15	C	
28X X7505 D	0.11	0.34	4.04	0.22	6.25	16.08	0.33	....	2.33	0.80	....	....	....	....	1.07	....	....	sold out - no remake planned			40 x 15	C
CRM 28X 6251 L	0.028	0.274	0.139	0.072	3.28	20.49	9.94	(0.041)	0.017	(0.054)	....	0.0043	0.0055	....	2.00	....	....	(0.0043)	63.36	0.0431	40 x 17	CC
CRM 28X 6252 M	0.084	0.559	0.276	0.483	3.72	21.08	9.23	0.262	0.21	0.257	....	0.0138	(0.008)	....	3.96	....	....	0.0166	59.37	0.173	40 x 17	CC
CRM 28X 6253 P	0.126	1.13	0.677	0.299	5.23	21.66	7.69	0.417	0.360	(0.21)	....	0.0211	0.013	....	4.202	0.057	....	....	57.51	0.093	40 x 15	CC
CRM 28X 6254 L	0.047	(0.79)	0.457	0.044	3.33	22.71	8.92	0.195	0.179	(0.05)	....	0.0160	0.0097	....	3.60	....	....	0.005	59.55	0.0364	40 x 17	CC
CRM 28X 6255 L	0.035	0.591	0.230	0.686	1.88	19.41	8.05	0.239	0.413	0.35	....	0.016	0.008	....	4.11	0.194	....	....	63.6	0.099	40 x 15	CC
CRM 28X 6256 A	0.0173	0.041	0.0004	0.018	(0.034)	21.29	8.81	....	0.266	0.301	....	(0.002)	0.0033	....	3.75	....	....	....	65.4	0.007	40 x 13	HIP
CRM 28X 06625 A	0.020	0.273	0.090	0.0288	0.917	21.94	9.15	0.031	0.238	0.184	....	0.0037	(0.002)	....	3.52	....	....	0.0009	63.49	0.0219	40 x 15	W
28X 7181 H	0.008	0.71	0.108	0.013	(19.5)	18.71	2.94	0.01	0.025	(0.007)	....	0.005	(0.003)	0.003	4.97	....	....	0.0010	52.6	0.233	45 x 18	C
CRM 28X 7182 M	0.021	0.390	0.310	0.134	(14.7)	19.98	3.59	0.632	0.98	0.41	....	0.0106	0.007	0.005	4.74	....	0.030	0.0047	53.86	....	43 x 20	C
CRM 28X 7183 T	0.119	0.309	0.41	0.319	17.2	18.4	3.49	(0.91)	1.23	0.90	....	0.0097	0.015	0.0056	5.57	0.022	0.076	0.0120	51.0	0.019	43 x 20	C
CRM 28X 7184 K	0.085	0.403	0.215	0.123	18.22	16.91	3.07	0.44	0.633	0.620	....	0.0158	0.0103	....	5.07	0.077	....	0.0052	54.16	0.084	40 x 15	CC
CRM 28X 7185 K	0.060	0.882	0.286	0.203	18.44	20.77	2.71	0.220	0.281	0.359	....	0.0089	0.0189	....	4.61	0.115	....	0.0107	50.67	0.172	40 x 15	CC
CRM 28X 7186 J	0.043	0.358	0.398	0.190	16.51	16.13	3.24	0.579	1.04	0.70	....	0.0264	0.020	....	5.75	....	....	0.0097	55.06	0.064	40 x 15	CC
CRM 28X 07718 A	0.026	0.076	0.055	0.038	19.55	18.62	3.01	0.172	0.945	0.544	....	0.0015	0.0063	....	5.05	....	....	0.0034	51.99	0.0056	38 x 15	W
2.10 Ni/Co/Cr/Al/Ti																	Size (mm) Ø x H	Form	Price			
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	N	Zr	V									
CRM 210X 11775 G	0.024	0.36	0.127	(0.008)	1.02	10.42	3.19	14.83	5.76	7.0	(0.003)	0.070	0.47							45 x 20	C	
210X 11979 G	0.025	0.30	0.13	0.07	0.56	8.07	3.28	14.32	5.22	3.76	....	0.04	0.82							40 x 15	C	
210X 11981 F	0.09	0.33	0.21	0.10	0.93	11.81	3.66	14.65	4.83	5.07	....	0.11	0.73							40 x 15	C	
2.11 Ni/Cr/Al																	Size (mm) Ø x H	Form	Price			
	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Nb	Ta	Zr										
211X 11221 F	0.21	0.24	0.05	0.25	13.82	3.72	1.24	1.26	6.26	2.81	0.06	0.21								40 x 15	C	
211X 11222 F	0.23	0.32	0.11	0.17	14.18	4.03	0.12	1.05	5.47	2.89	0.08	0.12								40 x 15	C	
211X 11224 F	0.34	0.11	0.31	0.41	13.82	3.99	0.25	1.31	6.30	3.33	0.53	0.15								40 x 15	C	
211X 11233 E	0.14	0.20	0.21	0.39	12.67	4.10	0.63	1.32	6.03	2.61	0.23	0.13								40 x 15	C	
211X 11236 E	0.21	0.21	0.16	0.46	15.98	4.02	0.64	1.33	6.14	2.73	0.10	0.05								40 x 15	C	

## 2. Nickel Base

Updated: 17 January 2011

Blocks / Discs

2.12 Ni/Cu (Monel Type)																			Size (mm) Ø x H	Form	Price			
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Pb	Sn	Zn	Cd	Be	Bi	Se	Ni		
CRM	212X 4001 N	0.0460	0.98	2.35	27.62	1.032	0.143	....	0.107	0.344	0.316	0.16	0.019	0.0099	....	0.054	....	....	....	....	66.56	40 x 15	CC	
CRM	212X 4002 L	0.0369	0.090	1.68	32.41	1.022	0.084	....	0.064	0.0421	0.081	0.0222	0.0019	....	0.0318	0.0373	....	....	....	....	64.36	40 x 15	CC	
CRM	212X 4003 J	0.0051	0.293	1.00	30.48	1.24	0.073	0.023	0.029	(0.063)	0.086	0.035	0.0069	0.0054	0.156	0.0134	....	....	....	....	66.58	43 x 20	C	
CRM	212X 4004 L	0.101	0.892	0.718	28.69	4.71	0.096	....	0.097	1.06	0.479	....	0.0078	0.0203	1.01	0.040	....	....	0.0023	....	....	62.11	40 x 15	CC
CRM	212X 4005 E	0.115	2.48	1.55	20.76	1.90	0.513	0.035	0.662	0.892	2.05	0.0304	0.0138	0.013	0.330	0.025	....	....	....	....	68.13	40 x 15	CC	
CRM	212X 4006 G	0.0241	4.01	0.763	24.95	1.75	0.120	....	0.042	1.50	3.81	0.107	0.0275	....	0.538	0.016	....	....	....	....	62.30	40 x 15	CC	
CRM	212X 4007 A	0.0219	2.19	0.955	29.39	1.89	....	....	....	....	....	0.0063	0.015	2.30	0.022	0.0207	0.0183	0.0125	0.0040	0.0490	0.023	63.05	40 x 15	CC
2.12 Ni/Cu (Monel Type)																			Size (mm) Ø x H	Form	Price			
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Pb	Ni								
	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 NA3 G	0.37	3.66	0.52	29.2	1.42	....	....	....	....	....	0.74	0.008	0.022	....	0.05	....	....	....	....	....	40 x 15	C	
CRM	212X NA4 A	0.098	3.83	1.082	29.34	2.26	0.120	0.026	0.046	0.037	0.012	0.0014	0.004	0.0053	(0.51)	0.018	62.8	....	....	....	....	....	40 x 13	CC
2.15 Ni/Co/Cr/Fe/Mo (Hastelloy Type)																			Size (mm) Ø x H	Form	Price			
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	B	N	V	W	Ni							
CRM	215X HB1 N	0.079	0.24	0.613	0.164	9.73	1.08	32.44	1.176	....	....	0.048	(0.014)	....	0.0207	0.454	....	....	....	....	....	40 x 17	CC	
CRM	215X HB2 F	0.045	0.48	0.925	(0.004)	2.43	1.63	32.1	0.51	....	....	0.039	0.011	....	0.006	0.52	....	61.2	....	....	....	45 x 20	C	
CRM	215X HB3 G	0.0355	0.78	0.90	(0.027)	5.06	0.303	29.9	1.014	....	....	0.0195	0.0239	....	0.005	0.292	(0.023)	61.59	....	....	....	43 x 20	C	
CRM	215X HB4 F	0.079	1.02	0.666	(0.024)	7.02	0.414	27.59	1.71	....	....	0.013	0.036	....	0.0028	0.115	(0.028)	61.21	....	....	....	43 x 20	C	
CRM	215X HB5 L	0.151	1.05	0.335	0.268	3.45	0.123	26.1	2.49	0.192	0.49	0.0113	0.038	0.003	0.006	0.136	....	65.3	....	....	....	40 x 15	CC	
CRM	215X HC1 L	0.045	(0.20)	1.19	0.046	2.60	15.42	20.91	2.60	0.264	0.72	0.0086	0.007	....	0.059	0.090	2.66	....	....	....	....	40 x 15	CC	
CRM	215X HC2 J	0.090	0.79	1.036	....	4.02	16.19	19.28	1.72	(0.078)	(0.01)	0.024	0.012	(0.006)	0.092	0.362	3.92	52.09	....	....	....	40 x 17	CC	
CRM	215X HC3 K	0.197	1.11	0.920	0.319	7.87	17.05	17.90	0.99	0.35	0.188	0.055	0.022	0.0106	0.064	0.263	4.32	....	....	....	....	40 x 17	CC	
CRM	215X HC4 J	0.146	0.264	0.548	0.052	6.18	18.17	16.46	0.500	0.149	(0.073)	0.0306	0.007	....	0.045	0.444	5.26	....	....	....	....	40 x 15	CC	
CRM	215X HC5 T	0.169	0.805	0.249	0.642	6.34	19.71	15.59	0.159	0.06	(0.03)	0.034	0.038	....	0.096	0.498	5.34	....	....	....	....	40 x 15	CC	
CRM	215X HC6 A	0.005	(0.048)	0.099	....	5.00	15.67	16.14	1.16	0.003	0.066	0.0021	....	....	0.0034	0.012	3.22	58.45	....	....	....	40 x 13	HIP	
2.19 Various Nickel Alloys																			Size (mm) Ø x H	Form	Price			
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ta	W	Zr	B	Nb	Ni	N					
CRM	219X 20500 B	0.0486	1.24	0.710	0.0103	3.65	49.99	0.082	0.016	....	....	0.0100	0.0026	....	....	....	0.214	43.88	0.175	....	....	40 x 15	CC	
	219X 1837 A	0.004	0.053	0.003	....	0.10	9.98	3.00	10.04	5.28	5.63	0.001	0.002	<0.01	0.012	0.027	0.11	<0.01	....	....	....	40 x 15	C	
CRM	219X 1867 D	0.092	0.187	0.131	0.308	0.244	7.78	6.00	9.80	1.355	6.05	0.0055	0.0054	4.05	0.066	0.273	0.0152	0.052	63.81	....	....	40 x 15	CC	
2.21 Ni/B Hardfacing Alloys																			Size (mm) Ø x H	Form	Price			
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	W	S	Bi	Se	Sn	B										
CRM	221X HF1 A	0.144	4.64	0.130	0.029	0.33	43.1	0.018	....	....	0.006	....	....	....	2.12	Sold out, no remake planned						40 x 15	G	
CRM	221X HF2 B	0.117	3.08	0.387	0.231	3.08	2.96	0.130	0.494	....	0.0106	0.0098	0.0048	....	2.96	....	....	....	....	....	....	43 x 20	C	
CRM	221X HF3 B	0.71	5.5	0.14	0.16	3.44	7.7	0.05	0.25	1.13	0.011	0.005	0.002	0.10	1.69	....	....	....	....	....	....	43 x 20	C	
CRM	221X HF4 B	0.38	6.49	0.15	0.05	5.82	17.3	0.05	0.094	0.76	0.009	....	....	0.68	1.07	....	....	....	....	....	....	43 x 20	C	

### 3. Copper Base

Updated: 17 January 2011

Blocks / Discs

3.1 Brass - Cu/Zn Binaries																		Size (mm)	Form	Price		
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	P	S	B	Cd	Cu	Ø x H		
CRM	31X B1 N	0.0234	0.039	43.76	0.0193	0.0089	0.0011	0.0141	0.0029	0.0022	0.0044	0.0040	....	....	0.0184	(0.0013)	0.0019	....	56.07	42 x 18	CC	
CRM	31X B2 L	0.151	0.0129	39.57	0.0191	0.0125	0.0172	(0.007)	0.0222	0.0249	0.0107	0.0207	....	....	....	....	0.0056	....	60.13	42 x 18	CC	
CRM	31X B3 K	0.0268	0.024	33.89	0.065	0.059	0.0114	0.017	0.0200	0.0187	0.0127	0.0096	....	....	....	....	0.0031	....	65.80	42 x 18	CC	
CRM	31X B4 L	0.073	0.064	28.39	0.026	0.0571	....	0.025	0.046	0.0074	0.0076	0.0076	0.087	0.033	(0.023)	0.0091	....	0.0330	71.10	40 x 17	CC	
CRM	31X B5 K	0.045	0.021	23.60	0.056	0.0085	(0.001)	(0.001)	0.0054	0.0006	0.0061	0.0057	0.0002	0.0062	....	....	0.0002	0.00050	76.22	40 x 15	CC	
	31X B6 J	<0.005	<0.005	19.4	(0.01)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	....	....	....	....	....	....	80.6	40 x 15	CC	
CRM	31X B7 J	0.101	0.010	15.01	0.018	0.020	<0.005	<0.005	0.0016	0.0002	0.066	0.0019	....	....	....	....	0.0030	....	84.80	42 x 17	CC	
CRM	31X B8 H	0.035	0.072	9.52	0.0267	0.0083	(0.0013)	0.0051	0.0081	0.0012	0.031	0.0108	....	....	....	....	0.0021	....	90.28	42 x 17	CC	
CRM	31X B9 L	0.0245	0.0549	3.83	0.0168	0.0129	(0.0005)	0.0036	0.0053	0.0017	0.0068	0.0075	....	....	....	....	(0.0003)	....	96.05	Se = 0.0029.	40 x 17	CC
	31X B95	0.45	<0.001	4.99	(0.007)	<0.001	<0.005	(0.01)	(0.008)	<0.001	(0.007)	<0.001	....	....	....	....	<0.001	....	94.4	40 x 15	CC	
3.1.1 Alloyed Brass																		Size (mm)	Form	Price		
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	B	Co	Cr	Cd	Hg	Cu	Ø x H	
CRM	31X B10 L	0.0386	0.0161	35.36	1.25	1.572	0.472	0.034	0.0062	0.206	0.0086	0.0126	....	....	....	....	....	....	....	61.01	42 x 18	CC
CRM	31X B11 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 **	0.49	0.010	36.5	0.018	0.018	4.00	0.050	0.009	0.012	0.011	0.015	....	....	....	0.011	....	....	....	58.8 ** provisional values	40 x 15	CC
CRM	31X B15 H **	0.95	0.008	36.9	0.018	0.010	2.98	0.107	0.005	0.012	0.008	0.011	....	....	....	0.0045	....	....	....	59.0 ** provisional values	40 x 15	CC
CRM	31X B16 G	2.17	(0.04)	37.4	(0.02)	(0.01)	2.04	0.20	(0.006)	(0.01)	<0.001	<0.001	....	....	....	....	....	....	....	58.0	40 x 15	CC
CRM	31X B17 F	0.010	(0.05)	(33.9)	(0.02)	(0.01)	6.05	(0.007)	(0.015)	<0.001	<0.001	<0.001	....	....	....	....	....	....	....	60.0	40 x 15	CC
CRM	31X B18 J	0.046	0.916	39.11	0.0193	0.0143	0.0236	0.018	0.0196	0.00110	0.0051	0.0129	0.0117	<0.005	....	....	....	....	....	59.82	42 x 18	CC
CRM	31X B19 P	0.035	2.51	38.50	0.028	0.0127	(0.004)	0.004	0.0110	0.0055	0.0047	0.0134	0.031	(0.002)	....	....	....	....	....	58.85	40 x 17	CC
CRM	31X B20 N	0.0244	4.43	37.03	0.024	0.021	0.0025	(0.005)	0.0028	0.0005	0.0025	0.0039	0.0230	(0.004)	....	....	....	....	....	58.53	42 x 17	CC
CRM	31X B21 D	0.132	0.120	29.50	0.129	0.107	0.121	0.147	0.108	0.0647	0.114	0.130	0.100	(0.002)	0.0050	....	....	....	....	69.24	42 x 18	CC
CRM	31X B22 E	0.209	0.209	17.32	0.168	0.166	0.125	0.171	0.169	0.097	0.193	0.173	0.157	0.104	0.0033	....	....	....	....	80.77	42 x 18	CC
CRM	31X B23 D	0.060	0.046	9.97	0.060	0.047	0.0048	0.0046	0.0482	0.0053	0.0463	0.0448	0.030	0.053	....	0.0472	....	0.0010	....	89.57	40 x 15	CC
CRM	31X B24 D	1.93	0.050	1.99	0.0342	0.134	(0.002)	....	0.0116	0.0030	0.0126	0.118	0.0065	0.050	....	....	0.0008	....	95.65	40 x 15	CC	
CRM	31X B25 B	0.613	0.298	40.83	0.056	0.236	0.470	0.254	0.0284	0.127	0.0594	0.0843	0.093	....	(0.0045)	....	....	....	....	56.95	42 x 17	CC
CRM	31X B26 E **	1.55	0.75	30	1.1	1.6	1.0	0.19	0.11	0.45	0.09	0.11	0.055	....	0.001	0.11	....	0.016	....	bal ** provisional values	40 x 15	CC
CRM	31X B27 B	0.985	0.492	17.65	0.111	0.0315	0.0015	0.0044	0.048	0.0059	0.0320	0.0243	0.0150	0.0080	(0.0005)	....	....	....	....	80.65	42 x 18	CC
CRM	31X B28 A	0.0126	0.081	35.47	0.0490	0.083	0.034	....	....	0.094	....	....	....	(0.0018)	....	....	0.073	0.0072	0.0007	64.02	42 x 18	CC
CRM	31X B29 A	0.0328	0.146	24.75	0.144	4.11	0.219	....	....	0.0625	....	....	3.33	....	....	....	0.062	0.0144	....	67.08	40 x 15	CC
3.1.2 Brass - Trace Elements																		Size (mm)	Form	Price		
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Se	Cd	B	C	Cu	Ø x H			
CRM	31X TB1 J	0.231	0.201	36.90	0.038	0.220	0.210	0.093	0.153	0.314	0.049	0.104	0.084	0.006	0.0114	0.0006	....	....	61.39	40 x 15	CC	
CRM	31X TB2 G	0.105	0.107	37.16	0.072	0.093	0.084	0.042	0.101	0.088	0.031	0.051	....	....	<0.0005	0.0040	....	....	61.97	42 x 18	CC	
CRM	31X TB3 K	0.089	0.169	37.92	0.0282	0.0637	0.0045	0.016	0.0454	0.0244	0.0030	0.0222	....	....	0.0043	(0.0005)	....	....	61.58	40 x 17	CC	
CRM	31X TB4 F	0.0356	0.0225	34.86	0.0229	0.0114	(0.0004)	(0.0027)	0.0065	0.0021	0.0056	0.0064	....	....	0.0021	0.0018	....	....	65.00	42 x 18	CC	

### 3. Copper Base

Updated: 17 January 2011

Blocks / Discs

3.1.3 Naval Brass																	Size (mm)	Form	Price			
	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	B	C	Cu	Ø x H				
CRM 31X NB1 H	0.535	0.504	29.73	0.037	0.520	(0.0004)	0.004	0.161	0.051	0.0065	0.0057	0.0223	0.0024	(0.0006)	....	....	68.35	42 x 17	CC			
CRM 31X NB2 G	1.06	0.293	28.82	0.095	0.065	0.085	0.096	0.105	0.116	0.052	0.115	0.091	<0.002	....	....	....	68.93	42 x 17	CC			
CRM 31X NB3 H	1.67	0.197	24.64	0.113	0.0299	0.094	0.145	0.074	0.0166	0.093	0.265	0.150	(0.006)	....	0.0026	(0.0020)	72.45	42 x 18	CC			
CRM 31X NB4 J	2.01	0.067	32.57	0.235	0.230	0.178	0.203	0.0062	0.0053	0.104	0.450	0.230	(0.0032)	....	0.0009	....	63.71	42 x 17	CC			
3.1.5 High Tensile Brass																	Size (mm)	Form	Price			
	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Sb	P	S	C	Cu			Ø x H					
CRM 31X HT31 A	0.0149	0.020	18.19	2.90	0.196	6.70	0.041	0.0006	5.27	(0.0011)	0.00032	(0.00003)	0.006	66.67			50 x 18	W				
CRM 31X HT37 A	0.0116	0.623	34.69	0.0344	0.0105	0.0004	1.38	0.0011	2.88	0.0007	0.003	<0.0005	0.003	60.33			40 x 18	W				
CRM 31X HT38 A	0.039	0.051	36.66	0.0530	0.0242	0.960	0.869	0.0008	2.60	(0.0006)	0.0024	(0.001)	0.003	58.77			50 x 18	W				
3.1.6 Bismuth Brass																	Size (mm)	Form	Price			
	Bi	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Sb	P	S	Se	Cd	B	Cu	Ø x H				
CRM 31X BIB1 C	1.948	0.488	0.211	36.67	0.113	0.313	0.0718	0.099	0.0282	0.0479	0.0158	0.0637	(0.001)	0.0064	0.0082	....	59.93	40 x 15	CC			
CRM 31X BIB2 B	0.921	1.186	0.0617	33.85	0.379	0.466	0.411	0.322	0.084	0.0451	0.119	0.0358	(0.0014)	0.0142	0.0020	....	62.05	42 x 18	CC			
CRM 31X BIB3 B	4.05	0.111	0.149	32.46	0.099	0.098	0.0298	0.061	0.057	0.243	0.0417	0.0175	(0.0005)	0.003	0.0029	....	62.48	40 x 17	CC			
CRM 31X BIB4 A	0.980	0.400	0.091	36.89	0.148	0.175	0.358	0.0018	....	0.0039	0.0144	0.0064	(0.0007)	0.0162	0.0005	0.0008	60.88	42 x 18	CC			
3.1.7 Leaded Brass																	Size (mm)	Form	Price			
	Pb	Sn	Zn	Fe	Ni	Mn	Al	Si	As	Bi	Sb	P	S	Co	Ag	Se	Cd	B	Cu	Ø x H		
CRM 31X 7835.1 R	2.699	0.293	35.31	0.118	0.143	....	0.0319	0.010	0.0201	0.0113	0.0161	0.0222	....	0.0232	(0.001)	(0.001)	0.0028	0.0012	61.20	40 x 15	CC	
CRM 31X 7835.2 J	2.08	0.211	31.86	0.094	1.35	....	0.172	0.0217	0.0225	0.0084	0.0240	0.0276	....	0.0279	0.003	0.003	0.0026	(0.0016)	64.03	42 x 18	CC	
CRM 31X 7835.3 G	1.274	0.0912	35.34	0.299	0.282	....	0.384	0.022	0.098	0.0257	0.104	0.042	....	0.0053	0.0010	0.0010	0.0030	0.0014	62.10	40 x 15	CC	
CRM 31X 7835.4 H	1.03	0.046	30.09	0.020	0.492	....	0.561	....	0.206	....	0.188	0.125	....	....	....	....	....	....	67.10	40 x 15	CC	
CRM 31X 7835.5 A	1.64	0.116	6.23	0.126	0.249	....	0.078	....	0.104	....	0.114	0.018	....	....	....	....	....	....	91.25	42 x 18	CC	
CRM 31X 7835.6 A	1.498	0.080	38.05	0.091	0.0173	....	0.546	(0.001)	0.0006	0.0026	0.0127	<0.0005	0.0017	0.0005	0.0007	0.0007	0.0010	0.0005	59.67	42 x 18	CC	
CRM 31X 7835.7 A	2.29	0.137	7.50	0.030	0.943	....	0.0084	0.039	....	0.048	0.0327	0.080	0.0075	0.0120	....	....	0.0047	....	88.87	40 x 15	CC	
CRM 31X 7835.8 A **	3.1	0.51	24.9	0.095	0.145	0.095	....	....	0.14	0.11	0.11	0.12	....	0.31	0.46	....	0.085	....	bal	** provisional values	40 x 15	CC

See also Section 3.1.1 products 31X B18 - B20

3.1.8 Manganese Brass																	Size (mm)	Form	Price		
	Mn	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Bi	Sb	P	S	Co	Nb	Ag	Cr	C	Cu	Ø x H	
CRM 31X MNB1 C	0.188	0.105	1.44	29.37	0.268	0.053	0.599	0.128	....	....	....	....	....	....	....	....	....	....	67.77	42 x 18	CC
CRM 31X MNB2 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 **	3.0	0.45	0.50	26.0	1.15	0.34	0.60	1.52	....	0.005	0.025	....	0.056	0.1	0.015	....	....	68.20	** provisional values	40 x 15	CC
CRM 31X MNB4 E	4.14	1.080	0.640	27.12	1.73	3.23	2.16	0.90	0.0068	....	(0.006)	0.0252	....	0.057	....	0.0171	....	....	58.95	42 x 18	CC
CRM 31X MNB5 Q	0.137	1.60	0.243	37.12	0.013	0.996	2.96	0.44	0.0100	....	0.0118	(0.008)	....	0.0155	....	0.0063	0.19	....	56.18	42 x 17	CC
CRM 31X MNB5 R	0.175	1.228	0.157	37.11	0.898	1.32	3.24	0.528	0.0021	....	(0.006)	0.0399	....	0.066	....	0.0195	0.0116	....	55.14	40 x 17	CC
CRM 31X MNB6 C	0.871	0.0310	0.016	28.53	0.0697	0.261	0.0148	0.0196	0.0107	....	0.0128	0.0226	....	0.0107	....	0.0509	....	....	70.01	40 x 15	CC
CRM 31X MNB11 A	11.99	0.161	1.610	22.85	0.337	4.46	1.19	0.071	0.0010	0.0021	0.0051	0.0186	(0.0007)	0.0046	....	....	0.0046	(0.009)	57.36	42 x 18	CC
CRM 31X MNB12 A	17.88	0.231	1.99	22.12	0.335	0.491	0.749	0.013	0.0022	0.0021	0.0056	0.019	(0.0012)	0.0012	....	....	0.0038	(0.011)	56.16	42 x 18	CC



### 3. Copper Base

Updated: 11 January 2011

Blocks / Discs

3.2.3 Aluminium Bronze (continued)																	Size (mm)	Form	Price		
	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	Cr	Mg	Co	Ag	C	Cu	Ø x H					
CRM 32X CA1 A	0.0180	0.007	0.162	4.63	4.94	9.79	0.090	0.296	0.003	0.0049	0.0003	....	0.0012	(0.007)	80.03		42 x 18	W			
CRM 32X CA7 A	0.0172	(0.004)	0.006	2.09	0.234	9.37	0.017	0.151	....	0.0028	0.0004	0.0003	0.0009	0.0028	88.06		42 x 18	W			
CRM 32X CA12 A	0.0157	(0.0017)	0.0405	0.657	0.088	6.14	2.57	0.0290	....	....	0.0005	(0.0003)	0.0010	(0.002)	90.48		42 x 18	W			
CRM 32X CA23 A	0.0164	(0.0026)	0.031	3.63	4.71	9.19	0.026	1.298	0.0011	0.0018	0.0003	....	0.0008	(0.0050)	81.05		50 x 18	W			
CRM 32X CA31 A	0.0037	(0.0024)	0.041	4.06	4.28	8.95	0.036	0.336	(0.003)	0.0026	0.0008	0.0029	0.0008	0.006	82.24		42 x 18	W			
3.2.4 Bismuth Bronze (Sebiloy Type)																	Size (mm)	Form	Price		
	Sn	Pb	Zn	Fe	Ni	As	Bi	Sb	P	S	Co	B	Se	Cd	Cu	Ø x H					
CRM 32X SEB1 C	4.23	0.209	8.79	0.0293	0.101	0.043	5.31	0.355	0.0054	0.0011	0.0089	....	0.97	(0.0017)	79.96		40 x 17	CC			
CRM 32X SEB2 C	9.34	0.424	3.73	0.078	0.028	0.0094	4.36	0.0120	0.013	....	0.0121	....	0.026	....	(81.8)		40 x 17	CC			
CRM 32X SEB3 C	2.07	0.109	0.85	0.082	1.52	0.0161	(5.4)	0.054	0.040	....	0.025	0.0021	1.42	0.0016	(88.4)	* Bi and Cu are not homogeneous in this material	40 x 17	CC			
CRM 32X SEB4 C	9.26	0.011	8.60	0.366	0.0091	0.0012	2.65	0.0056	(0.006)	....	0.48	0.0021	0.105	0.0004	78.6		42 x 17	CC			
CRM 32X SEB5 B	5.28	0.0149	6.64	0.360	0.308	0.0121	1.17	0.0344	0.183	....	0.0048	0.0028	0.512	0.0067	85.5		40 x 17	CC			
CRM 32X SEB6 C	7.14	0.0463	4.55	0.151	0.860	0.083	0.615	0.235	0.0118	....	0.231	(0.0004)	0.322	0.0036	85.66		40 x 17	CC			
CRM 32X SEB7 A	3.20	0.343	4.42	0.074	1.165	0.038	3.58	0.262	0.0206	0.067	0.119	....	1.19	0.0074	85.46		42 x 17	CC			
3.2.9 Bronze																	Size (mm)	Form	Price		
	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Cr	Co	Bi	Sb	Cd	Au	Ag	P	S	Cu	Ø x H	
CRM 32X SN1 E	11.55	5.32	0.401	0.006	1.69	(0.0003)	(0.0006)	0.0153	0.0002	....	0.0100	....	0.0126	....	....	(0.0010)	00087	80.94	42 x 17	CC	
CRM 32X SN2 H	13.54	1.97	1.28	0.0332	0.104	0.0004	0.0028	....	0.0043	....	....	0.100	....	....	0.082	0.0326	82.80	42 x 18	CC		
CRM 32X SN3 F	15.50	0.285	0.386	0.124	0.447	0.0120	0.005	0.0306	0.128	....	0.048	....	0.194	....	....	0.331	0.062	82.55	40 x 17	CC	
CRM 32X SN4 A	18.80	1.059	0.342	0.060	0.556	0.034	(0.004)	0.0468	0.0065	....	0.151	....	0.102	....	....	0.988	0.040	77.88	42 x 18	CC	
CRM 32X SN5 A **	16	0.26	0.50	1.3	0.45	0.45	....	0.055	0.71	0.06	0.15	0.10	0.65	0.15	0.01	0.09	....	0.001	bal	40 x 15	CC
CRM 32X SN6 A **	7.3	1.6	1.2	0.09	0.19	0.03	....	0.75	0.002	0.01	0.68	0.16	0.31	0.09	0.003	1.15	....	0.015	bal	40 x 15	CC
** provisional values																					
32X 14953 C	1.37	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
32X 14954 B	3.15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
32X 14955 B	5.25	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
32X 14956 B	7.35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40 x 15	C	
3.3 Gun Metal																	Size (mm)	Form	Price		
	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Cr	Co	Ag	Cd	Cu	Ø x H		
CRM 33X GM4 AB	2.56	4.69	7.13	0.053	1.795	(0.001)	(0.001)	0.287	0.0007	0.084	0.0261	0.0088	0.112	....	0.259	0.0265	....	82.96	40 x 17	CC	
CRM 33X GM5 L	5.22	5.13	4.19	0.136	1.008	(0.007)	(0.001)	0.059	0.0018	0.0225	0.093	0.0112	0.061	....	0.0662	0.0099	....	83.98	40 x 17	CC	
CRM 33X GM6 J	6.56	3.90	2.01	0.0338	0.833	0.0098	0.069	0.180	0.0307	0.0313	0.279	0.0406	0.093	....	0.0056	0.0065	....	85.99	40 x 17	CC	
CRM 33X GM7 H	9.97	0.97	2.29	0.0278	0.500	0.051	0.065	0.133	0.151	0.085	0.111	0.034	0.0139	0.0146	....	0.0574	....	85.49	42 x 18	CC	
CRM 33X GM8 F	4.13	6.11	5.45	0.098	0.148	0.0005	(0.001)	0.0159	0.0008	0.0248	0.0146	0.0029	0.0119	(0.0004)	....	0.097	....	83.81	40 x 17	CC	
CRM 33X GM20 A **	4.0	0.10	3.8	0.58	1.0	0.005	....	0.18	0.22	0.03	2.0	0.07	....	0.02	0.04	0.14	0.022	bal	** provisional values	40 x 15	CC
CRM 33X GM24 A	3.85	3.35	3.67	0.0083	0.0087	....	0.0028	0.0010	<0.0005	0.0009	0.0012	0.190	0.003	(0.0013)	....	0.0046	....	88.88	44 x 17	W	
CRM 33X GM29 A	6.12	0.050	4.23	0.0102	0.0289	....	0.0027	0.0017	(0.0005)	0.0019	0.0015	0.138	0.0024	(0.0004)	....	0.0026	....	89.36	33 x 19	W	
CRM 33X RB1 A	2.137	5.02	7.95	0.928	0.0539	0.0048	0.063	0.0030	0.0167	0.0029	0.432	0.020	0.0044	0.0013	....	0.0174	....	83.24	42 x 17	CC	
CRM 33X RB2 A	3.19	3.85	9.14	0.493	0.255	0.0352	0.0116	0.0211	0.0028	0.101	0.019	0.0208	0.078	0.0017	....	0.0029	....	82.67	42 x 17	CC	

### 3. Copper Base

Updated: 17 January 2011

Blocks / Discs

3.4 Nickel Silver																			Size (mm) Ø x H	Form	Price		
	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	S	Co	Cr	Ag	Mg	C	Cu							
CRM 34X NS1 F	0.0110	0.0141	33.41	0.064	7.81	(0.003)	(0.002)	0.0009	0.0140	(0.0004)	0.052	0.0003	0.069	0.0020	(0.0018)	58.63			42 x 18	CC			
CRM 34X NS2 F	0.019	0.063	25.31	0.085	13.39	....	(0.003)	0.0013	0.0091	(0.020)	0.0118	(0.001)	0.0026	<0.0005	....	61.09			42 x 17	CC			
CRM 34X NS3 F	0.056	0.178	19.96	0.285	14.96	<0.001	(0.002)	0.0377	0.0295	0.0028	0.0922	....	0.100	<0.001	....	64.16			40 x 15	CC			
CRM 34X NS4 F	0.0301	0.071	17.09	0.449	16.61	0.0454	0.102	0.304	0.0570	0.0110	0.152	....	0.0324	0.0009	....	64.97			40 x 15	CC			
CRM 34X NS5 F	0.194	1.29	(23.1)	0.717	17.16	0.674	0.158	0.127	0.067	....	0.197	0.0014	0.0102	0.704	....	55.11			42 x 17	CC			
3.6.1 Cupro Nickel																			Size (mm) Ø x H	Form	Price		
	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Bi	P	S	Co	Cr	Mg	B	C	Ti	Nb	Zr	Be	Cu		
CRM 36X CN1 N	0.0578	0.160	0.412	2.15	10.11	0.006	0.089	1.80	....	0.0436	0.0070	0.154	0.0258	....	0.0013	(0.003)	....	....	....	84.90	40 x 17	CC	
CRM 36X CN2 J	0.061	0.048	0.0358	1.70	15.47	0.005	0.044	1.26	0.0045	0.015	0.035	0.264	0.240	0.0006	....	0.004	0.0102	(0.032)	....	....	80.78	40 x 17	CC
CRM 36X CN3 L	0.063	0.053	0.80	1.07	19.95	0.0055	0.490	0.920	....	0.032	0.029	0.072	0.050	0.012	0.0064	0.035	....	0.15	....	0.0163	76.3	40 x 15	CC
CRM 36X CN4 K	0.009	(0.023)	0.041	2.67	27.49	0.0013	0.025	0.164	0.0077	0.0079	0.0076	0.052	0.022	(0.0004)	....	0.0053	(0.004)	0.0139	....	....	69.48	40 x 17	CC
CRM 36X CN5 N	0.015	0.027	0.232	0.791	32.26	0.006	0.80	0.090	....	0.041	0.074	0.018	0.118	0.014	0.0091	0.0253	....	0.441	....	0.011	65.1	40 x 15	CC
CRM 36X CN6 G	0.0307	0.0066	0.026	0.878	33.46	(0.0023)	0.144	0.451	0.0058	0.031	0.0109	0.0440	1.10	....	(0.0016)	0.0180	0.0066	0.51	....	....	63.34	40 x 15	CC
CRM 36X CN7 F	0.039	0.028	0.203	1.021	29.95	....	0.304	0.659	(0.014)	(0.021)	0.0151	0.108	1.51	0.0041	(0.004)	0.0106	(0.037)	0.58	(0.003)	....	65.58	40 x 17	CC
CRM 36X CN8 H	0.046	0.095	0.159	0.86	30.61	0.0009	0.132	0.881	0.103	0.046	0.022	0.104	1.28	0.021	0.0025	0.0225	....	0.18	....	....	65.51	40 x 15	CC
CRM 36X CN9 H	(0.015)	0.0497	....	1.62	27.86	0.030	0.625	1.22	0.020	0.028	0.0098	0.329	2.21	....	0.0204	0.0099	0.252	1.22	(0.011)	....	64.48	40 x 15	CC
CRM 36X CN10 A	(0.009)	0.004	0.026	4.28	29.3	1.23	1.02	0.262	0.014	(0.020)	0.055	0.081	1.59	0.0026	0.0029	0.064	0.03	0.89	(0.055)	....	61.01	40 x 15	CC
CRM 36X CN11 A	(0.002)	(0.003)	(0.006)	0.992	14.96	1.457	0.083	4.34	....	(0.002)	0.0012	0.0049	0.380	0.0241	....	(0.001)	....	0.124	....	....	77.56	40 x 17	W
																			As	Ag	Cd	C	
CRM 36X CN21 A	0.038	0.051	0.0203	0.0316	5.50	1.95	....	0.0391	....	0.053	....	0.0079	0.0050	0.0067	0.0064	0.0021	....	....	....	....	92.17	40 x 17	CC
CRM 36X CN22 A	0.0371	0.0260	0.0175	0.088	1.806	6.09	....	(0.016)	....	0.0178	....	0.0231	0.0144	0.0208	0.0196	0.0083	....	....	....	....	91.80	40 x 17	CC
CRM 36X CN23 A	0.102	0.115	14.88	0.140	14.38	0.007	....	0.0095	....	0.0299	....	0.0509	0.0021	0.047	0.042	0.0021	....	....	....	....	70.22	40 x 17	CC
CRM 36X CN24 A	(0.002)	0.0056	8.00	0.127	15.41	(0.001)	....	23.60	....	0.0037	....	0.0096	0.0065	(0.001)	0.0466	....	0.0436	....	....	....	52.56	38 x 13 x 13	C
3.6.1a Cu/Ni/Sn (Spinodal Alloy)																			Size (mm) Ø x H	Form	Price		
	Sn	Ni	Cu	Zn	Fe	Al	Si	Mn	Bi	Sb	P	S	Ag	Pb	Mg	Co	B	Ti	Nb				
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) Ø x H	Form	Price		
	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Co	Cr	Ag	Mg	Be	Cu									
CRM 36X CBC2 E	0.009	0.0099	0.0103	0.0208	0.0472	0.0231	0.0205	0.0015	2.47	0.0044	0.0020	....	0.450	96.96						40 x 17	W		
CRM 36X CBC3 D	0.0021	0.0025	0.004	0.046	0.007	0.019	0.039	....	0.209	....	....	0.0040	1.840	97.77						40 x 15	W		
CRM 36X CBC4 D	0.003	0.318	0.005	0.026	0.004	0.018	0.041	....	0.207	....	....	0.0070	1.865	97.46						40 x 15	W		
CRM 36X CBC5 A	0.01	0.009	0.038	0.028	1.69	0.021	0.036	(0.001)	0.14	0.006	....	....	0.32	97.6						40 x 15	W		

### 3. Copper Base

Updated: 3 December 2010

Blocks / Discs

3.6.5 Cu/Cr																		Size (mm)	Form	Price					
	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	S	Co	Cr	Ag	Mg	Cd	Zr	Cu	Ø x H								
CRM	36X CCR1 D	0.0049	0.0017	0.008	0.0378	0.0035	(0.001)	0.015	0.0010	0.0018	....	0.948	0.0016	0.0015	....	0.067	98.95	50 x 17	W						
CRM	36X CCZ A	0.0045	0.0023	0.0076	0.033	0.0084	0.0003	0.0031	0.0008	0.0010	0.0012	0.667	0.0019	....	0.0027	0.049	99.22	50 x 17	W						
CRM	36X 274 A	0.0140	0.0021	0.0395	0.0779	2.54	0.0013	0.594	0.0148	0.0035	0.0028	0.531	....	....	<0.005	....	96.23	46 X 17	W						
3.6.7 Cu/Cd																		Size (mm)	Form	Price					
	Sn	Zn		Ag		Cd											Ø x H								
CRM	36X CCD1 A	<0.001		(0.0017)		(0.0014)		1.01									30 x 15	W							
CRM	36X CCD3 A	0.473		(0.0018)		(0.0011)		1.10									30 x 15	W							
3.7.1 Various Copper Alloys																		Size (mm)	Form	Price					
	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	S	Cr	Co	C	Zr	Cu	Ø x H									
CRM	37X 218 A	0.015	0.0025	0.027	0.074	2.52	0.0022	0.58	0.083	0.0014	0.007	0.032	0.0013	0.0022	....	96.57	38 x 17	W							
CRM	37X 226 A	0.0030	(0.001)	2.82	1.51	0.0024	0.0020	3.55	0.577	0.0022	0.0005	0.0023	....	0.006	(0.0002)	91.58	57 x 17	W							
	37X HK7 A #	2.30	5.32	0.38	1.72	30.7	....	....	....	....	....	....	....	....	....	59.3	# These alloys are for XRF use only			40 x 10	CC				
	37X HK8 A #	10.4	21.0	0.17	0.23	5.01	....	....	....	....	....	....	....	....	....	63.2				40 x 10	CC				
3.8 Residuals in Pure Copper - Wire																		Size (mm)	Form	Price					
	Sn	Pb	Zn	Fe	Ni	Ag	As	Mn	Bi	Sb	All Elements ppm	Co	Cr	Si	P	Cd	Te	Se	S	O	Ø x H				
	38X C1 A	0.7	0.4	1.5	2	0.8	7.8	<1.0	<1.0	0.2	<1.0	<1.0	<1.0	....	....	<0.1	0.4	0.7	....	....	Wire				
	38X C1 B	<0.3	0.8	0.45	1.2	1.0	13	0.8	1.2	0.1	0.6	0.03	0.06	....	....	<0.01	0.3	....	....	....	3mm x 400mm	Wire			
CRM	38X C1 C	(0.01)	(0.05)	<0.1	1.7	0.27	11	0.19	(0.005)	0.10	0.10	....	<0.005	<0.1	<0.05	<0.01	(0.21)	(0.25)	2.0	266	(5 x 80mm pcs.)	Wire			
	38X C4	21	23	22	19	29	21	19	2.7	5	9	3	3	....	....	8	8	....	....	....	Each	Wire			
	38X C6	120	111	40	107	166	104	98	0.3	22	45	33	1	....	....	32	30	....	....	....	Wire				
3.9 Residuals in Pure Copper																		Size (mm)	Form	Price					
	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	All Elements ppm	Sb	P	S	Co	Cr	Cd	Ag	Au	Se	Te	In	Ge	Ø x H	
CRM	39X 17866 AF	122	73	30	4	471	....	....	381	....	61	54	....	26	49	....	62	69	19	34	26	170	....	40 x 15	CC
CRM	39X 17867 AB	53	58	(10)	9	339	(3)	10	417	3	122	145	(12)	41	3	(2)	173	117	120	87	104	29	....	40 x 17	CC
CRM	39X 17868 AF	(37)	460	(24)	15	211	2	....	196	23	202	200	(20)	56	2	....	23	323	129	120	240	9	....	40 x 17	CC
CRM	39X 17869 AE	57	120	(13)	5	100	....	....	100	....	234	370	....	51	8	....	19	423	89	177	105	35	....	40 x 15	CC
CRM	39X 17870 AF	44	296	48	(9)	65	(4)	....	84	1.3	334	337	14	44	25	(2)	36	456	484	208	52	31	....	40 x 17	CC
CRM	39X 17871 B	119	131	280	80	329	....	....	288	7	690	147	(5)	72	40	(5)	37	222	51	360	101	....	....	42 x 17	CC
CRM	39X 27866 A	448	54	287	30	487	....	....	383	....	47	52	147	469	308	12	139	57	16	28	32	437	29	38 x 20	W
CRM	39X 27869 A	106	225	65	30	190	....	....	98	....	376	362	119	112	36	(2)	28	349	80	127	153	90	123	38 x 20	W
																		Size (mm)	Form	Price					
	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	All Elements %	Sb	P	S	Co	Cr	Cd	Mg	Ag	Au	Se	Te	In	Ø x H	
CRM	39X 17872 A	0.180	0.293	0.107	(0.045)	0.0537	0.0118	....	0.0203	0.0055	0.0240	0.0217	0.0045	0.0242	0.0102	....	0.0013	....	0.0214	(0.002)	0.0103	0.0208	0.0241	42 x 15	C
CRM	39X 17873 A	0.0274	0.065	0.0231	0.019	0.0173	0.015	0.030	0.0209	0.0182	0.0233	0.0229	0.078	0.0206	0.0233	0.0231	0.0052	0.011	0.0228	....	0.0114	0.0070	0.0212	40 x 15	C

## 4. Zinc Base

Updated: 17th January 2011

Blocks / Discs

4.1 Residuals in Pure Zinc															Size (mm)	Form	Price		
	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Tl	In	Si	Hg	Ø x H		
CRM	41X Z1 P	0.0016	<0.0001	0.0001	0.0006	0.0024	0.0005	0.0010	0.0003	0.0002	0.0003	0.0002	....	0.0008	0.0002	....	0.0001	50 x 20	C
CRM	41X Z2 N	0.0026	0.0001	0.0008	0.0017	0.0077	0.0016	0.0018	0.0013	0.0005	0.0005	0.0006	....	0.0012	0.0006	....	0.0003	50 x 20	C
CRM	41X Z3 L	0.0080	0.0138	0.0164	0.0050	0.0022	0.0029	0.0066	0.0029	0.0029	0.0022	0.0045	....	0.0012	0.0010	....	(0.0013)	50 x 20	C
CRM	41X Z4 K	0.0091	0.0019	0.0096	0.0066	0.003	0.0070	0.0047	0.0069	0.0012	....	0.005	<0.0005	0.0037	0.0015	(0.0014)	....	50 x 20	C
CRM	41X Z5 M	0.0275	0.0098	0.041	0.0310	0.011	0.0275	0.0296	0.00054	0.0138	....	0.0098	0.00044	0.0073	0.0050	(0.002)	....	50 x 20	C
CRM	41X Z6 A	0.031	<0.0005	0.0096	0.0093	(0.002)	0.0038	0.0088	0.0002	0.0002	0.0122	....	....	0.0004	0.0228	....	....	50 x 20	C
CRM	41X Z11 A	0.0077	....	0.0261	0.0155	0.0019	0.0072	0.0116	....	....	0.0189	0.0026	....	(0.0010)	0.0345	....	(0.0009)	50 x 20	C
4.1.1 Zinc with Impurities															Size (mm)	Form	Price		
	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	In	Ag	As	Ø x H			
	41X 0336Zn1 K	0.95	0.0049	0.014	0.0056	0.0124	0.0053	0.0070	(0.0006)	0.0035	....	....	....	....	....	....	50 x 20	C	
CRM	41X 0336Zn2 M	0.486	0.099	1.55	0.145	(0.01)	0.038	0.354	0.0137	0.0212	0.0099	0.0007	0.0012	....	0.0102	0.0009	50 x 20	C	
CRM	41X 0336Zn3 K **	0.026	0.145	0.33	0.34	0.045	0.12	0.35	0.002	0.009	....	....	....	....	....	** provisional values	50 x 20	C	
CRM	41X 0336Zn4 B	2.87	0.179	1.39	0.638	(0.018)	2.38	0.874	0.0074	0.038	0.027	0.048	(0.004)	0.0035	0.0023	0.0005	50 x 20	C	
CRM	41X 0336Zn5 A	0.91	<0.0005	0.035	0.056	0.016	0.21	0.023	(0.0005)	(0.0001)	(0.001)	0.008	....	....	....	....	50 x 20	C	
CRM	41X 0336Zn6 A	1.82	0.0008	0.105	0.0140	0.08	0.0023	0.0203	0.0018	0.0010	0.123	0.234	0.0132	0.0123	0.0055	0.0020	50 x 20	C	
															Size (mm)	Form	Price		
	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Cr	Si	Co	Ø x H			
CRM	41X 4380Zn1 C	0.068	0.0011	0.055	0.376	0.01	0.049	0.175	0.0029	0.0015	0.0017	0.002	(0.001)	0.002	0.006	....	50 x 20	C	
CRM	41X 4380Zn2 C	0.268	0.0243	0.0153	0.284	0.048	0.0021	0.0288	0.0023	0.0087	0.0076	0.0093	0.0251	0.0027	....	50 x 20	C		
CRM	41X 4380Zn3 C	0.180	0.0220	0.0203	0.0950	0.017	0.080	0.073	0.0120	0.0180	0.0103	0.0046	0.125	0.0029	....	50 x 20	C		
CRM	41X 4380Zn4 D	0.310	0.118	0.446	0.086	0.017	0.0416	0.0284	0.0172	0.0092	0.0101	0.0156	(0.0003)	0.0029	0.0018	50 x 20	C		
CRM	41X 4380Zn5 C	0.140	0.00165	0.0215	0.0571	0.0120	0.0101	0.071	0.00147	0.035	0.0308	0.0061	0.339	0.0075	....	50 x 20	C		
CRM	41X 4380Zn6 C	0.411	0.0043	0.0051	0.0423	0.018	0.110	0.022	0.00058	0.024	0.00109	0.0359	0.062	0.0022	....	50 x 20	C		
CRM	41X 4380Zn7 D **	1.18	0.0030	0.28	0.016	0.002	0.0035	0.014	0.012	0.003	....	0.087	0.007	....	....	** provisional values	50 x 20	C	
CRM	41X 4380Zn8 C	0.73	0.007	0.225	0.0079	0.003	0.011	0.020	0.024	0.0015	0.011	0.016	0.012	0.0019	(0.005)	....	50 x 20	C	
CRM	41X 4380Zn9 A	0.0139	0.0153	0.295	0.0032	0.0113	0.0008	0.0416	0.0009	0.0018	0.00046	0.0060	....	0.0015	....	....	50 x 20	C	
4.1.2 Galvanising Alloys															Size (mm)	Form	Price		
	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	As	Cr	Co	V	Ø x H			
CRM	41X GLV1 C **	0.022	0.0008	0.200	0.010	0.0035	0.012	0.019	0.007	....	0.004	0.001	0.001	....	0.0002	....	** provisional values	50 x 20	C
CRM	41X GLV2 A	0.214	....	0.068	0.0025	0.048	0.003	0.0052	0.0070	....	0.017	0.006	<0.001	....	....	....	50 x 20	C	
CRM	41X GLV3 B	0.0091	0.00145	0.334	0.0188	0.0031	0.0060	0.0260	0.0300	0.0111	0.0016	0.058	(0.0007)	0.00084	0.00150	....	50 x 20	C	
CRM	41X GLV4 C	0.0062	0.0034	0.514	0.0006	0.0028	0.0024	0.0321	0.0441	0.0089	0.0061	0.0287	(0.0003)	0.0007	0.0037	....	50 x 20	C	
CRM	41X GLV5 A	0.0187	....	0.014	0.0138	0.076	0.020	0.0116	0.0030	....	0.0105	0.162	0.0041	....	....	50 x 20	C		
CRM	41X GLV6 A	0.120	....	0.474	0.0053	0.0047	0.0152	0.039	0.0008	0.0013	0.0248	0.0112	0.0014	0.0029	0.0047	<0.0005	50 x 20	C	
CRM	41X GLV7 A	0.082	....	0.399	0.00056	0.0031	(0.0006)	0.023	0.0060	0.0025	0.0108	0.0031	0.0016	0.0010	(0.0001)	<0.0001	50 x 20	C	
CRM	41X GLV8 A	0.0037	0.0012	0.263	0.0003	0.0062	0.0005	0.0139	0.0006	0.0012	0.0005	0.0057	....	0.0012	....	....	50 x 20	C	
CRM	41X CGL F	0.046	....	0.28	(0.0015)	....	<0.001	(0.0005)	....	....	....	....	....	....	....	42-48 x 20	C		

## 4. Zinc Base

Updated: 17 January 2011

Blocks / Discs

4.1.3 Zn/Mn, Zn/Mg, Zn/Ni & Zn/Sb Binaries													Size (mm)	Form	Price					
	Pb	Mg	Al	Cd	Fe	Cu	Ni	Mn	Mg	Sb	Sn	Bi	Ø x H							
CRM	41X ZMn1 A	(0.0026)	(0.0001)	(0.0002)	(0.0025)	(0.0005)	(0.0009)	1.07	....	....	....	....	50 x 20	C						
	41X ZMg1 A	....	....	....	....	....	....	....	1.13	....	....	....	40 x 15	C						
	41X ZMg3 A	....	....	....	....	....	....	....	2.80	....	....	....	40 x 15	C						
	41X ZNiBi A	0.0187	0.050	0.0020	0.0133	0.0132	2.02	....	....	0.154	0.502	....	50 x 20	C						
	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	Price					
	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	Price					
	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 ZSC5 A	0.0137	0.0502	0.147	<0.0002								50 x 20	C						
CRM	41X ZSC6 A	0.0077	0.215	0.029	<0.0002								50 x 20	C						
4.2 Zn/Al													Size (mm)	Form	Price					
	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Sb	Cr	Si	Tl	In	Ce	La	Zr	Ø x H		
CRM	42X Z1 H	0.0022	0.0041	4.61	0.0005	0.0024	0.0006	0.0019	0.0017	0.0007	(0.0009)	<0.0005	0.0046	....	....	0.0027	0.0026	....	50 x 20	C
CRM	42X Z2 J	0.0064	0.0150	4.08	0.0020	0.0072	0.0063	0.0307	0.0032	0.0058	(0.001)	0.0014	0.011	....	....	0.0072	0.0031	....	50 x 20	C
CRM	42X Z3 H	0.0060	0.0288	3.72	0.0048	(0.047)	0.0030	0.159	0.0102	0.0252	0.003	0.0020	0.015	....	....	(0.0003)	(0.0003)	....	50 x 20	C
CRM	42X Z4 H	0.0113	0.058	3.55	0.0076	0.012	0.0060	0.063	0.0177	0.0077	(0.0029)	....	....	(0.003)	0.0016	0.020	0.020	....	50 x 20	C
CRM	42X Z5 L **	0.005	0.047	4.3	0.0027	0.02	0.002	0.105	0.035	0.003	....	....	....	0.003	0.025	0.015	** provisional values		50 x 20	C
CRM	42X Z6 B	0.0093	0.177	3.67	0.0039	0.008	0.0057	0.238	0.00030	0.0157	0.0169	0.0034	(0.010)	0.0021	0.0019	(0.012)	(0.011)	....	50 x 20	C
CRM	42X Z7 A	0.0097	0.0095	4.39	0.030	0.027	0.012	0.0249	0.0067	0.0045	....	(0.0001)	0.006	....	....	0.053	0.047	....	50 x 20	C
CRM	42X Z8 A	0.0025	0.0033	7.03	0.0003	0.013	(0.002)	0.0215	0.0019	0.0014	....	(0.0002)	0.013	....	....	0.0081	0.0079	....	50 x 20	C
CRM	42X Z9 A	0.0021	0.0464	5.58	0.0054	0.032	(0.0004)	0.0070	(0.0003)	0.0006	....	....	(0.004)	....	....	0.0047	0.0044	0.011	50 x 20	C
CRM	42X Z11 A	0.0058	0.0329	3.19	0.0020	(0.036)	0.0017	0.093	0.0241	0.0196	0.0047	0.0016	....	0.0047	0.0037	0.0014	(0.0009)	....	50 x 20	C
CRM	42X Z12 A	0.0079	0.0488	4.72	0.00277	0.046	0.0022	0.156	0.0413	0.0483	0.0070	0.00063	....	0.0076	0.0068	0.0116	0.0084	....	50 x 20	C













## 6. Magnesium Base

Updated: 17 January 2011

Blocks / Discs

6.5 Mg/Al/Zn - continued																		Size (mm) Ø x H	Form	Price *	
	Al	Zn	Mn	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Be	Cd	Ti					
CRM	65X MGB1 C **	2.34	1.71	0.61	0.195	0.14	0.006	0.012	0.001	0.012	0.013	0.03	0.010	0.010	0.0006	0.07	....	45 x 20	C		
CRM	65X MGB2 C	2.67	0.95	0.333	0.113	0.069	0.010	0.0028	0.011	0.0047	0.0036	0.0099	0.0009	0.0007	0.0008	0.0115	0.0003	40 x 18	C		
CRM	65X MGB3 B **	3.19	0.608	0.0122	0.0214	0.012	(0.005)	0.0020	0.030	0.0050	0.0037	(0.002)	....	....	0.0029	0.012	(0.003)	45 x 20	C		
CRM	65X MGB4 C	3.86	0.333	0.031	0.0183	0.037	(0.009)	0.0003	0.0010	0.0050	0.0037	0.0046	0.0003	(0.0001)	0.0033	0.00016	(0.0008)	40 x 18	C		
6.6 Mg/Zn																		Size (mm) Ø x H	Form	Price *	
	Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Nd	Be	Sr				
CRM	66X-MGC2 E	<0.003	4.82	0.0036	0.47	0.037	(0.0013)	0.0009	0.0044	....	0.0007	0.0074	0.0048	0.0206	0.0164	....	<0.0004	....	temporarily out of stock	40 x 15	G
CRM	66X MGC3 B	0.011	4.97	0.020	0.13	0.009	(0.003)	(0.001)	0.006	....	<0.002	0.003	0.001	....	....	....	....	....	40 x 15	C	
CRM	66X MGC4 C	0.039	6.81	0.166	<0.001	0.0024	0.06	0.006	0.0009	....	0.021	0.0030	0.0074	....	....	....	(0.0001)(0.00014)	40x15 or 50x20	C		
CRM	66X MGD1 B	0.147	1.19	0.125	....	0.066	(0.073)	0.0029	0.0162	....	0.026	0.026	....	0.065	0.031	0.064	....	40x15 or 50x20	C		
	66X MGD2 A	0.30	1.13	0.74	<0.01	0.08	0.07	0.014	0.008	<0.005	0.011	0.012	....	....	....	....	....	40 x 15	C		
	66X MGD3 B **	0.041	1.97	0.28	0.029	0.058	0.020	0.023	0.002	(0.07)	0.007	0.009	0.005	0.004	0.004	....	0.0003	45 x 20	C		
CRM	66X MGD4 B	0.0012	2.77	0.0053	0.69	0.0041	<0.001	0.0010	....	....	(0.001)	(0.001)	(0.002)	0.015	0.014	....	<0.0002	....	40 x 15	C	
CRM	66X MGD5 A	0.040	6.25	0.307	....	2.88	0.134	0.008	0.0120	(0.030)	0.104	0.097	0.044	....	....	<0.0005	....	40x15 or 50x20	C		
6.7 Mg/Rare Earth																		Size (mm) Ø x H	Form	Price	
	Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Sn	Pb	Ag	La	Ce	Nd	Pr						
CRM	67X MGF1 B	0.0176	0.501	0.0039	0.022	0.0048	<0.005	0.0024	(0.0003)	<0.002	<0.001	<0.001	1.12	1.88	(0.05)	0.48		40 x 15	C		
CRM	67X MGF2 B	0.0038	1.71	0.0047	0.30	0.0033	<0.002	(0.001)	0.0008	<0.002	0.019	<0.001	0.98	1.42	0.29	0.112		40 x 15	C		
CRM	67X MGF3 B	<0.001	3.34	0.0040	0.53	0.0010	(0.001)	<0.002	....	<0.002	0.0140	<0.001	0.84	1.17	0.212	0.106		40 x 15	C		
CRM	67X MGF4 B	0.079	5.04	0.0023	0.024	0.0302	(0.0014)	<0.002	....	<0.001	<0.001	<0.0005	0.47	0.81	0.048	0.195		40 x 15	C		
CRM	67X MGF5 B	0.094	6.29	0.171	<0.001	0.0735	0.0026	0.0290	0.0004	<0.001	<0.0005	<0.0005	0.239	0.412	0.011	0.100		40 x 15	C		
6.8 Mg/Ag/Rare Earth																		Size (mm) Ø x H	Form	Price	
	Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	La	Ag	Ce	Nd	Pr	Total R.E.				
CRM	68X MGH1 B	<0.002	0.053	0.0027	0.47	0.0046	<0.005	<0.002	(0.0006)	....	<0.002	<0.002	0.034	3.21	0.040	3.05	(0.014)	....	40 x 17	C	
CRM	68X MGH2 B	<0.002	0.123	0.0038	0.46	0.0050	<0.002	(0.0006)	(0.0006)	....	<0.005	(0.0021)	0.044	2.94	0.055	2.70	(0.013)	....	40 x 17	C	
	68X MGH6 A	0.23	0.21	0.17	<0.01	0.11	0.01(5)	0.03	0.01	....	<0.002	<0.005	....	1.13	....	....	(1.0)	40 x 15	C		
The rare-earths in the above product were added as Neodymium rich R.E. but breakdowns of the individual R.E. values are not available.																					
6.9 Mg/Y/Rare Earth																		Size (mm) Ø x H	Form	Price	
	Al	Zn	Mn	Zr	Cu	Fe	Ni	Pb	Ca	Sn	Pb	La	Ag	Ce	Nd	Pr	Gd	Sm			
CRM	69X MGY4 A	(0.0023)	0.495	0.0104	0.29	0.0011	0.0012	0.0009	(0.001)	0.011	0.0078	2.36	0.0056	1.54	0.0083			60 x 6	CC		
Samples marked ** may be unsuitable for use with glow discharge analysers.																		Price* - Where two sizes are available the price for the smaller is given, the price for the larger is available on request.			



## 7. Tin Base

Updated: 17 January 2011

Blocks / Discs

7.4	Tin Lead-Free Solders																			Size (mm)	Form	Price
		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	S	P	In	Au	Se	Co	Hg	Ge		
CRM	74X OA A	0.080	1.065	0.0098	0.128	3.41	0.007	0.00063	(0.002)	0.0025	(0.001)	0.100	....	0.0072	0.0034	(0.0001)	....	....	....	....	40 x 15	C
CRM	74X WS A	0.0105	0.0063	1.49	0.037	4.58	(0.004)	0.00140	0.0009	0.0048	(0.001)	0.298	....	0.0122	0.0032	(0.0002)	....	....	....	....	40 x 15	C
CRM	74X CA1 B	....	0.0131	0.0169	0.077	0.682	....	0.0071	....	....	0.0262	0.440	....	....	....	0.0053	....	....	....	....	40 x 15	C
CRM	74X CA2 A	0.0100	0.0329	0.0737	0.0331	0.782	0.0021	0.0010	0.0003	0.0308	0.0002	3.50	(0.005)	0.0055	0.0062	0.0014	0.0015	....	0.0007	....	40 x 15	C
CRM	74X 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 B	0.0094	0.061	0.039	0.080	0.502	0.0043	0.00075	(0.001)	0.0542	(0.002)	3.02	....	(0.001)	0.0041	....	0.0027	0.0085	....	....	40 x 15	C
CRM	74X CA5 A	0.0353	0.0207	0.133	0.0116	1.098	0.0019	0.0025	0.0009	0.0147	(0.0003)	4.01	0.0006	0.0108	0.0111	0.0049	0.003	....	0.0006	....	40 x 15	C
CRM	74X CA6 A	0.0086	0.008	0.0078	0.0176	0.629	0.0061	0.00033	0.0006	0.0194	0.0006	0.282	(0.0008)	0.0046	0.0218	0.0106	0.0007	....	0.0064	....	40 x 15	C
CRM	74X CA7 A	0.0095	0.0081	0.0103	0.0965	0.333	0.0047	0.0045	....	0.0007	....	4.21	....	0.003	0.0026	....	....	....	0.053	....	40 x 15	C
CRM	74X CA8 A	0.0100	0.0032	0.0045	0.0403	0.947	0.0037	0.0103	....	0.0007	....	2.44	....	0.0077	0.0041	....	....	....	0.101	....	40 x 15	C
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: 14 January 2011

Blocks / Discs

8.1 Pb/Sb & Pb/As Binaries														Size (mm) Ø x H	Form	Price		
	Sb	As																
CRM	81X PA0.5 C	0.481	....												40 x 15	C		
CRM	81X PA1.0 C	0.989	....												40 x 15	C		
CRM	81X PA2.0 D	1.996	....												40 x 15	C		
CRM	81X PA3.5 E **	3.5	....	** provisional value											40 x 15	C		
CRM	81X PA7.0 D	7.02	....												40 x 15	C		
CRM	81X PA10.0 C	9.60	....												40 x 15	C		
CRM	81X PA12.5 D	12.72	....												40 x 15	C		
	81X PAs1 A	....	1.25												40 x 15	C		
8.2 Pb/Ag														Size (mm) Ø x H	Form	Price		
	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Fe	In	Al							
CRM	82X PAg 1.5R E	0.036	0.386	0.065	0.27	0.005	1.55	(0.004)	....	....	....				40 x 15	C		
CRM	82X PAg 2.5R D	0.082	0.246	0.13	0.26	0.009	2.21	(0.0024)	....	....	....				40 x 15	C		
CRM	82X PAg 3.5R D	0.25	0.106	0.290	0.073	0.020	3.54	(0.0004)	0.0027	<0.001	0.037	0.0015			40 x 15	C		
CRM	82X PAg 6.0R A	0.50	0.48	0.52	0.18	0.021	5.93	0.007	0.010	<0.001	0.008	<0.001			40 x 15	C		
	82X PAG0.7 A	....	....	....	....	0.733	....	....	....	....	....				40 x 15	C		
	82X PAG0.9 A	....	....	....	....	0.903	....	....	....	....	....				40 x 15	C		
8.3 Lead with Impurities														Size (mm) Ø x H	Form	Price		
	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	Na	Hg	Pt
CRM	83X PR1 J	0.0059	0.0048	0.0551	0.0039	0.0287	0.123	(0.0007)	0.006	0.0932	0.0356	0.0004	0.0016	(0.001)	....	....	....	(0.0016)
CRM	83X PR2 F	0.104	0.050	0.0310	0.0346	0.0235	0.0537	....	(0.0008)	0.0021	0.0012	0.0026	0.0114	(0.002)	0.0008	0.0012	0.0021	0.0041
CRM	83X PR3 F	0.050	0.095	0.162	0.0551	0.0017	0.0033	....	(0.0011)	0.0479	0.0069	0.0142	0.0021	0.0104	0.0041	0.0125	0.0026	0.0103
CRM	83X PR4 G	0.0112	0.0164	0.0187	0.0138	0.0054	0.0146	....	....	0.0083	0.0030	(0.0009)	0.0198	0.0053	(0.0023)	0.0033	....	0.044
CRM	83X PR5 D	0.0011	0.0002	0.0080	0.0006	0.0002	0.0004	....	0.0001	0.0002	0.0001	0.0001	0.0002	0.0001	....	....	....	0.0002
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
CRM	83X PR8 C	0.603	0.259	1.186	0.066	0.155	0.505	....	....	0.211	0.224	0.0020	0.0011	0.0064	0.0082	....	0.0073	0.089
8.4 Battery Alloys (Pb/Sn/Ca)														Size (mm) Ø x H	Form	Price		
	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Ni	Al	Te	Ca	Hg					
CRM	84X BA1 H	0.899	(0.002)	0.0174	0.0009	0.0007	0.0082	0.0048	0.0019	(0.0004)	0.0240	(0.0005)	0.0960	....			40 x 15	C
CRM	84X BA2 C	0.490	0.0010	0.0319	0.0033	0.0008	0.0107	0.0129	0.0040	0.00025	0.0127	....	0.0754	(0.003)			40 x 15	C
CRM	84X BA3 C	0.341	0.010	0.0411	0.006	(0.0006)	0.0082	(0.0055)	0.0044	(0.0004)	0.0026	0.0004	0.0163	....			40 x 15	C
CRM	84X BA4 C	0.0480	0.0078	0.0260	0.0064	(0.003)	0.0020	0.0065	0.0092	(0.0004)	0.0015	0.0205	0.0014	....			40 x 15	C
CRM	84X BA8 B	0.346	0.0009	0.0198	0.0009	0.0006	0.0064	0.0028	0.00096	0.00015	0.0298	....	0.141	(0.002)			40 x 15	C
CRM	84X BA9 B	2.92	0.0022	0.0186	0.0026	<0.0005	0.0017	0.0020	0.0010	(0.0003)	0.0154	<0.0005	0.109	....			40 x 15	C
CRM	84X BA10 A	1.51	0.0008	0.0190	0.0005	0.0005	0.0015	0.0003	0.0002	(0.0002)	0.0100	(0.0002)	0.0596	....			40 x 15	C
CRM	84X BA11 A	1.304	0.0079	0.0165	0.0026	0.0005	0.0023	0.0005	0.0006	....	0.0125	....	0.0552	....			40 x 15	C
CRM	84X BA12 A	1.527	0.0008	0.0173	0.0020	0.0005	0.0050	0.0023	0.0010	....	0.0172	....	0.0646	....			40 x 15	C
CRM	84X BA13 A	1.716	0.0010	0.0370	0.0007	0.0008	0.0075	0.0047	0.0014	....	0.0198	....	0.0738	....			40 x 15	C

More battery alloys are on the next page

## 8. Lead Base

Updated: 11 January 2011

Blocks / Discs

8.4 Battery Alloys (continued)																	Size (mm) Ø x H	Form	Price	
	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	Ni	Al	Te	Se	Ca	Mn	Mg	S			
CRM	84X BA20 A	0.299	0.0030	0.0194	....	....	0.0290	....	0.0438	0.0057	....	0.0483	....	....	0.334	....	....	....	40 x 15	C
CRM	84X BA21 A	0.161	0.0091	0.0224	....	....	0.0122	....	0.0136	0.0057	....	0.0067	....	....	0.608	....	....	....	40 x 15	C
CRM	84X BA22 A	0.108	0.00114	0.0162	....	....	0.0059	....	0.0053	0.00139	....	0.033	....	....	0.911	....	....	....	40 x 15	C
CRM	84X BA23 A	0.170	0.0020	0.0163	....	....	0.0039	....	0.00218	0.00014	....	0.0229	....	....	1.21	....	....	....	40 x 15	C
CRM	84X BAHC E	<0.0005	(0.0001)	0.0130	0.0005	(0.00015)	0.0005	<0.0001	(0.00017)	<0.0001	<0.0001	0.0304	(0.0001)	<0.0001	0.139	<0.0001	(0.0001)	<0.0001	55 x 12	C
8.5 Various Lead Alloys																	Size (mm) Ø x H	Form	Price	
	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	S	Hg			
CRM	85X PSn2 B	1.97	0.0269	0.0508	0.0344	0.0047	0.0033	....	0.0005	0.0012	....	0.0010	0.0041	0.0011	....	....	(0.0008)	....	40 x 15	C
CRM	85X PSb3 F	0.151	2.32	0.0234	0.0406	0.240	0.0057	....	(0.0006)	0.0045	....	0.0031	0.0049	0.0187	....	....	(0.0036)	....	40 x 15	C
CRM	85X PSb5 B	0.94	4.87	0.0195	0.0346	0.197	0.0257	....	(0.0017)	0.0011	....	0.0011	0.0018	0.0020	....	....	(0.0040)	....	40 x 15	C
CRM	85X PSb5 C	0.040	4.46	0.0219	0.0238	0.135	0.0026	....	(0.0006)	0.0009	....	0.0013	0.0015	0.0020	....	....	0.030	....	40 x 15	C
CRM	85X PSb5 D	0.094	4.68	0.0204	0.0251	0.180	0.0023	....	(0.0020)	0.0013	....	0.0017	0.0018	0.0024	....	....	0.0075	....	40 x 15	C
CRM	85X PSb8 B	0.041	8.04	0.0178	0.0169	0.0352	0.0049	....	<0.001	0.0010	....	0.0016	0.0043	0.0022	....	....	0.005	....	40 x 15	C
CRM	85X PSb10 B	0.090	10.00	0.0410	0.169	0.127	0.0020	....	0.015	0.0018	....	0.0027	0.0037	0.0020	....	....	<0.001	....	40 x 15	C
CRM	85X PSb12 B	0.270	11.50	0.0310	0.330	0.071	0.0019	....	0.071	0.00053	....	0.0033	0.0056	0.0004	....	....	<0.001	....	40 x 15	C
CRM	85X ANTH E	1.45	6.05	0.0194	0.0291	0.217	0.0071	(0.010)	(0.0007)	0.0046	....	0.0062	0.0071	0.0149	....	....	(0.0036)	....	40 x 15	C
CRM	85X CADH B	0.096	1.85	0.0292	0.0260	0.201	0.0076	0.0005	0.044	2.09	....	0.0045	0.0121	0.0010	....	....	<0.0005	....	40 x 15	C
CRM	85X CADL A	0.010	1.54	0.0169	0.0093	0.0065	0.0076	(0.0006)	(0.002)	1.69	....	(0.0005)	0.0030	(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 SSBC A	9.70	2.14	0.413	....	0.075	0.456	....	....	0.455	0.209	....	0.0037	0.00290	0.0079	0.0196	(0.0008)	....	40 x 15	C
CRM	85X SSCH A	2.64	5.52	0.0441	0.177	0.208	0.0134	(0.002)	0.0007	0.0040	....	0.010	0.0070	(0.015)	....	....	0.0035	....	40 x 15	C
CRM	85X 0494Pb1 A	0.051	0.95	0.0017	0.012	0.049	....	....	....	....	....	....	....	0.004	....	....	....	....	40 x 15	C
CRM	85X 0494Pb2 B	0.147	1.93	0.0174	0.0361	0.111	0.0302	(0.0010)	....	....	....	0.0051	0.0302	....	....	....	(0.0053)	....	40 x 15	C
CRM	85X 0494Pb3 B	0.344	3.10	0.0433	0.101	0.301	0.0142	(0.0007)	....	....	....	0.0151	0.077	....	....	....	(0.015)	....	40 x 15	C
CRM	85X 0616Pb1 B	0.065	1.756	0.0395	0.0496	0.077	0.0048	....	0.0005	0.0029	....	0.0009	0.0048	0.0149	....	....	(0.0003)	....	40 x 15	C
8.6 Lead Babbits																	Size (mm) Ø x H	Form	Price	
	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Al	Pd	Te						
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 A	9.01	14.02	0.031	0.608	0.10	0.006	(0.0016)	<0.001	0.020	0.004	0.0040	<0.001	(0.003)	....	....	....	40 x 15	C	
CRM	86X PSS3 B	9.39	14.13	0.0273	0.489	0.409	0.0140	0.0025	0.0030	0.0170	0.0111	0.0009	....	....	0.0050	....	....	40 x 15	C	
CRM	86X PSS4 B	10.64	15.93	0.102	0.355	0.241	0.0264	0.0035	0.012	0.0539	0.0174	0.0010	....	....	0.0146	....	....	40 x 15	C	

## 9. Lead/Tin Solders

Updated: 17 January 2011

Blocks / Discs

9.1 Tin / Lead Solders															Size (mm)	Form	Price		
	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Al	Te	Au	Hg	Ø x H			
CRM	91X S10PR1 C **	9.1	0.03	0.03	0.01	0.006	0.005	0.001	0.001	0.003	....	0.001	....	....	....	** provisional values	40 x 15	C	
	91X S10PR2 C	10.38	0.51	0.15	0.05	0.04	0.05	0.003	0.03	0.007	....	0.003	....	....	....		40 x 15	C	
	91X S10PR3 B	11.97	0.26	0.23	0.12	0.02	0.03	0.002	0.003	0.011	....	(0.02)	....	....	....		40 x 15	C	
CRM	91X S10P D	10.07	(0.002)	(0.006)	(0.001)	(0.001)	(0.001)	<0.001	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	....		40 x 15	C	
	91X S30PR1 B	29.3	0.047	0.057	0.19	0.006	0.007	(0.08)	0.0013	0.0024	....	0.0023	....	....	....		40 x 15	C	
CRM	91X S30PR2 C	30.17	0.619	0.158	0.095	0.028	0.060	0.009	0.016	0.0060	....	0.0077	<0.0005	....	0.0017		40 x 15	C	
CRM	91X S30PR3 C	30.88	0.269	0.294	0.102	0.0126	0.024	0.0016	(0.003)	0.0115	0.0085	0.0269	....	....	0.0063		40 x 15	C	
	91X S30P C	30.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	....	<0.001	....	....	....		40 x 15	C	
	91X S40PR1 B	39.1	0.059	0.060	0.20	0.006	0.005	<0.005	0.008	0.001	....	0.002	....	....	....		40 x 15	C	
CRM	91X S40PR2 D **	40.6	0.60	0.15	0.075	0.01	0.075	0.01	0.028	0.005	....	0.005	....	....	....	** provisional values	40 x 15	C	
	91X S40PR3 B	41.8	0.25	0.25	0.094	0.018	0.022	0.01	0.002	0.010	....	0.016	....	....	....		40 x 15	C	
CRM	91X S40P D	40.00	(0.002)	(0.005)	(0.001)	(0.007)	(0.001)	(0.001)	<0.0001	<0.0001	(0.002)	<0.001	<0.0005	....	....		40 x 15	C	
	91X S50PR3 C	51.4	0.26	0.25	0.10	0.015	0.020	0.009	0.008	0.002	....	0.016	....	....	....		40 x 15	C	
CRM	91X S50PR4 A	54.6	0.098	0.097	1.58	0.044	0.045	(0.0034)	0.0105	0.0118	0.052	0.0114	<0.001	....	0.029		40 x 15	C	
CRM	91X S50P E	50.05	(0.002)	(0.005)	(0.002)	(0.006)	(0.001)	(0.001)	<0.0001	<0.0001	(0.003)	(0.001)	<0.0005	....	....		40 x 15	C	
CRM	91X S62AG2 A	61.68	0.347	0.168	0.069	0.022	2.03	0.0065	0.0011	0.0016	....	(0.0016)	(0.0011)	....	0.0020		40 x 15	C	
CRM	91X S63PR0 B	60.03	0.0182	0.0084	0.0202	0.0094	0.0097	(0.002)	<0.0005	0.0097	0.0048	0.0018	....	0.0034	0.0148	0.004		40 x 15	C
CRM	91X S63PR1 G	61.45	0.052	0.0588	0.214	0.0064	0.0061	(0.002)	(0.002)	0.0045	0.0308	0.0060	....	0.0047	0.0348	(0.015)		40 x 15	C
CRM	91X S63PR2 J	62.38	0.539	0.144	0.0733	0.0190	0.054	0.0129	0.004	0.0130	0.0154	0.0092	(0.0014)	0.0032	0.076	....		40 x 15	C
CRM	91X S63PR3 G	64.01	0.243	0.254	0.101	0.0264	0.0193	0.0078	0.0061	0.0009	0.0097	0.0085	....	0.0068	0.169	(0.038)		40 x 15	C
CRM	91X S63PR4 A	66.8	0.093	0.030	0.021	<0.002	0.030	<0.005	<0.001	0.021	0.014	<0.005	....	0.006	0.05	....		40 x 15	C
CRM	91X S63Bi1 A	61.9	0.470	0.597	0.105	<0.002	0.0592	0.0204	(0.002)	0.0095	0.0067	0.0131	(0.0015)	0.0012	0.074	....		40 x 15	C
CRM	91X S63P H	63.30	(0.003)	(0.006)	(0.003)	(0.007)	(0.001)	(0.002)	<0.0001	<0.0005	(0.004)	(0.001)	<0.0005	....	....	....		40 x 15	C

9.3 Tin / Lead / Antimony Solders													Size (mm)	Form	Price			
	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Ø x H					
CRM	93X S30APR1 C	28.58	2.54	0.059	0.192	0.010	0.0144	(0.012)	(0.0004)	0.0014	0.0094	0.0010	0.0024				40 x 15	C
CRM	93X S30APR2 C	30.68	1.80	0.168	0.062	0.0178	0.049	0.0026	0.028	0.0061	0.0199	0.042	0.0102				40 x 15	C
CRM	93X S30APR3 C	33.0	0.96	0.28	0.008	0.018	0.021	0.0026	0.005	0.009	....	0.010	....				40 x 15	C
	93X S40APR1 A	38.5	2.70	0.06	0.23	0.011	0.007	(0.01)	0.002	0.002	....	0.003	....				40 x 15	C
	93X S40APR2 A	39.6	2.10	0.19	0.07	0.030	0.052	(0.02)	0.04	0.006	....	0.006	....				40 x 15	C
	93X S40APR3 A	41.4	1.70	0.26	0.12	0.024	0.021	(0.03)	0.022	0.011	....	0.014	....				40 x 15	C
	93X S50APR1 A	48.4	3.2	0.052	0.18	0.007	0.010	(0.01)	0.002	0.002	....	0.002	....				40 x 15	C
	93X S50APR2 A	49.6	2.8	0.15	0.049	0.027	0.055	0.01	0.042	0.006	....	0.014	....				40 x 15	C
	93X S50APR3 A	51.2	2.3	0.25	0.093	0.023	0.025	(0.02)	0.013	0.010	....	0.010	....				40 x 15	C

## 9. Other Solders

Updated: 17 January 2011

Blocks / Discs

9.5	Fusible Alloys	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Al	Pb	Co	Ni	Au	Nominal Melting Temperature °C		Size (mm) Ø x H	Form	Price
	95X 117 A	7.99	0.012	45.3	0.011	....	0.0047	....	0.0053	4.99	18.6	....	23.1	....	....	....	47		40 x 15	C	
	95X 136 A	12.05	0.023	48.7	0.0029	....	0.0057	....	0.030	0.0091	21.5	....	17.8	....	....	....	58		40 x 15	C	
	95X 158 A	13.5	0.057	50.2	0.048	....	0.002	....	0.044	9.6	0.006	....	27.0	....	....	....	70		40 x 15	C	
	95X 174 A	16.79	0.082	57.12	0.0029	....	0.0076	....	0.036	0.0089	26.2	....	0.081	....	....	....	79		40 x 15	C	
	95X 255 A	0.24	0.32	55.7	0.045	....	0.0019	....	0.035	0.0065	0.010	....	43.7	....	....	....	124		40 x 15	C	
	95X BIS40P1 B	42.3	0.092	57.4	0.0670	0.0101	0.035	(0.001)	....	0.0050	0.0164	....	0.043	....	....	....	138		40 x 15	C	
	95X BIS40P2 A	44.7	0.005	55.3	0.003	0.002	0.005	0.001	0.002	0.0008	0.005	0.002	0.020	0.001	0.002	0.0006	....		40 x 15	C	
	95X BIS40P3 A	38.2	0.020	60.0	0.10	(0.005)	0.29	0.014	0.001	0.005	1.01	0.034	0.106	0.016	0.032	0.009	....		40 x 15	C	
	95X BIS40P4 A	38.2	0.144	58.0	0.21	(0.007)	(0.70)	0.047	0.003	0.009	2.02	0.062	0.210	0.031	0.073	0.009	....		40 x 15	C	
	95X BIS50P1 A	50.0	....	49.8	....	....	....	0.051	0.006	0.022	....	....	....	....	0.025	....	....		40 x 15	C	
	95X BIS50P2 A	50.3	....	49.6	....	0.002	0.090	0.007	....	....	....	0.005	....	....	....	0.015	....		40 x 15	C	
	95X BIS50P3 A	48.6	....	49.8	....	0.073	1.50	0.003	0.002	0.015	....	....	....	....	....	0.0025	....		40 x 15	C	
	95X BIS70P1 A	69.1	....	29.6	....	0.025	1.10	0.010	....	....	0.040	<0.001	....	....	0.029	0.0004	....		40 x 15	C	
	95X BIS70P2 A	65.0	....	32.8	....	....	2.01	....	0.001	....	0.049	<0.001	....	....	....	....	....		40 x 15	C	
	95X CDS50P1 A	50.1	0.113	0.13	0.26	0.027	0.030	(0.0022)	0.007	18.1	0.092	<0.002	31.0	....	....	....	145		40 x 15	C	
	95X PBS40P1 A	42.6	0.016	13.8	0.025	0.005	0.011	0.0006	0.001	0.004	0.005	0.0006	(43.8)	....	....	....	....		40 x 15	C	
	95X SC34 A	34.05	....	....	....	....	....	....	....	(65.99)	....	....	....	....	....	....	....		40 x 15	C	
	95X SC36 A	36.09	....	....	....	....	....	....	....	(63.98)	....	....	....	....	....	....	....		40 x 15	C	

Note: these are not CRMs

## 10. Titanium Base

Updated: 17 January 2011

Blocks / Discs

10.1																	Size (mm) Ø x H	Form	Price	
	Al	Sn	V	Mo	Nb	Zr	Cr	Fe	Ni	Cu	Si	Y	C	S	N	O	H			
CRM	101X Ti1 A	3.08	....	....	14.98	2.75	....	....	0.035	0.0099	0.05	0.201	0.0030	0.0417	(0.003)	0.005	0.169	0.0069	40 x 13	HIP
CRM	101X Ti2 A	6.02	2.05	....	2.08	....	3.97	0.0054	0.053	0.0073	(0.003)	0.110	0.0002	0.016	....	0.0053	0.143	0.0076	40 x 13	HIP
CRM	101X Ti3 A	6.14	0.0215	4.00	0.0213	....	0.0152	0.0194	0.104	0.0303	0.0047	0.013	0.0101	0.0619	....	0.010	0.198	0.0034	40 x 13	HIP
CRM	101X Ti4 A	3.95	0.072	0.044	0.301	0.070	0.0668	0.0688	0.125	0.779	0.0645	0.072	0.0079	0.115	....	0.0195	0.199	0.0050	continued	
CRM	101X Ti5 A	5.33	2.09	0.0779	3.98	....	2.09	3.00	0.162	0.047	0.277	0.092	0.0111	0.089	0.0114	0.015	0.172	0.0039		
CRM	101X Ti6 A	5.99	0.067	3.95	0.064	0.0639	0.0653	0.0636	0.221	0.0421	0.0632	0.054	0.0087	0.0340	0.0061	0.0137	0.171	0.0043		
Continuation from above	B	Co	Mn	P	Pd	Ru	Ta	W									Size (mm) Ø x H	Form	Price	
101X Ti4 A	0.0093	0.066	0.0653	0.0076	0.145	0.054	0.096	0.072									40 x 13	HIP		
101X Ti5 A	0.0098	....	0.073	0.010	....	....	....	0.084									40 x 13	HIP		
101X Ti6 A	0.0080	0.0621	0.0623	0.0069	0.141	0.062	0.084	0.066									40 x 13	HIP		

Note: these products are available in other thicknesses on request

## 11. Cobalt Base

Updated: 17 January 2011

Blocks / Discs

11.1 Co/Cr/W (Alloy WI 52 Type)																		Size (mm) Ø x H	Form	Price	
	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Nb	Ta	Al	Cu	N	Pb	Sn				
CRM	111X 12667 M	0.008	0.749	0.0068	(0.003)	0.52	(0.70)	21.79	8.22	1.36	0.161	1.50	0.145	0.005	0.047	0.085	....	....	43 x 20	C	
	111X 12669 J	....	0.71	....	....	0.57	0.62	22.04	10.65	1.41	....	2.06	....	....	....	....	....	....	40 x 15	C	
CRM	111X 12670 N	(0.007)	0.589	0.026	0.0052	0.48	1.10	19.24	10.95	1.28	(0.057)	2.53	0.105	(0.004)	(0.059)	0.006	....	0.021	40 x 15	C	
	111X 12671 J	....	0.51	....	....	0.61	0.88	20.5	11.8	1.45	....	1.95	....	....	....	....	....	....	40 x 15	C	
	111X 12672 J	0.126	0.78	0.014	....	0.72	0.71	21.8	9.3	1.87	0.29	1.87	0.09	0.27	0.14	....	0.01	0.034	40 x 15	C	
CRM	111X 12673 A	(0.005)	0.82	0.022	0.010	0.52	1.69	19.0	9.75	1.70	0.086	2.35	0.06	<0.005	0.104	0.031	(0.003)	0.074	40 x 15	C	
11.2 Co/Cr/Mo (Stellite 8 / BS 3531 Type)																		Size (mm) Ø x H	Form	Price	
	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Al	Ti	Nb	Cu	B	N					
	112X 14936 N	0.45	0.23	....	....	0.77	1.67	23.00	1.12	0.39	4.65	0.48	....	....	....	....	....	....	out of stock - to be remade	40 x 15	E
CRM	112X 14937 S	0.340	1.18	0.0242	0.009	0.407	2.88	25.17	2.84	2.28	7.16	0.012	0.017	0.191	0.093	0.0123	0.142		42-48 x 15	C	
	112X 14941 M	0.38	0.45	....	....	0.14	4.47	26.85	0.54	0.76	4.16	0.03	....	....	....	....	....	....	sold out - no remake planned	40 x 15	E
	112X 14942 M	0.090	1.02	....	....	0.46	0.29	28.47	1.67	1.09	6.22	0.18	....	....	....	....	....	....	40 x 15	C	
CRM	112X 14943 G	0.129	0.58	0.026	0.006	1.20	0.138	30.64	0.060	1.23	7.94	(0.024)	....	0.119	0.229	0.0059	0.056		40 x 15	CC	
CRM	112X 14944 A	0.225	0.71	0.0040	0.0017	0.744	0.128	29.24	<0.02	0.14	6.29	<0.01	....	<0.01	0.006	(0.0004)	0.148		40 x 19	W	
11.3 Co/Cr/Ni/W (Stellite 31 Type)																		Size (mm) Ø x H	Form	Price	
	C	Si	S	P	Mn	Ni	Cr	W	Fe	B											
	113X X401 G	0.56	1.22	....	....	0.20	11.74	25.24	7.09	0.73	0.008								40 x 15	C	
	113X X402 H	0.38	0.32	0.036	0.045	1.26	9.41	24.86	7.96	2.15	....								40 x 15	C	
	113X X403 G	0.52	0.85	0.022	0.021	0.69	10.40	25.03	7.82	1.06	0.006								40 x 15	C	
	113X X404 D	0.51	0.75	0.006	0.002	0.69	10.76	23.7	7.71	1.28	0.001								40 x 15	C	
	113X X405 E	0.48	0.76	0.005	0.002	0.68	10.79	26.7	7.65	1.30	0.001								40 x 15	C	
11.9 Various Cobalt Alloys																		Size (mm) Ø x H	Form	Price	
	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Cu	Nb	Ta	Al	Mg	B	N				
CRM	119 X COB1 G	0.065	0.40	0.015	0.026	0.395	20.8	24.7	11.6	14.6	0.40	0.088	0.345	....	0.020	....	....	0.130	40 x 15	CC	
CRM	119X 81601 B	0.396	0.601	0.033	0.021	1.44	19.9	18.56	4.14	(5.37)	4.08	....	4.20	0.104	....	(0.012)	....	0.056	43 x 20	C	
CRM	119 X ST3 K	2.39	0.794	0.063	....	1.09	2.55	29.8	12.1	3.10	0.353	0.078	....	....	....	....	0.148	0.040	40 x 15	CC	

## 13. Noble Metals

Updated: 17 January 2011

Discs

All Elements ppm																			Size (mm)	Form	Price									
	Cu	Pb	Bi	Zn	As	Sb	Se	Hg	Au	Sn	Ir	Pt	Pd	Fe	Te	Mn	Ni	Cd	Ga	Si	Ø x H									
131X AGP1 A	522	465	485	312	308	465	287	<4	529	489	<4	514	517	150	483	242	sold out - no remake planned												25 x 3**	R
131X AGP2 A	137	112	113	77	48	93	68	<1	138	129	<1	127	130	73	121	20	....	....	....	....	....	25 x 3**	R							
131X AGP3 A	44	31	29	20	19	24	17	<1	36	26	<1	32	32	46	30	12	....	....	....	....	....	25 x 3**	R							
131X AGP4 A	20	5	6	7	5	6	<1	<1	10	<1	<1	10	8	24	7	2	....	....	....	....	....	25 x 3**	R							
R - Samples prepared from rolled strip																						**Mounted in Bakelite 30mm diameter								
131X PAg1 A	75	40	40	50	12	50	35	....	120	40	<1	35	180	5	120	35	25	35	60	30	34 x 12	C								
131X PAg2 A	400	12	12	550	8	12	10	....	20	14	<1	10	180	7	15	10	9	5	15	4	34 x 12	C								
13.2 Silver Copper Alloys																						Size (mm)	Form	Price						
	Ag	Cu	Zn																			Ø x H								
132X AGB88 A	87.60	12.26	....																			40 x 10	C							
132X AGB92 A	91.68	8.04	....																			40 x 10	C							
132X AGB95 A	94.40	5.13	....																			40 x 10	C							
132X 925Zn1 A	92.50	6.03	1.47																			25 x 3**	R							
132X 925Zn3 A	92.55	4.51	2.94																			25 x 3**	R							
R - Samples prepared from rolled strip																						**Available loose, or Mounted in Bakelite 30mm diameter								
13.3 Silver Quaternary Alloys																						Size (mm)	Form	Price						
	Au	Cu	Pb	Ag																		Ø x H								
133X AGQ1 B	0.237	2.493	0.267	bal.																		25 x 3**	R							
133X AGQ2 B	0.938	5.761	0.472	bal.																		25 x 3**	R							
133X AGQ3 B	2.007	9.76	0.970	bal.																		25 x 3**	R							
R - Samples prepared from rolled strip																						**Available loose, or Mounted in Bakelite 30mm diameter								

## 15. Binary Alloys

Updated: 9 April 2010

Blocks / Discs

15.1.1 Fe Binary										Size (mm) Ø x H	Form	Price
	C	Si	S	P	Mn	Ni	Cr	Mo	Al			
151X FC1 A	Cr	0.013	0.02	0.008	0.020	0.06	0.018	0.45	<0.005	0.067	40 x 15	C
151X FM1 A	Mn	0.019	0.01	0.008	0.011	0.53	0.015	0.015	<0.005	<0.005	40 x 15	C
151X FS1 B	S	0.07	0.10	0.058	0.013	0.26	0.015	0.03	0.01	0.02	40 x 15	C

  

15.1.2 Fe Binary										Size (mm) Ø x H	Form	Price	
	Si	Mn	Ni	Cr	Mo	Al	Ti	V	W	Co	Nb		
151X 13604 E	0.57	....	....	....	....	....	....	....	....	....	....	40 x 15	C
151X 13606 F	3.12	....	....	....	....	....	....	....	....	....	....	40 x 15	C
151X 14045 E	....	0.49	....	....	....	....	....	....	....	....	....	40 x 15	C
151X 13937 G	....	1.14	....	....	....	....	....	....	....	....	....	40 x 15	C
151X 13589 J	....	....	49.6	....	....	....	....	....	....	....	....	40 x 15	C
151X 13765 G	....	....	....	19.9	....	....	....	....	....	....	....	40 x 15	C
151X 13754 G	....	....	....	....	11.10	....	....	....	....	....	....	40 x 15	C
151X 14931 D	....	....	....	....	....	19.7	....	....	....	....	....	40 x 15	C
151X 13759 E	....	....	....	....	....	....	0.23	....	....	....	....	40 x 15	C
151X 13762 E	....	....	....	....	....	....	0.41	....	....	....	....	40 x 15	C
151X 13700 D	....	....	....	....	....	....	....	0.59	....	....	....	40 x 15	C
151X 13674 D	....	....	....	....	....	....	....	....	1.81	....	....	40 x 15	C
151X 13670 D	....	....	....	....	....	....	....	....	14.66	....	....	40 x 15	C
151X 13584 D	....	....	....	....	....	....	....	....	....	1.00	....	40 x 15	C
151X 13603 E	....	....	....	....	....	....	....	....	....	3.51	....	40 x 15	C
151X 13601 D	....	....	....	....	....	....	....	....	....	5.59	....	40 x 15	C
151X 13602 D	....	....	....	....	....	....	....	....	....	7.71	....	40 x 15	C
151X 13767 E	....	....	....	....	....	....	....	....	....	....	0.65	40 x 15	C
151X 13664 E	....	....	....	....	....	....	....	....	....	....	1.11	40 x 15	C

## 16. Setting Up Samples

Updated: 17 January 2011

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.

16.2 Steel																						Size (mm) Ø x H	Form	Price	
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Co	Nb	Pb	Bi	Sb	Zn	Zr		
162X FESUS1		1.1	1.8	0.35	0.15	0.8	0.5	25.0	0.45	0.3	0.05	0.6	0.4	0.4	0.2	0.005	1.1	0.05	0.005	0.005	0.015	0.002	0.04	43 x 20	C
16.4.2 Aluminium																						Size (mm) Ø x H	Form	Price	
		Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	Be	Sb	Ca	Sr	Zr	Ag						
164X ALSUS7		4	0.15	0.9	0.55	0.06	1.1	0.12	0.11	0.01	0.3	0.01	0.2	0.1	0.12	<0.001	0.003	0.18	....			50 x 25	C		
164X ALSUS8		0.75	0.9	9.5	0.25	0.45	0.12	0.25	0.001	0.13	0.02	0.06	0.025	0.015	0.03	<0.001	0.07	0.025	0.09			50 x 25	C		
16.5.1 Pure Copper		All Elements ppm																				Size (mm) Ø x H	Form	Price	
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Cr	Co	Ag	Mg	C	Se	O	N			
165X CUSUS1		0.7	11	0.4	8	1	0.05	0.05	0.05	0.01	0.05	0.1	1	11	0.01	0.1	0.05	0.01	(0.5)	0.05	(370)	(6)	50 x 45	W	
16.5.2 Copper																						Size (mm) Ø x H	Form	Price	
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Cr	Co	Mg	Cd	Se	Cu					
165X MNB5 SUS		1.6	0.20	38	0.55	1.1	3.2	0.40	....	0.20	....	....	....	....	....	....	....	....	....	....	55		40 x 17	C	
165X PB10 SUS		11.0	0.04	0.05	0.002	0.06	0.001	0.001	0.02	<0.001	0.02	0.15	0.002	0.03	0.001	0.01	....	....	0.01	....	89		42 x 18	CC	
165X ALB1 SUS		0.03	0.20	0.06	2.8	5.3	9.0	0.10	0.005	0.08	0.015	....	0.015	....	0.01	....	0.04	....	....	....	82		40 x 18	CC	
165X WSB4 SUS		1.0	0.25	5.5	0.80	0.25	0.35	4.5	0.03	1.5	0.01	0.08	0.08	0.002	0.03	....	0.08	0.003	....	....	85		40 x 17	CC	
165X GM4 SUS		2.7	5.2	6.5	0.03	1.9	0.001	0.002	0.01	0.0005	0.01	0.01	0.005	0.12	0.0005	....	0.0002	....	....	83.6		40 x 17	CC		
16.6 Magnesium																						Size (mm) Ø x H	Form	Price	
		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Sr									
166X MGSUS1		0.04	6.8	0.17	<0.001	0.002	0.06	0.005	0.001	<0.001	0.02	0.003	0.007	0.0001	....	0.0001							40 x 40	C	
166X MGSUS2		8	0.4	0.4	....	0.02	0.12	0.005	0.02	0.015	0.01	0.04	0.005	0.0015	0.004	0.0003							40 x 40	C	

## 16. Setting Up Samples

Updated: 3 January 2011

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.

																			Size (mm) Ø x H	Form	Price			
<b>16.8 Lead</b>	<b>Sn</b>	<b>Sb</b>	<b>Bi</b>	<b>Cu</b>	<b>As</b>	<b>Ag</b>	<b>Fe</b>	<b>Zn</b>	<b>Cd</b>	<b>In</b>	<b>Ni</b>	<b>Te</b>	<b>Se</b>	<b>Tl</b>	<b>Au</b>	<b>S</b>								
168X PBSUS1	1.6	6.1	0.07	0.04	0.4	0.015	<0.001	0.003	0.02	0.01	0.003	0.015	0.008	....	0.003	0.002			45 x 35	C				
168X PBSUSS5	1.2	0.4	0.35	0.10	0.35	0.20	<0.001	0.001	0.10	0.15	0.002	0.005	0.002	0.005	0.001	0.0005			45 x 35	C				
168X PBSUSS6	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				
<b>16.8.1 Lead for fire assay</b>	<b>ppm Pt</b>	<b>ppm Pd</b>	<b>ppm Au</b>	<b>ppm Rh</b>	<b>ppm Ru</b>	<b>ppm Ir</b>	<b>ppm Ag</b>	<b>ppm Fe</b>	<b>ppm Bi</b>	<b>ppm Cu</b>	<b>ppm Ni</b>	<b>ppm Te</b>	<b>ppm As</b>	<b>ppm Sb</b>	<b>ppm Tl</b>	<b>ppm S</b>								
168X PBSUS PM1	55	20	35	12	0.1	2	40	1	100	5	3	1	2	1	10	2			48 x 28	C				
<b>16.9 Zinc</b>	<b>Pb</b>	<b>Mg</b>	<b>Al</b>	<b>Cd</b>	<b>Fe</b>	<b>Sn</b>	<b>Cu</b>	<b>Ni</b>	<b>Mn</b>	<b>Bi</b>	<b>Sb</b>	<b>Ti</b>	<b>Tl</b>	<b>In</b>	<b>Ag</b>	<b>Cr</b>	<b>Si</b>		Size (mm) Ø x H	Form	Price			
169X ZN SUS1	0.6	0.002	0.35	0.3	0.05	0.3	0.35	0.06	0.001	0.005	0.2	0.001	0.06	0.25	0.04	0.001	0.003		50 x 20	C				
<b>16.90 Zinc control sample</b>	<b>Pb</b>	<b>Mg</b>	<b>Al</b>	<b>Cd</b>	<b>Fe</b>	<b>Sn</b>	<b>Cu</b>												Size (mm) Ø x H	Form	Price			
1690X ZnChk1	0.005	0.02	4	0.005	0.025	0.003	1.2												50 x 20	C				
1690X ZnChk2	2	<0.001	0.01	0.12	0.75	1	0.42												50 x 20	C				
<b>16.11 Tin</b>	<b>As</b>	<b>Bi</b>	<b>Sb</b>	<b>Pb</b>	<b>Cu</b>	<b>Fe</b>	<b>Cd</b>	<b>Zn</b>	<b>Ni</b>	<b>Al</b>	<b>Ag</b>	<b>Co</b>	<b>In</b>	<b>Au</b>	<b>Se</b>	<b>Te</b>	<b>Tl</b>	<b>Pt</b>		Size (mm) Ø x H	Form	Price		
1611X SNSUS6	0.08	0.09	0.13	0.95	0.50	0.050	0.008	0.005	0.030	....	0.08	0.015	0.005	0.003	0.001	0.001	0.005	....		50 x 20	C			
1611X SNSUS7	2.3	2.6	11.1	0.32	12.3	(0.05)	0.018	0.03	0.10	<0.001	0.12	0.0005	0.050	0.0005	0.005	0.003	0.03	0.0005		50 x 20	C			
<b>16.12 Cobalt</b>	<b>C</b>	<b>Si</b>	<b>S</b>	<b>P</b>	<b>Mn</b>	<b>Ni</b>	<b>Cr</b>	<b>W</b>	<b>Fe</b>	<b>Mo</b>	<b>Al</b>	<b>Nb</b>	<b>Cu</b>	<b>B</b>	<b>Sn</b>	<b>Pb</b>	<b>Ta</b>	<b>Ti</b>	<b>V</b>	<b>Co</b>		Size (mm) Ø x H	Form	Price
1612X COSUS1	1.0	1.6	0.07	0.05	1.7	17	26	8.0	3.5	6.5	1.5	2.2	0.15	0.01	0.08	0.01	0.02	0.20	0.25	-30		43 x 20	C	

## 18. Gases in Metals

Updated: 17 January 2011

Powders

18.1 Gases in Tool Steels					Approximate Matrix Composition	Size grams	Price
	C	S	N	O			
CRM 18X D7 A	2.32	0.0111	0.0124	0.072	12% Cr, 4% V, 1% Mo	100	
CRM 18X H13 A	0.344	0.0080	0.0115	0.063	5% Cr, 1% V, 1.5% Mo, 1% Si	100	
CRM 18X HCX A	1.555	0.0103	0.0111	0.141	22% CR, 3% Mo, 3% W, 2% V, 1% Si	100	
CRM 18X M3/2 A	0.994	0.0166	0.0269	0.105	4% Cr, 6% W, 6% Mo, 3% V	100	
CRM 18X M3/2-D A	0.992	0.0178	0.0421	0.408	4% Cr, 6% W, 6% Mo, 3% V	100	

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

## **Chippings**

Updated: 20 January 2011

Most of the MBH range of discs are available in chippings form. Please see the sections earlier for general composition information.

Chippings are made to order from the currently available 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 applicable to the chippings form of the material

Please enquire for availability, quantity and price.

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

## Listing of New Materials Added to this Catalogue.

Updated: 20 January 2011

Blocks / Discs

1.1.7 Low Alloy																			Size mm Ø x H	Form	Price	
	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Sb	Pb	N				
CRM	11X C10 B **	3.60	1.685	0.144	0.112	0.632	0.240	0.253	0.327	0.659	0.035	0.018	0.031	0.027	0.340	0.014	0.0065	0.007	0.0076	** provisional values	40 x 15	CC
1.4.11 High-Ni Calibration Series																			Size (mm) Ø x H	Form	Price	
	C	Si	S	P	Mn	Ni	Cr	Cu	Al	Co												
CRM	14X FeNi20 B **	0.012	1.13	0.008	0.009	0.025	20.0	0.103	0.073	0.020	1.01								40 x 15	CC		
CRM	14X FeNi25 B **	0.007	0.018	0.63	0.011	0.012	25.1	0.035	0.031	0.11	0.760								40 x 15	CC		
CRM	14X FeNi35 B **	0.041	0.245	0.13	0.028	0.163	35.4	0.090	0.040	0.038	0.355								40 x 15	CC		
CRM	14X FeNi40 B **	0.045	0.028	1.0	0.018	0.081	40.6	0.048	0.052	1.22	0.860								40 x 15	CC		
CRM	14X FeNi45 B **	0.004	0.57	0.035	0.041	0.014	45.2	0.050	0.077	0.55	0.66								40 x 15	CC		
CRM	14X FeNi50 B **	0.050	0.20	0.25	0.025	0.11	50.4	0.092	0.102	0.055	0.50								40 x 15	CC		
3.1.7 Leaded Brass																			Size (mm) Ø x H	Form	Price	
	Pb	Sn	Zn	Fe	Ni	Mn	As	Bi	Sb	P	Co	Ag	Cd	Cu								
CRM	31X 7835.8 A **	3.1	0.51	24.9	0.095	0.145	0.095	0.14	0.11	0.11	0.12	0.31	0.46	0.085	bal				** provisional values	40 x 15	CC	
3.2.9 Bronze																			Size (mm) Ø x H	Form	Price	
	Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Cr	Co	Bi	Sb	Cd	Au	Ag	S	Cu					
CRM	32X SN5 A **	16	0.26	0.50	1.3	0.45	0.45	0.055	0.71	0.06	0.15	0.10	0.65	0.15	0.01	0.09	0.001	bal	** provisional values	40 x 15	CC	
CRM	32X SN6 A **	7.3	1.6	1.2	0.09	0.19	0.03	0.75	0.002	0.01	0.68	0.16	0.31	0.09	0.003	1.15	0.015	bal	** provisional values	40 x 15	CC	
3.3 Gun Metal																			Size (mm) Ø x H	Form	Price	
	Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Bi	Sb	P	Cr	Co	Ag	Cd	Cu						
CRM	33X GM20 A **	4.0	0.10	3.8	0.58	1.0	0.005	0.18	0.22	0.03	2.0	0.07	0.02	0.04	0.14	0.022	bal		** provisional values	40 x 15	CC	
7.4 Tin Lead-Free Solders																			Size (mm) Ø x H	Form	Price	
	As	Bi	Sb	Pb	Cu	Fe	Cd	Ni	Ag	Au	Co	In										
CRM	74X AB1 **	0.030	1.02	0.10	0.035	0.029	0.045	0.020	0.004	3.58	0.0009	0.003	0.028						** provisional values	40 x 15	C	

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

Updated: 20 January 2011.

Blocks / Discs

9.5	Fusible Alloys														Nominal Melting Temperature °C	Size (mm)	Form	Price		
		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Al	Pb	Co	Ni	Au				
	95X BIS40P1 B	42.3	0.092	57.4	0.0670	0.0101	0.035	(0.001)	....	0.0050	0.0164	....	0.043	....	....	....	138	40 x 15	C	
	95X BIS40P2 A	44.7	0.005	55.3	0.003	0.002	0.005	0.001	0.002	0.0008	0.005	0.002	0.020	0.001	0.002	0.0006	....	40 x 15	C	
	95X BIS40P3 A	38.2	0.020	60.0	0.10	(0.005)	0.29	0.014	0.001	0.005	1.01	0.034	0.106	0.016	0.032	0.009	....	40 x 15	C	
	95X BIS40P4 A	38.2	0.144	58.0	0.21	(0.007)	(0.70)	0.047	0.003	0.009	2.02	0.062	0.210	0.031	0.073	0.009	....	40 x 15	C	
	95X BIS50P1 A	50.0	....	49.8	....	....	....	0.051	0.006	0.022	....	....	....	0.025	....	....	40 x 15	C		
	95X BIS50P2 A	50.3	....	49.6	....	0.002	0.090	0.007	....	....	....	0.005	....	....	0.015	....	40 x 15	C		
	95X BIS50P3 A	48.6	....	49.8	....	0.073	1.50	0.003	0.002	0.015	....	....	....	....	0.0025	....	40 x 15	C		
	95X BIS70P1 A	69.1	....	29.6	....	0.025	1.10	0.010	....	....	0.040	<0.001	....	....	0.029	0.0004	....	40 x 15	C	
	95X BIS70P2 A	65.0	....	32.8	....	....	2.01	....	0.001	....	0.049	<0.001	....	....	....	....	....	40 x 15	C	
	95X CDS50P1 A	50.1	0.113	0.13	0.26	0.027	0.030	(0.0022)	0.007	18.1	0.092	<0.002	31.0	....	....	....	145	40 x 15	C	
	95X PBS40P1 A	42.6	0.016	13.8	0.025	0.005	0.011	0.0006	0.001	0.004	0.005	0.0006	(43.8)	....	....	....	....	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	
	<u>Note: these are not CRMs</u>																			
16.8.1		Lead for fire assay	ppm Pt	ppm Pd	ppm Au	ppm Rh	ppm Ru	ppm Ir	ppm Ag	ppm Fe	ppm Bi	ppm Cu	ppm Ni	ppm Te	ppm As	ppm Sb	ppm Tl	ppm S		
		168X PBSUS PM1	55	20	35	12	0.1	2	40	1	100	5	3	1	2	1	10	2	48 x 28	C

**For Your Notes**

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