

CERTIFIED REFERENCE MATERIALS

Master Products Catalog

进口标准样品目录

上海禹重实业有限公司
SHANGHAI UZONG INDUSTRIAL CO., LTD.





REGISTRATION CERTIFICATE

This document certifies that the administration systems of

Analytical Reference Materials International Corporation

1 Perimeter Road, Suite 200, Manchester, New Hampshire 03103

***have been assessed and approved by QAS International
to the following management systems, standards and guidelines:***

ISO 9001:2008

*With the permitted exclusion of clause 7.3 Design and Development
and 7.6 Control of Monitoring and Measuring Equipment*

The approved administration systems apply to the following:

***Supply of Certified Reference Materials and Related Services
to the Metals and Hydrocarbon Markets.***

Original Approval **24th May 2002**
Current Certificate **31st July 2013**
Certificate Expiry **31st July 2014**
Certificate Number **A1553US**

Signed: Certification Officer

On behalf of QAS International

This certificate remains valid while the holder maintains their quality administration systems in accordance with the standards and guidelines stated above, which will be audited annually by QAS International. The holder is entitled to display the above registration mark for the duration of this certificate, which should be returned to QAS International upon reasonable request.
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QAS International

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公 司 简 介

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作为Thermo (赛默飞)、ZEISS (蔡司)、INSTRON (英斯特朗) 和INNOVATEST (轶诺) 品牌的核心代理商, 禹重科技(UZONGLAB)将世界级的分析测试前沿技术和产品带给国内客户, 为高校、科研院所、政府机构以及材质工业过程控制等行业, 提供金属和非金属材料的成分分析、表面分析、硬度和力学测试以及样品前处理等仪器测试方案, 同时提供标准样品、小型试验设备、材料测试咨询等综合性服务。

从冶金铸造和功能材料的开发; 船舶建造和石化装备升级换代; 到汽车零部件和电子电工的可靠性测试; 环境检测和工业品品质的不断提升, 禹重科技(UZONGLAB)在这些方面都发挥着实实在在的作用。

我们具备丰富的经验, 充分了解每个客户的核心需求, 并致力于提供最佳的解决方案。为客户提供更专业、更安全、更便捷的产品和服务是我们禹重科技的唯一目标。

UZONGLAB is an import and technology consulting service company in east of China, mainly worked for expanding the market. It consists of three division and center; they are analysis instrument division, standard spare parts business division, and customer project division and detection technology center.

As the core agent of Thermo Science, ZEISS, INSTRON , INNOVATEST, UZONGLAB brings world class analysis and testing technology and cutting-edge products to domestic customers. It provides components of metal and non-metal materials analysis, surface analysis, hardness, mechanical test and sample pretreatment instrument test scheme for the institutions of higher learning and scientific research institutions, government agencies, material industrial process control industry and so on.

UZONGLAB plays a very important role in the development of metallurgical foundry and functional materials, shipbuilding and petrochemical equipment upgrading, reliability of auto parts and electronic electrician, environmental testing and improving of industrial product quality.

Carbon & Low-Alloy Steels

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Si	C S	Cr Ta	Co Sn	Cu Ti	Pb W	Mg V	Mn Zn	Mo Zr
28A	AISI 1018	0.003	<0.01	(0.006)	---	(0.0001)	(0.0004)	0.20	0.15	0.010	0.247	<0.005	---	0.69	0.031
<i>Chips Only</i>	G10180	0.099	0.002	0.0113	(0.0106)	0.011	0.22	0.023	---	0.011	0.002	(0.012)	0.006	---	(0.002)
28B	AISI 1018	0.004	---	0.008	---	[0.0002]	[0.0016]	0.18	0.13	0.011	0.36	<0.01	---	0.75	0.029
<i>Chips Only</i>	G10180	0.13	0.002	[0.0094]	[0.0080]	0.010	0.23	0.029	---	0.014	0.002	<0.01	(0.002)	---	<0.005
28C	AISI 1018	0.010	---	0.004	---	0.0002	---	0.16	0.073	0.008	0.23	---	---	0.76	0.042
<i>Chips Only</i>	G10180	0.24	0.0014	0.0084	0.0074	0.011	0.25	0.011	---	0.016	0.001	(0.004)	0.024	---	---
28D	AISI 1018	0.011	---	0.0039	---	0.0002	---	0.17	0.081	0.009	0.11	---	---	0.80	0.025
<i>Chips Only</i>	G10180	0.09	0.002	0.0079	0.0061	0.010	0.27	0.016	---	0.008	0.001	(0.003)	0.019	---	---
28E	AISI 1018	0.011	<0.001	0.007	---	0.0001	(0.0003)	0.169	0.079	0.008	0.120	<0.001	<0.002	0.68	0.033
<i>Chips Only</i>	G10180	0.145	0.001	0.0088	0.0052	0.009	0.171	0.0026	<0.001	0.010	0.001	0.002	0.019	---	<0.002
28I	AISI 1018	0.003	0.0017	0.0038	---	0.0002	0.0015	0.175	0.068	0.005	0.168	---	---	0.760	0.012
<i>Chips Only</i>	G10180	0.048	0.001	0.005	0.005	0.0191	0.244	0.024	---	0.0112	0.0015	0.002	0.002	---	(0.003)
28J	AISI 1018	[0.004]	[(0.003)]	[0.006]	---	[0.0003]	[0.0006]	[0.17]	[0.111]	[0.008]	[0.27]	[(0.01)]	---	[0.82]	[0.024]
<i>Provisional</i>	G10180	[0.087]	[0.002]	[0.0066]	[0.0016]	[0.020]	[0.286]	[0.029]	---	[0.013]	[0.0016]	[0.006]	[0.002]	---	[(0.001)]
210A	AISI 1040	0.003	---	0.007	---	<0.005	---	0.39	0.11	0.008	0.27	---	---	0.82	0.022
<i>Chips Only</i>	G10400	0.11	(0.002)	0.0124	(0.0033)	0.015	0.22	0.023	---	0.011	(0.002)	---	0.052	---	---
210C	AISI 1040	0.005	(0.003)	0.008	---	0.0003	---	0.443	0.161	0.008	0.36	0.002	---	0.87	0.017
<i>X-Ray Only</i>	G10400	0.097	0.025	0.0090	0.009	0.033	0.219	0.025	(0.001)	0.019	0.001	<0.005	0.005	---	---
200A	AISI 1045	0.003	---	---	---	<0.0005	---	0.45	0.092	0.006	0.090	---	---	0.76	0.018
<i>Chips Only</i>	G10450	0.048	0.001	0.0084	(0.0031)	0.006	0.27	0.014	---	0.007	0.002	<0.01	0.057	---	---
200C	AISI 1045	[0.004]	[0.002]	[0.006]	---	[0.0004]	[0.0019]	[0.45]	[0.099]	[0.008]	[0.24]	---	---	[0.78]	[0.023]
<i>Provisional</i>	G10450	[0.095]	[0.001]	[0.0079]	[0.0035]	[0.007]	[0.24]	[0.020]	---	[0.0090]	[0.0011]	[(0.003)]	[0.024]	[(0.002)]	---
254A	AISI 1050	0.025	(0.004)	0.005	---	0.0002	0.001	0.500	0.050	0.006	0.091	(0.0003)	---	0.78	0.013
Final	G10500	0.044	0.001	0.0096	(0.003)	0.010	0.211	0.024	---	0.005	0.001	(0.001)	0.002	---	(0.001)
29C	AISI 1117	0.003	---	0.009	---	(0.003)	---	0.18	0.076	(0.01)	0.15	---	---	1.20	0.016
Final	G11170	0.076	(0.003)	0.010	0.005	0.011	0.28	0.13	---	0.008	0.001	(0.002)	0.003	---	---
29D	AISI 1117	0.0033	---	0.005	---	(0.0003)	---	0.17	0.076	(0.023)	0.085	---	---	1.07	0.016
Final	G11170	0.042	(0.0027)	0.0057	(0.0082)	0.018	0.120	0.050	---	0.0072	0.0014	(0.0030)	0.0018	---	---
183C	AISI 12L14	0.0021	(0.001)	0.003	<0.001	0.0011	---	0.079	0.055	(0.002)	0.016	0.18	<0.0005	1.06	0.010
Final	G12144	0.019	0.0010	0.0049	0.016	0.078	0.31	0.004	<0.001	0.003	0.0009	(0.002)	0.002	<0.001	0.001
206B	AISI 1215	[0.0025]	[(0.002)]	[0.0045]	---	[0.0006]	---	[0.074]	[0.038]	[0.007]	[0.113]	[(0.001)]	---	[1.01]	[0.018]
<i>Provisional</i>	G12150	[0.053]	[0.002]	[0.0075]	[0.016]	[0.050]	[0.293]	[0.013]	---	[0.0064]	[0.0008]	[(0.003)]	[0.0016]	---	[0.002]

Carbon & Low-Alloy Steels

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Si	C S	Cr Ta	Co Sn	Cu Ti	Pb W	Mg V	Mn Zn	Mo Zr
233A	AISI 1215 Bi	0.002	0.002	0.004	0.14	0.001	0.001	0.082	0.045	0.0046	0.096	0.003	---	0.80	0.011
Final	N/A	0.038	(0.001)	0.0057	0.013	0.072	0.30	0.010	---	0.011	0.001	0.002	0.002	<0.003	<0.002
143E	AISI 4130	[0.025]	[0.0020]	[0.005]	---	[(0.0002)]	[0.0004]	[0.29]	[0.90]	[0.008]	[0.192]	[(0.001)]	[(0.001)]	[0.476]	[0.171]
Provisional	G41300	[0.205]	[0.0016]	[0.0074]	[(0.002)]	[0.008]	[0.20]	[0.020]	---	[0.012]	[0.0010]	[0.002]	[0.0024]	---	[(0.001)]
30C	AISI 4140	0.027	---	---	---	(0.0001)	0.003	0.39	0.94	0.009	0.16	---	---	0.84	0.16
Chips Only	G41400	0.18	(0.002)	0.0108	0.0025	0.021	0.28	0.016	---	0.014	0.003	---	0.004	---	(0.003)
30D	AISI 4140	0.035	---	0.008	---	0.0004	(0.0006)	0.391	0.978	0.013	0.241	(0.0003)	(0.005)	0.83	0.220
Chips Only	G41400	0.159	0.002	0.0097	0.0014	0.013	0.24	0.020	(0.003)	0.017	0.002	0.003	(0.004)	---	---
30E	AISI 4140	0.014	---	0.015	---	0.0002	(0.001)	0.408	1.06	0.012	0.301	<0.001	<0.005	0.92	0.209
Chips Only	G41400	0.180	0.002	0.0063	0.0014	0.011	0.264	0.0071	---	0.017	0.003	0.005	0.005	(0.002)	---
30I	AISI 4140	[0.027]	[(0.002)]	[0.006]	---	[0.0002]	[(0.0002)]	[0.41]	[0.98]	[0.009]	[0.137]	---	---	[0.90]	[0.219]
Provisional	G41400	[0.131]	[0.0016]	[0.0085]	[(0.001)]	[0.021]	[0.20]	[0.017]	---	[0.009]	[0.0013]	[0.003]	[0.005]	---	[(0.001)]
330A	AISI 4330	0.045	(0.001)	0.003	---	0.0003	0.0010	0.299	0.90	0.0063	0.074	(0.0004)	---	1.00	0.404
Final	G43300	1.80	0.003	0.0024	0.0009	0.005	0.273	0.001	---	0.0039	0.006	(0.004)	0.071	---	0.0015
31A	AISI 4340	0.036	(0.002)	(0.006)	---	(0.0002)	(0.0012)	0.41	0.85	0.011	0.19	---	---	0.75	0.22
Chips Only	G43400	1.66	0.003	0.0114	(0.0015)	0.012	0.22	0.028	---	0.008	0.003	---	0.004	---	(0.003)
31B	AISI 4340	0.028	---	0.006	---	[0.0002]	[0.0005]	0.41	0.87	0.010	0.23	<0.01	---	0.71	0.26
Chips Only	G43400	1.81	(0.002)	[0.0087]	[0.0019]	0.013	0.25	0.022	---	0.010	0.003	(0.008)	0.006	---	(0.002)
31F	AISI 4340	0.026	(0.002)	0.005	---	0.0003	0.0005	0.39	0.83	0.008	0.181	(0.001)	(0.0003)	0.70	0.204
Final	G43400	1.78	0.002	0.0058	(0.001)	0.012	0.258	0.018	(0.003)	0.015	0.0017	(0.005)	0.0028	(0.001)	0.002
33B	AISI 4620	0.023	---	0.005	---	[0.0001]	[0.0003]	0.19	0.17	0.010	0.15	<0.01	---	0.54	0.22
Chips Only	G46200	1.68	0.003	[0.0073]	[0.0044]	0.010	0.22	0.014	---	0.010	0.002	<0.01	0.002	---	<0.005
33C	AISI 4620	0.025	---	(0.005)	---	(0.0002)	(0.0003)	0.184	0.133	0.008	0.223	<0.002	---	0.562	0.236
Final	G46200	1.71	0.002	0.0078	0.0021	0.009	0.25	0.017	---	0.009	0.0014	0.0026	0.0021	(0.002)	
33D	AISI 4620	0.026	(0.002)	0.0035	---	0.0002	(0.0003)	0.209	0.139	0.008	0.072	<0.001	---	0.593	0.229
Final	G46200	1.78	0.002	0.0053	0.0013	0.009	0.207	0.023	---	0.005	0.003	0.002	<0.005	---	<0.002
155A	AISI 4820	0.030	---	0.004	---	0.0003	0.002	0.20	0.13	0.010	0.12	<0.01	---	0.54	0.25
Chips Only	G48200	3.34	0.003	0.0096	0.0016	0.009	0.28	0.024	---	0.006	0.002	<0.01	0.001	---	<0.005
155D	AISI 4820	0.024	0.0010	0.0036	---	0.0002	0.0007	0.210	0.091	0.005	0.105	(0.0003)	(0.0003)	0.58	0.244
X-Ray Only	G48200	3.50	0.0017	0.0075	0.0018	0.010	0.206	0.025	---	0.0054	0.0018	0.002	0.004	(0.002)	0.002
155E	AISI 4820	0.025	0.0020	0.0050	---	0.0003	0.0004	0.200	0.121	0.0091	0.191	(0.001)	(0.0003)	0.65	0.201
Final	G48200	3.30	0.0015	0.0079	0.0017	0.009	0.192	0.020	---	0.009	0.0018	0.003	0.002	(0.002)	0.002

Carbon & Low-Alloy Steels

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Si	C S	Cr Ta	Co Sn	Cu Ti	Pb W	Mg V	Mn Zn	Mo Zr
49D	AISI E52100	0.018	0.0016	0.004	---	(0.0004)	---	0.99	1.53	0.006	0.120	(0.0004)	---	0.39	0.016
Final	G52986	0.061	0.0009	0.0102	0.0008	0.0173	0.24	0.0059	(0.001)	0.0076	0.0020	0.0034	0.004	---	(0.001)
34A	AISI E6150	0.014	---	(0.006)	---	(0.0002)	(0.0002)	0.51	0.99	0.009	0.18	---	---	0.78	0.044
<i>Chips Only</i>	G61500	0.14	0.003	0.0076	(0.0014)	0.01	0.22	0.010	---	0.009	0.003	(0.016)	0.17	---	(0.002)
34C	AISI E6150	[0.068]	[(0.001)]	[0.0025]	---	[0.0003]	[(0.0004)]	[0.50]	[0.92]	[0.006]	[0.077]	[(0.0004)]	---	[0.74]	[0.022]
<i>Provisional</i>	G61500	[0.085]	[0.0043]	[0.0029]	[0.001]	[0.009]	[0.30]	[0.0012]	---	[0.0056]	[0.0045]	[(0.003)]	[0.206]	---	[(0.001)]
32B	AISI 8620	0.040	---	0.006	---	[0.0002]	[0.0032]	0.20	0.54	0.009	0.14	<0.01	---	0.81	0.15
<i>X-Ray Only</i>	G86200	0.44	0.002	[0.0081]	[0.0043]	0.016	0.25	0.024	---	0.011	0.001	<0.01	0.004	---	<0.005
32D	AISI 8620	0.025	0.0023	0.0053	---	0.0002	0.0008	0.199	0.536	0.006	0.175	(0.001)	---	0.800	0.201
<i>X-Ray Only</i>	G86200	0.58	0.002	0.0072	0.0019	0.013	0.240	0.026	---	0.0095	0.0020	0.0028	0.0054	0.002	(0.001)
182A	Alloy 86L20	0.020	---	0.008	---	0.0003	0.002	0.20	0.56	0.011	0.23	0.14	---	0.90	0.18
<i>Chips Only</i>	N/A	0.50	0.003	0.0067	0.0014	0.028	0.25	0.023	---	0.012	0.005	(0.008)	0.005	---	(0.003)
182B	Alloy 86L20	0.038	0.003	0.003	---	0.0003	(0.0005)	0.21	0.49	0.006	0.017	0.19	---	0.81	0.172
Final	N/A	0.47	0.003	0.0040	0.003	0.016	0.27	0.037	(0.003)	0.0019	0.003	(0.01)	0.004	(0.002)	0.001
252A	AISI 8740	0.017	<0.005	0.005	---	0.0002	(0.0004)	0.419	0.501	0.008	0.107	0.0007	---	0.91	0.206
<i>X-Ray Only</i>	G87400	0.507	0.002	0.0085	(0.001)	0.024	0.248	0.009	---	0.007	0.001	0.004	0.005	---	(0.001)
252B	AISI 8740	0.028	(0.002)	0.005	---	0.0002	0.0002	0.419	0.486	0.005	0.084	0.0004	---	0.91	0.223
<i>X-Ray Only</i>	G87400	0.461	0.002	0.0081	0.0016	0.007	0.236	0.019	---	0.021	0.002	0.002	0.004	---	0.001
252C	AISI 8740	0.017	<0.005	0.004	---	(0.0001)	(0.0003)	0.416	0.501	0.008	0.109	0.001	---	0.92	0.205
Final	G87400	0.505	0.002	0.0083	(0.002)	0.025	0.248	0.008	---	0.007	0.001	<0.005	0.005	---	<0.002
156C	AISI E9310	0.028	0.0006	0.003	---	0.0002	0.0010	0.107	1.18	0.009	0.077	<0.001	---	0.46	0.113
Final	G93106	3.25	0.003	0.0026	0.002	0.007	0.25	0.0010	---	0.012	0.0024	0.006	0.005	(0.002)	0.0017
213A	A36	0.0018	---	0.007	---	0.0003	---	0.16	0.15	0.008	0.41	0.0025	---	0.66	0.048
<i>X-Ray Only</i>	K02600	0.15	0.002	0.0082	0.011	0.015	0.15	0.034	---	0.018	0.001	(0.007)	0.002	---	---
213B	A36	[0.0010]	[(0.003)]	[0.006]	---	[0.0003]	---	[0.15]	[0.14]	[0.007]	[0.28]	[(0.001)]	---	[0.78]	[0.035]
<i>Provisional</i>	K02600	[0.15]	[(0.001)]	[0.009]	[0.009]	[0.009]	[0.21]	[0.040]	---	[0.009]	[0.001]	[0.004]	[0.016]	[0.003]	[(0.002)]
268B	STA 361	0.002	---	<0.005	---	0.0011	---	0.087	0.094	0.003	0.31	<0.003	---	0.58	0.033
Final	N/A	0.127	0.006	0.0015	(0.015)	0.011	0.21	0.035	<0.005	0.010	<0.001	0.01	0.047	---	<0.001
35A	1¼Cr ½Mo	0.028	---	(0.003)	---	(0.0002)	(0.0002)	0.12	1.23	0.008	0.078	<0.005	---	0.52	0.49
<i>Chips Only</i>	K11572	0.088	0.003	0.0081	(0.0014)	0.005	0.61	0.006	---	0.004	0.002	---	0.020	---	(0.002)
35B	1¼Cr ½Mo	0.017	---	0.006	---	[0.0005]	[0.0001]	0.13	1.12	0.008	0.11	<0.01	---	0.45	0.45
<i>Chips Only</i>	K11572	0.084	0.003	[0.0081]	[0.0025]	0.006	0.58	0.016	---	0.006	0.003	<0.01	0.005	---	<0.005

Carbon & Low-Alloy Steels

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Si	C S	Cr Ta	Co Sn	Cu Ti	Pb W	Mg V	Mn Zn	Mo Zr
35C	1½Cr ½Mo	0.029	(0.005)	0.008	---	0.0004	(0.0004)	0.115	1.09	0.011	0.271	(0.001)	---	0.44	0.52
<i>Chips Only</i>	K11572	0.102	0.002	0.0093	0.0016	0.012	0.56	0.014	---	0.017	0.003	(0.005)	0.005	---	(0.002)
35K	1½Cr ½Mo	[0.018]	[0.003]	[0.006]	---	[0.0003]	[0.0007]	[0.130]	[1.17]	[0.006]	[0.13]	---	---	[0.46]	[0.56]
<i>Provisional</i>	K11572	[0.058]	[0.0024]	[0.008]	[0.0021]	[0.009]	[0.52]	[0.016]	---	[0.010]	[0.0013]	[0.003]	[0.004]	[(0.0002)]	[(0.001)]
229B	C ½Mo	[0.026]	[(0.0004)]	[0.0011]	---	[0.001]	[(0.001)]	[0.22]	[0.016]	[0.011]	[0.015]	---	---	[0.86]	[0.49]
<i>Provisional</i>	K12822	[0.029]	[0.002]	[0.007]	[(0.002)]	[0.008]	[0.33]	[0.011]	---	[0.001]	[0.002]	[(0.002)]	[0.006]	---	[(0.001)]
36A	2½Cr 1Mo	0.024	(0.001)	(0.005)	---	(0.0002)	(0.0002)	0.099	2.08	0.012	0.17	<0.005	---	0.55	0.93
<i>Chips Only</i>	K21590	0.16	0.004	0.0105	(0.0027)	0.006	0.22	0.013	---	0.009	0.003	---	0.008	---	(0.003)
36B	2½Cr 1Mo	0.030	---	0.008	---	[0.0003]	[0.0002]	0.14	2.18	0.012	0.13	(0.003)	---	0.49	0.95
<i>Chips Only</i>	K21590	0.18	0.003	[0.0102]	[0.0025]	0.010	0.21	0.038	---	0.007	0.003	<0.01	0.006	---	<0.005
305A	NIT 135M	1.09	0.005	0.005	---	0.0004	0.0003	0.401	1.62	0.034	0.098	(0.001)	(0.0005)	0.61	0.41
Final	K24065	0.142	0.003	0.0044	0.0008	0.005	0.38	0.0009	(0.003)	0.006	0.0034	0.011	0.012	(0.002)	0.0013
299A	D6-AC	0.092	(0.002)	0.003	---	0.0003	(0.001)	0.469	1.03	0.0054	0.100	(0.001)	---	0.70	0.99
Final	K24728	0.57	0.006	0.0028	(0.002)	0.008	0.22	0.002	---	0.0055	0.0038	0.010	0.120	---	(0.001)
342A	Hy-Tuff	0.019	0.0021	0.006	---	0.0004	(0.0001)	0.257	0.38	0.008	0.110	0.0008	(0.0002)	1.37	0.42
Final	K32550	1.76	(0.002)	0.0102	0.0006	0.006	1.63	0.0051	---	0.021	0.0028	(0.005)	0.023	(0.001)	(0.002)
37B	5Cr ½Mo	0.025	(0.004)	0.006	<0.0005	0.0002	(0.0004)	0.119	4.82	0.017	0.137	(0.0003)	<0.001	0.431	0.470
<i>Chips Only</i>	K42544	0.11	0.005	0.0155	0.0024	0.011	0.235	0.016	<0.001	0.008	0.0021	0.013	0.012	<0.005	0.002
340A	Alloy 300M	0.062	0.0021	0.004	---	0.0004	(0.0004)	0.414	0.84	0.006	0.103	(0.001)	(0.0002)	0.755	0.39
Final	K44220	1.80	0.015	0.0020	(0.001)	0.011	1.63	0.001	---	0.005	0.0098	0.005	0.064	(0.0001)	(0.002)
38A	9Cr 1Mo	0.009	(0.001)	(0.023)	---	(0.0003)	(0.0005)	0.13	8.67	0.029	0.15	---	---	0.41	0.96
<i>X-Ray & Chips Only</i>	K90941	0.24	0.008	0.0190	(0.0050)	0.008	0.38	0.018	---	0.014	0.003	(0.023)	0.020	---	(0.003)
38B	9Cr 1Mo	0.032	<0.005	0.01	<0.0002	0.0004	0.0005	0.130	8.84	0.017	0.119	<0.001	<0.01	0.427	0.94
Final	K90941	0.15	0.007	0.0192	0.0030	0.023	0.78	0.013	<0.0001	0.010	0.004	(0.01)	0.014	---	0.003
341A	HP9-4-30	0.032	(0.001)	0.003	---	0.0005	0.0011	0.298	0.99	4.44	0.143	(0.001)	---	0.226	1.01
Final	K91283	7.16	0.005	0.0025	0.0008	0.0038	0.10	0.0008	---	0.005	0.003	(0.01)	0.086	(0.0002)	(0.003)
238A	F91	0.03	---	0.012	---	0.0004	---	0.110	8.23	0.026	0.17	---	---	0.40	0.94
<i>chips only</i>	K91560	0.256	0.086	0.047	0.003	0.007	0.31	0.010	---	0.013	0.003	<0.03	0.22	---	0.002
321A	722	0.004	(0.002)	0.0052	---	0.0008	0.0016	0.53	0.24	0.007	0.212	(0.001)	---	1.53	0.026
Final	N/A	0.47	0.0017	0.0100	(0.005)	0.012	0.65	0.017	---	0.019	0.0036	0.0050	0.089	(0.005)	(0.001)
322A	75S	0.002	0.0027	0.005	---	0.0009	0.0019	0.317	0.159	0.006	0.33	(0.001)	(0.001)	1.40	0.021
Final	N/A	0.28	(0.001)	0.023	0.006	0.009	0.42	0.021	---	0.016	0.0016	0.003	0.124	0.003	(0.001)

Carbon & Low-Alloy Steels

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Si	C S	Cr Ta	Co Sn	Cu Ti	Pb W	Mg V	Mn Zn	Mo Zr
323A	420/60	0.003	(0.002)	0.006	(0.0001)	0.0003	0.0008	0.41	0.15	0.007	0.30	(0.001)	(0.0004)	1.14	0.023
Final	N/A	0.084	0.0012	0.0105	0.010	0.0178	0.19	0.061	(0.005)	0.011	0.0012	0.004	0.020	---	(0.001)
324A	M10	0.002	(0.002)	0.006	---	0.0004	0.0009	0.99	0.42	0.007	0.22	---	---	1.01	0.022
Final	N/A	0.081	0.014	0.0082	0.003	0.009	0.163	0.028	---	0.011	0.0016	(0.003)	0.0017	(0.003)	(0.001)

CKD Low-Alloy Steel CRMs

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

CKD Number	Al t Ni	Al s P	As Pb	B S	Bi Sb	C Se	Co Si	Cr Sn	Cu Ta	Fe Te	Mn Ti	Mo V	N W	Nb Zr
180B	(0.001) 0.018	---	0.001 (0.0002)	---	(0.0000) 0.0004	(0.003) (<0.001)	0.003 0.001	0.013 0.0011	0.006 (<0.0001)	(99.90) (<0.001)	0.047 ---	0.001 ---	(0.0028) (0.0001)	(0.0001) ---
181A	0.016 0.725	0.014 0.039	0.027 0.0005	0.0069 0.007	---	0.225 ---	0.050 0.435	0.660 0.113	0.093 0.039	(95.48) ---	0.971 0.149	0.385 0.302	(0.005) 0.188	0.058 0.001
182B	0.023 2.82	0.017 0.008	0.005 (0.000)	0.0003 0.006	---	1.39 ---	0.171 0.126	0.122 0.004	0.293 ---	(94.59) ---	0.370 0.004	0.011 0.027	0.0049 0.016	0.001 0.001
183A	0.150 1.09	0.141 0.009	0.005 (0.000)	0.0005 0.012	0.0000 0.003	0.047 ---	0.119 1.02	0.204 0.051	0.568 (0.000)	(94.49) ---	1.74 0.003	0.036 0.004	0.0036 0.354	0.006 0.001
183B	0.150 1.10	0.141 0.010	0.004 (0.000)	0.0005 0.012	0.0000 0.002	0.050 ---	0.119 1.03	0.204 0.0054	0.575 (0.000)	(94.44) ---	1.76 0.003	0.036 0.004	0.0036 0.347	0.006 0.001
184A	0.022 0.250	0.016 0.028	0.006 (0.000)	0.0005 (0.01)	---	1.013 (0.008)	0.007 0.348	2.33 0.008	0.089 0.000	(93.58) ---	2.23 0.010	0.016 0.017	0.0104 (0.001)	0.013 (0.002)
185A	0.060 3.84	0.054 0.024	0.022 0.002	0.0116 (0.02)	---	0.566 ---	0.032 0.230	0.032 0.003	0.179 0.085	(93.63) (0.005)	0.715 0.022	0.123 0.178	0.0051 (0.001)	0.20 0.002
186B	0.042 1.57	0.038 0.012	0.007 (0.000)	0.0009 0.007	---	0.382 ---	0.006 1.41	1.50 0.018	0.227 0.009	(93.12) ---	1.299 0.044	0.251 0.020	(0.005) 0.054	0.004 (0.002)
187A	0.019 0.085	0.017 0.035	(0.007) 0.003	0.0006 0.018	0.003 0.023	0.119 (0.004)	0.071 0.567	3.51 0.013	0.036 0.015	(93.01) ---	0.525 0.087	0.565 0.558	0.0122 0.67	0.028 0.013
188A	0.093 0.445	0.083 0.006	(0.005) 0.001	0.0047 0.033	---	0.332 ---	0.006 0.775	5.11 0.005	0.057 0.022	(90.53) (0.001)	0.169 0.034	1.28 0.802	0.0076 0.091	0.122 0.052
189A	0.041 5.34	0.039 0.032	0.080 0.002	0.0030 0.051	---	0.175 (0.003)	0.007 0.286	1.065 0.029	0.060 (0.005)	(90.01) ---	0.262 0.326	0.837 0.054	(0.004) 1.30	0.017 0.005

() and $< >$ Indicates non-certified value.

1. Iron Base		Steels																				Updated: 5th November 2012			Blocks / Discs	
1.2.2 Residuals in Mild Steel		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Co	Zn	Nb	N	Bi	Se	Sb	Size (mm) Ø x H	Form	
CRM	12X 10180 A	0.170	0.221	0.0336	0.0104	0.806	0.101	0.095	0.0220	0.176	0.0143	0.0243				0.0058		0.0031		0.0106					40 x 20	W
CRM	12X 10180 B	0.169	0.114	0.0056	0.0101	0.722	0.0333	0.0451	0.0062	0.0544	0.0065	0.043				0.0059		0.0079		0.0071					40 x 20	W
CRM	12X 10400 A	0.420	0.220	0.0305	0.0137	0.754	0.0631	0.139	0.0169	0.140	0.0127	0.0323				0.0068		0.0033		0.0133					40 x 15	W
CRM	12X 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 W **	0.13	0.29	0.100	0.029	1.25	0.48	0.55	0.22	0.32	0.041	0.003	0.030	0.068	0.032	0.072	0.43			** provisional values					40 x 15	W
CRM	12X 12750 T	0.202	0.383	0.0082	0.0106	0.248	1.012	0.853	0.119	0.0215	0.227	0.285	0.116	0.0961	0.105		0.670		0.120						40 x 15	W
CRM	12X 349 C **	0.26	0.23	0.019	0.025	0.74	0.24	0.18	0.105	0.165	0.192	0.047	0.126	0.054	0.050	0.01	0.017			** provisional values					40 x 15	W
CRM	12X 350 B	0.138	0.672	0.0363	0.029	0.706	0.162	0.392	0.149	0.150	0.0298	0.341	0.099	0.0286	0.275	0.053	0.0206								40 x 15	W
CRM	12X 352 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	0.428	0.443	0.0049	0.0075	0.633	0.494	0.624	0.408	0.259	0.072	0.0490	0.066	0.0258	0.008	0.062	0.045	0.0185	0.068	sold out			0.008		40 x 15	W
CRM	12X 354 A	0.27	0.19	0.015	0.066	0.86	.....	.....	.....	.....	.....	0.01	.....	0.02	.....	.....	0.03	.....	0.07	.....	.....	.....	0.05	38 x 15-20	W	
CRM	12X 355 B	0.152	0.486	0.0284	0.0289	0.595	0.081	0.103	0.0603	0.632	0.0547	0.118	0.144	0.121	0.0294	0.0294	0.0515	.....	0.039	0.0067	0.043	0.0338	0.080	40 x 15	W	
CRM	12X 356 B	0.320	0.294	0.0197	0.050	0.359	0.024	0.0667	0.024	0.432	0.0350	0.043	0.0324	0.0599	0.048	0.020	0.129	0.0181	0.017	0.0065	0.0102	0.0060	0.020	40 x 15	W	
CRM	12X 357 B	0.357	0.227	0.080	0.0115	0.255	0.078	0.094	0.0122	0.552	0.0158	0.146	0.028	0.171	(0.002)	0.0114	0.196	0.0251	0.0024	0.0084	0.0095	0.0048	0.0099	40 x 15	W	
1.2.3 Low Alloy Steel		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Nb	Ti	Ta	Zn	Zr	N	.....	Size (mm) Ø x H	Form	
CRM	12X LA1 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 B **	0.45	0.18	0.038	0.022	1.15	0.30	0.36	0.295	0.175	.....	0.029	0.153	.....	.....	0.030	** provisional values			0.008	0.027	0.008	.....	40 x 15	W	
CRM	12X LA4 B	0.537	0.335	0.039	0.0363	0.303	0.521	0.499	0.489	0.334	.....	0.057	0.328	0.091	.....	0.105	.....	.....	.....	.....	.....	0.0222	.....	42 x 15	W	
CRM	12X LA5 B	0.724	0.637	0.0216	0.050	0.977	0.150	0.131	0.225	0.161	.....	0.157	0.589	.....	.....	0.158	.....	.....	.....	0.0290	.....	0.0068	.....	40 x 15	W	
CRM	12X LA6 B	0.089	0.133	0.0097	0.0115	0.148	0.0112	0.0377	0.0073	0.071	.....	0.204	0.0162	.....	.....	0.0062	.....	.....	.....	0.0191	.....	0.0034	.....	40 x 15	W	
CRM	12X 15217 Q	0.176	1.390	0.073	0.058	0.652	0.864	1.24	0.358	0.231	0.0737	(0.021)	0.662	0.121	.....	0.248	0.131	.....	.....	.....	.....	0.0253	.....	40 x 15	W	
CRM	12X 15251 T	1.17	2.27	0.0258	0.0284	1.003	1.035	0.792	0.205	0.110	0.0047	0.050	0.405	0.053	.....	0.259	0.29	.....	.....	.....	.....	0.0232	.....	42 x 15	W	
CRM	12X 15252 Q	0.0478	0.265	0.0580	0.0213	0.818	2.03	0.887	0.248	0.154	0.0448	0.074	0.330	.....	.....	0.154	0.10	.....	(0.054)	.....	.....	0.0218	.....	40 x 15	W	
CRM	12X 15253 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 U **	0.425	0.590	0.016	0.047	1.20	1.585	3.12	0.315	0.230	0.019	0.470	0.102		0.072	0.375	1.45		0.11		** provisional values				40 x 15	CC
CRM	12X 41300 A	0.319	0.183	0.0156	0.0082	0.551	0.084	0.996	0.217	0.131	0.0060	0.027	.....	.....	0.0043	.....	.....	.....	.....	0.0012	.....	0.0095	.....	38 x 15	W	
CRM	12X 41400 A	0.418	0.221	0.0210	0.0138	0.795	0.127	1.003	0.211	0.238	0.0181	0.0195	.....	.....	0.0088	.....	.....	.....	.....	.....	.....	0.0101	.....	38 x 20	W	
CRM	12X 43400 A	0.422	0.259	0.0284	0.0164	0.592	1.378	1.181	0.223	0.177	0.007	0.013	.....	.....	0.0084	.....	.....	.....	0.0027	.....	.....	0.0089	.....	40 x 15	W	
CRM	12X 44220 A	0.417	1.662	0.0009	0.0050	0.874	1.89	0.846	0.401	0.031	0.0019	0.029	0.0764	.....	0.0026	.....	.....	.....	.....	.....	.....	0.0030	.....	38 x 15	W	
CRM	12X 15CDV6 A	0.171	0.152	0.0086	0.0056	0.839	0.044	1.397	0.875	0.0231	0.0011	0.019	0.242	.....	0.0041	.....	.....	.....	.....	.....	.....	0.0069	.....	40 x 15	W	
CRM	12X 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		Special Steels																	Updated: 5th November 2012		Blocks / Discs	
1.4.2 Tool Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	W	As	Co	Nb	N	Pb	Alloy Type	Size (mm) Ø x H	Form
CRM	14X HS1 C	0.718	0.22	0.020	0.018	0.29	0.27	4.00	0.37	0.069	(0.035)	.....	1.05	17.0	.....	0.25	.....	0.023	.....	T-1	40 x 15	W
CRM	14X HS2 C	0.780	0.216	0.0146	0.021	0.240	0.190	4.10	0.445	0.106	.....	.....	1.17	18.09	.....	5.06	.....	0.0211	.....	T-4	40 x 15	W
CRM	14X HS3 L	0.855	0.318	0.046	0.035	0.621	0.706	5.25	1.24	0.200	0.288	.....	1.79	17.93	0.044	10.64	.....	0.087	0.010	T-5/6	40 x 17	CC
CRM	14X HS9 A	2.14	0.406	0.0126	0.0222	0.259	0.239	12.40	1.11	0.039	.....	(0.022)	4.06	0.011	.....	0.037	(0.011)	0.032	.....	D-7	42 x 15	HIP
CRM	14X HS10 A	1.710	0.660	0.0099	0.0135	0.134	0.146	14.83	1.679	0.0605	.....	.....	1.142	1.75	.....	0.0866	.....	(0.001)	.....		48 x 13	HIP
CRM	14X HS11 A	1.739	0.794	0.0107	0.0133	0.237	0.188	19.34	1.52	0.0562	.....	.....	1.032	2.24	.....	0.074	.....	(0.002)	.....		48 x 13	HIP
CRM	14X 72305 A	1.085	0.206	0.0028	0.0128	0.349	0.089	0.425	0.0231	0.149	0.0101	0.0049	0.0045	.....	.....	.....	.....	0.0068	.....	W-5	40 x 15	W
	14X 14944 D	0.62	0.17	0.011	0.016	0.23	0.19	2.87	0.14	0.10	.....	.....	1.00	15.5	.....	0.15	.....	.....	.....		40 x 15	C
	14X 14945 D	0.67	0.26	0.041	0.033	0.72	0.33	3.97	0.23	0.12	.....	.....	0.55	16.84	.....	0.22	.....	.....	.....		40 x 15	C
	14X 14946 D	0.85	0.46	0.048	0.051	0.53	1.06	5.06	0.21	0.25	.....	.....	1.03	16.9(7)	.....	0.44	.....	.....	.....	T-1	40 x 15	C
	14X 14948 C	0.83	0.26	0.017	0.011	0.65	0.29	4.04	0.14	0.04	.....	.....	0.65	18.8	.....	0.16	.....	.....	.....		40 x 15	C
	14X 14952 D	0.90	0.32	0.054	0.054	0.64	0.34	4.93	0.32	0.02	.....	.....	1.24	18.0	.....	0.02	.....	.....	.....		40 x 15	C
	14X 14890 K	0.81	0.69	0.028	(0.012)	0.58	0.08	3.60	5.59	0.09	.....	.....	1.99	5.30	.....	0.32	.....	.....	.....		40 x 15	C
	14X 14892 K	0.83	0.23	0.047	0.054	0.23	0.23	3.99	4.99	0.20	.....	.....	1.76	6.30	.....	0.16	.....	.....	.....		40 x 15	C
1.4.5 High Manganese Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Nb	Ti	Ta	N			Size (mm) Ø x H	Form	
CRM	14X MN1 AJ **	0.48	0.54	0.004	0.025	19.4	0.36	1.45	0.51	0.062	0.005	0.20	0.015	0.14	0.060	0.01	0.048	** provisional values		40 x 15	CC	
CRM	14X MN2 R **	0.700	1.50	0.010	0.020	9.65	0.530	0.355	1.56	0.080	0.063	0.12	0.12	0.29	0.18	.....	0.012	** provisional values		40 x 15	CC	
CRM	14X MN3 S **	0.98	1.10	0.018	0.048	11.5	1.03	0.65	0.30	0.23	0.022	0.17	0.045	0.25	0.33	.....	0.018	** provisional values		40 x 15	CC	
CRM	14X MN4 AA **	1.15	0.91	0.011	0.030	13.3	1.03	2.12	0.87	0.275	0.020	0.004	0.025	0.09	0.03	0.015	0.030	** provisional values		40 x 15	CC	
CRM	14X MN5 S	1.377	1.57	0.0110	0.0270	8.55	1.372	3.31	1.91	0.421	0.0129	0.262	0.0397	0.021	1.01	0.005	0.0155			40 x 15	CC	
	14X 15195 P	1.64	1.45	0.018	0.062	12.06	0.09	0.11	0.30	0.12	0.05	0.08	0.33	.....	.....	.....	.....			40 x 15	C	
	14X 15196 S	1.08	1.64	0.012	0.037	10.16	0.25	0.26	0.22	0.22	0.10(5)	0.13(5)	0.21	.....	.....	.....	.....			40 x 15	C	
1.4.8 Free Machining & Resulphurised Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	V	Co	N			Size (mm) Ø x H	Form			
CRM	14X MSFM1 K	0.062	0.490	0.382	0.078	1.07	0.036	0.319	0.196	0.0101	0.0253	(0.021)	0.0116	0.0578	0.005			40 x 15	CC			
CRM	14X MSFM2 J	0.210	0.477	0.256	0.049	1.84	0.0667	0.568	0.287	0.0225	0.0095	(0.016)	0.0359	0.0137	0.0049			40 x 15	CC			
	14X MSFM3 F	0.55	0.52	0.087	0.060	2.10	.....	.....	0.27	.....	.....	.....	.....	.....	.....			40 x 15	C			
CRM	14X MSFM4 A	0.226	0.469	0.224	0.0386	1.141	6.22	1.69	0.974	0.429	0.0141	(0.007)	0.0151	0.0253	0.0220			40 x 15	CC			
1.4.11 High-Ni Calibration Series		C	Si	S	P	Mn	Ni	Cr	Cu	Al	Co			Size (mm) Ø x H	Form							
CRM	14X FeNi20 B	0.0137	1.12	0.0089	0.010	0.0284	20.06	0.102	0.074	0.018	0.994			40 x 15	CC							
CRM	14X FeNi25 B	0.0084	0.019	0.58	0.011	0.0121	25.10	0.0334	0.035	0.103	0.746			40 x 15	CC							
CRM	14X FeNi35 B	0.0418	0.239	0.119	0.0290	0.162	35.21	0.087	0.044	0.042	0.347			40 x 15	CC							
CRM	14X FeNi40 B	0.0450	0.030	(1.09)	0.0185	0.081	40.57	0.0446	0.0517	1.18	0.858			40 x 15	CC							
CRM	14X FeNi45 B	0.0045	0.567	0.038	0.0416	0.0149	45.20	0.048	0.078	0.552	0.654			40 x 15	CC							
CRM	14X FeNi50 B	0.0488	0.203	0.243	0.0259	0.115	50.09	0.093	0.105	0.052	0.499			40 x 15	CC							

() Indicates non-certified value.

[] Provisional value, certification in progress.

Special Carbon & Low-Alloy Steels

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IARM Status	Grade UNS#	Al Ni	As O	B P	C Pb	Ca S	Co Si	Cr Sn	Cu Ti	Mn V	Mo W	N Zr	Nb
164A	CLA1	0.72	(0.002)	(0.0001)	0.004	0.0002	0.006	0.032	0.88	1.57	0.009	0.0003	0.006
Final	N/A	1.29	0.0005	0.004	(0.004)	0.070	0.019	0.002	0.002	0.78	1.44	<0.005	
165A	CLA2	0.80	(0.003)	(0.001)	0.003	0.0002	0.006	0.036	1.40	1.65	0.009	0.0004	0.007
<i>X-Ray & Chips Only</i>	N/A	1.43	0.0004	0.005	(<0.01)	0.086	0.021	0.002	0.002	1.13	1.57	<0.005	
166A	CLA3	0.55	(0.004)	(0.0002)	0.003	0.0003	0.004	0.014	0.64	1.29	1.08	0.0002	0.006
<i>X-Ray & Chips Only</i>	N/A	0.77	0.0006	0.005	(<0.01)	0.073	0.91	(0.003)	0.002	0.40	1.02	<0.01	
167A	CLA4	0.64	(0.004)	(0.0002)	0.003	0.0002	0.003	0.016	0.95	1.36	1.25	0.0005	0.006
<i>X-Ray Only</i>	N/A	1.00	0.0007	0.019	(0.002)	0.087	1.08	0.003	0.003	0.59	1.19	0.003	
168A	CLA5	0.19	(0.003)	0.0004	0.003	0.0002	0.003	0.004	0.009	0.12	0.69	0.0002	0.003
Final	N/A	2.32	0.0008	0.030	(<0.01)	0.064	0.46	0.003	0.004	0.004	0.52	0.003	
169A	CLA6	0.30	(0.009)	(0.001)	0.31	0.0003	0.005	2.19	0.31	0.21	0.95	0.0004	0.005
<i>X-Ray & Chips Only</i>	N/A	2.50	0.0006	0.033	(0.002)	0.065	0.79	0.003	0.005	0.006	0.65	<0.005	
170A	CLA7	0.032	(0.005)	(0.0002)	0.56	0.0001	0.004	2.55	0.005	0.019	1.57	0.0003	0.004
<i>X-Ray & Chips Only</i>	N/A	1.51	0.0003	0.039	(<0.01)	0.025	0.010	0.002	0.006	0.006	(0.018)	0.003	
171A	CLA8	0.082	(<0.01)	(0.0006)	0.64	0.0001	0.005	2.88	0.49	0.020	1.91	0.0003	0.005
<i>X-Ray Only</i>	N/A	1.95	(0.0004)	0.043	(<0.01)	0.059	0.25	0.002	0.005	0.006	0.13	0.003	
172A	CLA9	0.39	(0.005)	0.0003	0.78	0.0001	0.006	3.52	0.40	0.010	0.014	0.0004	0.004
Final	N/A	0.025	0.0006	0.007	(<0.01)	0.004	1.29	0.003	0.003	0.003	0.038	<0.005	
173A	CLA10	0.48	(<0.01)	0.0004	0.85	0.0002	0.010	4.39	0.72	0.011	0.015	0.0006	0.006
<i>X-Ray & Chips Only</i>	N/A	0.024	0.0007	0.015	(<0.01)	0.004	1.70	0.003	0.004	0.28	0.041	<0.002	
180A	CLA11	0.76	(0.004)	0.0004	0.007	0.0001	0.004	0.037	0.89	0.41	0.006	0.0096	(0.005)
Final	N/A	1.29	0.0006	0.004	(0.002)	0.046	0.023	0.002	0.002	0.76	1.48	0.003	
181A	CLA12	0.87	(0.013)	(0.0002)	0.007	0.0002	(0.004)	0.044	1.45	1.76	0.009	0.0185	(0.007)
<i>X-Ray & Chips Only</i>	N/A	1.40	0.0006	0.004	(0.002)	0.095	0.026	0.002	0.003	1.12	1.65	<0.01	

() and < > Indicates non-certified value.

[] Indicates provisional value, certification in progress.

Tool Steels

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Si	C S	Cr Ta	Co Sn	Cu Ti	Pb W	Mg V	Mn Zn	Mo Zr
304A	AISI M-1	[0.010]	[(0.01)]	[0.01]	---	[0.002]	---	[0.86]	[3.6]	[0.28]	[0.13]	[<0.002]	---	[0.257]	[8.1]
Provisional	T11301	[0.132]	[(0.01)]	[0.034]	[0.003]	[0.018]	[0.37]	[0.002]	---	[0.006]	[0.003]	[1.7]	[1.22]	---	[(0.002)]
44A	AISI M-2	0.027	---	(0.022)	---	(0.0022)	---	0.86	4.26	0.16	0.14	<0.005	---	0.31	5.08
<i>Chips Only</i>	T11302	0.20	(0.009)	0.0247	(0.0018)	0.029	0.39	0.003	---	0.011	0.005	6.25	1.86	---	(0.004)
44B	AISI M-2	---	---	---	---	---	---	0.84	3.86	0.41	0.072	(0.0001)	---	0.27	4.79
<i>Chips Only</i>	T11302	0.18	0.016	0.0252	0.0028	0.014	0.39	0.006	---	(0.008)	0.004	5.98	1.83	---	---
44C	AISI M-2	0.05	(0.004)	(0.01)	---	(0.002)	---	0.82	4.04	0.247	0.12	(0.002)	---	0.301	5.02
Final	T11302	0.132	0.012	0.033	0.003	0.027	0.31	0.004	(0.004)	0.010	0.004	6.0	1.91	0.006	0.002
251A	AISI M-4	0.01	---	0.016	---	(0.002)	(0.0005)	1.398	4.1	0.129	0.13	(0.002)	---	0.33	5.16
Final	T11304	0.131	0.016	0.044	(0.01)	0.014	0.58	0.058	---	0.011	0.003	5.5	3.9	---	(0.002)
306A	AISI M-50	0.005	---	(0.004)	---	(0.001)	---	0.83	4.16	0.011	0.042	---	---	0.209	4.2
<i>X-Ray only</i>	T11350	0.118	0.007	0.0042	(0.001)	0.006	0.16	0.003	---	0.005	0.002	0.003	0.97	---	(0.001)
306B	AISI M-50	[0.08]	[0.0025]	[(0.003)]	---	[(0.001)]	---	[0.84]	[4.12]	[0.010]	[0.058]	[(0.001)]	---	[0.24]	[4.2]
Provisional	T11350	[0.095]	[0.007]	[0.0049]	[0.001]	[0.006]	[0.21]	[0.001]	---	[0.004]	[0.002]	[0.01]	[0.98]	---	[(0.002)]
48A	AISI T-1	(0.016)	---	(0.051)	---	(0.0018)	(0.0006)	0.79	4.32	0.13	0.13	---	---	0.33	0.40
<i>Chips Only</i>	T12001	0.23	(0.003)	0.0221	(0.0107)	0.036	0.29	0.021	---	0.019	0.004	17.99	1.13	---	(0.006)
48B	AISI T-1	---	---	---	---	---	---	0.74	4.2	0.045	0.070	---	---	0.28	0.10
<i>Chips Only</i>	T12001	0.082	---	0.0103	---	0.024	0.28	0.023	---	---	---	17.5	1.1	---	---
48C	AISI T-1	0.017	(0.002)	0.012	---	(0.001)	---	0.77	4.24	0.22	0.13	(0.0004)	(0.0002)	0.39	0.17
Final	T12001	0.204	0.005	0.0165	0.003	0.029	0.45	0.018	(0.01)	0.012	0.006	17.5	1.27	---	(0.003)
255A	AISI H-11	0.01	---	(0.002)	---	0.0004	(0.0004)	0.403	4.84	0.009	0.049	<0.001	---	0.27	1.33
Final	T20811	0.083	0.004	0.0067	0.0011	0.013	0.93	0.0012	<0.005	0.006	0.002	0.007	0.43	---	<0.005
42A	AISI H-13	(0.024)	---	---	---	(0.0007)	---	0.39	(5.42)	0.015	0.070	<0.005	---	0.35	1.29
<i>X-Ray only</i>	T20813	0.32	(0.001)	0.0143	(0.0019)	0.011	1.04	0.007	---	0.005	0.005	(0.014)	1.02	---	---
42B	AISI H-13	0.013	---	---	---	(0.0005)	---	0.38	5.10	0.013	0.089	(0.0003)	---	0.36	1.23
<i>X-Ray only</i>	T20813	0.18	0.004	0.0105	0.0026	0.014	0.99	0.005	---	0.005	0.003	0.012	0.94	---	---
42C	AISI H-13	[0.019]	---	[(0.01)]	---	[0.0010]	---	[0.38]	[4.87]	[0.022]	[0.066]	[(0.001)]	---	[0.40]	[1.28]
Provisional	T20813	[0.05]	[0.004]	[0.019]	[0.003]	[0.022]	[0.86]	[0.004]	---	[0.007]	[0.012]	[0.31]	[0.84]	---	---
39B	AISI A-2	0.006	---	---	---	---	---	0.99	4.79	0.014	0.10	---	---	0.54	1.01
Final	T30102	0.14	0.006	0.0096	---	0.017	0.35	0.003	---	0.004	0.003	(0.026)	0.22	---	---
40A	AISI A-6	0.009	---	(0.007)	---	(0.0003)	---	0.68	1.04	0.011	0.092	---	---	2.15	1.05
<i>Chips Only</i>	T30106	0.14	0.004	0.0077	(0.0024)	0.024	0.25	0.010	---	0.006	0.003	(0.013)	0.007	---	---

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Tool Steels

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Si	C S	Cr Ta	Co Sn	Cu Ti	Pb W	Mg V	Mn Zn	Mo Zr
40B	AISI A-6	(0.006)	---	---	---	(0.0010)	---	0.68	1.04	0.015	0.050	---	---	1.98	1.22
Final	T30106	0.096	0.005	0.0107	(0.0014)	0.012	0.39	0.003	---	0.004	0.003	0.013	0.014	---	---
40C	AISI A-6	0.019	---	0.008	---	0.0009	(0.001)	0.72	0.99	0.010	0.142	---	---	1.91	1.27
Final	T30106	0.255	0.003	0.0083	0.0013	0.014	0.32	0.012	---	0.008	0.008	0.009	0.010	---	(0.002)
45A	AISI O-6	0.011	---	(0.003)	---	(0.0001)	---	1.39	0.13	0.004	0.049	<0.005	---	0.88	0.25
Final	T31506	0.11	0.002	0.0079	(0.0017)	0.014	1.02	0.012	---	0.005	0.003	---	0.005	---	0.005
45B	AISI O-6	0.010	(0.001)	0.002	---	(0.0001)	(0.001)	1.42	0.061	0.004	0.018	---	---	0.90	0.24
Final	T31506	0.024	0.002	0.0080	0.0005	0.010	0.92	0.008	---	0.008	0.002	(0.004)	0.003	---	(0.001)
46A	AISI S-1	0.011	---	(0.009)	---	(0.0012)	---	0.49	1.31	0.015	0.083	<0.005	---	0.48	0.16
<i>X-Ray & Chips Only</i>	T41901	0.30	0.004	0.0144	(0.0027)	0.023	0.94	0.012	---	0.024	0.004	1.84	0.16	---	0.005
46B	AISI S-1	0.011	---	(0.01)	---	0.0003	---	0.45	1.09	0.013	0.147	<0.002	---	0.27	0.222
Final	T41901	0.108	0.003	0.0069	0.002	0.019	0.89	0.0040	---	0.016	0.007	1.96	0.170	---	---
47A	AISI S-5	0.017	0.003	(0.014)	---	(0.0003)	---	0.58	0.29	0.009	0.25	<0.005	---	0.80	0.41
<i>X-Ray only</i>	T41905	0.23	(0.004)	0.0084	(0.0021)	0.015	1.92	0.010	---	0.031	0.008	(0.016)	0.22	---	0.01
47B	AISI S-5	0.014	---	---	---	(<0.001)	---	0.59	0.23	0.007	0.17	(0.0003)	---	0.79	0.20
Final	T41905	0.090	(0.002)	0.0092	(0.0014)	0.017	1.96	0.006	---	0.008	0.010	(0.016)	0.17	---	---
259A	AISI S-7	0.016	(0.002)	0.006	---	0.0003	(0.0003)	0.479	3.27	0.011	0.081	<0.0005	---	0.399	1.43
Final	T41907	0.194	0.003	0.0077	0.0014	0.020	0.44	0.0007	(0.005)	0.004	0.0026	0.035	0.256	<0.005	0.001
43A	AISI L-6	0.030	0.002	(0.006)	---	(0.0002)	---	0.68	0.66	0.016	0.15	<0.005	---	0.61	0.20
<i>Chips Only</i>	T61206	1.34	0.003	0.0089	(0.0026)	0.009	0.24	0.034	---	0.008	0.003	(0.016)	0.008	---	0.01
43B	AISI L-6	0.021	<0.002	0.005	---	0.0002	(0.002)	0.711	0.651	0.012	0.180	<0.0005	<0.003	0.56	0.206
Final	T61206	1.39	0.004	0.0093	0.0016	0.008	0.251	0.013	<0.001	0.013	0.0047	<0.005	0.0035	---	<0.001

() and < > Indicates non-certified value.

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Statistical Process Control (SPC) Standards

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

IARM Status	Grade UNS#	Al Ni	As O	B P	C Pb	Ca S	Co Sb	Cr Si	Cu Sn	Mn Ti	Mo V	N W	Nb Zr
195A	SPC2	0.013	0.021	0.0040	0.255	0.0001	0.102	0.214	0.52	1.85	0.052	0.0078	0.007
Final	N/A	1.01	0.0017	0.018	0.0014	0.007	0.013	1.16	0.084	0.002	0.083	0.38	0.002
195B	SPC2	0.029	0.021	0.0039	0.255	0.0002	0.101	0.216	0.52	1.84	0.052	0.0070	0.007
Final	N/A	1.00	0.0017	0.018	0.002	0.005	0.011	1.16	0.084	0.002	0.082	0.38	0.002
196A	SPC3	0.015	0.025	0.0017	1.08	0.0002	0.013	2.35	0.25	2.40	0.129	0.0084	0.087
Final	N/A	0.61	0.0021	0.040	0.001	0.014	0.006	0.35	0.033	0.014	0.157	0.189	0.006

() and < > Indicate a non-certified value.

[] Indicate provisional value, certification in progress.

Intended Use

Intended for calibration, validation and matrix-match verification of cast iron spectrometric analysis from a plane of solid sample: Atomic Emission Spectrometry with spark, glow-discharge or laser excitation, and X-ray Fluorescence Spectrometry.

Technical Parameters (CZ2002-241 / CZ2002-249)

The samples were white chill-cast on a massive copper block with controlled speed at a controlled temperature of the molten metal. The samples are truncated pyramids with a base analytical surface (38x38 mm), a minimum total height of 20 mm and a side ledge 11-13 mm high. The samples can be used until 1 mm of the ledge height remains. The certified portion of a sample extends 10-12 mm from the original analytical surface.

Shrinkage cavities and porosity, which may appear in the uncertified portions of the samples, do not affect the analytical performance of the certified portions. The uncertified portions should not be used for calibration and/or validation.

Homogeneity was tested by Atomic Emission Spectrometry with an analytical area approximately 4 mm in diameter. The CRMs were tested for random homogeneity and trend homogeneity along the height of the certified portion. Trend homogeneity of the casting sequence was also tested. The latter test was supported by Combustion-IR Molecular Absorption Spectrometry and Thermo-evolution.

Technical Parameters (CZ02033-1 / CZ02033-8)

Homogeneity of the certified constituents and of the influence by structure were tested by the spark excitation AES, the technique prevailing in the cast iron analysis and coincidentally the most strongly structure-influenced technique. The within-sample trend homogeneity was tested as the difference of results on the opposite limits of the certified layer, the between-samples trend as the difference of results from the beginning and the end of casting. Both were found statistically insignificant except for a few cases, contributions of which were combined to the ultimate uncertainty of the certified values. Repeatability of the subsequent analyses distributed evenly on the same working surface was taken for a conservative estimate of the within-sample random homogeneity, as the repeatability of instrument itself cannot be exactly separated. This overall repeatability was satisfactory in respect to the uncertainty of all certified values. The CRM are stable by the nature of their matrix.

Manufactured as gangs of chill-cast discs, cooled on either side in vertical position. This resulted in a white (i.e. effectively graphite free) structure required by spectrometry. 0.5 mm was machined off either cooling surface.

Supplied in a set or as individual discs 40 mm in diameter and approximately 18 mm of total height, with two certified layers extending 6 mm upwards from either working surface. The discs are marked on side by the CRM code and the certified layers' limits. When used to both limits, the remainder, which may contain minor structure defects, should be discarded.

Manufacture and Characterization

Manufactured and characterized in compliance with the Czech Metrology Institute Methodical procedure No. 0217-MP-C001-06: Preparation and certification of reference materials, and ISO REMCO Guides 34, 35.

CMI Low-Alloy Cast Iron Spectrometric CRMs

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

CMI # Status	Al Mo	Sb Ni	As Nb	B N	Bi P	C Se	Ce Si	Cr S	Co Sn	Cu Te	Fe Ti	La W	Pb V	Mg Zn	Mn Zr
CZ02033-1D	0.091	---	---	0.0004	0.033	3.12	0.055	0.047	---	0.031	---	---	0.003	0.046	0.681
Final	0.189	0.389	---	---	0.056	---	2.54	0.006	0.022	---	0.017	0.022	0.013	0.027	---
CZ02033-2B	0.026	0.017	---	0.0100	---	3.54	(0.03)	0.051	0.023	0.69	---	---	---	0.030	0.098
Final	0.008	0.634	---	---	0.049	---	1.28	(0.01)	0.021	---	0.099	(0.003)	0.059	0.013	---
CZ02033-2D	0.015	0.022	---	0.0036	0.002	3.71	0.021	0.032	0.018	0.92	---	---	0.013	0.058	0.194
Final	0.013	0.635	---	---	0.165	---	1.28	0.011	0.025	---	0.019	0.003	0.028	0.023	---
CZ02033-3A	0.025	---	(0.012)	0.0053	0.008	3.72	0.013	0.205	0.007	0.406	---	---	0.007	0.013	0.333
Final	0.514	0.050	---	---	0.022	---	2.30	0.011	0.008	---	0.006	---	0.010	---	---
CZ02033-3B	0.026	---	---	0.0042	0.001	3.38	0.006	0.235	0.012	0.400	---	---	0.009	0.012	0.260
Final	0.456	0.049	---	---	0.012	---	1.74	0.012	0.019	---	0.023	---	0.009	---	---
CZ02033-4A	0.015	---	---	---	---	4.18	---	0.040	0.002	0.081	---	---	0.006	---	0.236
Final	0.002	0.056	---	---	0.053	---	0.71	0.034	0.007	---	0.015	---	0.004	0.007	---
CZ02033-4B	0.003	(0.001)	---	---	---	3.95	---	0.049	0.005	0.062	---	---	0.004	---	0.145
Final	0.005	0.023	---	---	0.041	---	0.252	0.046	0.001	---	0.006	---	0.004	0.008	---
CZ02033-5A	0.060	---	---	---	---	2.30	---	0.054	---	0.014	---	---	---	---	0.804
Final	0.100	0.096	---	---	0.035	---	1.26	0.100	---	---	0.008	---	0.005	---	---
CZ02033-6A	0.022	0.056	---	---	---	3.14	---	1.40	---	0.225	---	---	---	---	1.22
Final	0.005	0.023	---	---	0.077	---	3.37	0.032	0.119	---	0.066	---	0.300	---	---
CZ02033-7A	0.029	---	---	---	---	3.11	---	0.479	0.044	0.022	---	---	---	---	0.321
Final	1.07	1.29	---	---	0.043	---	1.83	0.019	---	---	0.027	0.022	0.0005	---	---
CZ02033-8A	0.015	0.001	---	---	0.017	3.49	---	0.126	---	0.116	---	---	0.006	---	0.408
Final	0.026	0.094	---	---	0.169	---	2.20	0.073	0.040	---	0.027	0.011	0.034	---	---
CZ02033-8B	0.004	0.018	---	---	0.013	3.28	---	0.111	---	0.154	---	---	0.006	---	0.461
Final	0.036	0.097	---	---	0.22	---	1.96	0.073	0.056	---	0.025	0.009	0.029	---	---
CZ2002-242B	0.042	0.005	0.009	0.005	0.020	2.06	---	0.031	0.004	0.040	(92.6)	---	0.027	---	0.189
Final	1.21	0.022	0.009	0.0092	0.044	(0.002)	2.81	0.028	0.010	0.031	0.28	(0.002)	0.46	---	---
CZ2002-244B	0.019	0.004	0.040	0.093	---	2.57	0.018	0.360	0.049	0.308	(93.0)	0.009	0.002	0.025	0.68
Final	0.056	0.336	0.006	---	0.022	---	2.06	0.011	0.179	---	0.019	0.052	0.002	0.026	0.025
CZ2002-245B	0.038	0.052	0.006	0.003	0.009	2.95	---	0.197	0.007	0.081	(92.5)	---	0.020	0.003	1.38
Final	0.115	0.194	0.029	---	0.42	(0.029)	1.59	0.035	0.076	0.017	0.110	0.020	0.055	---	0.004
CZ2002-246	0.006	0.003	0.005	---	---	2.82	0.01	1.20	0.008	1.38	(92.9)	0.003	0.0003	0.010	0.302
Used	0.005	0.043	0.001	---	0.60	---	0.62	0.022	0.002	---	0.001	0.007	0.002	---	---

() Indicates non-certified value.

CMI Low-Alloy Cast Iron Spectrometric CRMs

上海禹重实业有限公司 | 进口标样目录

CMI # Status	Al Mo	Sb Ni	As Nb	B N	Bi P	C Se	Ce Si	Cr S	Co Sn	Cu Te	Fe Ti	La W	Pb V	Mg Zn	Mn Zr
CZ2002-246B	0.101	0.004	0.003	---	0.001	2.73	0.007	1.16	0.012	1.39	(92.6)	0.003	(0.002)	0.016	0.354
Final	0.009	0.065	(0.001)	---	0.66	---	0.76	0.020	0.002	---	0.014	0.011	0.013	---	---
CZ2002-249C	0.032	0.005	0.016	0.017	0.004	4.06	0.017	0.148	0.014	0.486	(92.9)	0.004	0.009	0.042	0.099
Final	0.011	1.21	0.011	---	0.27	(0.002)	0.49	0.0075	0.002	<0.01	0.025	0.009	0.026	0.006	0.027

() Indicates non-certified value.

1. Iron Base		Irons																		Updated: 5th November 2012		Blocks / Discs					
1.1.3 High Phosphorus		C	Si	S	P	Mn	Cr	Mo															Size (mm) Ø x H	Form			
CRM	11X HPC1 G	3.22	2.60	0.0344	0.75	0.499	-----	-----	sold out														40 x 15	CC			
CRM	11X HPC2 K	2.85	2.19	0.066	1.55	0.775	2.05	-----															40 x 17	CC			
CRM	11X HPC3 J	3.38	1.63	0.0473	2.01	1.287	1.48	0.120															40 x 15	CC			
CRM	11X HPC4 P	3.45	4.08	0.094	2.03	0.804	4.57	-----	sold out														40 x 15	CC			
CRM	11X HPC5 A	3.68	1.175	0.223	0.246	1.028	1.42	-----															40 x 17	CC			
1.1.4 Spheroidal Graphite		C	Si	S	P	Mn	Ni	Cr	Cu	Al	Ti	Mg	As	Zn											Size (mm) Ø x H	Form	
CRM	11X SG1 A **	3.51	2.98	0.0095	0.037	0.280	0.041	0.029	0.019	0.019	0.015	0.040	0.0020	0.041	** provisional values										50 x 15	concast	
CRM	11X SG2 A **	3.47	3.01	0.0080	0.036	0.295	0.027	0.029	0.024	0.023	0.015	0.055	0.0022	0.039	** provisional values										50 x 15	concast	
1.1.7 Low Alloy		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	Nb	Co	W	As	Sb	Bi	Se	Zn	Size (mm) Ø x H	Form			
CRM	11X CC21 A	3.12	2.19	0.083	0.0246	0.785	0.107	0.351	0.0357	0.153	0.0078	0.0024	0.0259	0.0083	....	....	....	0.0101	....	....	....	....	45 x 6	2xCC			
CRM	11X 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	continued	sold out			
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 AA	3.384	0.975	0.150	0.489	0.664	2.95	1.97	0.204	0.340	0.198	0.099	0.0480	0.652	0.148	0.242	0.054	0.095	0.237	(0.008)	0.0090	0.0131					
CRM	11X C4 Q	4.89	3.02	0.138	0.111	0.654	2.41	4.50	0.114	0.342	0.0207	0.032	0.094	0.0233	0.072	0.0175	0.122	0.0403	0.044	0.0050	(0.0030)	0.0412					
CRM	11X C5 V	2.49	1.78	0.103	0.097	0.791	(2.1)	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	sold out			
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	1.64	0.189	0.043	0.496	0.320	0.504	0.158	0.347	0.094	0.046	0.115	0.0637	(0.082)	0.174	0.0475	0.077	0.068	0.044	(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	1.69	0.144	0.111	0.634	0.247	0.254	0.328	0.660	0.0346	0.019	0.0317	0.0275	....	....	0.335	0.0140	0.007	....	....	....					
Continuation from above		Pb	B	Zr	Te	Cd	N															Size (mm) Ø x H	Form				
	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 AA	0.040	0.0046	....	....	....	0.0095															40 x 15	CC				
	11X C4 Q	0.0155	0.018	0.006	0.0040	0.0014	....	sold out														40 x 17	CC				
	11X C5 V	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	sold out														40 x 15	CC				
	11X C9 B	0.0044	0.0058	....	0.015	....	....															40 x 17	CC				
	11X C10 B	0.007	....	....	....	....	0.0072															40 x 15	CC				
1.1.8 Abrasion Resistant		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	Nb	Pb											Size (mm) Ø x H	Form
CRM	11X AR5 J	3.10	1.70	0.0316	0.0299	0.57	5.16	9.73	0.12	0.032	(0.018)	0.0147	0.0586	0.030	(0.003)											40 x 17	CC

() Indicates non-certified value.

[] Provisional value, certification in progress.

1. Iron Base		Irons														Updated: 6th November 2012		Blocks / Discs	
1.1.9 Corrosion Resistant										Size (mm)		Form							
		C	Si	S	P	Mn	Ni	Cr	Cu							Ø x H			
CRM	11X S1 Cr3 J **	2.92	1.08	0.023	0.072	0.86	14.52	1.62	9.00							40 x 15			
CRM	11X S1 Cr5 G **	2.59	1.49	0.032	0.115	1.32	17.45	3.75	3.90							40 x 15			
	11X S2Cr1 E	2.83	2.85	0.011	0.31	1.68	16.5	2.48	0.02							40 x 15			
	11X S2Cr2 D	3.03	1.23	0.046	0.14	0.53	18.0	2.35	0.23							40 x 15			
	11X S2Cr4 D	2.82	2.59	0.010	0.049	0.97	20.7	1.10	0.24							40 x 15			
	11X S2Cr5 D	3.01	2.51	0.042	0.14	0.83	19.5	3.99	0.24							40 x 15			
	11X S2Cr6 D	2.65	3.59	0.009	0.254	0.81	18.0	4.39	0.27							40 x 15			
	11X S3Cr1 D	2.61	2.52	0.011	0.046	0.70	31.7	0.15	0.19							40 x 15			
	11X S3Cr2 C	2.30	2.59	0.010	0.045	0.85	31.0	2.62	0.21							40 x 15			
	11X S3Cr3 B	2.49	2.44	0.050	0.053	0.66	29.4	4.06	0.23							40 x 15			
										Size (mm)		Form							
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Co	Sn	Al	Ti	V	Pb	Ø x H		
	11X 20001 J	2.90	1.01	0.143	0.005	0.58	21.4	1.50	....	0.01	....	....	....	....	....	....	40 x 15		
	11X 20002 J	2.67	2.04	0.045	0.060	1.06	20.0	2.03	....	0.30	....	....	....	....	....	....	40 x 15		
	11X 20003 K	2.91	3.03	0.007	0.174	1.53	17.8	2.53	....	0.52	....	....	....	....	....	....	40 x 15		
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		
CRM	11X 0331.2 J **	2.26	2.30	0.092	0.058	1.05	14.7	1.48	0.082	6.97	0.145	0.032	0.064	0.081	0.033	0.029	40 X 13		
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		
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		
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		
1.1.11 With Chromium										Size (mm)		Form							
		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	V	W	Co	Pb	Ø x H			
CRM	11X 15204 T	2.25	0.400	0.050	0.100	0.551	4.84	20.32	0.630	0.126	0.070	0.124	0.45	0.170	0.0067	....	40 x 15		
CRM	11X 15205 P	2.285	1.057	0.004	0.005	1.04	0.350	24.87	0.518	0.238	(0.045)	0.144	(0.20)	0.542	(0.010)	....	40 x 17		
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		
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		

() Indicates non-certified value.

[] Provisional value, certification in progress.

Stainless & High Temperature Steel Alloys

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	B O	Ca P	C Se	Ce Si	Cr S	Co Ta	Cu Sn	H Ti	Pb W	Mg V	Mn Zn	Mo Zr
21C	13-8 PH Mo	1.07	---	---	0.0004	---	0.035	---	12.39	0.021	0.047	---	---	---	0.051	2.11
<i>X-Ray Only</i>	S13800	8.18	0.007	0.0045	0.0004	0.007	---	0.042	0.0038	0.002	0.005	0.012	(0.01)	0.013	---	(0.001)
22B	AISI 15-5PH	0.004	---	<0.005	(0.0007)	<0.005	0.045	---	14.29	0.08	3.25	---	<0.005	<0.005	0.53	0.35
<i>Chips Only</i>	S15500	4.81	0.301	0.012	0.001	0.022	---	0.41	0.001	(0.010)	0.010	0.003	0.028	0.054	---	<0.005
22C	AISI 15-5PH	[0.006]	---	[0.003]	[0.0006]	---	[0.042]	---	[14.28]	[0.086]	[3.24]	---	---	---	[0.63]	[0.48]
Provisional	S15500	[4.63]	[0.29]	[0.030]	[0.0020]	[0.027]	---	[0.39]	[0.0004]	[(0.004)]	[0.013]	[0.002]	[0.031]	[0.068]	---	[0.002]
318B	Alloy 16-6-2-2	0.004	---	(0.004)	0.0003	---	0.050	---	15.9	0.100	1.63	---	---	---	1.02	1.57
Final	NA	5.71	0.086	0.032	0.009	0.022	---	0.41	0.0006	(0.004)	0.004	0.014	0.087	0.115	---	(0.003)
23A	AISI 17-4 PH	(0.002)	---	---	---	---	0.049	---	15.51	0.05	3.18	---	---	---	0.52	0.10
<i>Chips Only</i>	S17400	4.40	0.28	0.044	(0.013)	0.024	---	0.51	0.006	---	0.007	<0.01	(0.03)	0.054	---	---
23D	AISI 17-4 PH	[0.005]	---	[(0.005)]	[0.0019]	[0.0013]	[0.038]	---	[15.16]	[0.041]	[3.27]	---	[(0.001)]	[(0.0004)]	[0.52]	[0.159]
Provisional	S17400	[4.88]	[0.29]	[0.037]	[0.004]	[0.022]	---	[0.49]	[0.0006]	[(0.001)]	[0.0060]	[0.003]	[0.011]	[0.053]	[(0.001)]	[(0.001)]
152B	AISI 17-7 PH	1.19	---	<0.01	0.002	---	0.075	---	16.94	0.17	0.31	---	---	<0.005	0.76	0.51
<i>Chips Only</i>	S17700	7.22	0.033	0.026	0.0011	0.0230	---	0.361	0.0019	<0.003	0.0081	0.115	0.05	0.091	---	<0.003
152C	AISI 17-7 PH	[0.95]	---	[(0.004)]	[0.003]	---	[0.072]	---	[16.99]	[0.113]	[0.315]	---	---	---	[0.74]	[0.36]
Provisional	S17700	[7.29]	[0.012]	[0.0172]	[0.001]	[0.024]	---	[0.263]	[0.0005]	[(0.01)]	[0.007]	[0.098]	[0.026]	[0.072]	---	---
17C	Nitronic 50	0.01	---	---	0.003	---	0.033	---	21.03	0.057	0.38	---	---	---	5.0	2.10
<i>Chips Only</i>	S20910	11.99	0.139	0.265	0.0035	0.022	---	0.47	0.0042	<0.01	0.006	<0.005	0.029	0.183	---	---
18C	Nitronic 60	0.0142	---	---	0.0014	(0.002)	0.087	---	16.19	0.060	0.285	---	---	---	7.69	0.354
Final	S21800	8.05	0.090	0.152	0.0018	0.027	---	3.8	0.0010	(0.004)	0.004	0.013	0.05	0.099	---	---
19C	Nitronic 40	0.007	---	(0.004)	0.0011	---	0.012	---	19.51	0.087	0.45	---	---	---	9.02	0.40
Final	S21900	6.40	0.028	0.32	0.003	0.027	---	0.31	0.0007	0.005	0.0061	0.003	0.037	0.090	---	---
289A	AISI 301	0.01	---	---	0.0003	---	0.126	---	17.0	0.054	0.016	---	---	---	1.67	0.005
Final	S30100	7.12	0.008	0.0032	0.0104	0.006	---	0.58	0.0019	<0.005	0.002	0.028	0.01	0.01	---	---
241C	AISI 302	0.003	---	<0.005	0.0005	---	0.069	---	17.80	0.058	0.52	---	---	---	1.50	0.117
<i>X-Ray Only</i>	S30200	8.05	0.003	0.0478	0.007	0.043	---	0.630	0.030	(0.005)	0.0057	0.002	0.01	0.039	---	(0.002)
1D	AISI 303	---	---	(0.003)	<0.002	<0.001	0.061	---	18.24	0.208	0.51	---	---	---	1.98	0.130
Final	S30300	9.50	<0.005	0.027	0.007	0.025	---	0.22	0.34	<0.005	0.006	(0.002)	0.015	0.101	---	0.001
253A	AISI 303Se	0.003	---	---	0.0003	---	0.041	---	17.90	0.088	0.223	---	---	---	1.50	0.348
Final	S30323	9.17	0.016	0.0373	0.009	0.140	0.21	0.50	0.0089	---	0.01	0.002	0.10	0.106	---	---
2D	AISI 304	(0.002)	---	(0.006)	(0.0004)	(0.002)	0.047	---	18.22	0.098	0.43	---	<0.003	<0.001	1.48	0.48
<i>Chips Only</i>	S30400	8.86	0.003	0.0506	0.0080	0.031	<0.001	0.49	0.020	(0.002)	0.014	(0.002)	0.022	0.047	---	<0.005

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Stainless & High Temperature Steel Alloys

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	B O	Ca P	C Se	Ce Si	Cr S	Co Ta	Cu Sn	H Ti	Pb W	Mg V	Mn Zn	Mo Zr
234A	AISI 302 HQ	0.36	---	---	0.0009	---	0.102	---	18.0	0.35	3.65	---	---	---	1.99	0.004
Final	S30430	8.06	0.20	0.096	0.0007	0.004	---	1.02	0.0026	(0.01)	0.003	0.002	0.02	0.003	---	---
316A	Alloy 253MA	0.006	---	0.007	(0.0003)	0.0017	0.070	0.064	21.07	0.118	0.19	---	(0.0001)	---	0.61	0.250
Final	S30815	10.81	0.003	0.1605	0.0052	0.023	---	1.50	0.0011	0.003	0.006	0.002	0.022	0.042	(0.0008)	---
3A	AISI 309	(0.012)	---	---	(0.0002)	---	0.076	---	22.54	0.113	0.31	---	---	---	1.58	0.36
<i>Chips Only</i>	S30900	12.48	0.02	(0.089)	(0.020)	0.026	---	0.43	0.002	---	0.007	(0.002)	0.04	0.06	---	---
3B	AISI 309	0.009	---	<0.01	(0.0004)	---	0.058	---	22.41	0.093	0.282	---	<0.005	<0.01	1.68	0.49
<i>Chips Only</i>	S30900	12.62	0.077	0.079	0.0044	0.027	<0.01	0.46	0.0034	<0.01	0.008	0.004	0.047	0.066	<0.001	<0.005
3D	AISI 309	[0.004]	---	[(0.004)]	[0.0003]	[(0.001)]	[0.059]	---	[22.52]	[0.084]	[0.25]	---	---	---	[1.66]	[0.32]
Provisional	S30900	[12.05]	[0.007]	[0.071]	[0.005]	[0.024]	---	[0.32]	[0.0009]	[(0.004)]	[0.008]	[0.002]	[0.020]	[0.13]	---	[(0.002)]
4D	AISI 310	[0.01]	---	---	[0.001]	---	[0.052]	---	[24.3]	[0.07]	[0.22]	---	---	---	[1.21]	[0.39]
Provisional	S31000	[20.2]	[0.010]	[0.046]	[0.004]	[0.021]	---	[0.49]	[0.001]	[(0.01)]	[0.007]	[0.004]	[0.028]	[0.073]	---	[(0.001)]
4E	AISI 310	0.004	---	(0.005)	0.0011	---	0.044	---	24.25	0.066	0.234	---	---	---	1.07	0.32
Final	S31000	20.18	0.024	0.038	0.0021	0.0224	---	0.514	0.0006	0.005	0.0060	0.003	0.046	0.052	---	(0.001)
302A	Alloy 254SMO	0.015	---	(0.007)	0.0027	(0.003)	0.024	---	20.3	0.069	0.70	---	---	---	0.92	6.15
Final	S31254	17.7	(0.01)	0.183	0.003	0.024	---	0.54	0.0008	0.003	0.009	0.003	0.024	0.052	---	<0.01
5G	AISI 316	0.004	---	0.006	0.0007	0.0007	0.044	---	17.5	0.33	0.37	---	(0.0001)	(0.0004)	1.67	2.03
Final	S31600	10.48	0.007	0.033	0.004	0.028	---	0.27	0.026	(0.004)	0.010	0.002	0.050	0.083	(0.001)	(0.002)
339A	AISI 316H	0.004	---	(0.001)	0.0006	0.0014	0.16	---	17.0	0.007	0.021	---	(0.002)	(0.0001)	1.71	2.79
Final	S31609	12.9	0.005	0.0060	0.016	0.004	(0.0003)	0.64	0.009	(0.005)	0.002	0.002	0.0119	0.007	(0.001)	0.003
153B	AISI 317L	0.006	---	(0.005)	0.0022	---	0.015	---	18.13	0.115	0.408	---	<0.002	---	1.58	3.12
<i>Chips Only</i>	S31703	13.19	0.008	0.0158	0.0052	0.031	---	0.28	0.0082	<0.01	0.014	0.002	0.020	0.031	---	---
6H	AISI 321	[0.041]	---	[(0.005)]	[0.004]	[(0.0003)]	[0.043]	---	[17.34]	[0.094]	[0.44]	---	---	---	[1.58]	[0.39]
Provisional	S32100	[9.18]	[0.009]	[0.011]	[0.002]	[0.029]	---	[0.51]	[0.001]		[0.014]	[0.36]	[0.023]	[0.09]	---	[(0.004)]
292A	Alloy 2101	0.010	---	<0.01	0.0011	---	0.030	---	21.35	0.031	0.29	---	---	---	5.0	0.097
Final	S32101	1.47	0.009	0.245	0.0024	0.018	---	0.75	0.001	(0.006)	0.004	0.005	0.01	0.084	---	---
212D	Alloy 2205	[0.005]	---	[(0.01)]	[0.001]	[(0.001)]	[0.019]	---	[22.6]	[0.049]	[0.125]	---	[(0.001)]	---	[1.21]	[3.28]
Provisional	S32205	[5.53]	[0.009]	[0.182]	[0.0034]	[0.024]	---	[0.34]	[0.0007]	[(0.003)]	[0.003]	[(0.002)]	[0.014]	[0.063]	---	[(0.004)]
317A	Alloy 2304	0.005	---	(0.006)	0.0019	(0.0003)	0.025	---	22.5	0.064	0.21	---	(0.001)	---	1.26	0.249
Final	S32304	4.19	0.004	0.123	0.0032	0.028	---	0.39	0.0007	(0.004)	0.008	(0.002)	0.015	0.061	---	---
239B	Ferrallium 255	[0.009]	---	[(0.003)]	[0.001]	---	[0.013]	---	[25.9]	[0.047]	[1.48]	---	[(0.001)]	---	[0.86]	[3.42]
Provisional	S32550	[5.76]	[0.024]	[0.25]	[0.003]	[0.024]	---	[0.39]	[0.0007]	[(0.004)]	[0.003]	[0.002]	[0.10]	[0.10]	---	[0.002]

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Stainless & High Temperature Steel Alloys

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	B O	Ca P	C Se	Ce Si	Cr S	Co Ta	Cu Sn	H Ti	Pb W	Mg V	Mn Zn	Mo Zr
301A Provisional	Alloy 2507 S32750	[0.021] [6.95]	--- [0.007]	--- [0.281]	[0.0020] [0.004]	[(0.002)] [0.020]	[0.016] ---	--- [0.27]	[24.9] [0.0006]	[0.038] [(0.003)]	[0.108] [0.003]	--- [0.003]	--- [0.017]	--- [0.048]	[0.81] ---	[3.85] ---
319A Provisional	Zeron 100 S32760	[0.011] [6.9]	--- [0.006]	[(0.005)] [0.239]	[0.002] [0.003]	--- [0.023]	[0.015] ---	--- [0.23]	[25.1] [0.0006]	[0.050] [(0.003)]	[0.51] [0.005]	--- [0.003]	--- [0.53]	--- [0.077]	[0.53] ---	[3.56] [(0.002)]
8F Provisional	AISI 347 S34700	[0.004] [9.02]	--- [0.64]	[(0.01)] [0.042]	[0.0005] [0.003]	[(0.0004)] [0.033]	[0.048] ---	--- [0.47]	[17.32] [0.011]	[0.155] [(0.01)]	[0.452] [0.011]	--- [0.003]	--- [0.03]	--- [0.08]	[1.53] ---	[0.42] ---
335A Final	Alloy AM355 S35500	0.019 4.27	--- 0.015	(0.01) 0.085	0.0007 0.0020	(0.001) 0.016	0.138 ---	--- 0.39	15.30 0.0005	0.063 (0.01)	0.086 0.0034	--- (0.002)	(0.002) 0.008	--- 0.094	0.85 ---	2.72 (0.002)
9A Chips Only	AISI 410 S41000	0.002 0.39	--- ---	--- 0.016	--- (0.028)	--- 0.029	0.14 ---	--- 0.29	11.84 0.011	0.025 ---	0.07 (0.007)	--- (0.004)	--- 0.014	--- 0.05	0.54 ---	0.07 ---
9B Chips Only	AISI 410 S41000	0.024 0.30	--- 0.028	--- 0.0468	--- 0.0019	--- 0.019	0.13 ---	--- 0.29	11.97 0.006	0.016 ---	0.054 0.004	--- 0.005	--- 0.01	--- 0.048	0.54 ---	0.064 ---
9D Provisional	AISI 410 S41000	[0.004] [0.20]	--- [0.003]	[(0.004)] [0.022]	[0.001] [0.006]	--- [0.034]	[0.142] ---	--- [0.38]	[12.52] [0.028]	[0.022] [(0.004)]	[0.11] [0.005]	--- [0.002]	--- [(0.005)]	--- [0.022]	[0.58] ---	[0.037] [(0.002)]
327A Final	AISI 415 S41500	0.003 3.83	--- 0.008	(0.004) 0.0157	0.001 0.0047	--- 0.018	0.018 ---	--- 0.43	12.73 0.0010	0.019 (0.004)	0.082 0.006	--- 0.0026	(0.0001) 0.009	(0.0003) 0.036	0.54 ---	0.53 (0.002)
10C Chips Only	AISI 416 S41600	0.003 0.24	--- 0.003	(0.006) 0.015	<0.0005 0.008	--- 0.026	0.128 ---	--- 0.37	12.25 0.29	0.022 ---	0.155 0.009	--- 0.002	(0.0002) 0.011	--- 0.024	0.35 ---	0.08 (0.001)
20A Chips Only	Greek Ascology S41800	(0.04) 2.02	--- 0.01	--- (0.04)	--- (0.029)	--- 0.015	0.18 ---	--- 0.35	12.78 0.011	0.034 ---	0.05 (0.003)	--- <0.01	--- 2.84	--- 0.10	0.41 ---	0.21 ---
20B Final	Greek Ascology S41800	0.006 1.94	--- 0.010	--- 0.0434	--- 0.0056	--- 0.019	0.18 ---	--- 0.40	12.42 0.004	0.030 ---	0.069 0.005	--- 0.004	--- 3.52	--- 0.17	0.35 ---	0.32 ---
20C Final	Greek Ascology S41800	(0.004) 1.93	--- 0.010	--- 0.0222	--- 0.0068	--- 0.018	0.18 ---	--- 0.35	12.15 0.007	0.031 ---	0.060 0.004	--- (0.003)	--- 2.59	--- 0.086	0.30 ---	0.12 ---
154A Chips Only	AISI 420 S42000	0.008 0.19	--- 0.004	--- 0.0294	--- (0.0068)	--- 0.018	0.39 ---	--- 0.35	12.82 0.003	0.021 ---	0.044 0.004	--- 0.002	--- 0.011	--- 0.045	0.47 ---	0.052 ---
154B Final	AISI 420 S42000	0.002 0.223	--- 0.003	--- 0.020	(0.001) 0.0016	--- 0.017	0.35 ---	--- 0.45	12.20 0.0004	0.020 ---	0.087 0.006	--- 0.002	<0.001 0.010	--- 0.067	0.405 ---	0.079 ---
205A Chips Only	AISI 422 S42200	0.005 0.92	--- 0.006	--- 0.046	0.0003 0.0019	--- 0.014	0.23 ---	--- 0.28	11.48 0.003	0.018 ---	0.033 0.003	--- 0.002	--- 1.01	--- 0.24	0.73 ---	0.98 0.003
205C X-Ray Only	AISI 422 S42200	0.003 0.68	--- 0.010	0.004 0.040	0.0003 0.0041	(0.0005) 0.017	0.231 ---	--- 0.39	12.14 0.0034	0.058 (0.002)	0.109 0.004	--- 0.002	--- 1.03	--- 0.21	0.74 (0.001)	1.00 0.002

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Stainless & High Temperature Steel Alloys

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	B O	Ca P	C Se	Ce Si	Cr S	Co Ta	Cu Sn	H Ti	Pb W	Mg V	Mn Zn	Mo Zr
11A	AISI 430	<0.02	---	---	---	---	0.042	---	0.14	0.007	0.28	---	---	---	0.78	0.035
<i>Chips Only</i>	S43000	0.15	(0.001)	0.021	(0.019)	0.021	---	0.51	0.003	---	(0.009)	(0.006)	(0.002)	0.04	---	---
11B	AISI 430	(0.003)	---	---	---	---	0.077	---	17.59	0.023	0.05	---	---	---	0.50	0.03
<i>Chips Only</i>	S43000	0.26	(0.007)	0.083	---	0.019	---	0.59	0.009	---	(0.010)	(<0.01)	---	0.055	---	---
11D	AISI 430	[0.014]	---	---	[0.0007]	[(0.003)]	[0.069]	---	[17.33]	[0.023]	[0.084]	---	---	---	[0.401]	[0.076]
Provisional	S43000	---	[0.009]	[0.0215]	[0.005]	[0.023]	---	[0.83]	[0.003]	[(0.002)]	[0.006]	[0.003]	[0.009]	[0.052]	---	[(0.002)]
12A	AISI 431	(0.076)	---	---	---	---	0.14	---	16.03	0.03	0.10	---	---	---	0.61	0.07
<i>Chips Only</i>	S43100	2.27	0.04	(0.057)	(0.020)	0.024	---	0.37	0.006	---	(0.007)	0.004	0.024	0.07	---	---
12B	AISI 431	(0.003)	---	---	(0.0003)	---	0.174	---	16.02	0.018	0.143	---	<0.0005	---	0.60	0.057
Final	S43100	2.15	0.011	0.061	0.0101	0.016	---	0.56	0.003	---	0.006	0.003	0.014	0.037	---	(0.002)
13C	AISI 440C	0.003	---	<0.01	<0.0005	---	1.02	---	16.84	0.021	0.031	---	<0.001	---	0.43	0.455
<i>Chips Only</i>	S44004	0.108	0.004	0.0188	0.0029	0.017	---	0.69	0.001	<0.01	(0.004)	0.005	<0.005	0.10	---	<0.002
14A	AISI 446	<0.01	---	---	---	---	0.089	---	23.84	0.038	0.06	---	---	---	0.46	0.05
<i>Chips Only</i>	S44600	0.31	<0.01	0.17	0.021	0.023	---	0.37	0.004	---	0.013	<0.01	0.014	0.045	---	---
14B	AISI 446	0.004	---	<0.005	(0.0004)	<0.005	0.016	---	23.60	0.030	0.071	---	<0.001	<0.001	0.426	0.095
<i>X-Ray Only</i>	S44600	0.29	0.006	0.043	0.0054	0.022	---	0.51	0.0015	<0.001	0.005	0.0024	0.011	0.11	---	<0.005
14C	AISI 446	[0.004]	---	[(0.0045)]	[0.001]	---	[0.061]	---	[25.0]	[0.044]	[0.19]	---	---	---	[0.38]	[0.10]
Provisional	S44600	[0.37]	[0.013]	[0.058]	[0.006]	[0.021]	---	[0.63]	[0.002]	[(0.004)]	[0.005]	[0.013]	[0.031]	[0.079]	---	[(0.002)]
15A	Custom 450	0.029	---	---	---	---	0.033	---	14.9	0.11	1.59	---	---	---	0.38	0.77
<i>Chips Only</i>	S45000	6.54	0.62	(0.015)	(0.022)	0.021	---	0.41	0.003	---	0.005	<0.01	0.026	0.09	---	---
15B	Custom 450	0.006	---	---	---	---	0.047	---	14.53	0.24	1.53	---	---	---	0.39	0.82
Final	S45000	6.94	0.65	0.0355	0.0039	0.013	---	0.33	0.001	---	0.009	0.005	0.12	0.033	---	---
16C	Custom 455	0.072	---	0.003	0.0011	---	0.003	---	11.34	0.017	2.08	---	---	(0.0001)	0.024	0.009
Final	S45500	8.23	0.248	0.0030	0.0014	0.007	---	0.03	0.0046	(0.005)	0.003	1.16	0.008	0.070	---	0.0010
291A	M-152	(0.004)	---	(0.005)	0.001	(0.001)	0.11	---	11.3	0.021	0.060	---	---	---	0.71	1.61
Final	S64152	2.62	0.022	0.035	0.014	0.016	---	0.23	0.009	(0.001)	0.004	0.0011	(0.01)	0.29	---	<0.005
26C	A286	0.12	---	0.004	0.0074	(0.0002)	0.028	---	13.7	0.052	0.144	---	---	(0.0003)	0.25	1.09
Final	S66286	25.05	0.002	0.0045	0.002	0.017	---	0.08	0.0004	0.002	0.011	1.87	0.01	0.238	(0.002)	(0.001)
242A	Aermet 100	0.004	---	---	(0.0005)	---	0.24	---	3.00	13.5	0.007	---	---	---	0.018	1.21
Final	K92580	11.1	0.004	0.0003	0.0006	0.002	---	0.02	0.0004	0.008	(0.001)	0.009	<0.01	0.01	---	(0.002)
308A	Alloy C-250	0.097	---	(0.003)	0.0029	(0.0003)	0.003	---	0.023	7.80	0.018	---	---	---	0.019	4.78
Final	K92890	18.53	0.003	0.0013	0.0005	0.004	---	0.014	0.0005	<0.01	0.001	0.46	0.01	0.01	---	0.01

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IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	B O	Ca P	C Se	Ce Si	Cr S	Co Ta	Cu Sn	H Ti	Pb W	Mg V	Mn Zn	Mo Zr
99B	Maraging 300	0.095	---	---	0.0026	---	0.005	---	0.081	9.24	0.094	---	---	---	0.036	4.88
Final	K93120	18.46	(0.005)	0.0011	0.0015	0.005	---	0.022	0.0005	---	(0.003)	0.74	0.016	0.012	---	<0.01
309A	Alloy C-350	0.11	---	(0.004)	0.0032	<0.001	0.0059	---	0.053	12.3	0.023	---	---	---	0.018	4.71
Final	K93540	18.4	0.004	0.0010	0.0005	0.004	---	0.020	0.0006	(0.006)	(0.001)	1.47	0.01	0.01	---	0.008
24A	Invar-36	(0.002)	---	---	---	---	0.055	---	0.17	0.056	0.08	---	---	---	0.76	0.01
<i>X-Ray Only</i>	K93601	36.07	(0.01)	(0.0026)	(0.009)	0.01	---	0.27	0.001	---	(0.002)	<0.005	(0.035)	0.024	---	---
24B	Invar-36	0.002	---	<0.005	(0.001)	---	0.053	---	0.121	0.036	0.052	---	---	---	0.82	0.011
Final	K93601	35.86	<0.01	0.0017	0.003	0.009	0.19	0.28	0.0010	<0.005	0.0018	0.002	<0.04	<0.005	---	<0.005
98A	Kovar	0.04	---	---	---	---	0.019	---	0.12	(17.50)	0.05	---	---	---	0.24	0.05
<i>Chips Only</i>	K94610	(29.09)	<0.01	---	---	(0.002)	---	0.10	0.002	---	---	<0.01	(0.03)	<0.01	---	<0.01
98B	Kovar	0.07	---	<0.002	0.001	<0.0005	0.007	---	0.012	17.0	0.028	---	<0.0005	0.0040	0.18	0.010
Final	K94610	29.4	0.002	0.0024	0.0021	0.002	---	0.17	0.0007	<0.05	0.002	0.03	(0.02)	(0.003)	<0.0005	<0.01
214A	NMS-100	(0.002)	---	---	(0.001)	---	0.018	---	12.36	0.021	0.36	---	---	---	18.3	0.44
Final	N/A	2.33	0.23	0.27	0.0026	0.033	---	1.00	0.002	---	0.008	0.002	0.02	0.04	---	---
294A	NMS J38	(0.01)	---	---	(0.003)	---	0.017	---	19.7	0.021	0.34	---	(0.001)	---	21.6	1.8
Final	N/A	2.9	0.03	0.78	0.003	0.026	---	0.43	0.0028	(0.003)	(0.006)	(0.002)	0.01	0.046	---	(0.002)
295A	NMS 140	(0.01)	---	---	0.002	---	0.021	---	18.0	0.021	0.113	---	---	---	19.7	0.97
Final	N/A	1.84	0.018	0.62	0.003	0.028	---	0.36	0.0041	---	0.004	0.0019	0.016	0.046	---	(0.001)
296A	NMS MDC	(0.005)	---	---	(0.001)	---	0.074	---	11.2	0.018	0.12	---	---	---	10.6	0.60
Final	N/A	1.71	0.043	0.23	0.003	0.027	---	0.38	0.002	---	0.007	0.002	0.01	0.056	---	---
100C	Haynes 556	0.35	---	<0.005	(0.002)	---	0.104	---	17.9	21.9	0.105	---	---	(0.001)	0.97	3.06
Final	R30556	20.5	0.172	0.126	0.001	0.013	---	0.441	0.0005	0.67	0.003	0.013	0.039	2.49	---	0.006

() and < > Indicates non-certified value.

[] Indicates provisional value, certification in progress.

1. Iron Base		Stainless Steels																				Updated: 5th November 2012		Blocks / Discs	
1.3.2 Austenitic Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Co	Nb	N	B	Ta	V	Sb	Ti	W	Zr	Size (mm) Ø x H	Form	
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	
	13X 17004 A	0.06	1.32	0.048	0.024	0.62	16.06	21.78	0.31	0.11	.....	.....	0.05	0.23	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
CRM	13X 17005 C	0.128	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 30300 A	0.041	0.424	0.312	0.0199	1.84	8.55	17.59	0.333	0.0252	.....	.....	0.0259	.....	0.0350	0.0035	.....	0.092	.....	.....	.....	.....	40 x 15	W	
CRM	13X 30403 A	0.0201	0.284	0.0248	0.0297	1.488	7.92	18.25	0.192	0.217	.....	.....	0.101	(0.019)	0.081	.....	.....	0.113	.....	.....	0.018	.....	40 x 15	W	
CRM	13X 30908 A	0.0560	0.320	0.0011	0.0267	1.638	12.05	22.51	0.221	0.269	.....	0.0035	0.120	0.0142	0.0652	0.0027	.....	0.128	.....	.....	.....	.....	38 x 15	W	
CRM	13X 32100 A	0.0463	0.498	0.0011	0.0298	1.52	9.32	17.39	0.282	0.415	0.0115	0.0247	0.105	0.0191	0.0115	0.0025	.....	0.106	.....	0.376	0.021	.....	38 x 15	W	
CRM	13X 34700 A	0.016	0.480	(0.0005)	0.0276	1.283	9.32	17.22	0.392	0.165	0.0053	0.025	0.132	0.329	0.0163	0.0007	.....	0.123	.....	.....	0.144	.....	38 x 15	W	
CRM	13X 18001 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	0.156	0.652	0.0193	0.021	0.806	8.01	18.07	0.239	0.082	.....	0.060	0.065	1.61	0.059	.....	.....	0.049	.....	.....	.....	.....	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	
	13X 18004 B **	0.10	1.25	0.02	0.07	1.4	12.6	21.5	0.61	0.04	.....	0.01	0.20	0.77	0.06	.....	.....	0.17	.....	.....	** provisional values	.....	40 x 15	W	
CRM	13X 19001 B	0.055	1.20	0.0174	0.0151	0.460	5.10	15.07	1.51	0.202	.....	.....	0.025	0.032	0.070	.....	(0.019)	0.083	.....	.....	.....	.....	40 x 15	W	
CRM	13X 19003 B	0.0132	0.550	0.0390	0.0406	1.273	12.22	18.56	2.47	0.068	.....	.....	0.121	0.122	0.020	.....	.....	.....	.....	.....	.....	.....	42 x 15	W	
	13X 19004 B	0.066	0.36	0.014	0.069	1.96	17.9	22.8	3.62	0.022	.....	.....	.....	0.18	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
CRM	13X 12533 Z **	0.112	0.435	0.016	0.015	0.81	5.05	18.8	1.08	0.125	0.010	0.059	0.029	.....	0.074	0.010	.....	.....	.....	0.145	** provisional values	.....	40 x 15	CC	
CRM	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	
CRM	13X 12536 S	0.149	0.865	0.136	0.052	0.406	12.07	15.30	2.54	0.065	0.018	0.049	0.298	.....	0.062	0.0274	0.091	.....	.....	0.105	.....	.....	40 x 15	CC	
CRM	13X 12537 S	0.090	1.18	0.048	0.092	1.174	11.10	19.32	3.12	0.659	0.049	(0.011)	0.114	.....	0.043	0.007	(0.15)	.....	.....	0.053	.....	.....	40 x 17	CC	
CRM	13X 31603 A	0.0242	0.332	0.0246	0.0284	1.78	10.17	16.83	1.98	0.322	0.0045	0.0098	0.0571	0.0078	0.080	0.0011	.....	0.093	.....	.....	0.0444	.....	40 x15	W	
CRM	13X 12853 K	0.109	1.057	0.025	0.0216	0.838	12.09	17.15	2.73	0.587	.....	.....	0.285	.....	.....	0.0051	0.013	.....	0.0203	0.0028	0.095	0.015	40 x 15	CC	
CRM	13X 12854 L	0.053	1.308	0.0278	0.024	1.300	11.60	15.77	2.50	0.306	.....	.....	0.33	0.689	0.0550	0.0076	(0.06)	.....	.....	0.065	0.16	.....	40 x 15	CC	
CRM	13X 12855 M **	0.18	1.05	0.024	0.024	1.15	10.7	17.1	2.85	0.45	.....	.....	0.23	.....	.....	0.009	0.05	.....	0.21	0.06	0.20	.....	40 x 15	CC	
1.3.3 Maraging Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Al	Ti	Co	N											Size (mm) Ø x H	Form
CRM	13X 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
CRM	13X 14935 T	0.0105	0.441	0.055	0.036	0.494	18.96	0.745	5.61	(0.007)	0.106	7.17	0.0102											40 x 15	CC

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[] Provisional value, certification in progress.

1. Iron Base		Stainless Steels																				Updated: 6th November 2012				Blocks / Discs	
1.3.4 Martensitic Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	As	Co	Nb	W	B	Sb	Pb	Ca	N	Size (mm) Ø x H	Form		
CRM	13X 12547 L	0.335	0.246	0.110	0.062	1.16	0.58	16.43	0.741	0.544	0.0232	.....	.....	0.098	.....	0.313	0.349	.....	.....	.....	.....	.....	0.0511	42 x 15	W		
CRM	13X 12548 M	0.189	0.421	0.218	0.0260	0.576	1.08	12.98	1.33	0.228	.....	.....	.....	.....	.....	0.352	0.585	0.033	.....	0.022	.....	.....	0.0508	40 x 15	CC		
	13X 12549 K	0.16	0.43	0.29	0.092	0.34	1.26	11.70	1.49	0.10	.....	.....	.....	.....	.....	0.52	0.23	.....	.....	.....	.....	.....	.....	40 x 15	C		
	13X 14775 R	0.05	0.63	0.054	0.053	1.37	1.75	17.7	0.47	0.21	.....	.....	.....	.....	.....	0.15	0.75	.....	.....	.....	.....	.....	.....	40 x 15	C		
CRM	13X 15023 V	0.118	0.311	0.008	0.014	1.352	0.850	10.96	1.052	(0.052)	.....	0.14	.....	0.0252	.....	0.0555	1.53	0.018	.....	.....	0.0104	.....	0.0409	40 x 15	CC		
	13X 15024 W	0.12	0.77	0.028	0.030	0.57	2.84	14.94	0.24	0.36	.....	.....	.....	.....	.....	0.10	0.10	.....	.....	.....	.....	.....	.....	40 x 15	C		
	13X 15036 T	0.10	0.68	0.069	0.054	0.93	2.66	13.94	0.45	0.34	.....	.....	.....	.....	.....	0.24	0.63	.....	.....	.....	.....	.....	.....	40 x 15	C		
	13X 15059 N	0.057	0.48	0.020	0.045	1.22	1.30	15.97	0.63	0.14	(0.02)	.....	.....	0.06	.....	0.26	0.84	.....	.....	.....	.....	.....	0.049	40 x 15	C		
CRM	13X 41001 A	0.136	0.298	0.0037	0.0142	0.464	0.0939	12.06	0.0102	0.056	0.0051	(0.004)	.....	0.079	.....	0.0143	.....	.....	.....	.....	.....	0.0010	0.0316	41 x 15	W		
CRM	13X 41600 A	0.111	0.442	0.302	0.0253	0.627	0.331	13.23	0.0499	0.160	0.0066	(0.004)	.....	0.0888	.....	0.0216	0.0053	(0.003)	.....	.....	.....	.....	0.0245	41 x 15	W		
CRM	13X 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		
1.3.5 Special Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	Ti	V	W	Co	Nb	Ta	B	N				Size (mm) Ø x H	Form			
	13X 12538 J	0.04	0.64	.....	.....	0.78	6.07	23.72	1.53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C		
	13X 12540 L	0.15	1.06	.....	.....	0.44	6.47	27.88	0.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C		
CRM	13X 14207 K	0.147	1.52	0.052	0.0213	0.901	12.60	19.83	0.299	0.248	.....	.....	.....	3.18	0.033	0.245	(0.064)	.....	0.097	.....	.....	.....	.....	40 x 15	CC		
	13X 14211 P	0.112	1.76	0.048	0.046	0.66	12.8	26.7	0.34	0.28	.....	.....	.....	2.90	0.066	0.46	.....	.....	.....	.....	.....	.....	.....	40 x 15	C		
CRM	13X 14212 R	0.104	2.02	0.025	0.0290	1.29	8.79	20.86	0.570	1.184	0.12	0.15	0.134	2.01	0.252	0.980	.....	.....	0.156	.....	.....	.....	.....	40 x 15	CC		
CRM	13X 14215 K	0.126	0.56	0.016	0.016	1.08	15.70	23.8	0.046	0.03	.....	0.08	0.06	2.89	0.016	(0.016)	.....	.....	.....	.....	.....	.....	.....	40 x 15	C		
	13X 14219 J	0.08	1.48	0.048	0.047	0.48	12.39	21.71	0.19	0.23	.....	.....	.....	4.07	.....	0.19	.....	.....	.....	.....	.....	.....	.....	40 x 15	C		
CRM	13X 31008 A	0.063	0.503	0.0040	0.0302	1.234	19.34	24.48	0.338	0.159	.....	.....	0.078	0.165	0.078	0.013	.....	.....	0.063	.....	.....	UNS S31008	38 x 15	W			
CRM	13X 66286 A	0.035	0.216	(0.0006)	0.0172	1.173	25.21	14.99	1.185	0.195	0.193	1.92	0.262	0.098	0.083			0.0044	0.0040			UNS S66286	38 x 15	W			

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[] Provisional value, certification in progress.

1. Iron Base		Stainless Steels																		Updated: 5th November 2012		Blocks / Discs	
1.3.6 Precipitation Hardening Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Ti	Al	V	Co	Nb	W	B	Ta	N	Size (mm) Ø x H	Form		
CRM	13X 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	** provisional values	40 x 17	CC	
CRM	13X PH3 M **	0.18	1.55	0.02	0.02	0.40	3.1	15.8	0.75	6.0			0.17	0.42	0.42		0.005		0.07		40 x 15	CC	
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 PH13800 A	0.0386	0.081	0.0030	0.0064	0.0332	8.04	12.52	2.10	0.0449	0.0122	1.075	0.0188	0.0220					0.0041	UNS S13800	38 x 15	W	
CRM	13X PH17400 A	0.0200	0.349	0.0215	0.0202	0.829	4.52	15.74	0.061	3.09			0.112	0.0411	0.184				0.0342	UNS S17400	41 x 15	W	
CRM	13X PH17700 A	0.0732	0.551	0.0008	0.0181	0.496	6.98	16.88	0.340	0.146	0.051	1.172	0.0390	0.0464	0.0201	0.009	0.0033		0.0192	UNS S17700	38 x 15	W	
CRM	13X PH2S143 A	0.044	0.479	0.0021	0.0212	0.546	5.20	13.46	1.326	1.61	....	....	0.087	0.0483	0.225	0.018	....	....	0.0246	32 x 15	W		
CRM	13X FV520B A	0.0181	0.342	0.0016	0.0221	0.655	5.29	13.73	1.334	1.462	....	....	0.080	0.030	0.301	0.020	....	....	0.0197	40 x 15	W		
1.3.7 High Nitrogen Stainless Steels		C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Al	V	W	Co	Nb	B	N			Size (mm) Ø x H	Form		
	13X NSA1 E	0.07	0.41			0.42	7.9(6)	20.3	2.47								0.040			** provisional values	40 x 15	CC	
CRM	13X NSA2 H **	0.13	0.75	0.028	0.025	1.02	10.0	17.7	2.00	0.26		0.14			0.15		0.13				40 x 15	CC	
	13X NSA3 J	0.16	0.57			1.07	12.0	16.1	2.8								0.20				40 x 15	W	
CRM	13X NSA4 A	0.0262	0.44	0.0130	0.0281	5.59	17.11	23.79	4.19	0.487	(0.016)				0.079		0.532				40 x 17	CC	
CRM	13X NSA5 A	0.063	0.281	0.0212	(0.010)	4.27	9.52	20.73	2.32	0.098	(0.012)	....	....	....	0.574	....	0.340	....	....	40 x 17	CC		
CRM	13X NSA6 A	0.0132	0.258	0.0086	0.0183	1.59	31.32	26.93	6.75	1.16	0.003	....	....	....	0.053	....	0.188	....	....	40 x 17	CC		
CRM	13X NSA7 A	0.0209	0.359	0.0009	0.022	0.951	5.67	25.91	3.25	1.42	(0.009)	....	....	....	0.015	....	0.247	....	UNS S32550	42 x 15	W		
CRM	13X NSA8 A	0.0240	(0.40)	0.0008	0.0216	0.656	6.29	25.93	3.60	0.903	....	0.060	0.586	0.0374	(0.004)	....	0.239	....	UNS S32760	44 x 15	W		
CRM	13X NSA9 A	0.019	0.469	(0.0007)	0.0248	1.592	5.44	22.57	3.11	0.240	....	0.068	0.024	0.072	0.012	....	0.156	....	UNS S31803	40 x 15	W		
CRM	13X NSA10 A	0.016	0.375	0.0006	0.0207	5.23	12.96	20.69	2.636	0.175	....	0.151	0.061	0.061	0.142	(0.0029)	0.343	....	UNS S20910	38 x 15	W		
CRM	13X NSA11 A **	0.016	0.265	0.001	0.019	0.635	23.9	20.3	6.17	0.190	0.028	0.052	0.038	0.099	0.150	....	0.205	** provisional values	UNS N08367	38 x 15	W		
CRM	13X 32101 A	0.0325	0.777	(0.0004)	0.0194	4.913	1.476	21.12	0.0970	0.295	0.0122	0.0830	....	0.0347	0.0070	0.0014	0.241	....	UNS S32101	38 x 15	W		
	13X NSB1 D	0.17	0.58	....	....	0.44	10.0	19.1	0.11	....	....	....	....	....	....	....	0.04	....	....	40 x 15	W		
	13X NSB2 D	0.06	0.66	....	....	0.62	11.1	18.2	0.21	....	....	....	....	....	....	....	0.095	....	....	40 x 15	W		
CRM	13X NSB3 G	0.121	0.471	....	....	0.632	9.26	15.22	0.630	....	....	....	....	....	....	....	0.198	....	....	42 x 15	W		
CRM	13X NSC1 N **	0.320	0.745	0.0095	....	6.78	5.06	19.1	0.205	0.355	....	0.516	0.102	....	1.47	....	0.092	....	** provisional values	40 x 15	CC		
CRM	13X NSC2 N	0.570	1.20	0.0233	....	8.36	4.00	20.14	0.782	1.040	(0.011)	0.293	....	....	2.25	....	0.269	....	....	40 x 17	CC		
CRM	13X NSC3 W	4.34	4.84	0.0086	....	9.48	3.04	22.94	0.0939	0.430	0.08	0.460	....	....	2.43	....	0.469	....	sold out	40 x 15	CC		
CRM	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		
CRM	13X NSC5 B **	0.55	1.2	0.017	....	2.25	4.3	22.3	0.01	0.78	0.17	0.05	....	....	2.35	....	0.30	....	** provisional values	40 x 15	CC		
CRM	13X NSC6 A	0.0266	0.523	0.0055	0.0049	8.85	6.52	20.47	(0.002)	0.0064	(0.009)	0.0052	....	....	....	....	0.235	....	....	40 x 13	HIP		
CRM	13X NSC7 A **	0.40	0.80	0.010	0.015	3.8	7.4	24.0	0.45	0.15	0.1	0.13	0.05	0.30	0.50	....	0.34	....	** provisional values	40 x 15	CC		
CRM	13X NSD1 C **	0.395	0.58	0.0022	0.031	23.00	0.109	22.00	1.21	0.082	0.010		0.062	0.132	0.038		0.99		** provisional values	40 x 15	W		

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CP Nickel & Nickel Alloys

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IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Re	C Si	Cr Ag	Co S	Cu Ta	Hf Sn	Fe Ti	La W	Pb V	Mg Y	Mn Zr	Mo
51A <i>Chips Only</i>	Alloy 400 N04400	0.05 (66.02)	---	---	---	<0.001 0.008	---	0.13 0.26	0.01 ---	0.015 0.001	29.87 <0.01	---	2.07 0.05	---	---	(0.024) ---	1.49 <0.01	<0.01
202A Final	Alloy R-405 N04405	0.080 64.8	---	---	---	<0.002 0.011	---	0.13 0.046	0.008 ---	0.020 0.032	32.3 (0.008)	---	1.31 0.005	---	---	0.024 ---	1.03 0.010	<0.01
52C <i>Chips Only</i>	Alloy K-500 N05500	2.98 (63.6)	---	---	---	(0.001) 0.009	(0.001) ---	0.153 0.14	0.046 ---	0.005 0.002	30.6 ---	---	1.04 0.55	---	0.0003 (0.01)	0.0021 0.003	0.89 0.051	0.011
69C Final	Alloy X N06002	0.11 48.7	(0.0005) 0.09	---	---	0.0034 0.011	---	0.068 0.35	21.6 (0.00004)	1.11 0.0005	0.069 (0.003)	---	18.3 0.017	---	(0.00003) 0.033	0.0030 ---	0.47 0.004	8.32
69D Final	Alloy X N06002	0.21 48.1	(0.0005) 0.204	(0.003) 0.029	(0.00002) 0.0012	0.0044 0.012	---	0.090 0.63	21.13 0.00012	1.67 0.0003	0.075 (0.01)	---	17.7 0.004	---	0.00010 0.033	0.0021 ---	0.72 0.0074	8.78
65C Provisional	Alloy C-22 N06022	[0.18] [55.8]	[(0.0002)] [0.027]	---	---	[(0.001)] [0.012]	---	[0.005] [0.04]	[21.13] [(0.0001)]	[1.43] [0.0006]	[0.073] [(0.02)]	---	[4.70] [0.005]	---	---	[0.0026] ---	[0.288] [(0.004)]	[13.29]
65D Final	Alloy C-22 N06022	0.29 56.8	---	---	---	(0.001) 0.008	---	0.0021 0.035	21.5 (0.0001)	1.22 0.0004	0.050 (0.01)	---	3.7 0.005	---	---	0.007 0.012	0.28 (0.002)	13.1
338A Provisional	Alloy 602CA N06025	[2.13] [62.3]	[(0.0001)] [0.004]	---	---	[0.004] [0.003]	[(0.001)] ---	[0.17] [0.02]	[25.3] [(0.00004)]	[0.035] [0.0007]	[0.005] ---	---	[9.8] [0.13]	---	---	[(0.0001)] [0.003]	[0.006] [0.07]	[0.05] [0.08]
67A <i>Chips Only</i>	Alloy G-30 N06030	0.20 (40.30)	---	---	---	(0.005) 0.016	---	0.019 0.30	28.77 ---	3.61 0.0014	1.88 (0.024)	---	14.88 0.03	---	<0.001 (0.04)	---	1.11 <0.01	5.02
67C Final	Alloy G-30 N06030	0.14 45.8	(0.0003) 0.36	---	---	0.001 0.011	---	0.0058 0.14	28.9 ---	1.75 0.0006	1.24 (0.006)	---	13.48 0.005	---	---	0.0068 0.031	1.01 0.002	4.93
329A Provisional	Alloy G-35 N06035	[0.29] [55.8]	[(0.0001)] [0.13]	[(0.001)] [0.073]	---	[(0.001)] [0.006]	---	[0.008] [0.05]	[33.7] [(0.0001)]	[0.049] [0.0003]	[0.065] [(0.01)]	---	[0.9] [0.005]	---	[(0.00003)] [0.02]	[(0.01)] [0.009]	[0.22] ---	[8.4]
258A Final	Alloy C-2000 N06200	0.30 58.6	<0.001 0.01	<0.001 0.032	---	0.001 0.005	---	0.005 0.015	22.8 ---	0.083 0.0007	1.54 <0.01	---	0.85 0.003	---	<0.0005 0.014	0.009 0.014	0.21 ---	15.5
68D Provisional	Haynes 230 N06230	[0.33] [60.3]	---	---	---	[0.004] [0.006]	---	[0.099] [0.42]	[21.6] ---	[0.16] [(0.0001)]	[0.015] [(0.01)]	---	[1.11] [0.011]	---	---	[0.006] [0.009]	[0.49] [0.003]	[1.29]
60A <i>Chips Only</i>	RA 333 N06333	(0.08) (44.20)	---	---	---	(0.003) (0.017)	---	0.058 1.21	25.72 ---	3.02 0.001	0.10 (0.02)	---	17.71 0.03	---	<0.002 0.07	---	1.50 <0.01	3.09
60B <i>X-Ray Only</i>	RA 333 N06333	0.05 45.3	0.002 0.016	<0.01 0.029	---	0.002 0.015	---	0.062 0.87	25.3 ---	2.9 0.0003	0.05 (0.01)	---	17.9 0.004	---	---	(0.001) ---	1.53 0.001	2.87
53E Final	Alloy 600 N06600	0.25 73.7	(0.0002) 0.024	(0.001) 0.0055	---	0.0026 0.007	(0.001) ---	0.072 0.050	15.39 ---	0.045 0.0011	0.168 (0.01)	---	9.42 0.254	---	(0.0001) 0.013	0.045 ---	0.21 (0.001)	0.220

() and < > Indicates non-certified value.

[] Indicates provisional value, certification in progress.

CP Nickel & Nickel Alloys

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Re	C Si	Cr Ag	Co S	Cu Ta	Hf Sn	Fe Ti	La W	Pb V	Mg Y	Mn Zr	Mo
272A Provisional	Alloy 617 N06617	[1.17] [52.8]	[(0.0001)] [0.015]	--- [0.0047]	--- [0.0005]	[0.003] [0.002]	--- ---	[0.081] [0.072]	[22.0] [(0.0001)]	[13.0] [0.0002]	[0.015] [(0.01)]	--- [(0.0004)]	[1.10] [0.50]	--- [0.062]	[(0.0001)] [0.005]	[(0.004)] ---	[0.067] [0.002]	[9.33]
62E Final	Waspaloy N07001	1.36 57.3	--- 0.037	(0.001) 0.0029	--- 0.001	0.0068 0.004	--- ---	0.035 0.054	19.56 ---	13.23 0.0003	0.012 0.004	--- 0.0011	0.90 3.07	--- 0.036	--- 0.034	0.0018 ---	0.019 0.061	4.27
325A Provisional	Rene 41 N07041	[1.56] [56.1]	--- [(0.006)]	[(0.0004)] [0.0017]	--- [0.0005]	[0.0082] [0.003]	--- ---	[0.067] [0.012]	[18.53] ---	[10.47] [0.0003]	[0.004] [(0.003)]	--- [(0.0002)]	[0.07] [3.16]	--- [0.03]	--- [0.01]	[0.0045] ---	[0.004] [0.002]	[9.99]
61A Chips Only	Haynes 214 N07214	4.42 (75.62)	--- (0.01)	--- ---	--- ---	0.005 0.003	--- ---	0.042 0.02	16.12 ---	<0.01 0.001	(0.01) <0.01	--- <0.001	3.57 <0.01	--- <0.01	<0.001 <0.01	<0.002 (0.005)	0.17 0.02	<0.01
273A Provisional	Alloy C263 N07263	[0.49] [50.3]	[(0.0001)] [0.019]	[(0.001)] [0.0036]	--- [0.0013]	[0.001] [0.003]	--- ---	[0.060] [0.08]	[20.4] [(0.00002)]	[20.1] [0.0003]	[0.007] [(0.01)]	--- [(0.0004)]	[0.28] [2.1]	--- [0.018]	[(0.0001)] [0.007]	[0.0022] ---	[0.21] [(0.001)]	[5.8]
287A Provisional	Udimet 500 N07500	[3.01] [54.8]	--- [0.022]	--- [0.0007]	--- [0.0005]	[0.009] [0.002]	--- ---	[0.079] [0.017]	[18.47] ---	[17.0] [0.0008]	[0.002] [0.010]	--- [0.0002]	[0.084] [3.01]	--- [0.013]	--- [0.004]	[0.0023] ---	[0.003] [0.008]	[3.51]
56G Provisional	Alloy 718 N07718	[0.54] [53.4]	[(0.0002)] [5.08]	[(0.001)] [0.0081]	--- [0.001]	[0.0036] [0.007]	--- ---	[0.023] [0.052]	[18.42] ---	[0.097] [0.0010]	[0.021] [0.0024]	--- [0.0008]	[18.08] [0.95]	--- [0.03]	--- [0.018]	[0.0005] ---	[0.04] [0.002]	[3.04]
274A Final	Alloy 725 N07725	0.26 57.5	--- 3.48	--- 0.007	--- 0.0006	0.002 0.007	--- ---	0.007 0.02	21.0 ---	0.143 0.0004	0.10 (0.002)	--- 0.001	7.60 1.55	--- 0.06	--- 0.019	0.0019 ---	0.08 (0.001)	8.06
25A Chips Only	20Cb3 N08020	0.01 (39.45)	--- 0.51	--- (0.015)	--- (0.012)	--- 0.020	--- ---	0.024 0.32	19.63 ---	0.27 0.003	3.23 (0.21)	--- 0.028	--- 0.004	--- 0.05	(0.003) 0.10	--- ---	0.48 ---	2.10
7A Chips Only	Alloy 330 N08330	0.022 35.53	--- 0.01	--- 0.038	--- (0.014)	--- 0.018	--- ---	0.063 1.24	19.00 ---	0.06 0.004	0.19 (0.19)	--- 0.003	(41.75) (0.004)	--- (0.045)	(0.005) 0.05	--- ---	1.47 ---	0.19
7B Chips Only	Alloy 330 N08330	0.023 35.84	--- 0.023	--- 0.0130	--- 0.0026	(0.002) 0.018	--- ---	0.062 1.38	19.32 ---	0.069 (0.001)	0.21 ---	--- 0.004	(43.0) (0.005)	--- (0.031)	--- 0.048	--- ---	0.0130 ---	0.023
7C Final	Alloy 330 N08330	0.017 34.9	(0.0003) 0.189	(0.002) 0.034	--- 0.0021	0.0027 0.014	(0.002) ---	0.064 1.21	18.4 ---	0.041 0.0004	0.031 (0.002)	--- 0.0020	43.5 0.022	--- (0.02)	(0.0001) 0.060	0.0015 ---	1.32 (0.001)	0.095
157A Chips Only	AL6XN N08367	0.021 23.8	--- 0.019	--- 0.20	--- ---	--- 0.014	--- ---	0.023 0.39	20.7 ---	0.045 0.001	0.14 ---	--- <0.01	--- (0.004)	--- 0.023	<0.01 0.044	--- ---	0.35 ---	6.18
157C Chips Only	AL6XN N08367	0.023 23.9	(0.0004) 0.17	(0.002) 0.236	(0.00001) 0.002	0.0010 0.018	0.0009 ---	0.018 0.314	20.35 (0.00004)	0.36 0.0003	0.201 0.005	--- 0.003	47.8 0.003	--- 0.13	0.0007 0.058	(0.0004) ---	0.41 0.0016	6.22
58B Final	Alloy 800 N08800	0.45 30.7	--- 0.01	(0.002) 0.010	--- 0.001	0.0003 0.010	--- ---	0.073 0.282	19.6 ---	0.02 0.001	0.011 <0.01	--- 0.002	47.7 0.50	--- 0.01	(0.0001) 0.035	(0.001) ---	0.51 <0.005	0.01
59A Chips Only	Alloy 825 N08825	0.05 (40.91)	--- 0.02	--- ---	--- ---	(0.002) 0.017	--- ---	0.02 0.10	22.12 ---	0.25 0.001	1.71 <0.01	--- (0.001)	30.82 0.83	--- 0.13	--- 0.03	<0.001 ---	0.33 <0.01	2.68

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IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Re	C Si	Cr Ag	Co S	Cu Ta	Hf Sn	Fe Ti	La W	Pb V	Mg Y	Mn Zr	Mo
59B	Alloy 825	0.18	---	---	---	(0.0008)	---	0.032	21.20	0.049	2.48	---	31.25	---	---	(0.002)	0.45	3.05
<i>Chips Only</i>	N08825	40.01	(0.005)	0.0079	0.0030	0.010	---	0.23	---	0.0028	---	---	0.96	(0.012)	0.048	---	(0.005)	
59E	Alloy 825	[0.068]	---	[(0.002)]		[0.0025]	---	[0.008]	[21.9]	[0.27]	[1.70]	---	[31.5]	---	---	[(0.0001)]	[0.50]	[2.72]
Provisional	N08825	[39.8]	[0.19]	[0.010]	[0.004]	[0.015]	---	[0.23]	---	[0.0009]	[(0.004)]	[0.0031]	[0.81]	[0.17]	[0.049]	---	[0.0021]	
347A	Alloy 904L	[0.017]	[(0.001)]	[(0.005)]		[0.0022]	[(0.003)]	[0.023]	[20.2]	[0.082]	[1.34]	---	[47.5]	---	[(0.0003)]	[0.0008]	[1.24]	[4.2]
Provisional	N08904	[24.8]	[0.011]	[0.062]	[0.0027]	[0.023]	---	[0.55]	[(0.0002)]	[0.0009]	[(0.01)]	[(0.01)]	[(0.01)]	[0.02]	[0.077]	---	[(0.002)]	
275A	Alloy 925	0.22	---	---	---	0.002	---	0.010	20.1	0.41	1.77	---	27.9	---	---	<0.001	0.61	3.20
Final	N09925	42.8	0.27	0.0033	0.0013	0.019	---	0.23	---	0.0003	<0.01	(0.002)	2.31	0.22	0.032	---	(0.001)	
328A	Alloy 945	[0.19]	[0.00024]	[(0.001)]		[0.0010]	---	[0.005]	[20.56]	[0.002]	[1.93]	---	[22.42]	---	[(0.00001)]	[(0.001)]	[0.02]	[3.16]
Provisional	N09945	[47.1]	[3.1]	[0.0055]	[0.0006]	[0.005]	---	[0.020]	---	[0.0007]	[(0.003)]	[(0.0001)]	[1.53]	[0.01]	[0.008]	---	[0.003]	
55A	Haynes 242	0.24	---	---	---	(0.005)	---	0.03	7.90	0.04	(0.03)	---	1.09	---	---	---	0.33	(25.4)
<i>Chips Only</i>	N10242	(64.71)	(0.02)	---	---	0.003	---	0.11	---	(0.001)	(0.01)	<0.01	0.01	0.09	<0.01	---	<0.02	
55B	Haynes 242	0.09	<0.0001	---	---	0.002	<0.005	0.004	8.25	0.036	0.013	---	1.12	---	<0.002	0.011	0.323	24.62
Final	N10242	65.4	0.08	0.016	0.0009	0.005	---	0.021	---	0.0010	(0.08)	<0.001	0.002	0.12	0.005	---	(0.005)	
66D	Alloy C-276	[0.19]	---	---		[0.001]	---	[0.0041]	[14.81]	[0.036]	[0.014]	---	[5.47]	---	[(0.00001)]	[(0.001)]	[0.52]	[15.37]
<i>Chips Only</i>	N10276	[60.1]	[0.013]	[0.0036]	[0.0009]	[0.005]	---	[0.039]	---	[0.0004]	[(0.004)]	[(0.001)]	[0.006]	[3.24]	[0.21]	---	[0.005]	
63A	Alloy B-2	0.28	---	---	---	---	---	0.005	0.55	0.09	0.05	---	1.47	---	<0.001	---	0.19	27.48
<i>Chips Only</i>	N10665	(69.67)	<0.01	---	---	0.004	---	0.02	---	0.001	<0.01	<0.01	<0.01	(0.18)	<0.01	---	(0.02)	
63B	Alloy B-2	0.31	---	---	---	<0.002	---	0.0025	0.47	0.019	0.012	---	1.68	---	0.0002	0.005	0.61	27.3
<i>Chips Only</i>	N10665	69.6	(0.001)	0.0041	0.001	0.004	---	0.019	---	(0.0004)	---	---	0.003	(0.01)	0.06	---	(0.002)	
257A	Hastelloy B-3	0.34	<0.0005	<0.001	---	<0.003	---	0.005	1.57	0.024	0.019	---	1.47	---	<0.0005	0.010	0.63	28.0
Final	N10675	67.9	<0.03	0.0039	0.0004	0.004	---	0.024	---	0.0005	<0.005	<0.0005	0.002	0.07	0.01	---	(0.008)	
203A	Alloy 909	0.066	---	---	---	(0.002)	---	0.005	0.72	12.9	0.05	---	40.6	---	---	<0.002	0.023	0.09
Final	N19909	38.4	5.00	0.0010	---	0.006	---	0.41	---	0.0009	---	---	1.58	(0.02)	<0.01	---	<0.01	
277A	Rene 77	4.38	---	---	---	0.015	---	0.080	14.35	14.5	0.004	---	0.16	---	---	0.0021	0.01	4.22
Final	NA	58.9	0.034	0.0017	0.0005	0.002	---	0.037	---	0.0010	(0.02)	<0.003	3.40	0.047	0.011	---	0.010	
283A	B 1900	6.05	(0.00002)	---	---	0.014	---	0.114	8.05	9.8	(0.01)		0.044	(0.002)	---	0.0033	0.001	5.94
Final	NA	64.4	0.020	0.0003	0.0004	0.003	---	0.019	---	0.0006	4.3	(0.0002)	0.98	0.056	0.0058	---	0.053	
332A	CMSX-4	[5.8]	---	[(0.0002)]		[0.001]	---	[0.004]	[6.31]	[9.4]	[(0.01)]	[0.098]	[0.023]	---	---	[0.006]	[(0.004)]	[0.61]
Provisional	NA	[61]	[0.005]	[0.0002]	[0.0003]	[(0.002)]	[2.9]	[0.03]	---	[0.0003]	[6.51]	---	[0.99]	[6.5]	[(0.001)]	---	[0.003]	
333A	Mar-M 247	[5.53]	---	---		[0.015]	---	[0.072]	[8.32]	[9.4]	[(0.01)]	[1.40]	[0.036]	---	---	[0.0013]	[(0.005)]	[0.49]
Provisional	NA	[61.1]	[0.005]	[0.0013]	[0.0004]	[(0.004)]	[(0.01)]	[0.08]	---	[0.0004]	[3.15]	---	[0.73]	[9.7]	[(0.002)]	---	[0.009]	

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Hi-Purity Nickel Materials

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Ag Mo	Al N	As Ni	B O	Be P	Bi Pb	C S	Ca Sb	Cd Se	Co Si	Cr Sn	Cu Te	Fe Ti	Ga Tl	Mg V	Mn Zn
187A	HPNI	0.1	11	0.1	(<5)	(<1)	<0.1	13	<10	(<0.1)	1.0	(3)	2.2	19	<0.5	(2)	3.0
Final	N/A	(<1)	(1)	Bal.	(14)	<1.0	0.15	1.9	<0.5	<0.1	(18)	0.4	<0.1	(3)	<0.2	(0.8)	<0.5
188A	HPNI-LO	1.1	24	0.7	(<5)	(<1)	0.9	22	<10	0.2	1.7	(6)	1.8	19	<0.5	(4)	2.3
Final	N/A	<1	(1)	Bal.	(17)	1.4	1.0	1.8	1.1	0.7	18	1.1	0.8	(2)	-0.9	(<0.5)	2.3
189A	HPNI-MI	2.4	44	0.7	(<5)	(<1)	2.6	23	<10	0.8	3.1	(10)	9.0	38	<0.5	(8)	1.9
Final	N/A	(<1)	(1)	Bal.	(18)	3.7	2.9	1.8	3.9	2.1	19	2.2	1.7	(3.3)	2.3	(<0.5)	2.8
190A	HPNI-HI	10.9	50	28	<5	(<1)	11.1	22	<10	5	8	(1)	17	99	<0.5	(6)	1.8
Final	N/A	(<1)	(1)	Bal.	(19)	34	9.3	3.3	11	6.5	28	6.2	8.9	(6)	5.8	(<0.5)	8.1
191A	ELNI-HP	0.1	1.5	13	(<5)	(<1)	<0.1	14	<10	<0.1	545	2.1	4.2	7.9	<0.5	(2)	3.1
Final	N/A	(<1)	(2)	Bal.	(30)	<1.0	0.3	2.1	<0.5	1.9	(5)	0.4	<0.1	(<1)	<0.2	(<0.5)	1.9

All Values Reported in ppm.

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2. Nickel Base		Updated: 6th November 2012																				Blocks / Discs			
2.1.2 Residuals in Nickel		Si	Mn	Cu	Fe	Cr	Co	Ti	Al	Mg											Size (mm)	Form			
																						Ø x H			
	21X 17519 J	0.17	0.35	0.06	0.28	0.06	0.77	0.07	0.19	0.20											40 x 15	C			
	21X 17520 H	0.20	0.18	0.09	0.25	0.10	0.48	0.08	0.04	0.06											40 x 15	C			
	21X 17521 J	0.28	0.11	0.16	0.24	0.16	0.26	0.12	0.03	0.03											40 x 15	C			
	21X 17522 G	0.35	0.02	0.20	0.07	0.23	0.04	0.31	0.03	<0.005											40 x 15	C			
2.2 Ni/Cr (Nimonic Type)		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Sn	Zr	V	Ag	Te	Bi	As	Sb	Pb	W	B	Size (mm)	Form
																								Ø x H	
	22X 801 D	0.14	0.51	0.56	0.22	0.57	20.75	0.25	0.25	2.19	1.33	0.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C
	22X 803 E	0.06	1.05	0.22	0.007	0.33	19.85	0.50	0.50	1.93	1.60	0.0002	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C
	22X 804 D	0.07	0.56	0.54	0.21	0.66	19.72	0.09	0.20	2.34	1.33	0.004	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C
	22X 805 D	0.20	0.22	1.01	0.54	1.06	19.82	0.10	0.22	2.71	1.06	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C
	22X 806 D	0.007	0.10	0.09	0.004	0.18	19.66	0.01	0.03	2.48	1.35	.....	.....	0.004	.....	.....	.....	.....	.....	.....	0.007	0.02	0.004	40 x 15	C
	22X 808 C	.....	0.10	0.05	<0.01	0.11	19.73	<0.01	0.03	2.14	1.41	.....	0.030	0.035	0.05	0.007	0.008	0.002	0.013	0.017	0.007	0.11	0.014	40 x 15	C
		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	B								Size (mm)	Form	
																								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	
	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	
2.3 Fe/Ni/Cr (Incoloy Type)		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ni								Size (mm)	Form		
																Ø x H									
CRM	23X 8001 G	0.130	0.191	1.29	0.078	(44.2)	20.28	0.540	0.982	0.650	0.55	0.0067	0.0067	30.98								40 x 15	C		
	23X 8002 E	0.06	0.47	0.68	0.28	.....	20.48	0.34	0.54	0.32	0.29	.....	.....	32.1								40 x 15	C		
	23X 8004 E	0.06	0.53	0.70	0.30		19.72	0.33	0.53	0.34	0.31			31.8								40 x 15	C		
	23X 8005 E	0.07	0.46	0.73	0.28		20.81	0.34	0.50	0.35	0.22			32.2								40 x 15	C		

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2. Nickel Base											Updated: 6th November 2012		Blocks / Discs									
2.3 Fe/Ni/Cr (Incoloy Type) continued											Size (mm)		Form									
	C	Si	Mn	Cu	Cr	Mo	Co	Ti	Al	Ni	Ø x H											
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)											
	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al		Ø x H											
24X 14939 E	0.42	0.63	0.52	0.57	21.0	6.62	19.58	1.88	0.76		40 x 15		C									
2.4.1 Waspalloy, 720-types											Size (mm)		Form									
	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ni	B	V	W	Zr	Nb	Pb	Ø x H		
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		40 x 15		CC
CRM 24X 07001 B	0.0357	0.064	0.0311	0.0115	0.997	19.52	4.29	13.31	3.01	1.384	(0.0007)	0.0033	57.2	0.0060			0.0563	0.0314		32 x 20		W
CRM 24X 7201 A	0.0322	0.036	0.0022		0.09	16.01	3.01	14.79	5.10	2.44	0.0024	(0.002)	57.10	0.0242		1.32	0.0433			40 x 13		HP
2.5 Ni/Cr/Nb/Mo											Size (mm)		Form									
	Si	Mn	Cu	Fe	Cr	Mo	Co	W	Nb		Ø x H											
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 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)		Form									
	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al		Ø x H											
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)		Form									
	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al		Ø x H											
27X 14184 F	0.41	0.40	0.09	0.40	21.8	10.7	10.5	0.02	0.02		40 x 15		C									
27X 14188 D	0.33	0.30	(0.003)	0.44	21.17	10.3	10.4	0.03	<0.01		40 x 15		C									
27X 14387 E	0.28	0.27	<0.005	1.11	20.2	10.8	10.0	<0.005	<0.005		40 x 15		C									

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2. Nickel Base		Updated: 6th November 2012																				Blocks / Discs		
2.8 Ni/Cr/Fe (Inconel Type)		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Sn	Nb	Ta	W	B	Ni	N	Size (mm) Ø x H	Form	
	28X 6001 G	.....	0.95	0.12	0.83	6.33	16.38	.....	1.02	0.58	0.02	0.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	○
	28X 6002 F	.....	0.25	0.65	0.02	8.24	16.23	.....	0.22	0.12	0.18	0.004	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	○
	28X 6003 E	.....	0.74	0.47	0.42	7.1	15.56	.....	0.62	0.22	0.025	0.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	○
	28X 6004 E	.....	0.65	0.38	0.42	7.17	16.21	.....	0.77	0.27	0.05	0.008	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	○
	28X 6005 E	.....	0.60	0.39	0.39	6.98	16.93	.....	0.62	0.28	0.06	0.002	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	○
	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	○
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	○○
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	○○
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	○○
CRM	28X 6254 L	0.047	(0.79)	0.457	0.044	3.33	22.74	8.92	0.195	0.179	(0.05)	.....	0.0160	0.0097	.....	3.60	.....	.....	0.005	59.55	0.0364	.....	40 x 17	○○
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	○○
CRM	28X 6256 A	0.0173	0.041	0.0004	0.018	(0.034)	21.29	8.81	.....	0.266	0.301	.....	(0.002)	0.0033	.....	3.75	.....	.....	.....	65.4	0.007	.....	40 x 13	HIP
CRM	28X 06625 A	0.020	0.273	0.090	0.0288	0.917	21.94	9.15	0.031	0.238	0.184	.....	0.0037	(0.002)	.....	3.52	.....	.....	0.0009	63.49	0.0219	.....	40 x 15	W
CRM	28X 7181 J	0.0198	0.811	0.150	0.042	18.98	18.42	3.25	(0.014)	0.125	0.070	.....	0.0089	0.0146	.....	4.88	.....	.....	0.0021	53.10	0.038	.....	40 x 15	○○
CRM	28X 7182 M	0.024	0.390	0.340	0.134	(14.7)	19.98	3.60	0.632	0.98	0.44	.....	0.0406	0.007	0.005	4.74	.....	0.030	0.0047	53.86	.....	.....	40 x 20	○
CRM	28X 7183 U	0.104	0.903	0.534	0.321	15.48	18.38	3.66	0.986	0.959	0.499	.....	0.0217	0.0213	.....	5.66	.....	.....	0.0114	(52.3)	0.0420	.....	40 x 15	○○
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	○○
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	○○
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	○○
CRM	28X 07718 A	0.026	0.076	0.055	0.038	19.55	18.62	3.01	0.172	0.945	0.544	.....	0.0015	0.0063	.....	5.05	.....	.....	0.0034	51.99	0.0056	.....	38 x 15	W
2.10 Ni/Co/Cr/Al/Ti		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	N	Zr	V	Size (mm) Ø x H		Form							
CRM	210X 11775 G	0.024	0.36	0.127	(0.008)	1.02	10.42	3.19	14.83	5.76	7.0	(0.003)	0.070	0.47	45 x 20	○	○							
	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	○	○							
	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	○	○							
2.11 Ni/Cr/Al		Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Nb	Ta	Zr	Size (mm) Ø x H		Form								
	211X 11221 F	0.21	0.24	0.05	0.25	13.82	3.72	1.24	1.26	2.81	0.06	0.21	.....	40 x 15	○	○								
	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	○	○								
	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	○	○								
	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	○	○								

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MBH Nickel Based Alloys

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2. Nickel Base		Updated: 6th November 2012																				Blocks / Discs			
2.12 Ni/Cu (Monel Type)		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Pb	Sn	Zn	Cd	Be	Bi	Se	Ni	Size (mm) Ø x H	Form
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							64.33	40 x 15	CC
CRM	212X 4003 K **	0.035	0.245	1.11	30.0	2.63	0.095	0.031	0.028	0.019	0.009	0.050	0.025	0.006	0.150	0.058				** provisional values			bal	40 x 15	CC
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 F **	0.052	2.54	1.80	21.4	1.50	0.155	0.095	0.171	0.805	1.28	0.016	0.018	0.016	0.31	0.025				** provisional values			bal	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
		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	Nb	Zr	Pb	B	N	Ni			Size (mm) Ø x H	Form	
CRM	212X NA2 G	0.07	2.50	1.06	29.8	1.53						0.008	0.023	0.019			0.02						40 x 15	G	
CRM	212X NA4 A	0.098	3.83	1.082	29.34	2.26	0.120	0.026	0.046	0.037	0.012	0.0014	0.004	0.0053	(0.51)		0.018			62.8			40 x 13	CC	
CRM	212X 04400 A **	0.157	0.253	1.023	32.48	2.060	0.166	0.0308	0.041	0.020	0.0299	0.052	0.0021	0.0037				0.0019	0.0005	63.8	** provisional values		40 x 15	W	
CRM	212X 05500 A **	0.135	0.167	0.634	29.90	1.164	0.074		(0.008)	0.630	3.00	0.0099	0.0010	0.0039		0.0349		0.0015	0.0010	64.3	** provisional values		38 x 15	W	
2.15 Ni/Co/Cr/Fe/Mo (Hastelloy Type)		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	B	Nb	V	W	N	Ni			Size (mm) Ø x H	Form		
CRM	215X HB1 N	0.079	0.24	0.613	0.164	9.73	1.08	32.44	1.176	....	....	0.048	(0.014)	....	....	0.454	....	0.0207	....	....	....	40 x 17	CC		
CRM	215X HB2 G	0.049	0.390	0.800	0.0526	4.20	0.689	31.84	0.584	0.13	0.19	0.0196	0.0084	....	0.248	0.480	....	0.0108	60.2	....	....	40 x 15	CC		
CRM	215X HB3 H	0.069	0.799	0.61	0.134	6.32	2.35	27.17	1.03	0.21	0.23	0.0156	0.0197	....	0.699	0.287	....	0.0271	(60.1)	....	....	40 x 15	CC		
CRM	215X HB4 F	0.079	1.02	0.666	(0.024)	7.02	0.414	27.59	1.71	....	....	0.013	0.036	....	....	0.115	(0.028)	0.0028	61.21	....	....	43 x 20	G		
CRM	215X HB5 L	0.151	1.05	0.335	0.268	3.45	0.123	26.1	2.49	0.192	0.49	0.0113	0.038	0.003	....	0.136	....	0.006	65.3	....	....	40 x 15	CC		
CRM	215X HC1 L	0.045	(0.20)	1.19	0.046	2.60	15.42	20.91	2.60	0.264	0.72	0.0086	0.007	....	....	0.090	2.66	0.059	....	....	....	40 x 15	CC		
CRM	215X HC2 J	0.090	0.79	1.036	....	4.02	16.19	19.28	1.72	(0.078)	(0.01)	0.024	0.012	(0.006)	....	0.362	3.92	0.092	52.09	....	....	40 x 17	CC		
CRM	215X HC3 L	0.102	1.21	0.698	0.254	5.02	17.48	18.00	0.903	0.087	0.048	0.0245	0.0102	0.0093	....	0.404	4.42	0.063	....	....	....	40 x 15	CC		
CRM	215X HC4 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	....	....	0.444	5.26	0.045	....	....	....	40 x 15	CC		
CRM	215X HC5 U	0.132	1.08	0.290	0.486	6.43	19.00	16.52	0.201	0.0416	(0.15)	0.022	0.029	0.0048	....	0.590	5.45	0.082	....	....	....	40 x 15	CC		
CRM	215X HC6 A	0.005	(0.048)	0.099	....	5.00	15.67	16.14	1.16	0.003	0.066	0.0021	....	....	....	0.012	3.22	0.0034	58.45	....	....	40 x 13	HIP		
2.19 Various Nickel Alloys		C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	S	P	Ta	W	Zr	B	Nb	Ni	N			Size (mm) Ø x H	Form	
CRM	219X 20500 B	0.0486	1.24	0.710	0.0103	3.65	49.99	0.082	0.016			0.0100	0.0026					0.214	43.88	0.175			40 x 15	CC	
CRM	219X 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	G		
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		
CRM	219X 20004 A	0.224	0.916	14.07	0.319	9.48	13.63	0.104	(0.104)	0.52	....	0.0028	0.0147	0.077	....	....	....	1.53	59.1	....	....	40 x 15	CC		
CRM	219X 86182 A	0.148	0.807	7.68	0.150	7.88	15.88	0.078	0.047	0.421	....	0.0034	0.0098	0.031	....	....	....	2.17	64.7	....	....	40 x 15	CC		
2.21 Ni/B Hardfacing Alloys		C	Si	Mn	Cu	Fe	Cr	Mo	Co	W	S	Bi	Se	Sn	B			Size (mm) Ø x H	Form						
	221X 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	G								
	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	G								

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CP Cobalt & Cobalt Based Alloys

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IARM Status	Grade UNS#	Al Ni	Sb Nb	As N	Bi O	B P	Ca Si	C Ag	Cr S	Co Ta	Cu Sn	Fe Ti	La W	Pb V	Mg Y	Mn Zr	Mo
326A	Permendur 2V	(0.003)	---	<0.005	---	(0.001)	---	(0.002)	(0.002)	48.4	(0.002)	49.6	---	---	(0.001)	0.003	(0.002)
Final	R30005	0.037	0.038	0.0004	0.0082	0.0013	0.029	---	0.0011	(0.01)	<0.001	(0.002)	(0.001)	1.94	---	0.002	
95C	Alloy 6B	0.13	---	<0.0005	<0.0005	(0.002)	---	1.10	29.0	57.0	0.014	2.47	<0.001	<0.001	(0.0004)	1.55	1.37
<i>Chips Only</i>	R30016	2.88	(0.008)	0.033	(0.004)	0.009	0.54	<0.0005	0.001	0.03	<0.0005	0.004	3.96	0.004	---	(0.005)	
95D	Alloy 6B	[0.079]	---	---	---	[0.002]	---	[1.06]	[30.0]	[58.0]	[0.008]	[0.82]	---	---	[(0.0002)]	[1.46]	[0.96]
Provisional	R30016	[2.99]	[0.024]	[0.042]	[0.002]	[0.006]	[0.64]	---	[0.0005]	[(0.04)]	---	[0.009]	[3.97]	[0.010]	---	---	
207A	MP35N	0.040	---	---	---	0.011	---	0.007	19.98	33.46	0.017	0.64	---	---	(0.0005)	0.015	9.6203
Final	R30035	35.19	0.043	0.0031	0.0011	0.002	0.053	---	0.0027	0.007	---	0.91	0.028	0.011	---	0.003	
208B	F-75	0.04	---	---	(0.0002)	0.005	---	0.100	30.0	60.0	0.03	1.17	---	0.0006	(0.0004)	0.75	6.63
Final	R30075	0.42	0.06	0.003	0.0015	0.004	0.63	(0.0005)	0.0009	0.042	0.004	0.029	0.03	0.05	---	0.002	
208C	F 75	0.07	---	<0.0005	<0.0005	0.002	---	0.052	27.55	64.0	0.01	0.29	(0.0005)	(0.001)	(0.0002)	0.53	6.12
Final	R30075	0.63	0.011	0.169	0.0010	0.008	0.62	<0.0001	0.0004	(0.02)	(0.001)	0.012	0.02	0.012	---	0.0014	
256A	MP159	0.17	---	---	---	0.013	---	0.020	19.1	35.6	0.008	9.0	---	---	<0.001	0.014	7.0
Final	R30159	25.7	0.51	0.0032	0.0011	0.006	0.07	---	0.002	<0.005	---	3.03	0.02	0.03	---	(0.005)	
97B	Alloy 188	0.08	---	---	---	(0.002)	---	0.096	21.2	42.5	0.07	1.92	0.005	<0.005	<0.002	0.76	0.56
Final	R30188	19.4	0.022	0.014	0.003	0.009	0.34	---	(0.001)	0.019	<0.005	0.006	12.9	0.012	---	(0.001)	
97C	Alloy 188	0.19	---	(0.0005)	---	0.0028	---	0.130	22.2	35.8	0.027	2.34	0.009	---	0.0010	0.82	0.36
Final	R30188	22.8	0.023	0.075	0.0007	0.011	0.47	---	0.0004	0.04	(0.001)	0.011	14.6	0.010	---	(0.007)	
96A	Alloy 25	0.03	---	---	---	(0.003)	---	0.10	20.17	(49.48)	0.04	2.29	---	---	---	1.52	0.28
<i>Chips Only</i>	R30605	10.53	0.07	---	---	0.009	0.17	---	0.0011	(0.08)	<0.01	0.01	15.20	0.01	---	(0.01)	
96B	Alloy 25	0.035	<0.0005	<0.001	<0.0005	0.0021	<0.02	0.132	20.54	49.4	0.047	2.29	<0.005	<0.005	(0.0005)	1.39	1.17
Final	R30605	10.04	0.046	0.007	0.002	0.0063	0.16	<0.0005	0.0005	0.028	(0.003)	0.007	14.52	0.012	<0.0005	0.007	
96C	Alloy 25	0.08	<0.0005	<0.001	<0.0005	0.002	<0.005	0.132	19.95	47.1	0.08	2.93	<0.005	<0.005	(0.0002)	1.91	1.88
Final	R30605	10.36	0.047	0.031	0.001	0.008	0.31	<0.0005	0.001	0.030	<0.005	0.007	15.4	0.012	<0.0001	0.009	
64C	Ultimet 1233	0.138	<0.0005	<0.001	---	0.0010	---	0.064	25.4	53.4	0.019	2.99	---	---	0.0043	0.79	4.72
Final	R31233	9.47	0.016	0.113	0.0012	0.0064	0.24	---	0.0004	0.02	<0.01	0.007	2.39	0.020	---	<0.01	
260A	FSX414	0.006	---	---	---	0.008	---	0.244	29.4	50.7	0.012	0.49	---	---	<0.005	0.46	0.015
<i>X-Ray Only</i>	NA	10.72	0.015	0.0323	0.006	0.005	0.85	---	0.0013	<0.02	---	0.01	7.0	0.01	---	<0.005	

() and < > Indicates non-certified value.

[] Indicates provisional value, certification in progress.

11. Cobalt Base																			Updated: 6th November 2012			Blocks / Discs	
11.1 Co/Cr/W (Alloy WI 52 Type)																			Size (mm)		Form		
		C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Nb	Ta	Al	Cu	N	Pb	Sn	Ø x H				
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)		Form		
		C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Al	Ti	Nb	Cu	B	N		Ø x H				
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			
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)		Form		
		C	Si	S	P	Mn	Ni	Cr	W	Fe	B								Ø x H				
	113X X401 G	0.56	1.22	....	....	0.20	11.74	25.24	7.09	0.73	0.008								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			
11.9 Various Cobalt Alloys																			Size (mm)		Form		
		C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Cu	Nb	Ta	Al	Mg	B	N	Ø x H				
CRM	119 X COB1 G	0.065	0.40	0.015	0.026	0.395	20.8	24.7	11.6	14.6	0.40	0.088	0.345		0.020			0.130	40 x 15	CC			
CRM	119X ST3 L **	2.35	0.80	0.025		0.93	2.12	29.9	12.7	3.50	0.16	0.032					0.125	0.050	40 x 15	CC			

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IARM Status	Grade UNS#	Al Mg	Sb Mn	As Ni	Be Nb	Bi N	B O	Cd P	C Se	Cr Si	Co Ag	Cu S	Ge Te	In Sn	Fe Zn	Pb Zr
278A	CDA 145	<0.002	<0.005	(0.001)	---	(0.001)	---	---	0.003	(0.001)	0.001	99.5	---	---	0.004	0.003
Final	C14500	(0.0005)	(0.0004)	<0.005	---	(0.0001)	(0.0004)	0.011	---	0.002	(0.001)	0.002	0.53	0.001	0.002	---
71B	CDA 172	0.040	(0.002)	---	1.84	---	---	---	0.003	0.0030	0.21	97.7	---	---	0.042	0.006
Final	C17200	(0.004)	0.0010	0.021	---	(0.0005)	(0.002)	0.004	---	0.060	(0.002)	(0.0004)	---	0.005	0.005	---
279A	CDA 182	0.002	(0.004)	(0.002)	---	(0.001)	---	(0.0005)	0.002	0.86	0.002	99.1	---	---	0.025	0.01
Final	C18200	(0.001)	(0.002)	0.014	---	(0.0003)	(0.001)	0.005	---	0.020	0.003	0.0015	---	0.021	0.01	0.012
72A	CDA 314	<0.01	<0.01	---	<0.001	---	---	---	(0.014)	---	<0.01	(89.71)	---	---	0.011	1.78
<i>Chips Only</i>	C31400	---	<0.01	<0.01	---	---	---	(0.007)	---	<0.01	<0.005	0.0014	---	<0.01	8.48	---
72B	CDA 314	---	0.006	(0.003)	---	---	---	---	0.002	---	---	90.08	---	---	0.007	1.99
Final	C31400	---	---	0.004	---	(0.0002)	0.002	0.005	---	(0.002)	(0.002)	0.0015	---	0.029	7.81	---
73C	CDA 360	[0.002]	[0.008]	[0.004]	---	[0.011]	---	[0.0013]	[(0.002)]	[0.001]	[0.002]	[61.3]	---	---	[0.199]	[2.97]
Provisional	C36000	[(0.001)]	[0.002]	[0.095]	---	---	---	[0.003]	---	[0.003]	[0.006]	[0.003]	---	[0.256]	[35.1]	---
74A	CDA 464	<0.01	<0.01	<0.01	---	---	---	---	(0.012)	---	---	(64.30)	---	---	0.01	0.02
<i>Chips Only</i>	C46400	---	<0.01	0.01	---	---	---	0.006	---	<0.01	(0.002)	0.001	---	0.50	38.14	---
74B	CDA 464	0.003	0.003	<0.01	---	<0.005	---	(0.002)	---	---	---	60.4	---	---	0.011	0.017
Final	C46400	---	<0.01	0.006	---	---	---	(0.008)	---	0.003	(0.005)	(0.003)	---	0.70	38.9	---
75A	CDA 482	<0.01	<0.01	<0.01	---	---	---	---	(0.010)	---	---	(59.79)	---	---	0.052	0.83
<i>Chips Only</i>	C48200	---	<0.01	0.025	---	---	---	0.005	---	<0.01	---	0.002	---	0.89	38.39	---
75B	CDA 482	(0.005)	(0.004)	(0.004)	---	(0.001)	---	(0.002)	(0.004)	---	(0.003)	60.63	---	---	0.06	0.63
Final	C48200	---	(0.003)	0.02	---	---	---	0.003	---	(0.003)	(0.005)	(0.001)	---	0.59	38.0	---
76A	CDA 485	<0.01	<0.02	<0.01	---	---	---	---	(0.031)	---	---	(60.92)	---	---	0.08	1.80
<i>Chips Only</i>	C48500	---	<0.01	0.03	---	---	---	0.005	---	<0.01	(0.002)	0.002	---	0.99	36.14	---
76C	CDA 485	(0.004)	(0.004)	(0.003)	---	---	---	---	0.003	---	---	60.4	---	---	0.013	1.6
Final	C48500	---	(0.001)	0.003	---	---	<0.005	0.003	---	(0.003)	(0.002)	(0.001)	---	0.66	37.2	---
77A	CDA 510	<0.01	(0.01)	<0.01	---	---	---	---	(0.012)	---	<0.01	(95.21)	---	---	0.01	(0.011)
<i>Chips Only</i>	C51000	---	0.01	<0.01	---	---	---	0.12	---	<0.01	(0.010)	0.003	---	4.60	0.03	---
77B	CDA 510	(0.001)	0.005	(0.001)	---	(0.004)	---	---	0.003	---	---	95.2	---	---	0.002	0.016
Final	C51000	---	(0.002)	0.002	---	(0.0001)	(0.002)	0.148	---	(0.003)	(0.002)	0.002	---	4.66	0.007	(0.001)
78B	CDA 544	(0.002)	0.01	<0.003	---	(0.001)	---	---	<0.002	---	<0.0005	87.7	---	---	0.02	3.87
Final	C54400	---	(0.002)	0.077	---	---	---	0.19	---	<0.002	0.008	0.010	---	4.73	3.55	---
79B	CDA 623	9.19	---	---	---	(0.003)	---	---	0.002	(0.003)	(0.002)	88.4	---	---	2.13	(0.003)
Final	C62300	---	0.16	0.075	---	(0.001)	(0.002)	0.005	---	0.019	0.002	(0.001)	---	0.017	0.013	---

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Copper, Brass & Bronze Alloys

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Mg	Sb Mn	As Ni	Be Nb	Bi N	B O	Cd P	C Se	Cr Si	Co Ag	Cu S	Ge Te	In Sn	Fe Zn	Pb Zr
79C	CDA 623	9.20	<0.005	0.003	---	---	---	---	0.003	(0.002)	<0.005	87.6	---	---	2.28	<0.005
Final	C62300	---	0.20	0.55	---	<0.0001	(0.001)	0.006	---	0.033	<0.005	<0.001	---	0.010	0.014	---
80B	CDA 630	10.19	(0.004)	(0.004)	---	<0.005	---	---	(0.01)	0.012	0.014	81.2	---	---	3.31	0.009
<i>Chips Only</i>	C63000	---	0.54	4.69	---	---	---	0.009	---	0.030	0.006	(0.001)	---	0.018	0.078	---
80C	CDA 630	10.1	(0.005)	0.006	---	---	---	---	0.008	0.013	0.008	80.5	---	---	3.86	0.004
Final	C63000	(0.002)	0.58	4.71	---	(0.0003)	0.0007	0.004	---	0.077	---	(0.001)	---	0.003	0.096	---
81B	CDA 642	6.70	0.003	0.058	---	<0.001	---	---	0.002	0.002	---	91.2	---	---	0.047	0.006
Final	C64200	---	0.012	0.003	---	<0.0005	(0.001)	0.004	---	1.84	(0.004)	<0.001	---	0.008	0.176	---
82A	CDA 655	(0.012)	<0.01	<0.01	---	---	---	---	(0.014)	---	<0.01	(95.79)	---	---	0.04	(0.02)
<i>Chips Only</i>	C65500	---	1.02	<0.01	---	---	---	(0.004)	---	3.07	<0.005	0.002	---	0.015	(0.01)	---
82B	CDA 655	0.002	<0.01	<0.002	---	---	---	---	(0.003)	0.004	---	95.3	---	---	0.080	0.011
Final	C65500	---	1.04	0.011	---	<0.0005	(0.001)	0.004	---	3.22	---	0.003	---	0.017	0.38	---
83A	CDA 675	<0.01	0.008	<0.01	---	---	---	---	(0.007)	---	<0.01	(58.32)	---	---	0.99	0.058
<i>Chips Only</i>	C67500	---	0.22	0.01	---	---	---	0.005	---	<0.01	<0.005	0.002	---	0.57	39.81	---
83B	CDA 675	0.002	(0.004)	---	---	---	---	(0.003)	0.003	(0.003)	(0.003)	58.7	---	---	0.97	0.017
Final	C67500	(0.001)	0.13	0.010	---	---	(0.001)	0.004	---	(0.003)	(0.002)	(0.001)	---	0.85	39.3	---
313A	CDA 693	---	[0.016]	---	---	[(0.0004)]	---	---	---	[(0.001)]	---	[75.4]	---	---	[0.011]	[0.04]
Provisional	C69300	[(0.001)]	[(0.001)]	[0.004]	---	---	---	[0.09]	---	[3.09]	[0.002]	[(0.001)]	---	[0.006]	[21.4]	---
84A	CDA 706	<0.01	<0.01	<0.01	---	---	---	---	0.013	<0.01	0.01	(87.90)	---	---	1.33	0.007
<i>Chips Only</i>	C70600	---	0.68	9.89	---	---	---	0.010	---	<0.01	<0.005	0.011	---	0.01	0.13	---
84B	CDA 706	(0.002)	(0.002)	---	---	---	---	---	(0.01)	(0.003)	0.013	87.9	---	---	1.30	0.008
<i>X-Ray</i>	C70600	(0.008)	0.62	10.03	---	---	---	0.004	---	0.01	0.005	0.008	---	0.014	0.082	---
85A	CDA 715	<0.005	<0.01	---	---	---	---	---	0.043	<0.01	0.01	(68.74)	---	---	0.58	0.005
<i>Chips Only</i>	C71500	0.001	0.8	29.79	---	---	---	0.005	---	<0.01	<0.005	0.005	---	0.02	0.01	---
85B	CDA 715	<0.01	<0.01	---	---	---	---	---	0.011	---	0.034	(69.18)	---	---	0.53	0.005
<i>Chips Only</i>	C71500	---	0.53	29.60	---	---	---	0.007	---	<0.01	---	0.010	---	0.014	0.12	---
85C	CDA 715	<0.01	---	0.0009	---	---	---	---	0.008	0.002	0.016	67.3	---	---	0.63	0.004
Final	C71500	0.01	0.65	31.3	---	<0.0003	(0.003)	0.003	---	0.01	<0.002	0.002	---	0.005	0.057	---
158B	CDA 815	0.002	0.002	(0.001)	---	---	---	(0.005)	0.002	0.85	0.002	98.5	---	---	0.090	0.01
Final	C81500	---	0.019	0.32	---	<0.0005	0.002	0.005	---	0.02	(0.01)	0.003	---	0.01	0.014	---
158C	CDA 815	0.002	0.002	(0.001)	---	---	---	(0.005)	0.002	1.04	0.002	98.5	---	---	0.090	0.01
Final	C81500	---	0.019	0.32	---	<0.0005	0.002	0.005	---	0.02	(0.01)	0.003	---	0.01	0.014	---

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IARM Status	Grade UNS#	Al Mg	Sb Mn	As Ni	Be Nb	Bi N	B O	Cd P	C Se	Cr Si	Co Ag	Cu S	Ge Te	In Sn	Fe Zn	Pb Zr
86D	CDA 836	0.002	0.112	0.007	---	0.042	---	---	0.003	(0.001)	0.004	(84.5)	---	---	0.035	5.4
Final	C83600	---	0.0011	0.40	---	---	---	0.072	---	0.002	0.022	0.029	(0.01)	4.9	4.6	---
250A	CDA 844	(0.002)	0.052	---	---	0.02	---	---	<0.005	<0.003	(0.002)	80.2	---	---	0.17	7.2
Final	C84400	---	<0.002	0.33	---	---	(0.002)	0.003	---	0.003	(0.02)	0.046	---	2.46	9.7	---
87B	CDA 857	0.20	0.014	0.007	---	0.003	---	---	0.003	(0.002)	0.007	60.9	---	---	0.29	1.58
Final	C85700	(0.01)	0.006	0.095	---	---	---	0.008	---	0.004	(0.01)	(0.001)	---	0.78	36.1	---
88A	CDA 863	6.03	<0.01	<0.01	---	---	---	---	(0.022)	---	<0.01	(64.59)	---	---	2.27	0.03
<i>Chips Only</i>	C86300	---	3.72	0.02	---	---	---	(0.004)	---	0.02	---	(0.002)	---	0.04	23.25	---
88B	CDA 863	5.66	<0.005	(0.01)	---	---	---	---	0.003	---	---	63.9	---	---	2.12	0.066
<i>X-Ray & Chips only</i>	C86300	---	2.93	0.065	---	---	<0.001	0.011	---	0.09	---	<0.001	---	0.020	25.1	---
150A	CDA 872	<0.01	<0.03	---	---	---	---	---	<0.01	---	---	---	---	---	0.045	---
<i>X-Ray</i>	C87200	1.05	---	---	0.013	---	0.005	0.011	---	3.93	<0.01	(0.001)	---	0.016	0.03	---
151A	CDA 875	<0.01	---	---	---	---	---	---	<0.01	---	---	(81.77)	---	---	0.076	---
<i>X-Ray</i>	C87500	0.002	---	---	0.009	---	0.006	---	---	3.95	<0.01	<0.01	---	(0.006)	14.02	---
151B	CDA 875	0.002	(0.001)	(0.002)	---	---	---	---	0.005	(0.003)	---	84.0	---	---	0.025	0.013
Final	C87500	---	0.002	0.011	---	---	(0.002)	0.003	---	3.11	(0.01)	<0.001	---	0.009	12.94	---
211A	Magnolia B	0.002	0.057	(0.01)	---	4.98	---	---	---	(0.002)	(0.001)	88.4	---	---	0.004	0.014
Final	C89320	---	(0.003)	0.003	---	---	---	0.19	---	0.003	0.005	0.002	---	6.23	0.006	---
226A	EnviroBrass 2-1	0.002	0.004	0.003	---	1.71	---	---	0.003	(0.001)	0.001	86.7	---	---	0.054	0.040
Final	C89520M	---	0.002	0.54	---	<0.0005	(0.001)	0.005	0.93	0.002	0.004	0.005	---	5.15	4.77	---
227A	EnviroBrass 2-2	0.002	<0.01	0.003	---	2.33	---	---	0.003	(0.001)	0.001	85.9	---	---	0.060	0.042
Final	C89520M	---	0.001	0.53	---	(0.0002)	0.0013	0.003	1.21	0.002	0.004	0.005	---	5.13	4.70	---
228A	EnviroBrass 2-3	0.002	0.010	0.003	---	1.53	---	---	0.003	0.001	0.001	89.0	---	---	0.052	0.026
Final	C89520M	---	0.001	0.45	---	<0.0005	(0.002)	0.032	0.67	0.002	0.003	0.004	---	4.11	4.07	---
264A	Federalloy I-844	0.003	0.074	(0.004)	---	3.6	---	---	(0.004)	(0.002)	0.001	(87.3)	---	---	0.048	0.057
Final	C89831	---	0.002	0.54	---	---	---	0.027	(0.001)	0.003	(0.005)	0.0013	---	3.03	5.33	---
263A	Federalloy I-848A	0.002	0.06	0.003	---	2.55	---	---	<0.005	0.002	0.001	(78)	---	---	0.047	0.022
Final	N/A	---	0.002	0.66	---	---	---	0.040	0.002	0.003	0.006	0.002	---	3.5	15.8	---
265A	Federalloy I-836	0.003	0.015	(0.005)	---	2.4	---	---	---	(0.001)	(0.001)	(90)	---	---	0.013	0.011
Final	C89833	---	(0.002)	0.69	---	---	---	0.024	(0.002)	0.003	(0.002)	(0.002)	---	4.4	2.45	---
266A	Federalloy I-932	0.002	0.010	0.004	---	2.37	---	---	0.002	(0.002)	(0.001)	(87)	---	---	0.035	0.010
Final	C89835	---	0.002	0.46	---	---	---	0.032	0.001	0.002	0.001	0.002	---	6.9	3.48	---

() and < > Indicates non-certified value.

[] Indicates provisional value, certification in progress.

Copper, Brass & Bronze Alloys

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al Mg	Sb Mn	As Ni	Be Nb	Bi N	B O	Cd P	C Se	Cr Si	Co Ag	Cu S	Ge Te	In Sn	Fe Zn	Pb Zr
89A	CDA 903	<0.01	<0.01	---	---	---	---	---	(0.009)	---	<0.01	(87.99)	---	---	0.009	0.09
<i>Chips Only</i>	C90300	---	<0.01	0.15	---	---	---	0.11	---	<0.01	---	0.018	---	8.14	3.48	---
89B	CDA 903	<0.01	<0.01	---	---	---	---	---	---	---	<0.01	(87.5)	---	---	0.013	0.089
<i>Chips Only</i>	C90300	---	<0.01	0.15	---	---	---	0.087	---	<0.01	---	0.018	---	8.17	3.96	---
89C	CDA 903	[0.002]	[0.008]	[0.003]	---	[(0.01)]	---	---	[0.002]	---	[(0.002)]	[87.6]	---	---	[0.004]	[0.17]
Provisional	C90300	---	[0.001]	[0.008]	---	---	[(0.01)]	[0.004]	---	[0.003]	[0.005]	[0.001]	---	[9.1]	[3.1]	---
90B	CDA 922	<0.01	0.060	---	---	---	---	---	---	---	<0.01	(88.0)	---	---	0.019	1.66
<i>Chips Only</i>	C92200	---	<0.01	0.69	---	---	---	0.054	---	<0.01	---	0.035	---	6.44	2.98	---
90C	CDA 922	[0.002]	[0.023]	[0.002]	---	[0.010]	---	[(0.001)]	[(0.003)]	[(0.001)]	[0.0012]	[87.5]	---	---	[0.10]	[1.4]
Provisional	C92200	[(0.0004)]	[0.003]	[0.26]	---	---	[(0.001)]	[0.028]	[(0.001)]	[0.001]	[0.011]	[0.010]	---	[6.3]	[4.3]	---
91D	CDA 932	[<0.003]	[0.12]	[0.01]	---	[0.06]	---	---	[0.002]	[<0.001]	[0.012]	[82]	---	---	[0.024]	[7.8]
Provisional	C93200	---	[<0.001]	[0.43]	---	---	---	[0.09]	[<0.002]	[0.002]	[(0.020)]	[0.017]	---	[6.5]	[3.20]	---
92C	CDA 937	[0.001]	[0.076]	[0.01]	---	[0.01]	---	---	---	---	---	[80.4]	---	---	[0.01]	[9.5]
Provisional	C93700	---	---	[0.17]	---	---	---	[0.08]	[<0.002]	[0.002]	[0.05]	[0.027]	---	[9.7]	[0.15]	---
184A	CDA 941	0.0016	0.27	0.010	---	0.03	---	---	(0.004)	(0.001)	(0.001)	(74)	---	---	0.003	19.0
Final	C94100	---	0.002	0.30	---	---	---	0.008	(0.002)	0.002	(0.01)	0.021	---	6.0	0.37	---
267A	CDA 947	0.003	<0.03	(0.004)	---	(0.005)	---	---	(0.003)	(0.001)	0.002	87.8	---	---	0.019	0.026
Final	C94700	---	0.002	5.1	---	---	---	0.037	0.002	0.003	0.002	0.0014	---	4.95	2.06	---
93B	CDA 954	10.33	(0.012)	<0.01	---	---	---	---	0.007	(0.007)	0.006	85.4	---	---	3.87	0.012
Final	C95400	---	0.024	0.088	---	---	---	(0.002)	---	0.024	(0.004)	0.002	---	0.009	0.17	---
204A	CDA 954M	10.55	<0.01	<0.01	---	---	---	---	0.006	0.008	0.008	83.3	---	---	3.87	0.004
Final	C95410	---	0.052	1.95	---	---	---	0.007	---	0.034	0.009	(0.002)	---	0.005	0.22	---
94A	CDA 955	10.63	<0.01	<0.01	---	---	---	---	(0.014)	---	0.01	(80.68)	---	---	4.04	0.009
<i>Chips Only</i>	C95500	---	0.16	4.37	---	---	---	<0.01	---	<0.01	---	(0.003)	---	<0.01	0.09	---
94B	CDA 955	10.80	(0.011)	<0.01	---	---	---	---	(0.006)	0.017	0.011	80.6	---	---	3.99	0.004
Final	C95500	---	0.071	4.31	---	---	---	0.011	---	0.028	0.017	0.002	---	(0.003)	0.14	---
235A	CDA 958	8.9	(0.004)	<0.005	---	(0.004)	---	---	0.009	0.01	0.01	81.2	---	---	4.07	0.012
Final	C95800	---	1.17	4.44	---	(0.0001)	(0.001)	0.012	---	0.061	<0.005	0.002	---	0.018	0.083	---
236A	CDA 964	0.003	<0.005	---	---	0.003	---	---	0.010	0.002	0.004	66.7	---	---	0.91	0.004
Final	C96400	---	1.04	30.0	0.92	0.0002	0.002	0.003	---	0.19	---	0.003	---	0.005	0.002	---
159A	NARloy-A	<0.01	---	---	---	---	---	---	(0.002)	<0.01	<0.01	(96.5)	---	---	<0.01	<0.01
Final	N/A	---	<0.01	<0.01	---	0.0003	0.0006	<0.01	---	<0.01	3.48	<0.01	---	<0.01	<0.01	---

() and < > Indicates non-certified value.

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Copper, Brass & Bronze Alloys

IARM Status	Grade UNS#	Al Mg	Sb Mn	As Ni	Be Nb	Bi N	B O	Cd P	C Se	Cr Si	Co Ag	Cu S	Ge Te	In Sn	Fe Zn	Pb Zr
160A	NARloy-Z	<0.01	---	---	---	---	---	---	0.003	<0.01	<0.01	(96.6)	---	---	<0.01	<0.01
Final	N/A	---	<0.01	<0.01	---	0.002	0.0030	(0.004)	---	<0.01	3.03	<0.003	---	<0.01	<0.01	0.40

() and < > Indicates non-certified value.
[] Indicates provisional value, certification in progress.

3. Copper Base

Updated: 6th November 2012

Blocks / Discs

3.1 Brass - Cu/Zn Binaries		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	P	S	Se	B	Cd	Cu	Size (mm) Ø x H	Form	
CRM	31X B1 P	0.0196	0.0126	44.04	0.0319	0.0078	0.015	0.006	0.0047	0.0141	0.0102	0.0073	0.0020	....	0.0176	....	....	0.0017	0.0013	55.75	40 x 15	CC	
CRM	31X B2 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	
CRM	31X B6 K **	0.004	0.012	20.1	0.010	0.006	0.001	0.010	0.0008	0.004	0.0009	0.001	0.0002	0.007	....	....	....	0.0025	0.004	79.8	** provisional values	40 x 15	CC
CRM	31X B7 K **	0.0866	0.0335	14.50	0.099	0.0252	0.0012	0.0125	0.0031	0.0009	0.060	0.0087	0.0006	0.0122	....	....	....	0.0030	0.0011	85.1	** provisional values	40 x 15	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	....	....	....	....	0.0029	(0.0003)	....	96.05	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		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	B	Co	Cr	Cd	Ag	Hg	Cu	Size (mm) Ø x H	Form
CRM	31X B10 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	0.486	0.0104	36.52	0.0183	0.0190	4.02	0.051	0.0091	0.0117	0.0103	0.0139	....	....	....	0.0109	....	....	0.0130	....	58.85	40 x 15	CC
CRM	31X B15 H	0.944	0.0073	36.80	0.0176	0.0102	2.98	0.109	0.0048	0.0122	0.0074	0.0111	....	....	....	0.0046	....	....	0.0071	....	59.07	40 x 15	CC
CRM	31X B16 H	2.13	0.0295	37.18	0.0162	0.0076	1.98	0.197	0.0056	0.0029	0.0042	0.0126	....	....	....	0.0023	....	....	0.0052	....	58.37	40 x 15	CC
CRM	31X B17 F	0.010	(0.05)	(33.9)	(0.02)	(0.01)	6.05	(0.007)	(0.015)	<0.001	<0.001	<0.001	....	....	....	....	....	....	....	....	60.0	40 x 15	CC
CRM	31X B18 J	0.046	0.916	39.11	0.0193	0.0143	0.0236	0.018	0.0196	0.00110	0.0051	0.0129	0.0117	<0.005	....	....	....	....	....	....	59.82	42 x 18	CC
CRM	31X B19 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 F	0.160	0.152	15.92	0.158	0.154	0.0402	0.047	0.165	....	0.17	0.161	0.207	0.030	0.0043	0.139	....	0.0117	....	....	82.47	40 x 15	CC
CRM	31X B23 D	0.060	0.046	9.97	0.060	0.047	0.0048	0.0046	0.0482	0.0053	0.0463	0.0448	0.030	0.053	....	0.0472	....	0.0010	....	....	89.57	40 x 15	CC
CRM	31X B24 D	1.93	0.050	1.99	0.0342	0.134	(0.002)	....	0.0116	0.0030	0.0126	0.118	0.0065	0.050	....	....	....	0.0008	....	....	95.65	40 x 15	CC
CRM	31X B25 B	0.613	0.298	40.83	0.056	0.236	0.470	0.254	0.0284	0.127	0.0594	0.0843	0.093	....	(0.0045)	....	....	....	....	....	56.95	42 x 17	CC
CRM	31X B26 E	1.62	0.752	29.81	1.08	1.68	1.12	0.195	0.112	0.474	0.096	0.116	0.054	....	0.0011	0.113	....	0.0172	....	....	62.80	40 x 15	CC
CRM	31X B27 B	0.985	0.492	17.65	0.111	0.0315	0.0015	0.0044	0.048	0.0059	0.0320	0.0243	0.0150	0.0080	(0.0005)	....	....	....	....	....	80.65	42 x 18	CC
CRM	31X B28 A	0.0126	0.081	35.47	0.0490	0.083	0.034	....	....	0.094	....	....	....	(0.0018)	....	....	0.073	0.0072	....	0.0007	64.02	42 x 18	CC
CRM	31X B29 A	0.0328	0.146	24.75	0.144	4.11	0.219	....	....	0.0625	....	....	3.33	....	....	....	0.062	0.0144	....	....	67.08	40 x 15	CC
3.1.2 Brass - Trace Elements		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	Se	Cd	B	C	Ag	Cu	Size (mm) Ø x H	Form	
CRM	31X TB1 J	0.231	0.201	36.90	0.038	0.220	0.210	0.093	0.153	0.314	0.049	0.104	0.084	....	0.006	0.0114	0.0006	....	....	61.39	40 x 15	CC	
CRM	31X TB2 H **	0.103	0.097	36.5	0.087	0.110	0.088	0.029	0.110	0.205	0.040	0.052	0.009	0.087	....	0.0014	0.0013	....	....	62.5	** provisional values	40 x 15	CC
CRM	31X TB3 K	0.089	0.169	37.92	0.0282	0.0637	0.0045	0.016	0.0454	0.0244	0.0030	0.0222	....	....	....	0.0043	(0.0005)	....	....	61.58	40 x 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	
CRM	31X TB5 A	0.107	0.576	40.63	0.178	0.079	0.0458	0.122	0.349	0.445	0.314	0.174	(0.20)	0.0229	....	0.501	....	....	0.213	55.84	40 x 15	CC	

() Indicates non-certified value.

[] Provisional value, certification in progress.

3. Copper Base		Updated: 6th November 2012																	Blocks / Discs			
3.1.3 Naval Brass		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	B	C	Cu	Size (mm) Ø x H	Form		
CRM	31X NB1 H	0.535	0.504	29.73	0.037	0.520	(0.0004)	0.004	0.161	0.051	0.0065	0.0057	0.0223	0.0024	(0.0006)	.....	.....	68.35	42 x 17	∞		
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	∞		
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	∞		
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	∞		
3.1.5 High Tensile Brass		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Sb	P	S	C	Cu	Size (mm) Ø x H				Form		
CRM	31X HT31 A	0.0149	0.020	18.19	2.90	0.196	6.70	0.041	0.0006	5.27	(0.0011)	0.00032	(0.0003)	0.006	66.67	50 x 18				W		
CRM	31X HT37 A	0.0116	0.623	34.69	0.0344	0.0105	0.0004	1.38	0.0011	2.88	0.0007	0.003	<0.0005	0.003	60.33	40 x 18				W		
CRM	31X HT38 A	0.039	0.051	36.66	0.0530	0.0242	0.960	0.869	0.0008	2.60	(0.0006)	0.0024	(0.001)	0.003	58.77	50 x 18				W		
3.1.6 Bismuth Brass		Bi	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Co	Sb	P	S	Se	Cd	B	Cu	Size (mm) Ø x H	Form	
CRM	31X BIB1 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	∞	
CRM	31X BIB2 C	0.972	1.107	0.0659	33.20	0.203	0.466	0.252	0.133	0.0499	.....	0.0496	0.089	0.0235	(0.0007)	0.0089	0.0122	.....	63.30	40 x 15	∞	
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	∞	
CRM	31X BIB4 B	0.897	0.512	0.093	36.26	0.153	0.205	0.391	0.0475	.....	.....	0.0317	0.0059	0.0144	0.0011	0.0073	0.0014	0.0011	61.32	40 x 15	∞	
3.1.7 Lead Brass		Pb	Sn	Zn	Fe	Ni	Mn	Al	Si	As	Bi	Sb	P	S	Co	Ag	Se	Cd	B	Cu	Size (mm) Ø x H	Form
CRM	31X 7835.1 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	∞
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	∞
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	∞
CRM	31X 7835.4 J	1.049	0.070	30.36	0.0350	0.477	.....	0.525	.....	0.142	0.0169	0.068	0.121	.....	0.0027	.....	.....	0.0088	0.0021	67.13	40 x 15	∞
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	∞
CRM	31X 7835.6 B	1.52	0.091	37.00	(0.023)	(0.017)	.....	0.625	0.010	0.0060	0.0031	0.0125	0.0165	0.0007	0.0013	0.0022	0.0004	0.0017	0.0035	60.52	40 x 15	∞
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	∞
CRM	31X 7835.8 A	3.15	0.516	24.83	0.100	0.158	0.093	.....	.....	0.143	0.112	0.115	0.122	.....	0.313	0.463	.....	0.087	.....	69.93	40 x 15	∞
CRM	31X 7835.9 A	1.024	1.48	14.34	0.408	0.100	0.0009	0.092	.....	0.107	0.81	0.445	0.0390	0.0161	0.0813	2.12	0.34	0.0673	.....	78.48	40 x 15	∞
CRM	31X CZ114 A **	1.25	0.50	38	0.75	0.02	1.45	0.72	0.005	.....	0.01	0.005	0.002	.....	.....	.....	.....	.....	.....	** provisional values	38 x 15	W
See also Section 3.1.1 products 31X B18 - B20																						
3.1.8 Manganese Brass		Mn	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Bi	Sb	P	S	Co	Ag	Cr	C	Cu	Size (mm) Ø x H	Form	
CRM	31X MNB1 C	0.188	0.105	1.44	29.37	0.268	0.053	0.599	0.128	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	67.77	42 x 18	∞
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	∞
CRM	31X MNB3 E	3.08	0.459	0.504	25.97	1.15	0.348	0.584	1.53	0.0179	.....	0.0056	0.0259	.....	0.0556	0.0162	.....	.....	.....	66.18	40 x 15	∞
CRM	31X MNB4 F	2.97	0.547	0.221	25.59	1.728	0.347	3.91	0.103	0.0125	.....	0.0189	0.0274	.....	0.0312	0.0131	.....	.....	.....	64.62	40 x 15	∞
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	∞
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	∞
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	∞
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	∞
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	∞

() Indicates non-certified value.

[] Provisional value, certification in progress.

3. Copper Base

Updated: 6th November 2012

Blocks / Discs

3.1.9 Silicon Brass		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Cr	Mg	Cd	Cu	Size (mm) Ø x H	Form		
CRM	31X WSB1 K	0.283	0.884	8.08	0.104	0.759	4.449	4.82	0.099	4.908	0.066	0.0247	0.0225	.....	0.182	0.444	.....	0.0226	80.29	sold out	40 x 45	CC	
CRM	31X WSB2 F	0.134	0.166	12.24	0.183	0.198	0.080	4.04	0.0305	0.096	.....	0.0302	0.029	0.002	0.0529	.....	0.0087	0.0017	82.72		40 x 15	CC	
CRM	31X WSB3 E **	0.085	0.235	7.35	0.098	0.245	0.040	3.65	0.0045	0.430	.....	0.030	0.035	<0.002	0.032	.....	0.015	0.0009	87.6	** provisional	40 x 15	CC	
CRM	31X WSB4 T	0.192	0.432	5.03	0.241	0.092	0.327	4.56	0.0290	0.342	.....	0.067	0.065	.....	0.162	.....	.....	0.0030	88.29		40 x 15	CC	
CRM	31X WSB6 E **	0.069	0.220	0.455	0.085	0.110	0.032	3.60	0.0050	0.905	.....	0.0025	0.020	.....	0.0078	.....	.....	0.0003	94.45	** provisional	40 x 15	CC	
CRM	31X WSB7 C	1.81	0.107	6.73	1.82	2.94	3.74	4.20	0.092	3.28	0.185	0.610	0.248	.....	0.054	0.0288	.....	0.0152	74.07		40 x 15	CC	
3.2.1 Phosphor-Bronze		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Mg	C	Se	Cu	Size (mm) Ø x H	Form		
CRM	32X PB10 N	11.87	0.067	0.0494	0.014	0.054	<0.001	(0.004)	0.0138	0.0005	0.0128	0.0201	0.003	0.0162	.....	0.004	.....	0.0058	87.85		40 x 17	CC	
CRM	32X PB11 F	3.40	1.038	1.50	0.566	0.904	<0.001	0.099	0.200	0.201	0.033	0.478	0.885	0.0227	0.097	0.0041	.....	.....	90.54		40 x 15	CC	
CRM	32X PB12 E	5.25	0.102	0.546	0.032	0.221	0.0067	0.0099	0.087	0.0110	0.057	0.160	0.172	0.0127	0.0142	0.0033	.....	.....	93.29		40 x 17	CC	
CRM	32X PB13 D	7.09	0.104	0.240	0.057	0.111	0.039	0.073	0.081	0.0300	0.0137	0.117	0.128	0.015	0.0052	0.0144	.....	.....	91.88		40 x 15	CC	
CRM	32X PB14 D	9.00	0.048	0.038	0.0056	0.144	(0.0009)	(0.0025)	0.0331	(0.0002)	0.224	0.055	(0.008)	0.065	0.0013	0.0003	.....	.....	90.26		40 x 17	CC	
CRM	32X PB15 A	2.21	0.174	0.76	0.116	0.212	0.045	0.043	0.123	0.0125	.....	0.026	0.0873	.....	0.0509	0.0275	.....	.....	96.07		40 x 15	CC	
CRM	32X PB20 A	4.55	0.0045	0.007	0.0013	0.0090	<0.001	0.0046	0.0011	(0.007)	.....	0.0012	0.196	0.0030	.....	.....	(0.0014)	.....	95.22		38 x 17	W	
CRM	32X PB23 A	7.56	0.0042	0.0020	(0.0005)	0.0033	(0.0004)	0.0016	0.0011	(0.0006)	.....	0.0025	0.319	0.0015	.....	.....	0.004	.....	92.04		49 x 17	W	
3.2.2 Lead Bronze		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Cd	Ag	Cu	Size (mm) Ø x H	Form			
	32X LB3 G	10.71	9.96	0.051	0.095	1.54	(0.0006)	(0.0024)	0.021	0.025	0.0091	0.024	0.0050	(0.0015)	.....	.....	.....	77.5		40 x 15	CC		
CRM	32X LB10 F **	8.4	12.4	0.435	0.002	0.69	0.018	0.007	0.145	.....	0.055	0.55	0.006	0.008	0.039	.....	0.046	77.2	** provisional values	40 x 15	CC		
CRM	32X LB11 C	11.01	10.56	0.306	0.036	0.672	(0.002)	(0.003)	0.088	0.0020	0.0293	0.109	0.033	(0.046)	0.0178	.....	0.0121	76.97		42 x 18	CC		
CRM	32X LB12 D	9.52	9.06	0.584	0.0223	0.433	(0.001)	<0.001	0.0897	.....	0.0231	0.442	0.383	0.094	0.0751	.....	.....	79.27		40 x 15	CC		
CRM	32X LB13 C	5.80	7.59	0.520	0.0160	0.828	0.0011	(0.0035)	0.131	0.0005	0.0721	0.0186	0.0161	0.115	0.0293	.....	0.0063	84.87		40 x 17	CC		
CRM	32X LB14 F	5.42	14.65	0.042	0.057	0.318	(0.0006)	0.006	0.052	0.0050	0.974	0.062	0.189	0.016	0.212	.....	0.0619	78.08		40 x 17	CC		
CRM	32X LB15 D	5.38	21.76	0.049	0.0089	0.104	(0.0004)	(0.002)	0.0222	0.0014	0.0173	0.092	0.0037	0.0136	0.0033	.....	0.0312	72.52		40 x 17	CC		
CRM	32X LB16 A	5.55	18.78	0.458	0.0040	0.793	(0.001)	.....	.....	.....	0.0119	(0.001)	(0.002)	0.0012	.....	.....	0.0016	74.42		32 x 17	W		
CRM	32X LB17 A	5.97	9.83	0.634	0.488	0.465	0.388	.....	1.51	0.296	0.220	4.10	0.051	.....	0.0083	0.151	0.911	74.83		40 x 15	CC		
CRM	32X 93700 A **	10.0	8.5	0.78	0.001	0.31	0.001	0.001	.....	.....	.....	0.005	0.001	0.001	0.001	.....	.....	bal	** provisional values	42 x 15	W		
3.2.3 Aluminium Bronze		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	P	Cr	Co	Mg	Bi	Sb	Ag	C	Se	Be	Cu	Size (mm) Ø x H	Form
CRM	32X ALB1 P	0.0314	0.207	0.0228	3.11	5.74	8.83	0.106	0.0083	0.057	0.0145	0.0052		0.0092							81.85	42 x 18	CC
CRM	32X ALB2 K	0.0715	0.147	0.174	4.27	4.42	10.08	0.245	0.0110	0.341	0.029	0.0973	0.286	0.0183			0.0210				79.64	40 x 15	CC
CRM	32X ALB3 R	0.110	0.105	0.311	3.97	3.47	11.20	0.173	0.0114	0.297	0.022	0.0060		0.0117							80.31	42 x 18	CC
CRM	32X ALB4 H	0.085	0.120	0.264	3.55	7.03	7.87	0.252	0.0130	1.028	0.036	0.022		0.153							79.61	42 x 18	CC
CRM	32X ALB5 J	0.062	0.093	0.487	2.22	4.14	6.91	0.086	0.064	1.21	0.048	0.0056	0.0307	0.0176							84.61	42 x 18	CC
CRM	32X ALB6 K **	0.120	0.074	0.125	2.68	5.39	9.68	0.072	0.012	0.772	0.005		0.140	0.0105			0.0085	** provisional values			80.8	40 x 15	CC
CRM	32X ALB7 C	0.30	0.029	0.527	4.82	4.96	4.01	0.399	0.056	0.383	0.057	0.061		0.0039							84.40	42 x 18	CC
CRM	32X ALB8 E	0.312	0.071	0.352	5.54	6.68	6.38	0.603	0.145	1.562	0.171	0.36	0.554	0.015		0.024	0.0099				77.17	40 x 15	CC
CRM	32X ALB9 B	0.061	0.377	1.17	3.13	1.21	13.86	0.282	0.0275	0.090	(0.054)	(0.064)	0.0259	0.205			0.042	(0.006)			79.24	42 x 18	CC
CRM	32X ALB10 A	0.202	0.107	0.315	4.23	7.58	11.25	0.169	0.017	1.73	0.040	0.0103		0.0029				(0.0022)			74.28	42 x 18	CC
CRM	32X ALB11 A	0.0289	0.118	0.576	3.81	4.33	8.80	0.069		1.13	0.045		0.089	0.075	0.120	0.093			0.006	0.0194	80.58	40 x 15	CC
CRM	32X ALB11 B	0.0062	0.0316	0.508	3.99	4.44	8.85	0.015		1.290	0.0249		0.0180	0.072	0.082	0.203			0.007	0.064	80.38	40 x 15	CC

() Indicates non-certified value.

[] Provisional value, certification in progress.

3. Copper Base

Updated: 5th November 2012

Blocks / Discs

3.2.3 Aluminium Bronze (continued)																	Size (mm)	Form					
		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	Cr	Mg	Co	Ag	C	Cu		Ø x H					
CRM	32X ALB12 A **	0.31	0.002	0.06	1.06	6.3	8.4	0.02	0.95	0.01	....	0.001	0.005	0.035	....	bal	** provisional values	41 x 15	W				
CRM	32X ALB13 A **	0.005	0.001	0.02	1.15	1.3	7.2	0.08	5.05	0.005	....	....	....	....	....	bal	** provisional values	35 x 15	W				
CRM	32X 61400 A **	0.30	0.0005	0.065	2.72	0.025	6.8	0.012	0.083	0.001	....	0.002	....	0.001	....	bal	** provisional values	42 x 15	W				
CRM	32X CA1 A	0.0180	0.007	0.162	4.63	4.94	9.79	0.090	0.296	0.003	0.0049	0.0003	....	0.0012	(0.007)	80.03		42 x 18	W				
CRM	32X CA7 A	0.0172	(0.004)	0.006	2.09	0.234	9.37	0.017	0.151	....	0.0028	0.0004	0.0003	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 (Sebily Type)																	Size (mm)	Form					
		Sn	Pb	Zn	Fe	Ni	As	Bi	Sb	P	S	Co	Al	Se	Ir	Ag	Cd	Cu	Ø x H				
CRM	32X SEB1 D **	4.24	0.199	7.81	0.071	0.101	0.040	4.26	0.301	0.0020	0.0052	0.048	....	0.81	....	....	0.0033	81.9	** provisional values	40 x 15	CC		
CRM	32X SEB2 D	6.96	0.104	1.40	0.074	0.0449	0.0160	4.57	0.0222	0.036	0.030	0.0133	....	0.044	0.074	0.0443	0.0255	86.56		40 x 15	CC		
CRM	32X SEB3 D **	2.12	0.059	0.558	0.019	1.41	0.022	6.20	0.0225	0.0115	0.026	0.0147	....	1.61	....	....	0.0042	87.85	** provisional values	40 x 15	CC		
CRM	32X SEB4 D **	9.15	0.06	7.10	0.215	0.047	0.016	2.62	0.018	0.011	....	0.29	0.30	0.105	....	....	0.0025	79.5	** provisional values	40 x 15	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	....	0.512	....	....	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	....	0.322	....	....	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					
		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)	0.0087	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 G **	16.2	0.160	0.150	0.142	0.465	0.140	0.025	0.032	0.068	....	0.046	....	0.353	....	....	....	0.645	0.035	81.8	** provisional	40 x 15	CC
CRM	32X SN4 A	18.80	1.059	0.342	0.060	0.556	0.034	(0.004)	0.0468	0.0065	....	0.151	....	0.102	....	....	....	0.988	0.040	77.88		42 x 18	CC
CRM	32X SN5 A	16.05	0.259	0.494	1.20	0.502	0.474	....	0.0615	0.720	0.0585	0.138	0.097	0.664	0.145	0.0102	0.099	....	0.0009	78.96		40 x 15	CC
CRM	32X SN6 A	7.31	1.559	1.17	0.099	0.203	0.0313	....	0.764	0.0024	0.0074	0.655	0.158	0.323	0.0903	0.0073	1.159	....	0.018	86.39		40 x 15	CC
CRM	32X SN7 A **	12.3	2.60	1.95	0.05	0.175	0.055	....	1.07	0.0009	....	0.43	0.050	0.27	0.037	0.0010	0.305	0.057	....	80.3	** provisional	40 x 15	CC
3.3 Gun Metal																	Size (mm)	Form					
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Se	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 M **	4.47	4.81	5.80	0.256	0.698	0.085	0.028	0.0345	....	0.050	0.050	0.041	0.072	....	....	0.045	0.042	0.0033	83.4	** provisional	40 x 15	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 J	9.61	1.119	2.72	0.050	0.511	0.0110	(0.003)	0.103	0.0088	0.119	0.1092	0.082	0.064	....	....	0.095	0.050	....	85.40		40 x 15	CC
CRM	33X GM8 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	4.07	0.106	3.87	0.570	0.999	(0.001)	....	0.196	0.219	0.031	2.004	0.063	....	....	0.015	0.0382	0.141	0.0229	87.58		40 x 15	CC
CRM	33X GM21 A **	4.55	7.00	5.03	0.755	0.131	0.252	0.0155	0.455	....	0.450	1.05	0.049	0.079	0.200	....	0.690	0.255	....	78.9	** provisional	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

() Indicates non-certified value.

[] Provisional value, certification in progress.

3. Copper Base		Updated: 6th November 2012																Blocks / Discs						
3.4 Nickel Silver		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	S	Co	Cr	Ag	Mg	C	Cu	Size (mm) Ø x H	Form					
CRM	34X NS1 F	0.0110	0.0141	33.41	0.064	7.81	(0.003)	(0.002)	0.0009	0.0140	(0.0004)	0.052	0.0003	0.069	0.0020	(0.0018)	58.63	42 x 18	CC					
CRM	34X NS2 F	0.019	0.063	25.31	0.085	13.39	....	(0.003)	0.0013	0.0091	(0.020)	0.0118	(0.001)	0.0026	<0.0005	....	61.09	42 x 17	CC					
CRM	34X NS3 F	0.056	0.178	19.96	0.285	14.96	<0.001	(0.002)	0.0377	0.0295	0.0028	0.0922	....	0.100	<0.001	....	64.16	40 x 15	CC					
CRM	34X NS4 F	0.0301	0.071	17.09	0.449	16.61	0.0454	0.102	0.304	0.0570	0.0110	0.152	....	0.0324	0.0009	....	64.97	40 x 15	CC					
CRM	34X NS5 F	0.194	1.29	(23.1)	0.717	17.16	0.674	0.158	0.127	0.067	....	0.197	0.0014	0.0102	0.704	....	55.11	42 x 17	CC					
3.6.1 Cupro Nickel		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Bi	P	S	Co	Cr	Mg	B	C	Ti	Nb	Zr	Be	Cu	Size (mm) Ø x H	Form
CRM	36X CN1 N	0.0578	0.160	0.412	2.15	10.11	0.006	0.089	1.80	....	0.0436	0.0070	0.154	0.0258	....	0.0013	(0.003)	....	....	....	....	84.90	40 x 17	CC
CRM	36X CN2 J	0.061	0.048	0.0358	1.70	15.47	0.005	0.044	1.26	0.0045	0.015	0.035	0.264	0.240	0.0006	....	0.004	0.0102	(0.032)	....	....	80.78	40 x 17	CC
CRM	36X CN3 M **	0.192	0.225	1.03	0.98	19.60	....	0.375	0.725	....	0.049	0.0155	0.070	0.026	0.075	0.002	0.019	....	0.025	....	0.0043	76.60	40 x 15	CC
CRM	36X CN4 K	0.009	(0.023)	0.041	2.67	27.49	0.0013	0.025	0.164	0.0077	0.0079	0.0076	0.052	0.022	(0.0004)	....	0.0053	(0.004)	0.0139	....	....	69.48	40 x 17	CC
CRM	36X CN5 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 H	....	0.033	0.388	0.792	31.21	0.063	0.154	0.458	0.0331	0.0104	0.0051	0.0590	2.65	....	....	0.0072	0.057	0.196	0.049	....	63.80	40 x 15	CC
CRM	36X CN7 F	0.039	0.028	0.203	1.021	29.95	....	0.304	0.659	(0.014)	(0.021)	0.0151	0.108	1.51	0.0041	(0.004)	0.0106	(0.037)	0.58	(0.003)	....	65.58	40 x 17	CC
CRM	36X CN8 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	....	....	65.54	sold out	CC
CRM	36X CN9 J	0.0291	0.020	0.060	0.722	28.90	(0.094)	0.413	1.019	....	0.008	0.0130	0.323	1.84	....	0.0065	0.0098	0.150	1.40	0.0019	....	64.96	40 x 15	CC
CRM	36X CN10 A	(0.009)	0.004	0.026	4.28	29.3	4.23	4.02	0.262	0.044	(0.020)	0.056	0.084	4.69	0.0026	0.0029	0.064	0.03	0.89	(0.066)	....	64.04	sold out	CC
CRM	36X CN11 A	(0.002)	(0.003)	(0.006)	0.992	14.96	1.457	0.083	4.34	....	(0.002)	0.0012	0.0049	0.380	0.0241	....	(0.001)	....	0.124	....	....	77.56	40 x 15	W
CRM	36X CN12 A **	<0.005	<0.005	0.15	0.10	13.5	2.4	0.04	0.40	....	<0.005	....	0.005	....	0.07	0.005	0.010	....	<0.005	....	....	bal	40 x 15	W
** provisional values																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	concast
3.6.1a Cu/Ni/Sn (Spinodal Alloy)		Sn	Ni	Cu	Zn	Fe	Al	Si	Mn	Bi	Sb	P	S	Ag	Pb	Mg	Co	B	Ti	Nb	Size (mm) Ø x H	Form		
CRM	36X SP1 A	5.75	8.33	84.90	0.344	0.45	0.0020	0.004	0.084	0.0039	0.0177	(0.003)	0.005	0.005	0.0115	....	0.057	0.0007	(0.0004)	(0.031)	....	40 x 15	CC	
CRM	36X SP2 A	8.92	15.72	74.91	0.029	(0.09)	0.0003	(0.0023)	0.0019	(0.0027)	0.006	(0.0006)	0.0030	0.0181	0.026	0.0002	0.119	0.0005	(0.0008)	....	....	40 x 15	CC	
3.6.4 Cu/Be/Co		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Co	Cr	Ag	Mg	Be	Cu	Size (mm) Ø x H	Form							
CRM	36X CBC2 E	0.009	0.0099	0.0103	0.0208	0.0472	0.0231	0.0205	0.0015	2.47	0.0044	0.0020	....	0.450	96.96	40 x 17	W							
CRM	36X CBC3 D	0.0021	0.0025	0.004	0.046	0.007	0.019	0.039	....	0.209	....	....	0.0040	1.840	97.77	40 x 15	W							
CRM	36X CBC4 D	0.003	0.318	0.005	0.026	0.004	0.018	0.041	....	0.207	....	....	0.0070	1.865	97.46	40 x 15	W							
CRM	36X CBC5 A	0.01	0.009	0.038	0.028	1.69	0.021	0.036	(0.001)	0.14	0.006	....	....	0.32	97.6	40 x 15	W							

() Indicates non-certified value.

[] Provisional value, certification in progress.

3. Copper Base		Updated: 6th November 2012																Blocks / Discs							
3.6.5 Cu/Cr		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	S	Co	Cr	Ag	Mg	Cd	Zr	Cu	Size (mm) Ø x H	Form						
CRM	36X CCR1 D	0.0049	0.0017	0.008	0.0378	0.0035	(0.001)	0.015	0.0010	0.0018	....	0.948	0.0016	0.0015	....	0.067	98.95	50 x 17	W						
CRM	36X 274 A	0.0140	0.0021	0.0395	0.0779	2.54	0.0013	0.594	0.0148	0.0035	0.0028	0.531	....	....	....	<0.005	96.23	46 X 17	W						
3.7.1 Various Copper Alloys		Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	S	Cr	Co	C	Zr	Cu	Size (mm) Ø x H	Form							
CRM	37X 218 A	0.015	0.0025	0.027	0.074	2.52	0.0022	0.58	0.083	0.0014	0.007	0.032	0.0013	0.0022	....	96.57	38 x 17	W							
CRM	37X 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	#This alloy is for XRF use only	40 x 10	CC						
3.8 Residuals in Pure Copper - Wire		Sn	Pb	Zn	Fe	Ni	Ag	As	Mn	Bi	Sb	Co	Cr	Si	P	Cd	Te	Se	S	O	Size (mm) Ø x H	Form			
	38X C1 A	0.7	0.4	1.5	2	0.8	7.8	<1.0	<1.0	0.2	<1.0	<1.0	<1.0	....	....	<0.1	0.4	0.7	....	....	3mm x 400mm (5 x 80mm pcs.)	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	....	....	....		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		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		Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Bi	Sb	P	S	Co	Cr	Cd	Ag	Au	Se	Te	In	Mg	Ge	Size (mm) Ø x H	Form
CRM	39X 17866 AF	122	73	30	4	471	....	381	....	61	54	....	26	49	....	62	69	19	34	26	170	....	....	40 x 15	CC
CRM	39X 17867 AC	412	93	820	151	379	37	331	....	281	129	190	160	26	(870)	35	100	73	61	107	161	320	....	40 x 15	CC
CRM	39X 17868 AG **	1050	1030	1950	1100	220	75	225	120	310	300	495	210	245	....	128	250	100	112	205	78	80	....	40 x 15	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 AG	31	447	1290	(400)	62	12	33	....	470	478	12	26	17	....	305	468	9	261	11	78	....	76	40 x 15	CC
CRM	39X 17871 C **	45	67	30	10	345	10	205	....	550	125	....	50	10	....	58	215	32	285	88	50	....	8	40 x 15	CC
CRM	39X 27866 A	448	54	287	30	487	....	383	....	47	52	147	469	308	12	139	57	16	28	32	437	....	29	38 x 20	W
CRM	39X 27869 A	106	225	65	30	190	....	98	....	376	362	119	112	36	(2)	28	349	80	127	153	90	....	123	38 x 20	W
** provisional values																									
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Cr	Cd	Mg	Ag	Au	Se	Te	In	Size (mm) Ø x H	Form
CRM	39X 17872 A	0.180	0.293	0.107	(0.045)	0.0537	0.0118	....	0.0203	0.0055	0.0240	0.0217	0.0045	0.0242	0.0102	....	0.0013	....	0.0214	(0.002)	0.0103	0.0208	0.0241	42 x 15	C
CRM	39X 17873 A	0.0274	0.065	0.0231	0.019	0.0173	0.015	0.030	0.0209	0.0182	0.0233	0.0229	0.078	0.0206	0.0233	0.0231	0.0052	0.011	0.0228		0.0114	0.0070	0.0212	40 x 15	C

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Archaeological Copper series for artifact analysis by museums																				Updated: November 2012		
3.1.7		Lead Brass																		Size (mm)	Form	
		Pb	Sn	Zn	Fe	Ni	Mn	Al	Si	As	Bi	Sb	P	S	Co	Ag	Se	Cd	Cu	Ø x H		
#1	CRM 31X 7835.8 A	3.15	0.516	24.83	0.100	0.158	0.093	....	....	0.143	0.112	0.115	0.122	....	0.313	0.463	....	0.087	69.93	40 x 15	CC	
#2	CRM 31X 7835.9 A	1.024	1.48	14.34	0.408	0.100	0.0009	0.092	0.0232	0.107	0.81	0.445	0.0390	0.0161	0.0813	2.12	0.34	0.0673	78.48	~40 x 15	CC	
3.1.2		Brass - Trace Elements																		Size (mm)	Form	
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Cr	Co	Se	Cd	B	Ag	Cu	Ø x H		
#3	CRM 31X TB5 A	0.107	0.576	40.63	0.178	0.079	0.0458	0.122	0.349	0.445	0.314	0.174	(0.20)	0.0229	....	0.501	....	0.213	55.84	40 x ~15	CC	
3.2.9		Bronze																		Size (mm)	Form	
		Sn	Pb	Zn	Fe	Ni	Al	As	Mn	Cr	Co	Bi	Sb	Cd	Au	Ag	P	S	Cu	Ø x H		
#4	CRM 32X SN5 A	16.05	0.259	0.494	1.20	0.502	0.474	0.0615	0.720	0.0585	0.138	0.097	0.664	0.145	0.0102	0.099	....	0.0009	78.96	40 x 15	CC	
#6	CRM 32X SN6 A	7.31	1.559	1.17	0.099	0.203	0.0313	0.764	0.0024	0.0074	0.655	0.158	0.323	0.0903	0.0073	1.159	....	0.018	86.39	40 x 15	CC	
#9	CRM 32X SN7 A **	12.0	2.5	2.0	0.07	0.18	0.06	1.00	0.001		0.45	0.05	0.25	0.04	0.001	0.30	0.06		81	**Provisional	40 x 15	CC
3.3		Gun Metal																		Size (mm)	Form	
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Cr	Se	Co	Ag	Cd	Cu	Ø x H	
#5	CRM 33X GM21 A **	4.5	7.0	5.0	0.75	0.12	0.26	0.02	0.47		0.5	1.05	0.05	0.07		0.20		0.6	0.25	** Provisional	40 x 15	CC
#7	CRM 33X GM20 A	4.07	0.106	3.87	0.570	0.999	(0.001)		0.196	0.219	0.031	2.004	0.063		0.015		0.0382	0.141	0.0229	87.58	40 x 15	CC
#10	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	
3.2.2		Leaded Bronze																		Size (mm)	Form	
		Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Cd	Ag	Cr	Cu	Ø x H		
#8	CRM 32X LB17 A	5.97	9.83	0.634	0.488	0.465	0.388	....	1.51	0.296	0.220	4.10	0.051	....	0.0083	0.151	0.911	0.0008	74.83	40 x 15	CC	
#11	CRM 32X LB14 F	5.42	14.65	0.042	0.057	0.318	(0.0006)	0.006	0.052	0.0050	0.974	0.062	0.189	0.016	0.212	....	0.0619	....	78.08	40 x 17	CC	
#12	CRM 32X LB10 F **	8.4	12.4	0.435	0.002	0.69	0.018	0.007	0.145		0.055	0.55	0.006	0.008	0.039		0.046		77.2	** Provisional	40 x 15	CC
3.6		Copper/Arsenic																		Size (mm)	Form	
		As	Sn	In	Cd	Fe	Ni	Pb													Ø x H	
#13	RM 36X CUAS3 A	2.90	0.009	0.0054	(0.0003)	(0.0010)	0.0007	0.0012													~40 x 15	CC
#14	RM 36X CUAS4 A	3.66	0.375	0.093	0.109	0.0012	0.0003	0.0009													~40 x 15	CC

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CP Titanium & Titanium Alloys

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

IARM Status	Grade UNS#	Al O	B Pd	C P	Cr Ru	Co Si	Cu S	H Ta	Fe Sn	Mg Ti	Mn V	Mo W	Ni Y	Nb Zr	N
312A Final	Ti CP Grade 1 R50250	0.006 0.066	--- (0.004)	0.004 ---	(0.002) ---	(0.001) 0.006	0.002 (0.001)	0.0049 ---	0.028 0.0012	--- 99.7	(0.001) (0.002)	(0.002) ---	(0.002) (0.0004)	--- (0.001)	0.0023
174C Final	Ti CP Grade 4 R50700	(0.003) 0.34	--- ---	0.0057 ---	0.009 ---	(0.001) (0.006)	0.0015 (0.0005)	0.0027 ---	0.28 0.023	--- (99.5)	0.0019 0.002	0.002 ---	0.007 (0.0004)	(0.004) (0.003)	0.004
311A Final	Ti CP BT1-0	0.32 0.083	--- ---	0.009 ---	0.013 ---	--- 0.005	0.0013 ---	0.0021 ---	0.060 0.0020	--- (99.4)	0.0013 0.004	0.0012 (0.002)	0.014 (0.0002)	(0.002) 0.012	0.012
303A Final	Ti CP Grade 7 R52400	0.008 0.134	--- 0.139	0.011 ---	0.021 ---	--- 0.004	0.002 ---	0.0011 ---	0.051 <0.005	--- ---	0.002 0.005	0.001 ---	0.022 (0.0003)	<0.005 (0.001)	0.0069
280A Final	Ti 4-4-2-0.5 IMI 550	4.11 0.19	--- (0.002)	0.005 ---	0.0055 ---	(0.002) 0.47	0.003 (0.001)	0.0015 ---	0.044 2.07	--- (88.7)	(0.002) 0.023	4.01 ---	0.012 (0.0003)	(0.001) 0.002	0.0014
271A Final	Ti 5-2.5 R54520	5.28 0.16	--- ---	0.026 (0.002)	0.016 ---	(0.002) 0.021	0.004 (0.002)	0.013 ---	0.31 2.49	--- ---	0.002 0.09	0.011 ---	0.035 ---	(0.003) 0.015	0.012
314A Final	Ti 5-5-5-3 Ti5553	5.50 0.155	--- ---	0.008 (0.005)	3.09 ---	(0.003) 0.02	0.002 ---	0.004 ---	0.46 (0.01)	--- (81)	0.002 4.98	4.78 ---	0.022 (0.0003)	--- 0.002	0.0034
314B Final	Ti 5-5-5-3 Ti5553	5.57 0.130	(0.001) (0.003)	0.010 (0.001)	3.08 ---	(0.004) 0.041	0.002 (0.001)	0.0057 (0.002)	0.39 0.022	--- (81)	0.001 5.04	4.88 (0.003)	0.0044 (0.001)	0.009 (0.002)	0.0045
177C Final	Ti 6-2-4-2 R54620	6.02 0.107	(0.001) (0.004)	0.005 ---	0.012 ---	(0.001) 0.086	0.003 ---	0.0014 ---	0.033 2.02	--- (86)	0.0015 0.020	1.96 ---	0.011 (0.0002)	--- 3.99	0.0022
285A Final	Ti 6-2-1-1 R56210	5.81 0.076	(0.002) ---	0.007 ---	(0.001) ---	(0.002) 0.009	0.008 (0.0004)	0.0038 0.97	0.037 0.004	--- (90)	(0.001) 0.004	0.77 (0.01)	0.006 0.0024	2.00 0.002	0.0043
336A Final	Ti 6-2-4-6 R56260	5.9 0.102	(0.001) ---	0.005 ---	0.002 ---	0.002 0.019	0.002 (0.002)	0.0022 ---	0.115 2.03	--- 81.7	--- 0.005	6.16 (0.004)	0.002 (0.0003)	--- 3.92	0.0015
336B Final	Ti- 6-2-4-6 R56260	6.04 0.101	(0.001) ---	0.006 (0.002)	(0.001) ---	(0.002) 0.020	0.002 (0.002)	0.0029 ---	0.132 2.04	--- 81.4	--- 0.004	6.16 (0.005)	0.002 (0.0002)	--- 4.12	0.0016
337A Final	Ti 6-2-2-2-2 Ti 6-22-22	5.60 0.104	(0.001) ---	0.008 ---	2.01 ---	0.0011 0.14	0.002 (0.001)	0.005 ---	0.114 1.96	--- (86.0)	--- (0.003)	2.05 (0.003)	0.011 (0.0004)	(0.004) 1.89	0.0017
261A Final	Ti 3-2.5 R56320	3.00 0.10	--- ---	0.007 ---	0.013 ---	(0.001) 0.012	0.002 (0.001)	0.0023 ---	0.19 0.008	--- ---	0.0011 2.48	0.003 ---	0.006 (0.001)	(0.01) (0.002)	0.007
315A Final	Ti 4-2 PT3V	4.58 0.099	--- (0.003)	0.011 (0.001)	0.016 ---	(0.004) 0.014	0.005 ---	0.0016 ---	0.065 0.004	--- 93.3	0.008 1.84	0.008 ---	0.012 0.0002	--- 0.0044	0.0052
175D Provisional	Ti 6-4 R56400	[6.38] [0.177]	--- ---	[0.008] ---	[0.015] ---	--- [0.009]	[0.002] ---	[0.0028] ---	[0.22] [(0.01)]	--- [(89.1)]	[0.002] [4.00]	[0.003] ---	[0.016] ---	--- ---	[0.030]

() and < > Indicates non-certified value.

[] Indicates provisional value, certification in progress.

CP Titanium & Titanium Alloys

上海禹重实业有限公司 | 进口标样目录

IARM Status	Grade UNS#	Al O	B Pd	C P	Cr Ru	Co Si	Cu S	H Ta	Fe Sn	Mg Ti	Mn V	Mo W	Ni Y	Nb Zr	N
176C Provisional	Ti 6-4 ELI R56407	[5.97] [0.111]	--- [(0.004)]	[0.012] ---	[0.011] ---	--- [0.016]	[0.003] [(0.001)]	[0.0034] ---	[0.14] [0.007]	--- [89.6]	[(0.001)] [4.00]	[0.005] ---	[0.011] [(0.0001)]	--- [0.003]	[0.005]
297A Final	Ti 10-2-3 R56410	3.12 0.109	(0.003) ---	0.014 ---	0.007 (0.004)	--- 0.022	0.002 (0.001)	0.0045 (0.01)	1.86 0.006	--- 85.0	0.007 9.71	0.004 ---	0.0041 ---	(0.06) 0.002	0.008
178C Provisional	Ti 6-6-2 R56620	[5.44] [0.17]	(0.001) ---	[0.022] ---	[0.014] ---	--- [0.047]	[0.62] ---	[0.0025] ---	[0.66] [1.97]	--- [(85.7)]	[(0.002)] [5.43]	[0.012] ---	[0.013] ---	[(0.01)] [0.004]	[0.011]
300A Provisional	Ti 6-7 R56700	[5.97] [0.16]	(0.001) ---	[0.006] ---	[0.009] ---	--- [0.019]	[0.003] ---	[0.0019] ---	[0.19] [(0.01)]	--- [(86.7)]	[(0.001)] [(0.01)]	[(0.001)] ---	[0.008] ---	[6.9] ---	[0.004]
344A Provisional	Ti 15-3-3-3 R58153	[3.16] [0.11]	(0.001) ---	[0.011] ---	[3.08] ---	[(0.003)] [0.027]	[(0.002)] ---	[0.016] ---	[0.20] [3.09]	--- [(75.0)]	[0.002] [15.0]	[(0.003)] ---	[0.011] [(0.002)]	--- [0.002]	[0.006]
286A Final	Ti 3-8-6-4-4 R58640	3.25 0.089	--- (0.02)	0.010 ---	6.3 ---	(0.006) 0.030	(0.004) (0.001)	0.0039 ---	0.09 (0.003)	--- 73.4	(0.002) 8.1	4.15 ---	0.013 0.001	--- 4.08	0.010

() and < > Indicates non-certified value.
[] Indicates provisional value, certification in progress.

10. Titanium Base

Updated: 6th November 2012

Blocks / Discs

10.1	Various Ti Alloys	Al	Sn	V	Mo	Nb	Zr	Cr	Fe	Ni	Cu	Si	Y	C	S	N	O	H	Size (mm) Ø x H	Form	
CRM	101X Ti1 A	3.08	.....	.....	14.98	2.75	.....	.....	0.035	0.0099	0.05	0.201	0.0030	0.0417	(0.003)	0.005	0.169	0.0069	40 x 13	HIP	
CRM	101X Ti2 A	6.02	2.05	.....	2.08	.....	3.97	0.0054	0.053	0.0073	(0.003)	0.110	0.0002	0.016	.....	0.0053	0.143	0.0076	40 x 13	HIP	
CRM	101X Ti3 A	6.14	0.0215	4.00	0.0213	.....	0.0152	0.0194	0.104	0.0303	0.0047	0.013	0.0101	0.0619	.....	0.010	0.198	0.0034	40 x 13	HIP	
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		B	Co	Mn	P	Pd	Ru	Ta	W											Size (mm) Ø x H	Form
	101X Ti4 A	0.0093	0.066	0.0653	0.0076	0.145	0.054	0.096	0.072											40 x 13	HIP
	101X Ti5 A	0.0098		0.073	0.010				0.084											40 x 13	HIP
	101X Ti6 A	0.0080	0.0621	0.0623	0.0069	0.141	0.062	0.084	0.066											40 x 13	HIP

Note: These products are available in other thicknesses on request

() Indicates non-certified value.

[] Provisional value, certification in progress.

Aluminum Alloys

IARM Status	Grade UNS#	Sb Mg	As Mn	Ba Hg	Be Mo	Bi Ni	B P	Cd Si	Ca Ag	Cr Na	Co Sr	Cu Sn	Ga Ti	Fe V	Pb Zn	Li Zr
104B	AA2024	---	---	---	[(0.0002)]	---	[(0.002)]	---	[(0.001)]	[0.009]	---	[4.60]	[0.010]	[0.26]	[0.014]	---
Provisional	A92024	[1.57]	[0.64]	---	---	[0.005]	[(0.003)]	[0.15]	[(0.001)]	[(0.0005)]	---	[(0.003)]	[0.055]	[0.007]	[0.064]	[(0.001)]
109C	AA6061	---	---	---	---	[(0.001)]	[(0.001)]	---	[(0.001)]	[0.10]	[(0.001)]	[0.30]	[0.013]	[0.53]	[0.007]	---
Provisional	A96061	[0.83]	[0.11]	---	---	[0.012]	[(0.001)]	[0.61]	---	---	---	[(0.002)]	[0.018]	[0.009]	[0.12]	[0.002]
343A	AA7055	---	---	---	[0.0009]	---	[(0.001)]	---	[(0.001)]	[0.21]	[(0.001)]	[1.37]	[0.009]	[0.23]	[0.006]	---
Provisional	A97055	[2.17]	[0.093]	---	---	[0.010]	[(0.002)]	[0.20]	---	[(0.003)]	---	[(0.003)]	[0.043]	[0.004]	[5.7]	[0.013]
111B	AA7075	---	---	---	---	---	---	[(0.0002)]	[(0.002)]	[0.001]	---	[2.29]	[0.013]	[0.09]	[0.001]	---
Provisional	A97075	[2.04]	[0.001]	---	---	[0.004]	[(0.001)]	[0.05]	---	---	---	[(0.003)]	[0.018]	[0.005]	[8.1]	[0.15]

() and < > Indicate a non-certified value.
[] Indicate provisional value, certification in progress.

6. Magnesium Base

Updated: 6th November 2012

Blocks / Discs

6.1		Residuals in Pure Magnesium																		Size (mm)		Form
		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Ce	La	Nd	Y	Ø x H		
CRM	61X MGP1 A **	0.014	(0.002)	0.0035	<0.0005	0.0008	0.005	0.027	(0.001)	<0.001	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.001	<0.001			Unsuitable for use with glow-discharge systems	45 x 20	⊖
CRM	61X MGP2 A **	0.065	0.0122	0.0118	(0.0007)	0.0109	0.031	0.0061	0.0029	0.0138	0.0073	0.0061	0.003	<0.0001	0.0063	0.0019	0.0014				45 x 20	⊖
CRM	61X MGP3 A **	0.096	0.0196	0.0137	(0.0014)	0.0292	0.044	0.014	0.0048	0.054	0.0155	0.0148	0.0125	<0.0001	0.0154	0.0055	0.0038				45 x 20	⊖
CRM	61X MGP4 A **	0.0247	0.0158	0.0100	0.030	0.0108	0.037	(0.0044)	0.0028	0.028	0.0067	0.0066	0.0203	<0.0001	0.0071	0.0041	0.0030				45 x 20	⊖
CRM	61X MGP5 A	0.119	0.099	0.201		0.092	0.094	0.0048	0.0176		0.0352	0.0357	0.0342	0.0018	0.0292	0.049	0.0382	0.0446	0.0132		40x15 or 50x20	⊖
CRM	61X MGP6 A	0.0449	0.010	0.0125		0.0067	0.044	0.0041	0.0025	(0.001)	0.0091	0.0120	0.0043		0.0025	0.0209	0.0137	0.0238	0.0375		40x15 or 50x20	⊖
6.3		Mg/Mn																		Size (mm)		Form
		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Be	Cd	Ti	Ø x H			
CRM	63X MGE1 D	0.056	0.0514	0.492	<0.001	0.0486	0.040	0.0045	0.0091	(0.014)	0.0033	0.0413	0.0497	0.0010	0.0006	0.00036		0.00012		sold out	40x15 or 50x20	⊖
CRM	63X MGE2 B	0.0432	0.0245	1.75		0.0203	0.019	0.0020	0.0035	0.0015	0.0024	0.0020	0.0090				0.0009				40x15 or 50x20	⊖
CRM	63X MGE3 B	0.015	0.022	2.36	<0.001	0.012	(0.009)	0.004	0.0023	0.13	0.0055	0.005					0.0009	<0.001			40x15 or 45x20	⊖
6.4		Mg/Al																		Form		
		Al	Zn	Mn	Cu	Si	Fe	Ni	Sn	Pb	Be	Ce	La	Nd								
CRM	64X MGQ1 A	1.083	0.235	0.377	0.0840	0.062	0.0034	0.0041	0.0195	0.0199	0.00036	.....	.....	.....	AZ10A				40x15 or 50x20	⊖		
CRM	64X MGQ2 A	4.53	0.107	0.378	0.0151	0.051	0.0041	0.0061	0.0107	0.0107	0.0013	.....	.....	.....	AM50A				40x15 or 50x20	⊖		
CRM	64X MGQ3 A	8.66	0.0039	0.206	0.0349	0.083	0.0090	0.0032	0.0019	0.0022	0.0041	.....	.....	.....	AM90A				40x15 or 50x20	⊖		
CRM	64X MGQ4 A	6.50	0.188	0.183	0.310	0.067	0.0040	0.0068	0.0282	0.0322	0.00029	.....	.....	.....	AM60A				40x15 or 50x20	⊖		
CRM	64X MGQ5 A	5.76	0.0465	0.276	0.0072	0.052	0.0043	0.0010	0.0050	0.0056	0.0013	.....	.....	.....	AM60B				40x15 or 50x20	⊖		
CRM	64X MGQ6 A	2.31	0.072	(0.26)	0.0045	(0.97)	(0.004)	0.0026	0.0055	0.0060	0.0007	.....	.....	.....	AS21A				Mn and Si segregation	40x15 or 50x20	⊖	
CRM	64X MGQ7 A	4.02	0.061	(0.43)	0.0167	(1.05)	0.0028	0.0053	0.0096	0.0126	0.00042				AS41A					Mn and Si segregation	40x15 or 50x20	⊖
CRM	64X MGQ8 A	1.030	0.0442	0.700	0.0019	0.045	0.0018	0.0004	0.0022	0.0008	0.00015	.....	.....	.....	AZ10-mod				40x15 or 50x20	⊖		
CRM	64X MGQ9 A	2.14	0.243	0.0684	0.0104	(0.37)	0.0069	0.0020	0.0076	0.0096	0.0015	0.111	0.083	0.114	AS21B				Si segregation	40x15 or 50x20	⊖	
6.5		Mg/Al/Zn																		Size (mm)		Form
		Al	Zn	Mn	Cu	Si	Fe	Ni	Sn	Pb	Be	Ca	Ag	Ce	La	Cd	Sr	Hg	Ø x H			
CRM	65X MGA1 J **	5.45	1.26	0.060	0.221	0.20	0.021	0.021	0.072	0.012	0.006	0.029	0.012	0.009	0.007	0.013	++ unsuitable for use with glow-discharge			45 x 20	⊖	
CRM	65X MGA5 A	8.00	0.411	0.401	0.0195	0.110	0.006	0.0201	0.0124	0.042	0.0013	(0.014)	0.0050	.....	.....	0.0035	0.0004	.....	.....	40x15 or 50x20	⊖	
CRM	65X MGA11 A	3.63	1.59	0.044	0.0496	0.022	0.0048	0.0134	0.093	0.0190	0.0021	0.102	(0.0002)	(0.0005)	(0.0005)	0.0014	.....	0.006	.....	40x15 or 50x20	⊖	
CRM	65X MGA12 A	5.68	3.18	0.198	0.266	0.0142	0.0053	0.0148	0.0021	0.010	(0.0036)	0.037	0.0128	0.0009	0.0007	0.0121	.....	(0.016)	.....	40x15 or 50x20	⊖	
CRM	65X MGA13 A	7.45	0.925	0.092	0.125	0.022	(0.008)	0.0039	0.043	0.0085	(0.010)	0.0064	0.0074	0.0024	0.0021	0.0055	.....	(0.033)	.....	40x15 or 50x20	⊖	
CRM	65X MGA14 A	9.09	0.685	0.282	0.0102	0.080	0.008	0.0082	0.0085	0.006	0.0029	0.016	0.0016	0.0120	0.0111	0.0014	.....	(0.082)	.....	40x15 or 50x20	⊖	
CRM	65X MGA15 A	10.67	0.348	0.067	0.0273	0.034	0.010	0.0026	0.0021	0.0051	0.0062	(0.0014)	0.030	0.0069	0.0048	0.0034	.....	0.011	.....	40x15 or 50x20	⊖	
CRM	65X MGA16 A	6.78	4.03	0.271	0.099	0.023	0.0073	0.0057	0.028	0.050	0.0011	0.0024	0.0035	0.0017	0.0012	0.0066	.....	0.005	.....	40x15 or 50x20	⊖	
CRM	65X MGA17 A	4.20	0.128	0.203	0.0215	0.33	0.0069	0.0141	0.0050	0.0009	.....	0.021	0.0064	.....	.....	0.0049	.....	.....	.....	40x15 or 50x20	⊖	
CRM	65X MGA18 A	6.75	0.502	0.192	0.052	0.043	0.0081	0.0074	0.0114	0.0244	0.00051	.....	.....	.....	.....	.....	.....	.....	AZ61A	40x15 or 50x20	⊖	
CRM	65X MGA19 A	8.97	2.17	0.322	0.0426	0.196	0.0085	0.0065	0.0489	0.0489	0.00025	.....	.....	.....	.....	.....	.....	.....	AZ92A	40x15 or 50x20	⊖	
CRM	65X MGA20 A	5.87	1.32	0.067	0.0131	0.052	0.0078	0.0025	0.0320	0.0075	0.0018	.....	.....	.....	.....	.....	.....	.....	AZ61A	40x15 or 50x20	⊖	
CRM	65X MGA21 A	12.37	5.11	0.0777	0.0020	0.028	0.0140	0.0010	0.0063	0.0048	0.0006	.....	.....	.....	.....	.....	.....	.....	AZ125A	40x15 or 50x20	⊖	
CRM	65X MGA22 A	8.62	0.89	0.40	0.078	0.085	0.0060	0.0058	0.0033	0.0038	0.0006	.....	.....	.....	.....	.....	.....	.....	AZ91A	40x15 or 50x20	⊖	
CRM	65X MGA23 A	9.75	0.555	0.130	0.0155	0.027	0.0085	0.0011	0.0024	0.0019	0.0024	.....	.....	.....	.....	.....	.....	.....	AZ91D	40x15 or 50x20	⊖	

() Indicates non-certified value.

[] Provisional value, certification in progress.

6. Magnesium Base																		Updated: 6th November 2012		Blocks / Discs	
6.5 Mg/Al/Zn - continued																		Size (mm)		Form	
																		Ø x H			
		Al	Zn	Mn	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Be	Cd	Ti				
	66X MGB1 C	2.34	4.74	0.64	0.495	0.44	0.006	0.042	0.004	0.042	0.043	0.03	0.040	0.040	0.0006	0.07	---	Sold Out	40 x 15	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)	See note below	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)		Form	
																		Ø x H			
		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Ce	La	Nd	Be	Sr			
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 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	---	See note below	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	
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.																					
6.8 Mg/Ag/Rare Earth																		Size (mm)		Form	
																		Ø x H			
		Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Sn	Pb	La	Ag	Ce	Nd	Pr	Total R.E.				
	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.																					
Samples marked ** may be unsuitable for use with glow discharge analysers.																					

() Indicates non-certified value.

[] Provisional value, certification in progress.

Updated: 5th November 2012

Discs

() Indicates non-certified value.
[] Provisional value, certification in progress.

7. Tin Base		Updated: 6th November 2012																				Blocks / Discs			
7.1 Tin with Impurities		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	Cr	Co	In	Au	Te	Se	S	Ga	Ge	Hg	Size (mm) Ø x H	Form	
CRM	71X PB3 A	0.0022	0.0103	0.0024	2.77	0.0074	.....	0.0008	0.0016	.....	.....	0.0011	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
CRM	71X PB4 A	0.0045	(0.002)	0.0059	4.00	0.0014	.....	0.0027	0.0063	.....	.....	0.0047	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
CRM	71X SR0 C **	0.0010	0.0025	0.0045	0.035	0.007	0.003	0.0027	0.005	0.0024	0.041	0.0024	.....	0.0006	0.009	0.0012	0.0018	0.0005	0.001	0.0055	.....	0.011	40 x 15	C	
CRM	71X SR1 E	0.0102	0.0107	0.0156	0.0324	0.0111	(0.0021)	0.0104	0.0146	0.0041	(0.0016)	0.0212	.....	.....	0.0120	0.0014	0.0112	(0.0015)	.....	0.0049	.....	0.0142	40 x 15	C	
CRM	71X SR2 F	0.0070	0.0403	0.074	0.151	0.116	0.0133	0.0351	0.0058	0.0183	0.0022	0.0305	0.0031	.....	0.0597	0.0077	0.0246	.....	.....	.....	0.009	0.140	40 x 15	C	
CRM	71X SR3 F	0.097	0.123	0.128	0.306	0.121	0.0203	0.100	0.054	0.0371	(0.0014)	0.050	.....	.....	0.104	0.0145	0.070	0.0031	.....	0.0339	.....	0.115	40 x 15	C	
** provisional values																									
7.2 Tin with Antimony		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn													Size (mm) Ø x H	Form		
	72X SA4R B	0.03	0.1	4.0	0.08	0.02	0.1	0.003	0.007													40 x 15	C		
	72X SA5R B	0.02	0.005	5.0	0.025	0.005	0.003	0.02	0.001													40 x 15	C		
7.3 Tin White Metals (Pewter, Babbitt)		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	Co	In	S	P							Size (mm) Ø x H	Form	
CRM	73X SC1 A	0.008	0.084	1.48	0.067	2.02	0.0025	0.006	0.003	0.0041	0.0025	0.010	<0.001	0.008	<0.002	.....							40 x 15	C	
CRM	73X SC2 A	0.035	0.62	3.07	0.029	1.06	0.030	0.036	0.003	0.0048	(0.002)	0.006	0.021	(0.002)	<0.001	.....							40 x 15	C	
CRM	73X SC3 A	0.029	0.020	4.60	0.040	0.222	0.017	0.024	0.0014	0.0136	0.001	0.013	0.006	0.031	(0.002)	.....							40 x 15	C	
CRM	73X SC4 B	0.0268	0.153	5.94	0.429	2.63	0.0014	0.0085	(0.001)	0.0130	(0.002)	0.0525	0.0020	0.0143	.....	0.005							40 x 15	C	
CRM	73X SC5 A	0.013	0.43	7.03	0.136	0.57	0.004	0.008	0.001	0.0058	0.003	0.063	0.011	0.036	(0.001)	.....							40 x 15	C	
CRM	73X SC6 A	0.204	0.115	0.092	0.100	5.17	0.007	0.0125	0.01	0.013	(0.003)	0.08	0.0050	0.058	(0.004)	.....							40 x 15	C	
CRM	73X SC7 B **	0.060	0.011	14.0	0.315	5.75	0.042	0.0020	0.005	0.017	<0.001	0.005	0.014	0.018	<0.001		** provisional values							40 x 15	C
CRM	73X SC8 B	0.11	0.0531	5.52	0.110	3.78	0.055	0.098	0.004	0.0351	(0.001)	0.0253	0.0267	0.0325	0.004	.....							40 x 15	C	
CRM	73X SC9 A	0.53	0.066	8.18	0.20	8.47	0.037	0.078	(0.003)	0.008	<0.001	0.004	0.0030	0.010	(0.008)	.....							40 x 15	C	
CRM	73X SC11 B	0.292	0.560	12.01	0.061	11.18	0.011	1.75	0.063	0.452	0.0025	0.066	.....	.....	.....	0.019							40 x 15	C	
CRM	73X SC12 B	(0.034)	0.0301	7.50	0.091	6.03	0.024	0.758	0.0210	0.115	0.0015	0.842	0.0210	.....	.....	.....							40 x 15	C	
CRM	73X SC13 A	0.054	0.0188	4.21	0.259	4.19	0.053	0.0021	0.0126	.....	(0.01)	.....	.....	.....	.....	(0.02)							40 x 15	C	
7.4 Tin Lead-Free Solders		As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	P	Se	Au	Co	Ge	In					Size (mm) Ø x H	Form	
CRM	74X AM F	0.0038	0.190	1.064	0.126	3.07	(0.001)	0.0061	(0.006)	0.0260	(0.001)	0.496	(0.002)	(0.001)	.....	.....	.....	0.0082					40 x 15	C	
CRM	74X E F	0.0092	0.0099	0.0168	0.0248	2.94	0.0008	0.0003	(0.005)	0.0069	(0.001)	0.667	(0.001)	0.0008	.....	.....	.....	0.0074					40 x 15	C	
CRM	74X HA G	0.0032	0.0639	2.10	0.077	0.629	0.0029	0.0018	2.73	0.0133	(0.002)	2.80	(0.001)	(0.001)	.....	.....	.....	0.0090					40 x 15	C	
CRM	74X HB G	0.045	0.038	4.81	0.056	4.49	0.0138	0.0103	(0.02)	1.22	(0.003)	0.086	(0.002)	0.0038	.....	.....	.....	0.0179					40 x 15	C	
CRM	74X HN E	0.010	0.122	0.037	0.0404	3.82	0.010	0.0057	(0.0009)	0.185	0.005	0.143	(0.002)	0.0016	.....	.....	.....	.....					40 x 15	C	
CRM	74X TC F	0.024	0.106	0.124	0.183	4.99	0.0031	0.0150	0.004	0.0167	(0.001)	0.039	(0.002)	0.0473	.....	.....	.....	0.0215					40 x 15	C	
CRM	74X BZ1 A	0.0119	3.03	0.031	0.0238	0.026	0.011	0.0012	8.27	0.0097	0.0021	0.004	.....	.....	.....	.....	.....	.....					40 x 15	C	
CRM	74X AB1 A	0.0280	0.997	0.0111	0.0353	0.0285	0.0435	0.0199	.....	0.0036	.....	3.58	.....	.....	0.0010	0.0032	.....	0.0262					40 x 15	C	
CRM	74X GE1 A	.....	.....	.....	0.0339	0.662	.....	0.0059	.....	0.0289	0.065	0.052	.....	.....	.....	.....	0.046	.....					38 x 13	C	
CRM	74X GE2 A	.....	.....	.....	0.0467	0.713	.....	0.0086	.....	0.031	0.068	0.079	.....	.....	.....	.....	0.479	.....					38 x 13	C	

() Indicates non-certified value.

[] Provisional value, certification in progress.

7. Tin Base		Updated: 6th November 2012																		Blocks / Discs		
7.4	Tin Lead-Free Solders	As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	P	In	Au	Se	Co	Hg	Ge	Size (mm) Ø x H	Form	
CRM	74X OA A	0.080	1.065	0.0098	0.128	3.41	0.007	0.00063	(0.002)	0.0025	(0.001)	0.100	0.0072	0.0034	(0.0001)	.....	.....	.....	.....	40 x 15	C	
CRM	74X WS A	0.0105	0.0063	1.49	0.037	4.58	(0.004)	0.00140	0.0009	0.0048	(0.001)	0.298	0.0122	0.0032	(0.0002)	.....	.....	.....	.....	40 x 15	C	
CRM	74X CA1 B	.....	0.0131	0.0169	0.077	0.682	.....	0.0071	.....	.....	0.0262	0.440	.....	.....	0.0053	.....	.....	.....	.....	40 x 15	C	
CRM	74X CA2 B	0.018	0.0365	0.079	0.0496	0.795	0.0023	0.0017	0.0005	0.0361	<0.001	3.50	0.010	0.0053	0.0009	0.0022	0.0019	0.0017	0.023	40 x 15	C	
CRM	74X CA3 B	0.0039	0.0156	0.0266	0.0491	0.0869	0.006	0.00045	0.0009	0.0077	0.0010	2.98	0.031	0.0042	0.007	.....	.....	.....	0.0093	40 x 15	C	
CRM	74X CA4 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 B **	0.013	0.005	0.125	0.041	1.18	0.0020	0.0027	0.0017	0.015	0.001	4.05	0.014	0.012	0.009	<0.001		0.0032		** provisional values	40 x 15	C
CRM	74X CA6 B **	0.012	0.009	0.0095	0.027	0.605	0.012	0.0005	0.0005	0.024	<0.001	0.300	<0.001	0.023	0.005	0.0006		0.004		** provisional values	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 B	0.0144	0.0172	0.0180	0.084	0.950	0.0043	0.0101	.....	0.0020	.....	2.47	0.010	0.0062	.....	.....	0.0202	0.101	0.0020	40 x 15	C	
CRM	74X CA9 A	0.0173	0.0364	0.076	0.038	0.097	0.0085	0.0015	0.0010	0.0039	0.0007	1.002	0.011	0.0165	0.0025				0.0049	40 x 15	C	

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Cookson Electronics Pig Tin Standards

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		Sn Cu	Al In	Sb Fe	As Pb	Bi Ni	Cd Ag	Co Zn
NF-54	Standard #1	Balance	0.0003*	0.0065	0.0105	0.0026	0.0003	0.002*
		0.0107	0.0053	0.003**	0.023	0.0018	0.006	0.0002*
	Standard #2	Balance	0.008*	0.011	0.082**	0.0046	0.0006	0.002
		0.047	0.013	0.014**	0.148	0.0033	0.010	0.0001*
	Standard #3	Balance	0.018*	0.020	0.13	0.010	0.0009	0.008
		0.15	0.02	0.018*	0.41	0.012	0.032	0.001*
	Standard #4	Balance	--	0.045	0.27	0.022	0.005	0.02
		0.29	0.043	0.023*	0.72	0.024	0.063	0.0003*
	Standard #5	Balance	--	0.095	0.47	0.038	0.01	--
		0.52	0.098	--	1.0	--	0.10	0.016*
	Standard #6	Balance	--	0.0024	0.0007	0.0006	--	--
		0.0011	0.0005	--	0.006	--	0.0010	0.0003

* Severe Segregation Noted
** Slight Segregation Noted

8. Lead Base

Updated: 5th November 2012

Blocks / Discs

8.1 Binaries: Pb/Sb, Pb/As & Pb/Mg													Size (mm)		Form								
		Sb	As	Mg										Ø x H									
CRM	81X PA0.5 C	0.481	.....	.....										40 x 15		⊙							
CRM	81X PA1.0 C	0.989	.....	.....										40 x 15		⊙							
CRM	81X PA2.0 D	1.996	.....	.....										40 x 15		⊙							
CRM	81X PA3.5 E	3.49	.....	.....										40 x 15		⊙							
CRM	81X PA7.0 D	7.02	.....	.....										40 x 15		⊙							
CRM	81X PA10.0 C	9.60	.....	.....										40 x 15		⊙							
CRM	81X PA12.5 D	12.72	.....	.....										40 x 15		⊙							
	81X PAs1 A	.....	1.25	.....										40 x 15		⊙							
	81X PMg1 A	.....	.....	1.15										40 x 15		⊙							
	81X PMg2 A	.....	.....	0.173										40 x 15		⊙							
	81X PMg3 A	.....	.....	0.023										40 x 15		⊙							
8.2 Pb/Ag		Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Fe	In	Al	Size (mm)		Form								
													Ø x H										
CRM	82X PAg 1.5R E	0.036	0.386	0.065	0.27	0.005	1.55	(0.004)	.....	.....	.....	.....	40 x 15		⊙								
CRM	82X PAg 2.5R D	0.082	0.246	0.13	0.26	0.009	2.21	(0.0024)	.....	.....	.....	.....	40 x 15		⊙								
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		⊙								
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		⊙								
	82X PAg0.7 A	.....	.....	.....	.....	.....	0.733	.....	.....	.....	.....	.....	40 x 15		⊙								
	82X PAg0.9 A	.....	.....	.....	.....	.....	0.903	.....	.....	.....	.....	.....	40 x 15		⊙								
8.3 Lead with Impurities		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	Na	Hg	Pt	S	Size (mm)		Form
																					Ø x H		
CRM	83X PR1 J	0.0059	0.0048	0.0551	0.0039	0.0287	0.123	(0.0007)	0.006	0.0932	0.0356	0.0004	0.0016	(0.001)					(0.0016)		40 x 15		⊙
CRM	83X PR2 F	0.104	0.050	0.0310	0.0346	0.0235	0.0537		(0.0008)	0.0021	0.0012	0.0026	0.0114	(0.002)	0.0008	0.0012	0.0021	0.0041			40 x 15		⊙
CRM	83X PR3 F	0.050	0.095	0.162	0.0551	0.0017	0.0033		(0.0011)	0.0479	0.0069	0.0142	0.0021	0.0104	0.0041	0.0125	0.0026	0.0103			40 x 15		⊙
CRM	83X PR4 G	0.0112	0.0164	0.0187	0.0138	0.0054	0.0146			0.0083	0.0030	(0.0009)	0.0198	0.0053	(0.0023)	0.0033		0.044			40 x 15		⊙
CRM	83X PR5 E **	0.0002	0.0002	0.008	0.0002	0.0002	0.0001		0.0003	0.0004	0.0002	0.0002	0.0003	0.0004					** provisional values		40 x 15		⊙
CRM	83X PR7 B	0.189	0.795	0.479	0.176	0.051	0.290	(0.0008)	(0.0006)	0.455	0.653	(0.0015)	0.0097	0.0052				0.0047			40 x 15		⊙
CRM	83X PR8 C	0.603	0.259	1.186	0.066	0.155	0.505			0.211	0.224	0.0020	0.0011	0.0064	0.0082		0.0073	0.089			40 x 15		⊙
CRM	83X PR11 A	0.119	0.497	0.0117	0.0551	0.0095	0.0030	(0.0003)		0.0008		0.0011		(0.0001)		0.0042				0.009	40 x 15		⊙
CRM	83X PR12 A	0.0005	0.0011	0.0119	0.0353	(0.0003)	0.0030	(0.0003)		0.0011		0.0009		(0.0002)		0.0051				(0.0002)	40 x 15		⊙
8.4 Battery Alloys (Pb/Sn/Ca)		Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Ni	Al	Te	Ca	Hg	Size (mm)		Form						
															Ø x H								
CRM	84X BA1 J **	1.00	0.001	0.015	0.002	0.0005	0.010	0.007	0.0015	<0.001	0.022	<0.001	0.100		40 x 15		⊙						
CRM	84X BA2 D **	0.54	0.002	0.024	0.002	0.0005	0.004	0.025	0.0035	<0.001	0.016	<0.001	0.075		40 x 15		⊙						
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		⊙						
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		⊙						
CRM	84X BA7 B **	0.60	0.002	0.015	0.002	0.0005	0.0015	0.003	0.0005	<0.001	0.008	<0.001	0.040		40 x 15		⊙						
CRM	84X BA8 C	0.324	(0.0006)	0.0166	0.0007	0.0003	0.0046	0.0031	0.00065	(0.0002)	0.0283		0.125	0.0017	40 x 15		⊙						
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		⊙						
More battery alloys are on the next page																							

More battery alloys are on the next page

() Indicates non-certified value.

[] Provisional value, certification in progress.

8. Lead Base

Updated: 5th November 2012

Blocks / Discs

8.4 Battery Alloys (continued)																	Size (mm)	Form			
		Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Al	Ca								Ø x H		
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	
CRM	84X BA14 A **	0.96	0.001	0.015	0.001	<0.001	0.010	0.006	0.001	0.015	0.07	** provisional values							40 x 15	C	
CRM	84X BA20 A	0.299	0.0030	0.0194	.....	.....	0.0290	0.0438	0.0057	0.0483	0.334								40 x 15	C	
CRM	84X BA21 A	0.161	0.0091	0.0224	.....	.....	0.0122	0.0136	0.0057	0.0067	0.608								40 x 15	C	
CRM	84X BA22 A	0.108	0.00114	0.0162	.....	.....	0.0059	0.0053	0.00139	0.033	0.911								40 x 15	C	
CRM	84X BA23 A	0.170	0.0020	0.0163	.....	.....	0.0039	0.00218	0.00014	0.0229	1.21								40 x 15	C	
8.5 Various Lead Alloys																	Size (mm)	Form			
		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Au	Tl	S	Hg	Ø x H		
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 G	0.132	2.20	0.0202	0.0351	0.269	0.0046	.....	0.00047	0.0041	.....	0.0033	0.0063	0.0179	.....	.....	(0.0009)	.....	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 SSB C 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 C	0.245	2.99	0.129	0.108	0.248	0.0212	(0.0003)	.....	.....	.....	.....	0.0145	0.036	.....	.....	0.007	.....	40 x 15	C	
CRM	85X 0616Pb1 C	0.0045	1.59	0.0333	0.0143	0.060	0.0071	.....	0.0004	0.0016	.....	0.0011	0.0065	0.0087	.....	.....	.....	0.0010	40 x 15	C	
8.6 Lead Babbits																	Size (mm)	Form			
		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Pd	Ta						Ø x H	
CRM	86X PSS1 B	4.29	11.54	0.195	0.0249	0.554	0.0049	0.0018	0.0030	0.0057	0.0074	0.0100	0.0023							40 x 15	C
CRM	86X PSS2 B	7.00	8.04	0.0646	0.127	1.43	0.0179	(0.001)	0.031	0.066	0.0059	0.0165	0.0049							40 x 15	C
CRM	86X PSS3 B	9.39	14.13	0.0273	0.489	0.409	0.0140	0.0025	0.0030	0.0170	0.0111	0.0009		0.0050						40 x 15	C
CRM	86X PSS4 B	10.64	15.93	0.102	0.355	0.241	0.0264	0.0035	0.012	0.0539	0.0174	0.0010		0.0146						40 x 15	C

() Indicates non-certified value.

[] Provisional value, certification in progress.

9. Lead/Tin Solders																	Updated: 6th November 2012		Blocks / Discs	
9.1 Tin / Lead Solders		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Al	Te	Au	Hg	Size (mm) Ø x H	Form		
CRM	91X S10PR1 C	9.10	0.0278	0.0277	0.0097	0.0045	0.0078	(0.0016)	<0.001	0.0029	....	0.0006	....	....	....	....	40 x 15	C		
	91X S10PR2 C	10.38	0.51	0.15	0.05	0.04	0.05	0.003	0.03	0.007	....	0.003	....	....	....	....	40 x 15	C		
	91X S10PR3 B	11.97	0.26	0.23	0.12	0.02	0.03	0.002	0.003	0.011	....	(0.02)	....	....	....	....	40 x 15	C		
CRM	91X S10P D	10.07	(0.002)	(0.006)	(0.001)	(0.001)	(0.001)	<0.001	<0.0001	<0.0001	<0.001	<0.001	<0.001	....	....	....	40 x 15	G		
	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	G		
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	G		
	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	G		
CRM	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	G		
	91X S40PR2 D	40.68	0.596	0.154	0.085	0.010	0.086	0.0096	0.0275	0.0046	....	0.0050	....	....	....	....	40 x 15	G		
	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	G		
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	G		
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	G		
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	G		
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	G		
9.3 Tin / Lead / Antimony Solders		Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Size (mm) Ø x H		Form				
CRM	93X S30APR1 C	28.58	2.54	0.059	0.192	0.010	0.0144	(0.012)	(0.0004)	0.0014	0.0094	0.0010	0.0024	40 x 15		G				
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				
	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		G				
	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		G				
	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 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		G				

() Indicates non-certified value.

[] Provisional value, certification in progress.

9. Other Solders

Updated: 6th November 2012

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

Note: these are not CRMs

() Indicates non-certified value.

[] Provisional value, certification in progress.

4. Zinc Base																Updated: 6th November 2012		Blocks / Discs	
4.1 Residuals in Pure Zinc																Size (mm)		Form	
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	In	Hg	Ø x H			
CRM	41X Z1 P	0.0046	<0.0004	0.0004	0.0006	0.0024	0.0005	0.0040	0.0003	0.0002	0.0003	0.0002	0.0008	0.0002	0.0004	sold out	50 x 20	⊖	
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	⊖	
CRM	41X Z3 L	0.0080	0.0438	0.0464	0.0050	0.0022	0.0029	0.0066	0.0029	0.0029	0.0022	0.0045	0.0042	0.0040	(0.0043)	sold out	50 x 20	⊖	
CRM	41X Z4 L	0.0058	0.0033	0.0065	0.0044	0.0148	0.0022	0.0033	0.0032	0.0029	0.0032	0.0034	0.0028	0.0030	0.0025		50 x 20	⊖	
CRM	41X Z5 N	0.0286	0.0107	0.0243	0.0165	0.0262	0.0063	0.0109	0.0051	0.0049	0.0056	0.0054	0.0068	0.0057	0.0050	50 x 20	⊖		
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	⊖		
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	⊖		
4.1.1 Zinc with Impurities																Size (mm)		Form	
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	In	Ag	As	Ø x H		
CRM	41X 0336Zn1 L	1.007	0.0062	0.0177	0.0067	0.0106	0.0051	0.0088	0.0009	0.0102	....	....	....	....	....	0.0008	50 x 20	⊖	
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	⊖	
CRM	41X 0336Zn3 K	0.0282	0.147	0.336	0.341	0.0456	0.127	0.353	0.0022	0.0106	....	....	....	....	....	0.0003	50 x 20	⊖	
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	⊖	
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	⊖	
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	⊖	
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Cr	Si	Co	Size (mm)		Form
		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	⊖	
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	⊖	
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	⊖	
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	⊖	
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	⊖	
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	⊖	
CRM	41X 4380Zn7 D	1.18	0.0029	0.277	0.0156	0.0018	0.0036	0.0133	0.0120	0.0036	....	0.086	0.0065	....	....	....	50 x 20	⊖	
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	⊖	
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	⊖	
CRM	41X 4380Zn10 A	0.0043	0.184	0.0004	0.0007	0.49	0.0014	0.0022	0.063	....	....	0.0005	....	0.117	....	....	50 x 18	⊖	
4.1.2 Galvanising Alloys																Size (mm)		Form	
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	As	Cr	Co	V	Ø x H		
CRM	41X GLV1 C	0.0207	0.0008	0.202	0.0101	0.0041	0.0124	0.0184	0.0068	....	0.0040	0.0011	(0.0008)	....	0.00016	....	50 x 20	⊖	
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	⊖	
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	⊖	
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	⊖	
CRM	41X GLV5 B	0.0166	0.0014	0.0139	0.0136	0.0443	0.0172	0.0103	0.0025	....	0.0098	0.148	0.00044	....	0.0011	....	50 x 20	⊖	
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	⊖	
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	⊖	
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	⊖	
CRM	41X GLV9 A	0.0043	0.0014	0.547	0.0028	0.0039	0.0028	0.0037	0.0009	0.0027	0.0019	0.0048	....	....	0.0005	....	50 x 20	⊖	
CRM	41X GLV10 A	0.0066	0.0040	0.969	0.0030	0.0051	0.0062	0.0073	0.0022	0.0062	0.0031	0.0009	....	....	0.0002	....	50 x 20	⊖	
CRM	41X CGL F	0.046	....	0.28	(0.0015)	....	<0.001	(0.0005)	....	....	....	....	....	....	....	....	42-48 x 20	⊖	

() Indicates non-certified value.

[] Provisional value, certification in progress.

4. Zinc Base																	Updated: 6th November 2012		Blocks / Discs	
4.1.3 Zn/Mn, Zn/Mg, Zn/Ni & Zn/Sb Binaries																	Size (mm)		Form	
																	Ø x H			
	41X ZMn1 A	(0.0026)	(0.0001)	(0.0002)	(0.0025)	(0.0005)	(0.0009)	1.07	.....	.....	.....	.....	.....	.....	.....	.....	.....	50 x 20	C	
	41X ZMg1 A	.....	.....	.....	.....	.....	.....	.....	1.13	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
	41X ZMg3 A	.....	.....	.....	.....	.....	.....	.....	2.80	.....	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
CRM	41X ZNiBi A	0.0187	0.050	0.0020	0.0133	0.0132	2.02	.....	.....	.....	0.154	0.502	.....	.....	.....	.....	.....	50 x 20	C	
CRM	41X ZNi2 A	0.0172	0.0135	0.0010	0.0061	0.0056	1.97	.....	.....	.....	0.141	0.0050	.....	.....	.....	.....	.....	50 x 20	C	
	41X ZSb1 A	.....	.....	.....	.....	.....	.....	.....	.....	1.03	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
	41X ZSb4 A	.....	.....	.....	.....	.....	.....	.....	.....	3.78	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
	41X ZSb8 A	.....	.....	.....	.....	.....	.....	.....	.....	7.68	.....	.....	.....	.....	.....	.....	.....	40 x 15	C	
4.1.4 Special Alloys																	Size (mm)		Form	
																	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	
																	Ø x H			
CRM	41X ZSC1 A	0.0621	0.0288	0.026	0.0039	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50 x 20	C	
CRM	41X ZSC2 A	0.111	0.0016	0.0053	0.0036	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50 x 20	C	
CRM	41X ZSC3 A	0.0273	0.119	0.0021	0.0148	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50 x 20	C	
CRM	41X ZSC4 A	0.156	0.0131	0.050	0.0299	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50 x 20	C	
CRM	41X ZSC6 A	0.0077	0.215	0.029	<0.0002	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50 x 20	C	
4.2 Zn/Al																	Size (mm)		Form	
																	Ø x H			
CRM	42X Z1 J **	0.0018	0.0009	4.65	0.0015	0.014	0.0006	0.005	0.0013	0.0035	0.0012	0.0003	0.0015			0.0011	0.0008	** provisional values	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 J	0.0133	0.0663	3.52	0.0065	0.019	0.0052	0.0752	0.0170	0.0083		(0.0002)	0.006		0.0025	0.0361	0.0183		50 x 20	C
CRM	42X Z5 L	0.0051	0.0471	4.24	0.0027	0.021	0.0022	0.1095	0.0325	0.0023		(0.0002)		(0.001)	0.0037	0.0277	0.0138		50 x 20	C
CRM	42X Z6 B	0.0093	0.177	3.67	0.0039	0.008	0.0057	0.238	0.00030	0.0157	0.0169	0.0034	(0.010)	0.0021	0.0019	(0.012)	(0.011)		50 x 20	C
CRM	42X Z7 B	0.0097	0.0095	4.39	0.030	0.027	0.012	0.0249	0.0067	0.0045		(0.0001)	0.006			0.072	0.061		50 x 20	C
CRM	42X Z8 A	0.0025	0.0033	7.03	0.0003	0.013	(0.002)	0.0215	0.0019	0.0014		(0.0002)	0.013			0.0081	0.0079		50 x 20	C
CRM	42X Z9 A	0.0021	0.0464	5.58	0.0054	0.032	(0.0004)	0.0070	(0.0003)	0.0006			(0.004)			0.0047	0.0044	0.011	50 x 20	C
CRM	42X Z11 A	0.0058	0.0329	3.19	0.0020	(0.036)	0.0017	0.093	0.0241	0.0196	0.0047	0.0016		0.0047	0.0037	0.0014	(0.0009)		50 x 20	C
CRM	42X Z12 A	0.0079	0.0488	4.72	0.00277	0.046	0.0022	0.156	0.0413	0.0483	0.0070	0.00063		0.0076	0.0068	0.0116	0.0084		50 x 20	C
CRM	42X Z15 A	0.0074	0.0026	9.99	0.0023	0.026	0.0006	0.0028	0.0017	0.0037	0.0006	0.0003			0.0024				50 x 20	C
CRM	42X Z16 A	0.0090	0.105	12.28	0.0045	0.033	0.0034	0.235	0.0039	0.0028		0.0007	0.011	(0.003)	0.0051				50 x 20	C

() Indicates non-certified value.

[] Provisional value, certification in progress.

4. Zinc Base		Updated: 6th November 2012														Blocks / Discs				
4.3	Zn/Al/Cu	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Cr	Si	Be	Size (mm) Ø x H	Form		
CRM	43X Z1 K **	0.0037	0.026	4.45	0.0017	0.007	0.0018	0.715	0.0010	0.0013	0.0018	0.0007	.....	0.0006	.....	.....	** provisional values	50 x 20	C	
CRM	43X Z2 M	0.0106	0.0828	3.89	0.0053	0.0081	0.0099	1.004	0.0024	0.0086	0.0022	0.0068	0.0008	0.0063	0.011	.....	.....	50 x 20	C	
CRM	43X Z3 M **	0.0075	0.115	3.42	0.011	0.043	0.006	1.50	0.0061	0.0012	0.009	0.0030	.....	0.0045	.....	.....	** provisional values	50 x 20	C	
CRM	43X Z4 B	(0.0024)	0.043	4.76	0.0025	(0.064)	(0.0023)	3.21	0.0286	0.088	0.012	0.0043	0.0017	0.0063	(0.0065)	.....	.....	50 x 20	C	
CRM	43X Z5 A	0.0045	0.041	3.05	0.0111	0.023	0.0032	6.05	0.0021	0.0030	.....	.....	0.0009	0.0010	0.003	.....	.....	50 x 20	C	
CRM	43X Z6 B **	0.004	0.0235	4.50	0.0032	0.024	0.0052	2.88	0.0028	0.0022	0.0055	0.0045	.....	0.0005	.....	.....	** provisional values	50 x 20	C	
CRM	43X Z7 A	0.0058	0.062	3.68	0.00092	0.029	0.0031	3.14	0.0005	0.0025	(0.001)	0.0016	0.067	0.0003	.....	0.0194	(Beric Alloy)	50 x 20	C	
CRM	43X Z8 A	0.0027	0.00155	2.51	0.00090	(0.002)	(0.0005)	0.481	0.00033	0.00021	.....	.....	.....	0.00024	.....	.....	.....	50 x 20	C	
CRM	43X Z9 A	0.0078	0.0472	3.17	0.0034	0.073	0.0020	4.82	0.0027	0.0108	0.0033	0.0033	0.0012	0.0034	.....	0.0010	.....	50 x 20	C	
CRM	43X Z10 A	0.0046	0.0403	3.99	0.0014	0.007	0.0012	2.97	0.0036	0.0050	.....	.....	.....	0.0003	0.009	.....	.....	50 x 20	C	
CRM	43X Z11 E	0.0305	0.053	11.61	0.0224	0.0091	0.0206	0.515	0.0014	0.0089	0.0035	0.0091	0.013	0.0010	0.020	.....	.....	50 x 20	C	
CRM	43X Z12 E **	0.0042	0.029	10.4	0.0047	0.036	0.0017	0.790	0.0032	0.0025	0.0020	0.0035	0.005	0.0008	0.003	.....	** provisional values	50 x 20	C	
CRM	43X Z13 D	0.0125	0.0204	9.55	0.0100	0.05	0.0111	0.981	0.0109	0.0070	.....	0.009	.....	.....	(0.0048)	.....	.....	50 x 20	C	
CRM	43X Z14 E	0.015	0.0133	8.05	0.0083	0.031	0.0054	1.13	0.0066	0.0050	0.0096	0.0089	0.0014	0.0047	0.016	.....	.....	50 x 20	C	
CRM	43X Z15 C	0.0054	0.0024	7.36	0.0030	0.009	0.004	1.53	0.0019	0.0020	0.005	0.005	0.0020	0.0025	(0.011)	.....	.....	50 x 20	C	
CRM	43X Z21 C	0.012	0.047	23.5	0.027	0.12	0.0140	1.81	0.043	0.0104	.....	.....	0.013	0.0087	0.022	.....	.....	50 x 20	C	
CRM	43X Z22 D **	0.0055	0.010	27.4	0.0042	0.070	0.0015	2.10	0.010	0.0055	.....	.....	0.0075	0.0010	0.020	.....	** provisional values	50 x 20	C	
CRM	43X Z23 E	0.0112	0.0242	30.7	0.0042	0.055	0.0115	3.22	0.0236	0.0090	.....	.....	0.0045	0.0147	0.077	.....	.....	50 x 20	C	
																		Form		
		Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Cr	Si	Ce	La						
CRM	43X SC1 A	0.0150	0.740	3.75	0.0011	0.073	0.0082	1.903	0.0161	0.0201	0.0082	0.022	.....	.....	.....	.....	50 x 20	C		
CRM	43X SC2 A	0.0097	0.498	3.41	0.0018	0.046	0.0031	4.80	0.0096	0.0183	0.023	0.0133	.....	.....	.....	.....	spin-casting alloys	50 x 20	C	
CRM	43X SC3 A	0.0066	0.257	3.14	0.0028	0.018	0.0078	3.03	0.0261	0.0337	0.0108	0.022	.....	.....	.....	.....	50 x 20	C		
CRM	43X SC4 A	0.0064	0.093	4.35	0.0058	0.022	0.0056	1.122	0.0249	0.044	0.009	0.022	.....	.....	.....	.....	50 x 20	C		
CRM	43X GALF1 A	0.0505	0.0999	4.68	0.0499	0.061	0.0514	4.39	.....	.....	.....	.....	0.0569	0.0284	.....	.....	50 x 20	C		
CRM	43X GALF2 A	0.0050	0.0504	5.40	0.0043	0.032	0.0040	0.0585	.....	.....	.....	.....	0.0318	0.0158	.....	.....	50 x 20	C		
CRM	43X GALF3 A	0.0032	0.0099	8.37	0.0018	0.018	0.0025	0.507	.....	.....	.....	.....	0.0152	0.0076	.....	.....	galvan-type alloys	50 x 20	C	
CRM	43X GALF4 A	0.0122	0.0062	10.71	0.0108	0.074	0.0110	2.470	.....	.....	.....	.....	0.079	0.041	.....	.....	50 x 20	C		
CRM	43X GALF5 A	0.0084	0.0016	15.03	0.0080	(0.072)	0.0081	0.0114	.....	.....	.....	.....	0.0041	0.0019	.....	.....	50 x 20	C		
4.4	High Alloy Zinc	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Bi	Sb	Ag						Size (mm) Ø x H	Form	
	44X ZnCd30 A	0.09	.....	.....	31.0	0.002	0.05	0.05	0.001	0.05	1.03	0.05						40 x 15	C	
4.5	Zn/Al 'Galvalume'	Zn	Si	Fe	Cu	Sn	Pb	Mg	Ca	Ti	Li	Sr	Al						Size (mm) Ø x H	Form
	45X ZnAl1 B	24.6	3.07	0.22	0.057	0.017	0.021	0.044	0.0021	0.016	0.0015		bal.						55 x 6	CC
	45X ZnAl7 A	46.2	1.47	0.183	0.031	0.010	0.039	0.043		0.0073		0.011	52.1						55 x 6	CC
	45X ZnAl11 A	27.4	2.21	0.139	0.037	0.008	0.010	0.011	0.0020	0.012	(0.001)		bal.						55 x 6	CC

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IRMM Impurities in Zinc Metal

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Part #	Grade	Al	Cd	Cu	All Values in mg/kg		Mg	Ni	Pb	Sn	Ti	Size (mm)	
					Fe	In						Ø	H
BCR-351	ZnAl4	43.55	(0.21)	12.13	---	---	131.0	(1.9)	4.50	---	0.74	80	x 20
BCR-352	ZnAl4	41.50	2.88	31.26	---	3.02	283.0	6.74	(6.4)	6.0	3.2	80	x 20
BCR-353	ZnAl4	39.5	10.44	100.0	---	2.55	452.5	---	24.4	5.60	3.95	80	x 20
BCR-354	ZnAl4	37.27	29.7	312.3	---	9.8	602	83.1	30.8	14.1	11.01	80	x 20
BCR-355	ZnAl4	34.43	58.1	1035	---	24.6	786	268	56.9	29.1	23.25	80	x 20
BCR-356	ZnAl4Cu1	44.34	0.73	3.944	31.5	---	132.3	3.43	9.87	(0.32)	0.79	80	x 20
BCR-357	ZnAl4Cu1	42.27	2.83	5.849	25.7	3.30	273	9.82	13.8	3.51	2.76	80	x 20
BCR-358	ZnAl4Cu1	39.46	10.22	7.93	40.5	7.04	403	26.98	22.5	7.87	6.09	80	x 20
BCR-359	ZnAl4Cu1	37.11	29.8	9.89	119.7	15.5	557	92.6	36.2	16.93	13.34	80	x 20
BCR-360	ZnAl4Cu1	34.27	59.50	12.340	---	29.80	705.0	267.00	73.90	33.00	25.90	80	x 20
BCR-361	ZnAl4Cu1	40.68	(0.80)	7.98	10.34	---	---	---	5.31	46.3	37.4	80	x 20

IRMM Zirconium Alloys

Please call for availability and current pricing – (603) 935-4100 or (800) 421-9454

Part #	Grade	O	N	C	Form
BCR-275	Zircaloy-4	1670	39.0	113	1 bottle of 10 discs 13mm x 1mm
BCR-276	Zircaloy-4	1540	41	108	1 bottle of approximately 100 discs 4.5mm x 2mm

() Indicates non-certified value.

Set-Up Standards (SUSs)

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

Cast Irons

IARM Status	Grade	Al Ni	As P	B Pb	Bi S	C Sb	Co Si	Cr Sn	Cu Ti	Mg V	Mn W	Mo Zn	Nb Zr
215A Final	QA 21	(0.037) (0.9)	--- (0.3)	--- ---	--- (0.13)	(3.5) ---	--- (2.1)	(0.6) (0.17)	(0.6) (0.07)	--- (0.5)	(1.3) ---	(0.5) ---	---
216A Final	QA 22	(0.06) (2)	(0.03) (0.026)	(0.037) (0.005)	(0.004) (0.001)	(3) (0.06)	(0.6) (3)	(1.5) (0.04)	(0.08) (0.007)	(0.08) (0.03)	(0.3) (0.043)	(0.004) (0.01)	(0.3) (0.05)

LAS

IARM Status	Grade	Al P	As Pb	B S	C Sb	Ca Si	Co Sn	Cr Ta	Cu Ti	Mn V	Mo W	N Zn	Nb Zr	Ni Fe
217A Final	QA A	(0.0002) (0.002)	(0.003) (0.004)	(<0.0001) (0.001)	(0.01) (0.006)	(0.0001) (0.01)	(0.004) (0.0005)	(0.01) (0.01)	(0.001) (0.0001)	(0.003) (0.002)	(0.01) (0.005)	(0.0005) (<0.0001)	(0.001) (0.005)	(0.01) >99.9
218A Final	QA C	(0.003) (0.1)	(0.1) (<0.001)	(0.0004) (0.07)	(0.05) (0.02)	(<0.0001) (0.1)	(0.01) (0.1)	(0.1) (0.02)	(0.6) (0.01)	(2) (1)	(0.1) (0.7)	(0.007) (<0.001)	(<0.0001) (<0.00)	(5) >89.8
219A Final	QA D	(0.2) (0.003)	(0.01) (0.003)	(0.01) (0.002)	(0.9) (0.1)	(<0.0001) (2)	(1) (0.06)	(5) (0.01)	(0.6) (1.7)	(0.02) (0.3)	(1.5) (0.01)	(0.002) (0.01)	(0.4) (0.002)	(2.8) >83.3

Aluminum

IARM Status	Grade	Ag Mn	B Na	Be Ni	Bi P	Ca Pb	Cd Si	Cr Sb	Co Sn	Cu Sr	Fe Ti	Ga V	Li Zn	Mg Zr
220F Final	QA 10	--- (<0.0001)	(<0.0001) (<0.0001)	(<0.0001) (<0.0001)	(<0.0001) (0.0001)	(<0.0001) (<0.0001)	(<0.0001) (0.0003)	(<0.0001) (0.0001)	(<0.0001) (0.0001)	(0.0002) (<0.0001)	(0.0003) (<0.0001)	(<0.0001) (0.0001)	(<0.0001) (0.0002)	(0.0002) (0.0001)
221A Final	QA 11	--- (0.4)	--- ---	(0.005) ---	--- ---	(0.03) ---	--- (0.2)	(0.2) (0.01)	(0.2) ---	(0.6) ---	(0.2) (0.1)	(0.03) ---	--- (6.7)	(4.8) ---
221B Final	QA 11	--- (0.4)	--- ---	(0.005) ---	--- ---	(0.03) ---	--- (0.2)	(0.2) (0.01)	(0.2) ---	(0.6) ---	(0.2) (0.1)	(0.03) ---	--- (6.8)	(4.8) ---
221C Final	QA 11	--- (0.4)	--- ---	(0.005) ---	--- ---	(0.03) ---	--- (0.2)	(0.2) (0.01)	(0.2) ---	(0.6) ---	(0.2) (0.1)	(0.03) ---	--- (6.8)	(4.8) ---
221D Final	QA 11	--- (0.4)	--- ---	(0.005) ---	--- ---	(0.03) ---	--- (0.2)	(0.2) ---	(0.2) ---	(0.6) ---	(0.2) (0.1)	(0.03) ---	--- (6.7)	(4.8) ---

() and < > Indicates non-certified value.

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MBH Set-Up Samples (SUSs)

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16. Setting Up Samples		Updated: 6th November 2012																				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	C	Si	S	P	Mn	Ni	Cr	Mo	Cu	Sn	Al	Ti	V	W	As	Co	Nb	Pb	Bi	Sb	Zn	Zr	Size (mm) Ø x H	Form	
	162X 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	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	Cr	Co	Be	Sb	Ca	Sr	Zr	Ag					Size (mm) Ø x H	Form	
	164X ALSUS7	4	0.15	0.9	0.55	0.06	1.1	0.12	0.11	0.01	0.3	0.01	0.2	0.1	0.12	<0.001	0.003	0.18	....					50 x 25	C	
	164X ALSUS8	0.75	0.9	9.5	0.25	0.45	0.12	0.25	0.001	0.13	0.02	0.06	0.025	0.015	0.03	<0.001	0.07	0.025	0.09					50 x 25	C	
16.5.1	Pure Copper	All Elements ppm																							Size (mm) Ø x H	Form
		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	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Cr	Co	Mg	Cd	Se	Cu					Size (mm) Ø x H	Form
	165X MNB5 SUS	1.6	0.20	38	0.55	1.1	3.2	0.40		0.20										55					40 x 17	CC
	165X PB10 SUS	11.0	0.04	0.05	0.002	0.06	0.001	0.001	0.02	<0.001	0.02	0.15	0.002	0.03	0.001	0.01			0.01	89					42 x 18	CC
	165X ALB1 SUS	0.03	0.20	0.06	2.8	5.3	9.0	0.10	0.005	0.08	0.015		0.015		0.01		0.04			82					40 x 18	CC
16.6	Magnesium	Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Sr								Size (mm) Ø x H	Form	
	166X MGSUS2	8	0.4	0.4		0.02	0.12	0.005	0.02	0.015	0.01	0.04	0.005	0.002	0.004	3E-04								40 x 40	C	

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16. Setting Up Samples

Updated: 6th November 2012

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.

16.8	Lead	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	In	Ni	Te	Se	Tl	Au	S	Hg	Size (mm) Ø x H	Form			
	168X PBSUS1	1.3	6.2	0.04	0.03	0.37	0.01	0.002	0.001	0.015	0.01	0.003	0.01	0.01	0.001	0.001	0.002	.....	45 x 30	C			
	168X PBSUS5	0.9	0.35	0.35	0.06	0.35	0.2	<0.001	.....	0.09	0.08	0.001	0.003	.....	0.002	0.0005	0.0005	0.02	50 x 25	C			
	168X PBSUS6	0.15	0.12	0.22	0.10	0.025	0.04	<0.001	0.002	0.015	0.01	0.003	0.0005	0.003	0.03	0.001	0.0005	.....	45 x 35	C			
16.8.1	Lead for fire assay	ppm Pb	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			
16.9	Zinc	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Bi	Sb	Ti	Tl	In	Ag	Cr	Si	Size (mm) Ø x H	Form			
	169X ZN SUS1	0.6	0.002	0.35	0.3	0.05	0.3	0.35	0.06	0.001	0.005	0.2	0.001	0.06	0.25	0.04	0.001	0.003	50 x 20	C			
16.90	Zinc control sample	Pb	Mg	Al	Cd	Fe	Sn	Cu											Size (mm) Ø x H	Form			
	1690X ZnChk1	0.005	0.02	4	0.005	0.025	0.003	1.2											50 x 20	C			
	1690X ZnChk2	2	<0.001	0.01	0.12	0.75	1	0.42											50 x 20	C			
16.11	Tin	As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	Co	In	Au	Se	Te	Tl	Pt	Size (mm) Ø x H	Form		
	1611X SNSUS6	0.3	0.08	0.15	1.0	0.4	0.03	0.01	0.005	0.03		0.1	0.02	0.005	0.001	0.003	0.001	0.005		50 x 20	C		
	1611X SNSUS7	2.3	2.6	11.1	0.32	12.3	(0.05)	0.018	0.03	0.10	<0.001	0.12	0.0005	0.050	0.0005	0.005	0.003	0.03	0.0005	50 x 20	C		
16.12	Cobalt	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Al	Nb	Cu	B	Sn	Pb	Ta	Ti	V	Co	Size (mm) Ø x H	Form
	1612X COSUS1	1.0	1.6	0.07	0.05	1.7	17	26	8.0	3.5	6.5	1.5	2.2	0.15	0.01	0.08	0.01	0.02	0.20	0.25	~30	43 x 20	C

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Heavy Metals in Plastic RMs - XRF Analysis

European Communion (EC) directives have defined specific limits for heavy metals in plastic. Sets of PE and PVC have been designed for screening heavy metals to check for compliance with these limits.

These sets of reference materials consist of 3 individual discs. Each disc is 31 mm in diameter and at least 12.9 mm thick. The overall error of concentration of the added element is estimated at less than 4% relative at a 95% confidence level, except, below 100 mg/kg, the estimated error is 5 mg/kg absolute at a 95% confidence level.

There are many various additives combined with different plastics or polymers to give specific properties. XRF is often used to monitor these products. If you have a specific or special application need, please contact us for the possibility of custom made reference materials.

These RMs are sold as sets only.

Heavy Metals in PE

Element	PE-High	PE-Low	PE-Blank
	Amount added, (mg/kg)	Amount added, (mg/kg)	Amount added, (mg/kg)
Br	1100	500	0
Hg	1100	200	0
Cr	1000	400	0
Pb	1200	400	0
Cd	300	100	0

Heavy Metals in PVC

Element	PVC-High	PVC-Low	PVC-Blank
	Amount added, (mg/kg)	Amount added, (mg/kg)	Amount added, (mg/kg)
Br	1100	500	0
Hg	1100	200	0
Cr	1000	400	0
Pb	1200	400	0
Cd	300	100	0

Every effort is made to assure the high quality of these standards and their data. The use of these standards and the interpretation of the results is the sole responsibility of the user.

LABORATORY PROFICIENCY TESTING PROGRAM

"Let ARMI be a cornerstone member of your Quality Team!"

In support of "Total Quality Assurance" programs, Analytical Reference Materials International (ARMI) developed its Laboratory Proficiency Testing (PT) Program in 1991. Having been in the business of CRM characterization, statistical evaluation, and certification of standards for many years, the Company has compiled a vast database of statistical information that is easily utilized as an extremely effective quality assurance tool. This statistical information library, combined with ARMI's CRMs, composes the basis for an unrivaled PT program to support your internal Quality System.

The PT Program offers benchmark proficiency testing which is directed towards supporting internal quality assurance programs, as well as fulfilling the accreditation requirements of several accrediting bodies, such as A2LA, NADCAP, and many others. The Program can also be incorporated into ISO 9000 and ISO 17025 certification requirements.

ARMI's PT Program is a direct, tailor made program, custom designed for the individual subscribing company. The participating company selects the timing and material matrix for testing. ARMI then selects the specific material from its extensive CRM inventory and sends it to the subscriber for testing and evaluation. Once the analysis results are received, ARMI reports back within 48 hours the results of the company's testing versus the certified values for that specific material. The results are reported in an easily read graphical format that allows for instant performance level recognition. This rapid turnaround ensures the company's ability to take corrective action for any problem quickly and efficiently and furthermore, the information is kept totally confidential. Finally, since the material used for testing is from a CRM, the company also now has an actual standard for use in its daily operations.

The PT Program is NOT method or instrument specific. The Program can be used for a single technique, method, and instrument or for several techniques, methods, and instruments. The Program has the flexibility to be adapted for most any laboratory situation. In addition, the PT Program is NOT a round-robin comparison. Your results are only compared against certified values and the results are returned to you within 48 hours, not 30, 60, or even 90 days.

The PT Program samples used are all actual CRMs and traceable to NIST. The analytical data used for the evaluation of the PT Program results is the same data generated by the expert members of ARMI's ILAP group. This is the same group of Industry and commercial laboratories that supports ARMI's CRM development and certification program. The data has been thoroughly critiqued, statistically evaluated, and it is free of any outliers. The end result is that by utilizing ARMI's PT Program, your performance test results are now indisputable and traceable to NIST!

Laboratory Proficiency Testing

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	Plan 1 - Monthly 12 Samples per Year Unit Price per Sample	Plan 2 - Quarterly 4 Samples per Year Unit Price per Sample	Plan 3 - Bi-Annual 2 Samples per Year Unit Price per Sample
Carbon Steel	\$160.00	\$220.00	\$280.00
Cast Iron (Solid Disk Only)	Call for quote	Call for quote	Call for quote
Low Alloy Steel	\$160.00	\$220.00	\$280.00
Tool Steel	\$160.00	\$220.00	\$280.00
Stainless Steel	\$170.00	\$230.00	\$290.00
High Temperature Steel	\$170.00	\$230.00	\$290.00
Nickel Alloy	\$185.00	\$250.00	\$305.00
Cobalt Alloy	\$200.00	\$265.00	\$320.00
Copper Alloy	\$160.00	\$220.00	\$280.00
Aluminum Alloy	\$765.00	\$765.00	\$765.00
Titanium Alloy	\$275.00	\$325.00	\$385.00
Magnesium Alloy	Call for quote	Call for quote	Call for quote
Sulfur in Refined Petroleum	N/A	\$175.00	\$175.00
Sulfur in Coal	N/A	\$175.00	\$175.00
Sulfur & Prox in Coal	N/A	\$200.00	\$200.00

Terms and Conditions

A one-time Initial Setup & Administrative Fee of \$225.00 will be added to invoices for new customers only. This includes a subscriber, instrument, and/or technique profile plus the set up of an individual historical database. A single invoice will be issued prior to the first sample being shipped for the total subscription period. Terms are 'Net 30 days'.

Unit prices apply to one set of data points per sample. In the case of a subscriber reporting multiple data sets from a single sample, add \$65.00 for each additional data set submitted. For metals, all prices include a single solid sample. Optional 10g Chip Sample Packs and/or a Pin Disk or Solid Pin Packs for C, S, O2, and N2 are available at an additional charge of \$25.00 per sample pack. Subscribers desiring chip samples only will be provided an equivalent weight.

Price includes hard copy reports and delivery of samples in the United States and Canada. Shipping will be added for other destinations.

Please contact ARMI for a formal price quotation.

The 90/10 Share Program

In the same spirit of cooperation that has become the very foundation of ARMI's efforts to develop new CRMs in the private sector, in May of 1990, the Company launched its "90/10 Share Program." Although many materials are quite common, spectrochemical standards for these materials are frequently non-existent. The 90/10 Program was created to solve this all too common problem.

The 90/10 Program is a very simple and cost effective service offered by ARMI allowing the Company (which is a leading producer of CRMs) to work together with the scientific community by sharing the task, as well as the costs, of developing new commercially available CRMs.

Here is how it works! The customer furnishes ARMI with the material of the specific alloy, usually in the form of round bar stock. The bar stock needs to be a minimum of 1.25" outside diameter and an 1.5" outside diameter is ideal. The overall length should be at least 10 to 12 feet. Forms other than bar stock are acceptable as long as the quantity is sufficient for the sampling that is required for the laboratories' examinations. The material is then processed through ARMI's ILAP for certification as a CRM. Approximately 15% to 20% of the material is expended in the analysis process. After certification, 10% of the remaining material is returned to the customer in any form desired (OES solids, chips, X-Ray discs, etc.) and ARMI retains the balance for sale commercially.

The only cost to the customer is the cost of the material. ARMI has well-established vendors for most alloy materials and will assist in the location and acquisition of the base stock material.

That is all there is to it! By working together, we make available a new CRM, traceable to NIST, for the scientific community.

Sample Preparation Equipment Parts List

上海禹重实业有限公司 | 进口标样目录

Catalog #	Description	Quantity/Pk
HK200 - Disk Grinder		
HK200	Manual disc grinding machine for preparation of iron and steel samples for OES and XRF analysis, desktop machine. Dimensions - ~40x45x40cm, Weight 22kg, 220V/60Hz	1
HKPACK	Export packing, wooden box	1
Optional Accessories		
HKHOLD3	Magnetic sample holder, round, 40-50mm Ø	1
HKHOLD4	Magnetic sample holder, rectangular, 35x35mm	1
Consumables		
PAP200K/40	Grinding paper Al ₂ O ₃ , 40 grit, PSA, 200mm Ø	100 pcs/pack
PAP200K/60	Grinding paper Al ₂ O ₃ , 60 grit, PSA, 200mm Ø	100 pcs/pack
PAP200K/80	Grinding paper Al ₂ O ₃ , 80 grit, PSA, 200mm Ø	100 pcs/pack
PAP200S/40	Grinding paper SiC, 40 grit, PSA, 200mm Ø	100 pcs/pack
PAP200S/60	Grinding paper SiC, 60 grit, PSA, 200mm Ø	100 pcs/pack
PAP200S/80	Grinding paper SiC, 80 grit, PSA, 200mm Ø	100 pcs/pack
PAP200Z/40	Grinding paper ZrO ₂ , 40 grit, PSA, 200mm Ø	100 pcs/pack
PAP200Z/60	Grinding paper ZrO ₂ , 60 grit, PSA, 200mm Ø	100 pcs/pack
PAP200Z/80	Grinding paper ZrO ₂ , 80 grit, PSA, 200mm Ø	100 pcs/pack
Special Accessories		
HK200W	Disc Grinder, dry & wet applications	1
HK210	Disc Grinder, Spectrographic & Metallographic	1
HKHOLD5	Non-magnetic sample holder, round	1
HKHOLD6	Magnetic sample holder, rectangular, 50x50mm	1

Pictures of this equipment are available on our website -

Sample Preparation Equipment Parts List

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

Catalog #	Description	Quantity/Pk
HK350 - Disk Grinder		
HK350	Manual disc grinding machine for preparation of iron and steel samples for OES and XRF analysis. Disk grinder, complete with dust trap and exhauster. Dimensions - ~70x70x105cm, Weight 100kg, 220V/60Hz	1
HKPACK	Export packing, wooden box	1
Optional Accessories		
HK350ERS	Spare parts set (bellows, safety glass, lamp, fuses)	1
HKHOLD3	Magnetic sample holder, round, 40-50mm Ø	1
HKHOLD4	Magnetic sample holder, rectangular, 35x35mm	1
HKEXFILT	Round filter, exhauster HK150/350, PAS 11-21	1
Consumables		
PAP350K/40G	Grinding paper Al ₂ O ₃ , grit 40, 350mm Ø	100 pcs/pack
PAP350K/60G	Grinding paper Al ₂ O ₃ , grit 60, 350mm Ø	100 pcs/pack
PAP350K/80G	Grinding paper Al ₂ O ₃ , grit 80, 350mm Ø	100 pcs/pack
PAP350S/40	Grinding paper SiC, grit 40, 350mm Ø	100 pcs/pack
PAP350S/60	Grinding paper SiC, grit 60, 350mm Ø	100 pcs/pack
PAP350S/80	Grinding paper SiC, grit 80, 350mm Ø	100 pcs/pack
PAP350Z/40	Grinding paper ZrO ₂ , grit 40, 350mm Ø	100 pcs/pack
PAP350Z/60	Grinding paper ZrO ₂ , grit 60, 350mm Ø	100 pcs/pack
PAP350Z/80	Grinding paper ZrO ₂ , grit 80, 350mm Ø	100 pcs/pack
Special Accessories		
HKHOLD5	Non-magnetic sample holder, round	1
HKHOLD6	Magnetic sample holder, rectangular, 50x50mm	1
HKEXFILT	Round filter, exhauster HK150/350, PAS 10-20	1
HKDUST	Spark arrester with metal tube for HK150 & HK350	1
PAP350K/60PE	Grinding paper PE63, grit 60, 350mm Ø	100 pcs/pack

Pictures of this equipment are available on our website -

Sample Preparation Equipment Parts List

上海禹重实业有限公司 | 进口标样目录

Catalog #	Description	Quantity/Pk
HK150 - Disk Grinder		
HK150	Manual sample grinding machine for preparation of iron and steel samples for OES and XRF analysis. Pendulum grinder (bench top) complete for operation with stones (BR HKT32J), tools, and vice with low and high brackets. Dimensions - ~70x70x105cm, Weight 120kg, 220V/60Hz	1
HKPACK	Export packing, wooden box	1
Alternate Configuration		
HK150EXS	HK150 configuration as above with steel cabinet, exhauster, spark arrester, and tubing (floor standing). Dimensions - ~70x70x105cm, Weight 120kg, 3Ø 230/60Hz - Cabinet & Exhauster ~70x70x105cm, Wght 70kg	1
HKPACK	Export packing, wooden boxes (2)	2
Optional Accessories		
HK150ERS	Spare parts set (bellows, safety glass, lamp, fuses)	1
HK150MS	Magnetic plate, complete with arm, 100x65mm	1
HK150VICE	Vice for samples 44-58mm Ø	1
HKEXFILT	Round filter, exhauster HK150/350, PAS 11-21	1
Consumables		
HKT46J1	Al2O3-grinding stone	1-3 packs 3 pcs/pack
HKT46J2	Al2O3-grinding stone	4-8 packs 3 pcs/pack
HKT46J3	Al2O3-grinding stone	9+ packs 3 pcs/pack
HKT49M1	SiC-grinding stone	1-3 packs 3 pcs/pack
HKT49M2	SiC-grinding stone	4-8 packs 3 pcs/pack
HKT49M3	SiC-grinding stone	9+ packs 3 pcs/pack
Special Accessories		
HKEXFILT	Round filter, exhauster HK150/350, PAS 10-20	1
HKDUST	Spark arrester with metal tube for HK150 & HK350	1

Pictures of this equipment are available on our website -

Sample Preparation Equipment Parts List

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

Catalog #	Description	Quantity/Pk
HK80F - Milling Machine		
HK80F	Semi-automatic milling machine for preparation of non-ferrous metal samples for OES and XRF analysis. Dimensions - ~56x78x75cm, Weight 140kg, 220V/60Hz	1
HK80F80	Standard milling head with cutters, 80mm Ø	1
HKPACK	Export packing, wooden box	1
Optional Accessories		
HK80FERS	Spare parts set (bellows, safety glass, lamp, fuses)	1
HK80FWP	Hard metal cutters (standard)	10 pcs/pack
HK80FSN	Brackets for lower samples >3mm, 16-52mm Ø	1
HK80FSG	Brackets for universal use >9mm, 16-52mm Ø	1
HK80WZ	Measuring base, cutter positioning	1
HK80FSR	Special chuck, rectangular samples	1
Special Accessories		
HK80F63	Milling head complete with cutters, 63mm Ø	One
HK80F8022	Special milling head with special cutters, 80mm Ø	One
HK80FWPS	Special hard metal cutters, octagonal	6 pcs/pack

Pictures of this equipment are available on our website -

Sample Preparation Equipment Parts List

上海禹重实业有限公司 | 进口标样目录

Catalog #	Description	Quantity/Pk
HK40 - Swing Grinder		
HK40	Swing grinder, desktop model for grinding of mineral samples for XRF or solution analysis. Dimensions - ~50x40x67cm, Weight 48kg, 115V/60Hz	1
HK40MG1	Vessel, Corundum 99.6%, bio-inert, 100ml	
HKPACK	Export packing, wooden box	1
Optional Accessories		
HK40MG2	Vessel, Corundum 99.9%, bio-inert, 100ml	1
HK40MG3	Vessel, Hardened Cr-steel, 100ml	1
HK40MG4	Vessel, Nitrided, Cr-steel, 100ml	1
HK40MG5	Vessel, Tungsten Carbide, 100ml	1
HK40MG6	Vessel, Zirconia Oxide >99.9%, 100ml	1
SPECTAB 20	Grinding & Pelletizing agent, tablets	4000 x 0.25g
BR70 - Jaw Crusher		
BR-70	Jaw crusher, laboratory model for crushing of mineral samples for XRF or solution analysis (with regular acc). Dimensions - ~50x60x60cm, Weight 90kg, 3Ø 220/60Hz	1
HKPACK	Export packing, wooden box	1

Pictures of this equipment are available on our website -

Sample Preparation Equipment Parts List

Shanghai UZong Industrial Co., Ltd. | CRMs Catalog

Catalog #	Description	Quantity/Pk
Manual Hydraulic Press		
PE-MAN	Hydraulic press, manual, variable from 0-20 tons available pressure for preparation of XRF and IR pellets. Dimensions - ~70x59x47cm, Weight 55kg	1
HKPACK	Export packing, wooden box	1
Optional Accessories		
4030	Evacuated Die Set, SS, includes 2 SS-pellets, 32mm Ø	1
4038	Evacuated Die Set, SS, includes 2 SS-pellets, 35mm Ø	1
4040	Evacuated Die Set, SS, includes 2 SS-pellets, 40mm Ø	1
Special Accessories		
4035	Press plate, tungsten carbide, 32mm Ø	1
4037	Press plate, tungsten carbide, 35mm Ø	1
4045	Press plate, tungsten carbide, 40mm Ø	1
4060	Press plate, stainless steel, 40mm Ø	1
Consumables		
HWC	Micropowder C, binder XRF-pellets	1 kg
HWC	Micropowder C, binder XRF-pellets	5 kg
HWC	Micropowder C, binder XRF-pellets	10 kg
HWC	Micropowder C, binder XRF-pellets	20 kg

Pictures of this equipment are available on our website -

Sample Preparation Equipment Parts List

上海禹重实业有限公司 | 进口标样目录

Catalog #	Description	Quantity/Pk
Electro-Hydraulic Press		
PE-EL	Electro-hydraulic press, manual, variable from 0-20 tons available pressure for preparation of XRF and IR pellets. Dimensions - ~70x59x47cm, Weight 70kg, 120V/60Hz	1
HKPACK	Export packing, wooden box	1
Optional Accessories		
4030	Evacuated Die Set, SS, includes 2 SS-pellets, 32mm Ø	1
4038	Evacuated Die Set, SS, includes 2 SS-pellets, 35mm Ø	1
4040	Evacuated Die Set, SS, includes 2 SS-pellets, 40mm Ø	1
Special Accessories		
4035	Press plate, tungsten carbide, 32mm Ø	1
4037	Press plate, tungsten carbide, 35mm Ø	1
4045	Press plate, tungsten carbide, 40mm Ø	1
4060	Press plate, stainless steel pellet, 40mm Ø	1
Consumables		
HWC	Micropowder C, binder XRF-pellets	1 kg
HWC	Micropowder C, binder XRF-pellets	5 kg
HWC	Micropowder C, binder XRF-pellets	10 kg
HWC	Micropowder C, binder XRF-pellets	20 kg