

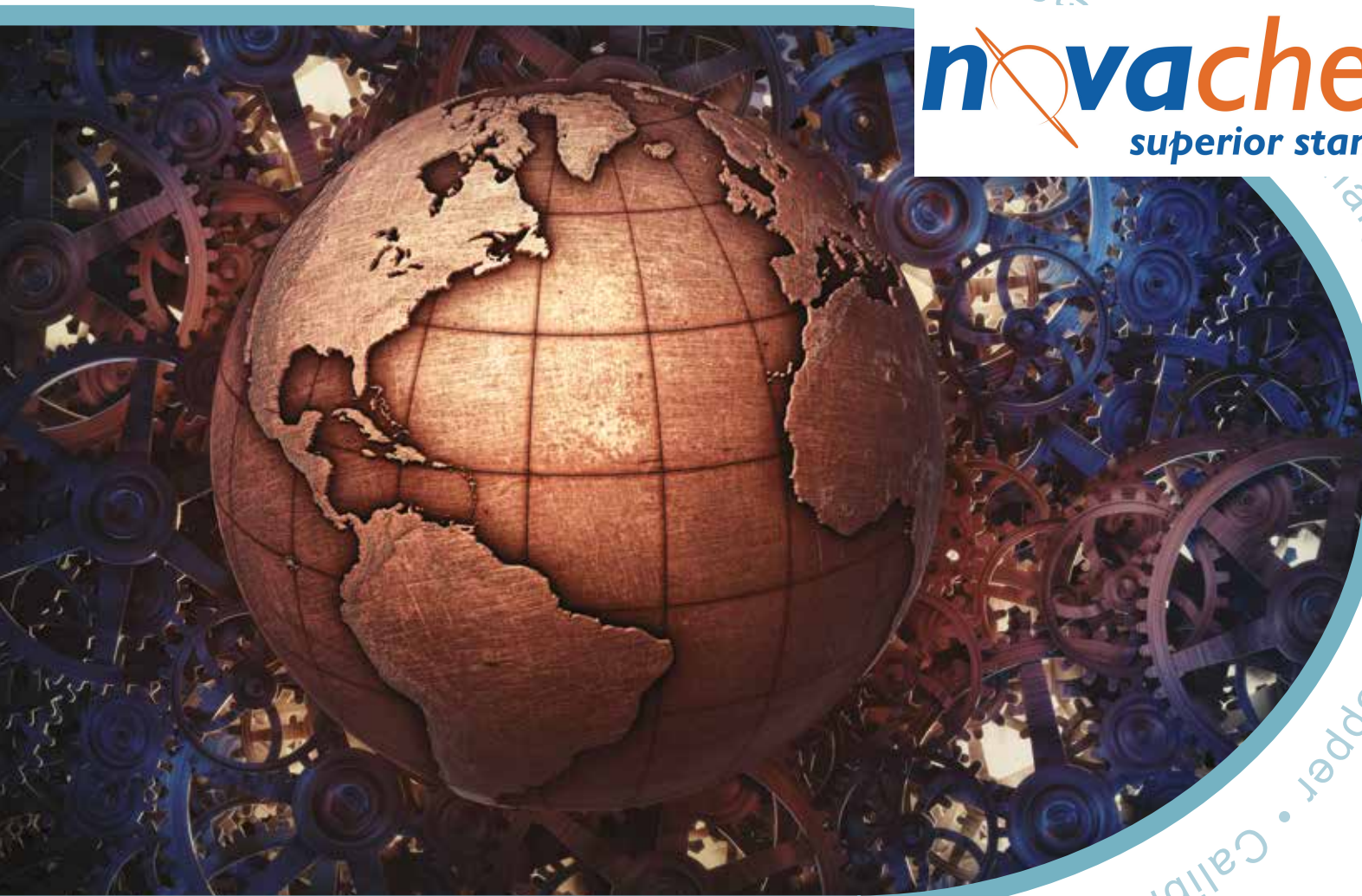
Copper reference materials 2016



Pure Copper • Special Copper Calibration Sets

novachem
superior standards

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High Copper Alloys • X-ray Fluorescence

Large • Phosphorized Copper • Calibration



Metal alloy proficiency testing you can rely on



The ARMI metal alloy Proficiency Testing Program (PTP) measures analytical performance against a CRM's actual certified value and against peer results. This two-pronged approach to proficiency testing is unique in the metals industry and has made the ARMI PTP the proficiency test of choice within the industry.

The ARMI PTP difference:

- Choose the test frequency that meets your quality requirements
- Select from our extensive stock of CRMs, traceable to NIST values, to best suit your needs
- Enter results online or via fax for your convenience
- Receive comprehensive, actionable feedback within 72 hours of submission

We're here to help you deliver **analytical excellence!**

Contact us: askus@lgcgroup.com

Visit us at www.lgcstandards.com

LGC Quality – ISO 9001 • ISO/IEC 17025 • ISO Guide 34 • GMP/GLP • ISO 13485 • ISO/IEC 17043

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Compliant with ISO 17043:2010, Annex A, Model 2 Scheme Guidelines

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Introduction

LGC Standards provides the widest range of reference materials available from any single supplier. We work closely with leading manufacturers to provide improved access to reference materials, with an increasingly large range of parameters, for laboratories worldwide. LGC Standards has both extensive reference material sales experience and technical expertise that allows us to work in successful partnership with our customers. Furthermore, our network of offices in Europe, US, UAE, China and India provides fast product delivery supported by strong knowledge of complex import and export regulations.

About LGC and LGC Standards

LGC Standards is part of LGC, an established leader in laboratory services, measurement standards, reference materials and proficiency testing. LGC's Science and Technology Division acts as the designated UK National Measurement Institute (NMI) for chemical and bioanalytical measurement, and has a long history in the development and validation of analytical methods and in reference material production.

LGC's Science and Technology Division is accredited to ISO Guide 34 (General requirements for the competence of reference materials producers) for the production of reference materials.

Breitländer GmbH has been a reference material specialty company since 1972. LGC Standards acquired Breitländer in 2007, and together they offer the most extensive range of certified reference materials and standards for the metals industry. Breitländer also added high-quality sample preparation equipment to the LGC portfolio.

Industrial Analytical (Pty) was formed in 1988 to specifically meet ever-increasing industry demand for Reference Materials, for verification of both analytical results and quality of characterization. Industrial Analytical is now not only the largest Certified Reference Material supplier in the Republic of South Africa, but is also the largest in the African continent as a whole. Industrial Analytical was acquired by LGC Standards in 2012.

Analytical Reference Materials International (ARMI) was founded in 1984, and is a market leader in the chemical characterization and certification of metal alloy Certified Reference Materials. ARMI produces and distributes a diverse line of reference materials from Manchester, NH, USA into markets worldwide. ARMI developed and manages the Inter-laboratory Analysis Program (ILAP), whose member labs provide CRM certification data on an entirely voluntary basis. ARMI also provides a metal alloy PT program unique in the metals industry. ARMI became part of LGC Standards in 2012.

VHG Labs is an ISO Guide 34 accredited manufacturer and supplier of single-element, multi-element and custom blended petroleum, aqueous and solid analytical reference materials and calibration standards. Additionally, they provide consumables and supplies for ICP, ICP-MS, AA, GFAA and XRF instruments. VHG Labs calibration standards and reference materials are certified in their ISO/IEC 17025 accredited testing lab. VHG Labs became a part of LGC Standards in 2012.

This catalogue

This catalogue features certified reference materials and setting-up samples for the copper industry. It provides an updated and relevant listing of the available materials on the market. The products are listed in groups according to type and/or manufacturer. An index of all products is included in the back of the catalogue, listed by name and catalogue number.

Analytical values are presented in mass percentage, and should be considered to be typical or pilot values. Certificates that are supplied with purchased materials will present actual values. Values in brackets () are not certified and are listed for information only. A reference material lot will only include a limited number of standards, as it is difficult to maintain homogeneity when trying to produce larger lots. Follow-up lots of like material will differ slightly in composition and dimensions. Should you need an exact value, or more information on manufacture, material properties, methods or uncertainties prior to purchase, please do not hesitate to ask for more information.

Producers of reference materials

This catalogue brings together products from a wide variety of sources. These include certified reference materials from National Measurement Institutes, and also reference materials and setting-up samples from many different producers. Most products are supplied with certificates of analysis, although the layout and format of the certificates will vary according to the producer. Setting-up samples come with information sheets only.



The use of reference materials

Use of quality reference materials helps produce reliable analytical measurements and quality data, which ensures proper decision making going forward.

When choosing a matrix reference material for a particular application, the analyst should consider the following factors before selecting the material:

- Matrix match and potential interferences
- Analytes
- Quantitation range
- Measurement uncertainties
- Producer certification procedures
- Material documentation (e.g. certificate or report)



Certified Reference Material (CRM)

A CRM is accompanied by a certificate with one or more property values certified by a procedure which establishes its traceability to an accurate realization of the unit in which the property values are expressed. Each certified value is also accompanied by an uncertainty at a stated level of confidence. CRMs are certified by a recognized certifying organization using approved certification procedures as outlined in ISO Guide 35:2006, "Reference Materials-General and Statistical Principles for Certification." A CRM is an analytical reference material that is elevated to the highest order possible due to its traceability to SI units, and to the attributed confidence in the producing company or organization.

Reference Material (RM)

An RM is a material or substance with one or more property values sufficiently homogeneous and well established to be used to calibrate an apparatus, for the assessment of a measurement method, or for assigning material values. Interlaboratory testing is applied to RMs using many analysts, and RMs are then supplied with certificates of analysis. Testing does not usually follow all ISO Guide 35 certification guidelines. RM certificates often state that measurement data is traceable to primary CRMs.

Setting-Up Samples (SUS)

SUS materials should have minimal inhomogeneity, and are used to monitor or adjust lab instrument analytical signals. Instrument calibration is conducted using CRMs, RMs and SUS samples, at which time values are assigned to the SUS materials. As a result, SUS materials do not have certified analyses, but are assigned approximate values only. SUS standards are also referred to as "recalibration samples", "drift control samples" and "monitor samples."

General ordering information

Prices and delivery procedures are available from your local LGC Standards sales office.

Orders are accepted only in accordance with LGC Standards standard terms and conditions of sale, unless otherwise agreed to in advance and in writing.

LGC Standards technical staff are available to help customers requiring assistance with the use, application or suitability of a particular material. Customers should contact their local LGC Standards office for advice; contact details are provided on the back of this catalogue.

For any additional information please visit www.lgcstandards.com.

More catalogues

LGC Standards will release additional product catalogues in 2016 that cover the rest of our extensive range of reference materials and standards, for the following families:

- Aluminium base
- Non-ferrous base
- Precious metals
- Steel and iron
- XRF Glass
- Mechanical testing
- Combustion and wet chemistry analysis

Additional materials

This catalogue presents a wide selection of materials for copper analysis available at time of print. New materials are constantly added to our range, so we can often source products not listed in the catalog. Please contact us for assistance for help with a specific application, or if you cannot find the materials you need.

We also have many other associated materials for elemental analysis, available through other catalogs and listings, which include soils, waters, industrial materials, metals, ores, petroleum and many others.



Section: Copper

Pure Copper

Product Code	Fe	P	Sn
BAM-M390	0.000079	0.00013	(<0.00001)
BAM-M391	0.00009	0.00033	(<0.00001)
BAM-M392	0.00008	0.0007	(<0.00001)

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Product Code	Ag	Al	As	Be	Bi	Cd	Co	Cr	Fe	Mg	Mn	Ni	P	Pb
BAM-369	-	-	-	-	0.00097	-	0.001042	0.00092	-	0.00036	-	-	-	-
BAM-370	-	0.00126	-	-	-	-	-	-	-	-	-	-	0.00117	0.00158
BAM-371	-	-	-	0.00115	-	0.000163	-	-	0.00183	-	-	-	-	-
BAM-372	0.000901	-	0.00103	-	-	-	-	-	-	-	0.00114	0.001166	-	-

Product Code	S	Sb	Si	Sn	Te	Ti	Zn	Zr
BAM-369	-	-	-	-	-	-	0.0022	-
BAM-370	-	0.00156	0.00187	0.00168	-	-	-	-
BAM-371	0.00121	-	-	-	0.00144	0.00129	-	-
BAM-372	-	-	-	-	-	-	-	0.00058

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Product Code	O
BAM-379/1	0.0038
BAM-379/2	0.0212
BAM-379/3	0.0378

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Product Code	O	P	S
BCR-017A	-	0.000685	0.00104
BCR-022A	0.0138	-	-
BCR-022B	0.0138	-	-
BCR-0054R	0.000047	-	-
BCR-058	0.039	-	-

Size	Grade	Type	Form
Ø 38-40x30mm		CRM	
Ø 26x9mm		CRM	
Ø 9x50mm		CRM	
Ø 7x50mm		CRM	
Ø 7x50mm		CRM	

Product Code	Ag	As	Bi	Cd	Co	Cr	Fe	Mn	Ni	O	P	Pb	S	Sb
MBH-38X C1 C	0.0011	0.000019	0.00001	<0.00001	-	<0.005	0.00017	(0.005)	0.000027	0.0266	<0.05	(0.05)	0.0002	0.00001

Product Code	Se	Si	Sn	Te	Zn
MBH-38X C1 C	(0.000025)	<0.00001	(0.01)	(0.000021)	<0.00001

Size	Grade	Type	Form
Wire Ø 3x80mm		RM	

Product Code	Ag	Al	As	Au	Bi	Cd	Co	Cr	Fe	Ge	In	Mg	Mn	Ni
BS-110B	<0.0002	<0.0002	<0.0001	-	-	-	<0.0001	<0.0001	0.0005	-	-	<0.0001	<0.0001	<0.0002

Product Code	P	Pb	S	Sb	Se	Si	Sn	Te	Zn
BS-110B	<0.0006	0.00052	0.0003	<0.0005	-	<0.0004	<0.0002	<0.0002	<0.0003

Size	Grade	Type	Form
Ø 38x19mm	C11000	CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Pure Copper

Product Code	Ag	Al	As	Bi	Cd	Co	Cr	Fe	Mg	Mn	Ni	P	Pb	S
BAM-M381	<0.0001	(<0.0001)	<0.00005	<0.00003	<0.00004	<0.00003	<0.00004	0.00033	<0.00006	0.000022	0.00007	-	5.9E-05	(0.00032)
BAM-M382	0.00018	<0.00025	(0.00006)	<0.000053	<0.000090	<0.000073	<0.000056	0.0006	(0.00014)	<0.000076	0.00017	-	0.0001	(0.00032)
BAM-M383A	0.00111	(<0.00015)	0.00025	0.00027	0.000116	0.000096	(<0.0001)	(0.00031)	(<0.0001)	0.000034	0.000113	(<0.0001)	0.00011	(0.00032)
BAM-M383B	0.00106	(<0.00012)	0.00028	0.000185	0.000093	0.000102	(<0.0001)	0.00036	(<0.0001)	0.000018	0.000143	(<0.0001)	0.0001	(0.00036)
BAM-M383C	0.00106	(0.00016)	0.000154	0.000101	0.000206	0.000121	(<0.00015)	(0.00014)	0.000111	0.000152	0.00042	(<0.0001)	0.0003	(0.00046)
BAM-M384A	0.00107	(<0.00015)	0.00054	0.000616	0.00041	0.000364	(<0.00002)	0.00027	(<0.00002)	0.000022	0.00061	(<0.00015)	0.00117	(0.000460)
BAM-M384B	0.00113	(0.00029)	0.00066	0.000681	0.0004	0.00104	(0.00023)	(0.00051)	0.00033	0.00081	0.00047	(<0.0002)	0.00016	(0.00038)
BAM-EB385	0.00286	0.00286	0.00114	0.000581	0.00058	0.000693	0.000981	0.00454	0.00291	0.00101	0.00119	0.00129	0.00113	0.00313
ERM-EB386	0.00474	0.00365	0.00242	0.00096	0.00078	0.00052	0.00124	0.00647	0.00361	0.00133	0.0025	0.00072	0.00234	0.00219
BCR-074A	-	-	0.000078	(0.00001)	<0.000002	<0.000005	<0.00001	0.000114	-	0.000127	0.000104	-	9.7E-05	-

Product Code	Sb	Se	Si	Sn	Te	Ti	Zn	Zr
BAM-M381	<0.0001	(<0.0001)	(<0.0003)	0.000386	(<0.00003)	(<0.00003)	0.00053	<0.0006
BAM-M382	0.00007	0.00006	<0.0006	0.000429	0.000061	(0.00006)	0.0006	0.0003
BAM-M383A	0.000191	0.000134	(<0.0001)	0.000101	0.000177	(<0.0002)	0.00171	(<0.0001)
BAM-M383B	0.000169	0.000117	(<0.0002)	0.00008	0.00057	(<0.0001)	0.00093	(<0.0001)
BAM-M383C	0.000213	0.00025	(<0.00025)	0.00019	0.00046	(0.00026)	0.00025	(0.00029)
BAM-M384A	0.00054	0.00058	(<0.00025)	0.00026	0.00093	(<0.0001)	0.00053	(0.00001)
BAM-M384B	0.00058	(0.00029)	(<0.00025)	0.00021	0.00072	0.00029	0.00026	0.00013
BAM-EB385	0.00191	0.00072	(0.00072)	0.0018	0.001	0.000383	0.0058	(<0.0007)
ERM-EB386	0.00312	0.00116	(0.00143)	0.00283	0.00383	0.00331	0.00495	(0.00089)
BCR-074A	0.000058	0.000037	-	<0.000007	(.000021)	-	0.000046	-

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 38x30mm		CRM	
Ø 38x30mm		CRM	
Ø 38x30mm		CRM	
Ø 38x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 38x30mm		CRM	

Product Code	Ag	Al	As	Au	Bi	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	O
NIST-494	0.00505	(<0.0002)	0.00026	(0.000007)	0.000035	(0.00005)	0.00005	0.0002	99.908	0.0147	(<0.0001)	0.00037	0.00117	-
NIST-495	-	(<0.0002)	0.00016	(0.000013)	0.00005	(0.00004)	-	0.0006	99.944	0.0096	(<0.0001)	0.00053	0.00054	-
NIST-497	0.0008086	-	(<0.0002)	(<0.00005)	(0.000022)	(<0.0001)	(0.0000227)	(<0.0002)	99.97	(0.00024)	(<0.0001)	(<0.00001)	(0.000067)	(0.0367)
NIST-498	0.00201	(<0.0002)	0.0025	(0.00001)	0.0002	(<0.0022)	0.00027	(0.000003)	99.98	0.0011	(<0.0001)	(0.00003)	0.0007	-
NIST-499	0.0117	(<0.0002)	0.0047	(0.0004)	0.00105	(<0.0001)	0.00005	(0.00005)	99.79	0.002	(<0.0001)	(0.00003)	0.0506	-
NIST-500	0.0181	(<0.0002)	0.014	(0.001)	0.00245	(<0.0001)	0.00006	(0.00005)	99.70	0.0041	(<0.0001)	(0.00002)	0.0603	-
NIST-1034	0.00081	(<0.0002)	(0.00002)	(<0.00005)	(0.00002)	(<0.0001)	(0.00002)	(0.00003)	(99.96)	(0.0002)	(<0.0001)	(<0.00001)	(0.00006)	(0.0363)

Product Code	Pb	S	Sb	Se	Si	Sn	Te	Ti	Zn
NIST-494	0.00265	0.0015	0.00045	0.0002	(<0.0002)	0.007	0.000058	-	0.0405
NIST-495	0.000325	0.0013	0.0008	0.000063	(<0.0002)	0.00015	0.000032	-	0.00122
NIST-497	0.0000512	(0.0004)	0.0000214	0.000405	(<0.0001)	(<0.00001)	0.0000296	(<0.0001)	(<0.0003)
NIST-498	0.001	(0.0011)	0.00074	0.00175	(<0.0002)	0.0005	0.00101	-	0.0025
NIST-499	0.0114	(0.001)	0.003	0.0095	(<0.0002)	(0.009)	0.005	-	0.0045
NIST-500	0.0128	(0.0009)	0.0102	0.0214	(<0.0002)	(0.020)	0.0153	-	0.0114
NIST-1034	(0.00005)	0.00028	(0.00002)	(0.00033)	(<0.0002)	(<0.00002)	(0.00005)	-	(<0.0011)

Size	Grade	Type	Form
Ø 6.4x103mm		CRM	CCC
Ø 6.4x103mm		CRM	CCC
Ø 6.4x103mm		CRM	CCC
Ø 6.4x103mm		CRM	CCC
Ø 6.4x103mm		CRM	CCC
Ø 6.4x103mm		CRM	CCC
Ø 6.35x103mm		CRM	CCC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Pure Copper

Product Code	Ag	As	B	Bi	Cd	Co	Cr	Fe	Mn	Ni	P	Pb	S	Sb
IM CS6	0.00085	0.00002	<0.00005	<0.00005	(0.000006)	(0.00002)	0.00002	0.00208	0.00007	0.00008	(0.00015)	(0.00004)	0.00054	0.0001
IM CS7	0.00137	0.00009	<0.00005	<0.00005	(0.000002)	0.000009	0.00197	0.00049	0.00022	0.00044	(0.00024)	0.00009	0.0007	0.0001
IM CS7D	0.00137	0.00009	<0.00005	<0.00005	(0.000002)	0.000009	0.00197	0.00049	0.00022	0.00044	(0.00024)	0.00009	0.0007	0.0001
IM CS7R	0.00137	0.00009	<0.00005	<0.00005	(0.000002)	0.000009	0.00197	0.00049	0.00022	0.00044	(0.00024)	0.00009	0.0007	0.0001

Product Code	Se	Si	Sn	Te	Zn
IM CS6	<0.00010	-	0.00106	<0.000005	0.00014
IM CS7	<0.00010	<0.00010	0.00005	<0.000005	0.00012
IM CS7D	<0.00010	<0.00010	0.00005	<0.000005	0.00012
IM CS7R	<0.00010	<0.00010	0.00005	<0.000005	0.00012

	Size	Grade	Type	Form
	Ø 40x20-30mm		CRM	
	Ø 40x25-27mm		CRM	
Disk	Ø 40x20-30mm		CRM	
Rod	Ø 6x100mm		CRM	

Product Code	Ag	Al	As	Au	Bi	Cd	Co	Cr	Cu	Fe	Ge	In	Mg	Mn
MBH-39X 17866 AG	0.007	-	0.055	0.0023	0.0130	0.0050	0.0330	-	Rem.	0.002	-	0.036	-	-
MBH-39X 17867 AD	0.008	-	0.0387	0.0075	0.0153	0.0110	0.0194	-	Rem.	-	0.0062	0.0130	0.0041	-
MBH-39X 17868 AG	0.0249	0.0072	0.0226	0.0101	0.0308	0.0130	0.0248	-	Rem.	0.110	-	0.0076	0.0085	0.0123
MBH-39X 17869 AF	0.0376	0.0136	0.0099	-	0.045	0.0201	0.0036	-	Rem.	0.0079	-	0.0037	0.0010	0.0023
MBH-39X 17870 AG	0.0468	0.0012	0.0033	0.0009	0.0470	0.0305	0.0017	-	Rem.	(0.040)	0.0076	0.0078	-	-
MBH-39X 17871 C	0.0215	0.001	0.0205	0.0032	0.0550	0.0058	0.0010	-	Rem.	0.001	0.0008	0.005	-	-
MBH-39X 17872 A	0.0214	0.0118	0.0203	(0.002)	0.0240	0.0013	0.0102	-	Rem.	(0.045)	-	0.0212	-	0.0055
MBH-39X 17873 A	0.0228	0.015	0.0209	-	0.0233	0.0052	0.0233	0.0231	Rem.	0.019	-	0.0212	0.011	0.0182

Product Code	Ni	P	Pb	S	Sb	Se	Si	Sn	Te	Zn	Size	Grade	Type	Form
MBH-39X 17866 AG	0.060	-	0.027	0.053	0.006	0.007	-	0.170	0.021	0.048	Ø 40x15mm		CRM	CC
MBH-39X 17867 AD	0.0410	0.0015	0.0196	0.041	0.0143	0.0067	-	0.115	0.0078	0.0325	Ø 40x15mm		CRM	CC
MBH-39X 17868 AG	0.0222	0.051	0.104	0.022	0.030	0.0133	-	0.103	0.0206	0.197	Ø 40x15mm		CRM	CC
MBH-39X 17869 AF	0.010	0.0163	0.0880	0.009	0.040	0.0243	0.0013	0.0440	0.0319	0.082	Ø 40x15mm		CRM	CC
MBH-39X 17870 AG	0.0062	0.0012	0.0447	0.0026	0.0478	0.0261	-	0.0031	0.0011	0.129	Ø 40x15mm		CRM	CC
MBH-39X 17871 C	0.0345	-	0.0067	0.005	0.0125	0.0285	-	0.0045	0.0088	0.003	Ø 40x15mm		CRM	CC
MBH-39X 17872 A	0.0537	0.0045	0.293	0.0242	0.0217	0.0103	-	0.180	0.007	0.107	Ø 42x15mm		CRM	CCC
MBH-39X 17873 A	0.0173	0.078	0.065	0.0206	0.0229	0.0114	0.03	0.027	0.0070	0.0231	Ø 40x15mm		CRM	C

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Pure Copper

Product Code	Ag	Al	As	Au	Be	Bi	Cd	Co	Cr	Fe	H	Hg	In	Mg
ERM-EBO74A	0.000103	(0.3-1.9ppm)	0.000123	0.000052	0.000031	0.000051	0.000040	0.000083	0.000037	0.000058	(0.7-2.5ppm)	(<0.00001)	4.9E-05	0.00020
ERM-EBO74B	0.000103	(0.3-1.9ppm)	0.000123	0.000052	0.000031	0.000051	0.000040	0.000083	0.000037	0.000058	(0.7-2.5ppm)	(<0.00001)	4.9E-05	0.00020
ERM-EBO74C	0.000103	(0.3-1.9ppm)	0.000123	0.000052	0.000031	0.000051	0.000040	0.000083	0.000037	0.000058	(0.7-2.5ppm)	(<0.00001)	4.9E-05	0.00020
ERM-EBO75A	0.00108	0.00023	0.000318	0.000146	0.000108	0.000179	0.000269	0.000264	0.000140	0.000093	(0.3-4ppm)	<0.000035	0.00018	0.00070
ERM-EBO75B	0.00108	0.00023	0.000318	0.000146	0.000108	0.000179	0.000269	0.000264	0.000140	0.000093	(0.3-4ppm)	<0.000035	0.00018	0.00070
ERM-EBO75C	0.00108	0.00023	0.000318	0.000146	0.000108	0.000179	0.000269	0.000264	0.000140	0.000093	(0.3-4ppm)	<0.000035	0.00018	0.00070

Product Code	Mn	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Te	Ti	W	Zn
ERM-EBO74A	0.000093	0.000061	(7-11ppm)	0.000153	0.00027	(0.00033)	0.000057	0.000055	-	(0.00015)	0.000050	0.000097	<0.000025	0.00022
ERM-EBO74B	0.000093	0.000061	(7-11ppm)	0.000153	0.00027	(0.00033)	0.000057	0.000055	-	(0.00015)	0.000050	0.000097	<0.000025	0.00022
ERM-EBO74C	0.000093	0.000061	(7-11ppm)	0.000153	0.00027	(0.00033)	0.000057	0.000055	-	(0.00015)	0.000050	0.000097	<0.000025	0.00022
ERM-EBO75A	0.000135	0.000218	(1-6ppm)	0.000259	0.000480	0.0025	0.000293	0.000169	0.00026	0.000213	0.000178	0.00032	<0.00001	0.00065
ERM-EBO75B	0.000135	0.000218	(1-6ppm)	0.000259	0.000480	0.0025	0.000293	0.000169	0.00026	0.000213	0.000178	0.00032	<0.00001	0.00065
ERM-EBO75C	0.000135	0.000218	(1-6ppm)	0.000259	0.000480	0.0025	0.000293	0.000169	0.00026	0.000213	0.000178	0.00032	<0.00001	0.00065

Product Code	Zr
ERM-EBO74A	(0.00088)
ERM-EBO74B	(0.00088)
ERM-EBO74C	(0.00088)
ERM-EBO75A	(0.0020)
ERM-EBO75B	(0.0020)
ERM-EBO75C	(0.0020)

	Size	Grade	Type	Form
Disk	Ø 39x30mm		CRM	
Rod	Ø 8x100mm		CRM	
Chips			CRM	
Disk	Ø 39x30mm		CRM	
Rod	Ø 8x100mm		CRM	
Chips			CRM	

Product Code	Ag	Au	Bi	Cr	Cu	Fe	Mn	Ni	Pb	Sb	Sn	Zn
E CUI/10	0.0016	<0.00010	<0.00002	0.000025	(99.9)	0.0004	0.00004	<0.00002	0.00004	<0.00002	<0.00002	<0.00002
E CUI/4	0.0117	0.00051	0.0008	0.001	-	0.0053	0.0011	0.0104	0.0104	0.0101	0.0104	0.0121
E CUI/5	0.0066	0.00022	0.00043	0.00035	-	0.0028	0.0005	0.0052	0.0051	0.0053	0.0051	0.0057
E CUI/6X	0.1026	0.005	0.0081	0.0101	-	0.0502	0.0108	0.1012	0.0996	0.1022	0.1005	0.1202
E CUI/9X	0.0018	<0.00010	<0.00002	0.00003	(99.9)	0.0006	0.00007	0.00033	0.00024	0.00025	0.00025	0.00023
E CUI/8X	0.002	<0.00053	0.00004	0.00004	-	0.0007	0.0001	0.0005	0.0005	0.00053	0.0005	0.00059

Product Code
E CUI/10
E CUI/4
E CUI/5
E CUI/6X
E CUI/9X
E CUI/8X

Size	Grade	Type	Form
Ø 40x25mm		RM	
Ø 40x12mm		RM	
Ø 40x12mm		RM	
Ø 40x3mm		RM	
Ø 40x3mm		RM	
Ø 40x3mm		RM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Pure Copper

Product Code	As	Cd	Co	Cu	P	Pb	S	Se
E CUIII/10	0.00007	<0.00002	<0.00005	Rem.	0.00009	0.00005	0.0009	<0.00002
E CUIII/2	0.0492	0.0167	0.0263	Rem.	0.0259	0.0185	0.0109	0.0255
E CUIII/4	0.0102	0.0028	0.0052	Rem.	0.005	0.0035	0.0031	0.0048
E CUIII/6	0.002	0.0006	0.0011	Rem.	0.0011	0.001	0.0014	0.001
E CUIII/7	0.001	0.00022	0.00043	Rem.	0.00046	0.00042	0.0014	0.00034
E CUIII/7X	0.001	0.00022	0.00043	Rem.	0.00046	0.00042	0.0014	0.00034
E CUIII/8	0.00055	0.00013	0.00023	Rem.	0.00031	0.00025	0.0014	0.00018
E CUIII/9	0.00025	0.00007	0.00007	Rem.	0.00018	0.00015	0.0009	0.0001
E CUIII/9X	0.00025	0.00007	0.00007	Rem.	0.00018	0.00015	0.0009	0.0001
E CUIII/8X	0.00055	0.00013	0.00023	Rem.	0.00031	0.00025	0.0014	0.00018

Size	Grade	Type	Form
Ø 40x25mm		RM	
Ø 40x25mm		RM	
Ø 40x25mm		RM	
Ø 40x25mm		RM	
Ø 40x25mm		RM	
Ø 40x3mm		RM	
Ø 40x25mm		RM	
Ø 40x25mm		RM	
Ø 40x3mm		RM	
Ø 40x3mm		RM	

Product Code	As	Cd	Co	Cu	P	S	Se	Te
E CUII/3	0.0196	0.0065	0.0101	Rem.	0.011	0.0035	0.0095	0.0043
E CUII/4	0.0095	0.0028	0.005	Rem.	0.007	0.0033	0.0051	0.0022
E CUII/4X	0.0095	0.0028	0.005	Rem.	0.007	0.0033	0.0051	0.0022
E CUII/6X	0.0019	0.00055	0.001	Rem.	0.0012	0.0007	0.00095	0.00045
E CUII/8X	0.00049	0.00013	0.00023	Rem.	0.00028	0.0007	0.00028	0.00013

Size	Grade	Type	Form
Ø 40x25mm		RM	
Ø 40x25mm		RM	
Ø 40x3mm		RM	
Ø 40x3mm		RM	
Ø 40x3mm		RM	

Pure Copper Chips

Product Code	P	S
IM CU50	-	(0.00496)
IM CU90	-	(0.00837)
IM CUS10	-	(0.00075)
IM CUS20	-	(0.00231)
BCR-017B	0.000685	0.00104

Values listed in mass %; () Uncertified Value

	Size	Grade	Type	Form
Chips	250g		CRM	
Chips	250g		CRM	
Chips	250g		CRM	
Chips	150g		CRM	
Chips	50g		CRM	

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Pure Copper Chips

Product Code	Ag	Al	As	Au	Bi	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	P
NIST-454	0.0286	-	0.0046	0.00075	0.0019	-	(0.0004)	-	99.84	(0.005)	-	-	(0.015)	-
NIST-399	0.0117	(<0.0002)	0.0047	(0.0004)	0.00105	(<0.0001)	0.00005	(0.00005)	99.79	0.002	(<0.0001)	(0.00003)	0.0506	-
IM 4	0.21	-	0.054	-	(0.0011)	-	0.001	<0.00005	Rem.	0.001	-	<0.00003	0.078	-
IM 5	0.001	-	0.0004	-	(0.000096)	-	0.00081	<0.00005	Rem.	0.00045	-	0.00013	0.00044	-
CAN-CUAR-1	0.0294	-	0.0145	0.00023	(0.0083)	-	-	-	(98.6)	0.0076	-	-	(0.4109)	-
CAN-CUPD-1	0.0216	-	0.0306	0.00039	0.0062	-	-	-	(99.5)	0.004	-	-	0.0153	-
DH-SL02-02	-	-	0.032	-	-	-	-	-	98.15	0.911	-	0.007	0.034	-
BAS-CURM09-01C	0.011	(<0.0005)	(<0.001)	-	(<0.0005)	-	(<0.0005)	-	99.82	0.0019	-	(<0.0005)	(<0.0005)	0.151
BAS-CURM09-02C	0.0055	(<0.0005)	(<0.001)	-	(<0.0005)	-	(<0.0005)	-	99.90	0.0042	-	(<0.0005)	(<0.0005)	0.078
BAS-CURM09-03C	0.012	(<0.0005)	(<0.001)	-	(<0.0005)	-	(<0.0005)	-	99.92	0.0033	-	(<0.0005)	(<0.0005)	0.056
BAS-CURM09-04C	0.0033	(<0.0005)	(<0.001)	-	(<0.0005)	-	(<0.0005)	-	99.96	0.0047	-	(<0.0005)	(<0.0005)	0.0174
IPT-64	0.001	(<0.0006)	(0.0002)	-	(<0.0001)	-	-	-	99.98	0.00045	-	-	0.00018	-
BAM-365	0.01027	-	0.00298	-	0.00294	-	0.00236	-	99.937	0.00223	-	(<0.0001)	0.01753	-
BAS-BCS-CRM 399	-	-	(<0.001)	-	(0.001)	(0.003)	-	-	(99.93)	(0.006)	-	-	(0.002)	0.045

Product Code	Pb	Pd	S	Sb	Se	Si	Sn	Te	Zn		Size	Grade	Type	Form
NIST-454	0.0066	(0.00001)	-	0.0024	0.0479	-	0.00022	0.0027	0.0007	Chips	35g		CRM	
NIST-399	0.0114	-	(0.001)	0.003	0.0095	(<0.0002)	(0.009)	0.005	0.0045	Chips	50g		CRM	
IM 4	0.20	-	-	0.0041	-	(0.00029)	0.00044	-	(0.0017)	Chips	200g		CRM	
IM 5	0.0027	-	-	(0.000092)	-	(0.00026)	0.00046	-	(0.0013)	Chips	200g		CRM	
CAN-CUAR-1	0.0864	-	-	(0.0798)	(0.0026)	-	0.0113	0.0033	(0.0032)	Chips	425g		CRM	
CAN-CUPD-1	0.0069	-	-	0.0147	0.0237	-	0.0005	(0.0056)	(0.0011)	Chips	425g		CRM	
DH-SL02-02	0.139	-	0.037	0.008	-	-	0.381	-	0.229	Chips	50g		RM	
BAS-CURM09-01C	(<0.0005)	-	-	(<0.0005)	-	(<0.001)	(<0.001)	(<0.001)	0.0008	Chips	100g		RM	
BAS-CURM09-02C	(<0.001)	-	-	(<0.0005)	-	(<0.002)	(<0.001)	(<0.001)	(<0.001)	Chips	100g		RM	
BAS-CURM09-03C	(<0.0005)	-	-	(<0.0005)	-	(<0.001)	(<0.001)	(<0.001)	(<0.001)	Chips	100g		RM	
BAS-CURM09-04C	(<0.001)	-	-	(<0.0005)	-	(<0.002)	(<0.001)	(<0.001)	(<0.001)	Chips	100g		RM	
IPT-64	0.00006	-	-	(0.0002)	(<0.0002)	-	(<0.0005)	(<0.0001)	(0.001)	Chips	50g		CRM	
BAM-365	0.00288	-	(0.00077)	0.00088	0.012	-	(<0.0005)	0.00046	-	Chips	100g		CRM	
BAS-BCS-CRM 399	(0.002)	-	-	(<0.001)	-	-	(0.003)	-	(0.003)	Chips	100g		CRM	

Values listed in mass %; () Uncertified Value

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Pure Copper Rod

Product Code	O
IM CU100	0.0123
IM CU300	0.0258
IM CU10/1	0.00035
IM CU600/1	0.0581
IM CU100/5	0.01637

	Size	Grade	Type	Form
150g Rod	Ø 5x11.5mm		CRM	
150g Rod	Ø 5x11.5mm		CRM	
150g Rod	Ø 5x11.5mm		CRM	
150g Rod	Ø 5x11.5mm		CRM	
200g Rod	Ø 20x11.5mm		CRM	

Pure Copper Sets

Product Code	Ag	As	Bi	Cd	Co	Cr	Fe	Mn	Ni	P	Pb	S	Sb	Se
IM CP1	0.0012	0.00004	0.0001	0.00006	0.00002	0.00003	0.001	0.00013	0.00034	0.0002	0.00017	0.00063	0.0011	-
IM CP2	0.0036	0.014	-	0.0072	0.0039	0.00005	0.00081	0.00059	0.002	0.0011	0.012	0.0035	0.016	0.0077
IM CP3	0.006	0.0063	0.0047	0.0035	0.002	0.0045	0.0015	0.003	0.0013	0.0044	0.0081	0.006	0.012	0.0043
IM CP4	0.011	0.0014	0.0013	0.0011	0.00042	0.0086	0.0044	0.0055	0.00034	0.013	0.0028	0.0094	0.0048	0.001
IM CP5	0.0031	0.0065	0.00094	0.00025	0.0034	0.0048	0.0077	0.0049	0.0039	0.011	0.0013	0.0021	0.0027	0.0035
IM CP6	0.002	0.000085	-	-	-	0.00003	0.00064	0.00006	0.00027	0.00017	0.00027	0.00075	0.00004	-

Product Code	Si	Sn	Te	Zn
IM CP1	-	0.00056	0.0003	0.00019
IM CP2	(0.0004)	0.00048	0.0012	0.0092
IM CP3	(0.0008)	0.0017	0.0046	0.0033
IM CP4	0.0003	0.004	0.0075	0.0017
IM CP5	(0.0082)	0.00021	0.00078	0.0038
IM CP6	-	0.00007	-	0.00014
Set of 6 Only				

Size	Grade	Type	Form
Ø 40x23mm		CRM	
Ø 40x23mm		CRM	
Ø 40x23mm		CRM	
Ø 40x23mm		CRM	
Ø 40x23mm		CRM	
Ø 40x23mm		CRM	

Product Code	Ag	As	Bi	Cd	Co	Cr	Fe	Mn	Ni	P	Pb	S	Sb	Se
NCS HS52704-1	0.00007	0.00001	0.00002	0.00001	0.00001	0.00002	0.00016	0.00003	0.00009	0.00005	0.00003	0.00003	0.00002	0.00002
NCS HS52704-2	-	0.00014	0.00004	0.00013	-	0.00003	-	0.00005	-	0.00015	0.00016	0.00021	0.00003	0.00011
NCS HS52704-3	0.003	0.00057	0.00014	0.00046	0.00056	0.00046	0.00066	0.00042	0.00061	0.00085	0.00055	0.0019	0.00028	0.00019
NCS HS52704-4	0.0053	0.0018	0.00059	0.0012	0.0018	0.0012	0.0024	0.0011	0.0023	0.0026	0.0021	0.0039	0.0015	0.00034
NCS HS52704-5	0.0072	0.0038	0.0012	0.003	0.0035	0.0032	0.0054	0.0027	0.006	0.0056	0.0044	0.0082	0.0031	0.00087

Product Code	Si	Sn	Te	Zn
NCS HS52704-1	0.00015	0.00001	0.00003	0.00004
NCS HS52704-2	-	0.00009	0.00007	-
NCS HS52704-3	0.00054	0.00055	0.00015	0.00093
NCS HS52704-4	0.0014	0.0012	0.00041	0.0026
NCS HS52704-5	0.0034	0.0026	0.0011	0.0052
Set of 5 Only				

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Values listed in mass %; () Uncertified Value

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Pure Copper Sets

Product Code	As	Bi	Fe	Ni	P	Pb	S	Sb	Se	Sn	Te	Zn
NCS HS43716A-1	-	-	0.0022	-	0.020	-	(0.0013)	-	-	-	-	0.0015
NCS HS43716A-2	0.0013	0.0006	0.0070	0.0025	0.0017	0.0016	0.0021	0.0021	(0.0013)	0.00097	(0.0016)	0.0024
NCS HS43716A-3	0.0026	0.0033	0.0047	0.0035	0.0029	0.0037	0.0037	0.0032	(0.0022)	0.0018	(0.0016)	0.0042
NCS HS43716A-4	0.0032	0.00095	0.0032	0.0011	0.0088	0.00097	0.0019	0.00098	-	0.0037	-	0.0087
NCS HS43716A-5	0.0052	0.0017	-	0.0118	0.0103	0.0079	(0.0050)	0.0052	(0.0051)	0.0070	(0.0052)	0.0182
NCS HS43716A-6	0.0083	0.0059	0.0475	0.0090	0.0222	0.0154	0.0047	0.0077	(0.0071)	0.0142	(0.0082)	-
NCS HS43716A-7	(0.0250)	(0.0190)	0.0652	0.0423	0.0414	(0.0445)	0.0044	(0.0210)	(0.0109)	0.0489	(0.0120)	0.0443
NCS HS43716A-8	(0.0136)	(0.0093)	0.0198	0.0242	0.0299	(0.0312)	0.0063	(0.0108)	(0.0070)	0.0183	(0.0054)	0.0331
NCS HS43716A-9	(0.0139)	(0.0062)	-	0.0687	0.0587	(0.0558)	0.0091	(0.0078)	(0.0104)	0.0689	(0.0087)	0.0247

Product Code
NCS HS43716A-1
NCS HS43716A-2
NCS HS43716A-3
NCS HS43716A-4
NCS HS43716A-5
NCS HS43716A-6
NCS HS43716A-7
NCS HS43716A-8
NCS HS43716A-9
Set of 9 Only

Size	Grade	Type	Form
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	
Ø 34x20mm		CRM	

Product Code	Ag	As	B	Bi	Cd	Co	Cr	Fe	Mn	Ni	P	Pb	S	Sb
IM CS1	0.00531	0.00023	(0.00011)	0.00011	0.0001	0.00006	(0.00003)	0.00184	0.0029	0.00468	0.00577	0.00605	0.00659	0.0003
IM CS2	0.00456	0.00079	(0.00028)	0.00062	0.00074	0.00036	0.00358	0.00305	0.00353	0.00267	0.00338	0.00386	0.00449	0.00075
IM CS3	0.00389	0.00138	(0.00042)	0.00122	0.00134	0.00074	0.00109	0.00283	0.00126	0.00111	0.00121	0.00133	0.00188	0.0013
IM CS4	0.0237	0.00422	(0.00217)	0.00396	0.00355	0.00243	0.0007	0.0082	0.00083	0.00072	0.00063	0.00076	0.00413	0.00368
IM CS5	0.032	0.00705	(0.00352)	0.00597	0.00661	0.00375	0.0001	0.00909	0.00043	0.00044	0.0002	0.0005	0.00120	0.00639

Product Code	Se	Si	Sn	Te	Zn
IM CS1	0.00615	(0.00030)	0.00529	0.00021	0.00241
IM CS2	0.0039	(0.00094)	0.00337	0.00056	0.00089
IM CS3	0.00154	(0.00222)	0.00133	0.00106	0.00313
IM CS4	0.00067	(0.00465)	0.00062	0.00329	0.0044
IM CS5	0.00009	(0.00548)	0.000085	0.00499	0.01006
Set of 5 Only					

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Pure Copper Sets

Product Code	Ag	As	Bi	Fe	Ni	Pb	Sb	Sn	Zn
IM CF1	0.0045	0.00067	0.00125	0.0042	0.0029	0.0033	0.0024	0.0021	0.0057
IM CF2	0.0009	0.00011	-	0.00028	0.00007	0.00006	0.00014	-	0.00022
IM CF3	0.00032	0.00018	-	0.002	0.00064	0.00089	0.00022	0.00032	0.00034
IM CF4	0.0018	0.0043	0.00012	0.00037	0.00078	0.00011	0.0011	0.0001	0.0031
IM CF5	0.0012	0.00023	0.000025	0.0098	0.0003	0.00032	0.00019	0.00013	0.00047
IM CF6	0.0012	0.000032	(0.0000012)	-	0.0001	(0.00004)	0.00018	0.00002	0.000006
Set of 6 Only									

Size	Grade	Type	Form
Ø 3-6x100mm		CRM	
Ø 3-6x100mm		CRM	
Ø 3-6x100mm		CRM	
Ø 3-6x100mm		CRM	
Ø 3-6x100mm		CRM	
Ø 3-6x100mm		CRM	

Product Code	Ag	Al	As	Bi	Cd	Co	Cr	Fe	Mg	Mn	Ni	P	Pb	S
VS MO3-1	0.00222	-	0.000055	0.0000089	0.0000063	0.000009	0.000025	0.00037	-	0.00099	0.000038	0.00020	5.1E-05	0.00053
VS MO3-2	0.0011	0.00014	0.00022	0.000162	0.00091	0.00053	0.00029	0.00053	0.000076	0.00055	0.00150	0.00073	0.00029	0.00068
VS MO3-3	0.00109	0.00029	0.00044	0.00042	0.000342	0.00026	0.00021	0.00047	0.00013	0.000397	0.000318	0.00029	0.00017	0.00088
VS MO3-4	0.000041	0.00019	0.000014	0.000073	0.000093	0.000137	0.000038	0.00402	0.000101	0.00077	0.000080	0.000346	0.00094	-
VS MO3-5	0.00033	0.00084	0.00158	0.000159	0.000022	0.00178	0.00092	0.00184	0.00065	0.00151	0.00293	0.00143	0.00241	0.00120
VS MO3-6	0.00472	-	0.00532	0.0046	0.0028	0.00295	0.00235	0.00566	-	0.00434	0.0102	0.00169	0.0069	0.00275
VS MO3-7	0.00108	(0.00006)	0.000096	0.000049	0.000059	-	0.000011	0.00109	-	0.000308	0.000036	0.000095	0.000030	0.00039
VS MO3-8	0.00282	-	0.000145	0.000115	0.000084	0.00023	0.000094	0.00121	-	0.000056	0.000315	0.000041	0.00040	0.00117
VS MO3-9	0.00105	-	0.000151	0.000111	0.000081	0.000071	0.000060	0.00036	0.000082	0.000309	0.000263	0.000084	0.00015	0.00061

Product Code	Sb	Se	Si	Sn	Te	Zn
VS MO3-1	0.00021	0.000039	0.00115	0.000052	0.000033	0.000193
VS MO3-2	0.00078	0.000097	0.00130	0.000139	0.000113	0.000107
VS MO3-3	0.00031	0.00036	0.00034	0.00039	0.00031	0.00032
VS MO3-4	0.000045	0.000042	-	0.000064	-	0.00098
VS MO3-5	0.00258	0.00127	0.00084	0.00133	0.000126	0.00194
VS MO3-6	0.00525	0.00319	0.00141	0.00432	0.0035	0.00556
VS MO3-7	0.000090	-	-	0.000029	0.000047	0.000095
VS MO3-8	0.00034	0.00010	0.000077	0.000143	0.000131	0.000086
VS MO3-9	0.00028	0.000078	0.000091	0.000109	0.000097	0.00019
Set of 9 or Individuals Available						

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Phosphorized Copper

Product Code	Ag	Al	As	Be	Bi	Cd	Co	Cr	Cu	Fe	Ge	In	Mg	Mn
MBH-39X 27869 A	0.0349	-	0.0098	0.008	0.0376	0.0028	0.0036	(0.0002)	Rem.	0.003	0.0123	0.009	-	-
NIST-C1252A	0.0158	(<0.0020)	0.0118	0.00339	0.0019	0.00169	0.0087	0.0019	99.87	0.0072	-	-	(<0.0020)	0.0043
MBH-39X 27866 A	0.0057	-	0.0383	0.0016	0.0047	0.0139	0.0308	0.0012	Rem.	0.003	0.0029	0.0437	-	-
MBH-39X 17869 AF	0.0376	0.0136	0.0099	0.0053	0.045	0.0201	0.0036	-	Rem.	0.0079	-	0.0037	0.0010	0.0023
BAS-CURM09.04	0.0033	(<0.0005)	(<0.001)	-	(<0.0005)	-	(<0.0005)	-	99.96	0.0047	-	-	-	(<0.0005)
BAM-376	0.0163	(0.01815)	0.01999	0.00406	0.02	0.01861	0.02079	0.04	Rem.	0.02346	-	-	0.0124	0.02059
BAS-CURM09.05	<0.001	<0.001	<0.001	-	<0.0005	-	<0.0005	-	Rem.	<0.001	-	-	-	<0.001
NIST-C1251A	0.008	(<0.0020)	0.0016	0.00155	0.00037	(<0.0003)	0.00132	(0.0003)	99.89	0.0285	-	-	(<0.0020)	0.00046
MBH-39X 17868 AG	0.0249	0.0072	0.0226	-	0.0308	0.0130	0.0248	-	Rem.	0.110	-	0.0076	0.0085	0.0123
BAS-CURM09.03	0.012	(<0.0005)	(<0.001)	-	(<0.0005)	-	(<0.0005)	-	99.92	0.0033	-	-	-	(<0.0005)
NIST-C1253A	0.0494	0.0176	0.0436	0.0072	0.0056	0.007	0.0454	0.026	99.46	0.029	-	-	0.015	0.0357
BAS-CURM09.02	0.0055	(<0.0005)	(<0.001)	-	(<0.0005)	-	(<0.0005)	-	99.90	0.0042	-	-	-	(<0.0005)
MBH-39X 17873 A	0.0228	0.015	0.0209	-	0.0233	0.0052	0.0233	0.0231	Rem.	0.019	-	0.0212	0.011	0.0182
BAS-CURM09.01	0.011	(<0.0005)	(<0.001)	-	(<0.0005)	-	(<0.0005)	-	99.82	0.0019	-	-	-	(<0.0005)

Product Code	Ni	P	Pb	S	Sb	Se	Si	Sn	Te	Zn	Size	Grade	Type	Form
MBH-39X 27869 A	0.019	0.0119	0.0225	0.0112	0.0362	0.0127	-	0.0106	0.0153	0.0065	Ø 38x20mm		CRM	W
NIST-C1252A	0.0128	0.0125	0.006	(0.0070)	0.0042	0.0056	(<0.0100)	0.012	0.00546	0.00694	33x32x19mm		CRM	CC
MBH-39X 27866 A	0.0487	0.0147	0.0054	0.0469	0.0052	0.0028	-	0.0448	0.0032	0.0287	Ø 38x20mm		CRM	W
MBH-39X 17869 AF	0.010	0.0163	0.0880	0.009	0.040	0.0243	0.0013	0.0440	0.0319	0.082	Ø 40x15mm		CRM	CC
BAS-CURM09.04	(<0.0005)	0.0174	(<0.001)	-	(<0.0005)	-	(<0.002)	(<0.001)	(<0.001)	(<0.001)	Ø 50x12mm		RM	CC
BAM-376	0.0209	0.0203	0.0236	0.0133	0.0202	0.021	-	0.02473	0.0215	0.02173	Ø 40x30mm		CRM	
BAS-CURM09.05	<0.001	0.027	<0.001	-	<0.001	-	<0.001	<0.001	<0.002	<0.005	Ø 50x12mm		RM	CC
NIST-C1251A	0.00236	0.042	0.00235	(0.0035)	0.00149	0.0011	(<0.0050)	0.0016	0.0016	0.0024	33x32x19mm		CRM	CC
MBH-39X 17868 AG	0.0222	0.0510	0.1040	0.0220	0.0300	0.0133	-	0.1030	0.0206	0.1970	Ø 40x15mm		CRM	CC
BAS-CURM09.03	(<0.0005)	0.056	(<0.0005)	-	(<0.0005)	-	(<0.001)	(<0.001)	(<0.001)	(<0.001)	Ø 50x10mm	C12220	RM	CC
NIST-C1253A	0.0491	0.0561	0.0243	(0.0050)	0.0139	0.0136	0.058	0.0499	0.0168	0.0329	33x32x19mm		CRM	CC
BAS-CURM09.02	(<0.0005)	0.078	(<0.001)	-	(<0.0005)	-	(<0.002)	(<0.001)	(<0.001)	(<0.001)	Ø 50x12mm	C12500	RM	CC
MBH-39X 17873 A	0.0173	0.0780	0.065	0.0206	0.0229	0.0114	0.030	0.0274	0.007	0.0231	Ø 42x15mm		CRM	CC
BAS-CURM09.01	(<0.0005)	0.151	(<0.0005)	-	(<0.0005)	-	(<0.001)	(<0.001)	(<0.001)	0.0008	Ø 50x12mm		RM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Phosphorized Copper Set

Product Code	P
BAM-373/1	0.00338
BAM-373/2	0.02265
BAM-373/3	0.04557
Set of 3 Only	

Size	Grade	Type	Form
Ø 50x30mm		CRM	
Ø 50x30mm		CRM	
Ø 50x30mm		CRM	

Tellurium Bearing Copper

Product Code	Ag	Al	As	Au	Bi	C	Cd	Cr	Co	Cu	Fe	Ge	In	Mg
IARM-278A	(0.001)	<0.002	(0.001)	-	(0.001)	0.003	-	(0.001)	-	99.5	0.004	-	-	-
BS-14500	<0.0002	(<0.0006)	(<0.0005)	-	-	-	-	(<0.0001)	(<0.0001)	-	0.0041	-	-	(<0.0003)

Product Code	Mn	N	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Te	Zn	Zr
IARM-278A	(0.0004)	(0.0001)	<0.005	(0.0004)	0.011	0.003	0.002	<0.005	-	0.002	0.001	0.53	0.002	-
BS-14500	0.00004	-	(<0.0003)	-	0.0075	0.0008	0.0033	(<0.001)	-	(<0.002)	0.0002	0.53	0.004	-

Product Code
IARM-278A
BS-14500

Size	Grade	Type	Form
Ø 38x19mm	C14500	CRM	C
Ø 38x19mm	C14500	CRM	C

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought



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Section: High Copper Alloys

Beryllium Copper

Product Code	Ag	Al	Be	C	Co	Cr	Cu	Fe	Mn	Ni	P	Pb	S	Sb
CTIF-4873	-	0.094	0.17	-	0.98	0.105	98.40	0.078	(0.002)	0.049	-	(0.003)	-	-
MBH-36X CBC5 A	-	0.021	0.32	-	0.14	0.006	97.6	0.028	(0.001)	1.69	-	0.009	-	-
BS-17500	-	0.0210	0.43	0.0054	2.31	0.0015	(97.1)	0.0262	0.081	0.095	0.0031	0.0005	-	-
MBH-36X CBC2 E	0.002	0.0231	0.45	-	2.47	0.0044	96.96	0.0208	0.0015	0.0472	-	0.0099	-	-
CTIF-4583	-	0.029	0.84	-	(0.002)	-	96.35	(0.15)	0.064	2.02	-	0.084	-	-
CTIF-CuBeCo6	1.37	0.135	1.50	-	(1.9)	0.0576	93.09	0.12	0.0173	(1.45)	-	0.0397	-	-
CTIF-4766	-	0.027	1.58	-	0.64	(0.20)	96.83	0.16	0.008	0.203	-	0.053	-	-
MBH-36X CBC3 D	-	0.019	1.84	-	0.21	-	97.77	0.046	-	0.007	-	0.0025	-	-
IARM-71B	(0.002)	0.040	1.84	0.003	0.21	0.003	97.70	0.042	0.001	0.021	0.004	0.006	(0.0004)	(0.002)
MBH-36X CBC4 D	-	0.018	1.865	-	0.207	-	97.46	0.026	-	0.004	-	0.318	-	-
BS-172 Be-1	-	(0.02)	1.89	-	0.206	0.0032	97.68	0.052	0.0010	0.039	0.003	(0.002)	-	-
CTIF-4872	-	0.059	1.93	-	0.40	(0.04)	97.00	0.104	0.008	0.103	-	0.019	-	-
CTIF-4584	-	0.033	2.53	-	0.04	-	97.05	0.12	(0.002)	0.015	-	(0.002)	-	-
CTIF-4868	-	0.044	2.92	-	0.246	-	96.15	0.204	0.019	0.038	-	0.023	-	-

Product Code	Si	Sn	Zn
CTIF-4873	0.088	(0.007)	(0.003)
MBH-36X CBC5 A	0.036	0.01	0.038
BS-17500	0.0641	(0.0002)	0.0065
MBH-36X CBC2 E	0.0205	0.009	0.0103
CTIF-4583	0.08	0.25	0.094
CTIF-CuBeCo6	0.26	0.0135	0.033
CTIF-4766	0.11	0.10	0.07
MBH-36X CBC3 D	0.039	0.0021	0.004
IARM-71B	0.06	0.005	0.005
MBH-36X CBC4 D	0.041	0.003	0.005
BS-172 Be-1	0.055	0.033	0.0070
CTIF-4872	0.16	0.044	0.119
CTIF-4584	0.166	0.022	0.022
CTIF-4868	0.211	0.022	0.056

	Size	Grade	Type	Form
	Ø 60x5mm		CRM	C
	Ø 40x16mm	C17510	CRM	W
	Ø 38x19mm	C17500	CRM	W
	Ø 40x17mm		CRM	W
	Ø 60x5mm		CRM	C
	Ø 60x5mm		CRM	C
	Ø 60x5mm		CRM	C
	Ø 40x16mm		CRM	W
Chips Only	100g	C17200	CRM	
	Ø 40x16mm	C17300	CRM	W
	Ø 38x19mm	C17200	CRM	W
	Ø 60x5mm	C17200	CRM	C
	Ø 60x5mm		CRM	C
	Ø 60x5mm		CRM	C

Beryllium Copper Sets

Product Code	Al	Be	Cu	Fe	Ni	Pb	Si	Sn	Zn
VS 3152-85	(0.19)	1.71	(97.5)	0.036	0.092	0.0028	0.086	0.18	(0.035)
VS 3153a-85	(0.14)	1.54	(97.3)	0.23	0.25	0.0035	0.14	-	-
VS 3154-85	(0.064)	2.44	(96.7)	0.28	0.23	0.0023	0.12	0.033	0.041
VS 3155-85	(0.027)	2.64	(96.2)	0.079	0.35	0.0060	0.23	0.083	0.13
VS 3156-85	(0.054)	3.20	(95.4)	0.14	(0.081)	0.011	0.30	0.061	0.23
Set of 5 Only									

Size	Grade	Type	Form
40x40x25mm		CRM	
40x40x25mm		CRM	
40x40x25mm		CRM	
40x40x25mm		CRM	
40x40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Chromium in Copper

Product Code	Ag	Al	As	Bi	C	Co	Cr	Cu	Fe	Mg	Mn	N	Ni	O
MBH-36X 274 A	-	0.0013	-	-	-	0.0028	0.531	96.23	0.0779	-	0.0148	-	2.54	-
MBH 36X CCR1 E	0.0042	0.0013	0.0007	-	-	-	0.652	99.24	0.0170	(0.0003)	-	-	0.0111	-
BS-18150	-	0.0009	(0.0004)	-	0.0009	(0.0002)	0.74	(99.1)	0.0047	-	0.0010	-	0.0010	(0.0006)
BS-18150A	-	0.0023	(0.0003)	-	0.0010	(0.0003)	0.79	(98.9)	0.007	-	0.0010	-	0.0019	(0.0008)
IARM-158B	(0.010)	0.002	(0.001)	-	0.002	0.002	0.85	98.5	0.090	-	0.019	<0.0005	0.32	0.002
IARM-279A	0.003	0.002	(0.002)	(0.001)	0.002	0.002	0.86	99.1	0.025	-	(0.002)	(0.0003)	0.014	(0.001)
IARM-158C	(0.010)	0.002	(0.001)	-	0.002	0.002	1.04	98.5	0.090	-	0.019	<0.0005	0.32	0.002

Product Code	P	Pb	S	Sb	Si	Sn	Zn	Zr
MBH-36X 274 A	-	0.0021	0.0035	-	0.594	0.014	0.0395	<0.005
MBH 36X CCR1 E	0.0223	0.0008	0.0016	-	-	0.0018	(0.0011)	0.079
BS-18150	0.0037	0.0005	0.0007	(0.0001)	0.019	0.0097	0.0006	0.113
BS-18150A	0.0045	0.0011	0.0007	(0.0002)	0.027	0.0144	0.0006	0.203
IARM-158B	0.005	0.01	0.003	0.002	0.02	0.01	0.014	-
IARM-279A	0.005	0.01	0.0015	(0.004)	0.02	0.021	0.01	0.012
IARM-158C	0.005	0.01	0.003	0.002	0.02	0.01	0.014	-

Size	Grade	Type	Form
Ø 46x17mm	C18000	CRM	W
Ø 50x17mm	C18155	CRM	W
Ø 38x19mm	C18150	CRM	
Ø 38x19mm	C18150	CRM	
Ø 38x19mm	C81500	CRM	C
Ø 38x19mm	C18200	CRM	W
Ø 38x19mm	C81500	CRM	C

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

High Copper Sets

Product Code	Ag	Co	Fe	Ni	Pb	Zn
IM CG1	0.011	0.17	0.013	0.036	0.60	0.016
IM CG2	0.25	0.098	0.015	0.011	0.30	0.026
IM CG3	0.04	0.045	0.03	0.39	0.22	0.14
IM CG4	0.10	0.057	0.25	0.23	0.11	0.12
IM CG5	0.41	0.0079	0.069	0.10	0.053	0.18
Set of 5 Only						

Size	Grade	Type	Form
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	

Product Code	Ag	Co	Fe	Ni	Pb	Zn
IM CH6	0.18	0.18	0.028	0.40	0.50	0.19
IM CH7	0.40	0.11	0.11	0.18	1.01	0.047
IM CH8	0.039	0.02	0.0012	0.036	1.49	0.077
IM CH9	0.01	0.006	0.006	0.01	1.97	0.015
Set of 4 Only						

Size	Grade	Type	Form
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	

Product Code	Ag	As	B	Bi	Co	Fe	Ni	P	Pb	S	Sb	Se	Sn	Te
IM CT1	0.057	0.32	0.024	0.018	0.051	0.17	0.48	0.082	0.013	0.054	0.33	0.062	0.24	0.053
IM CT2	0.042	0.22	0.033	0.013	0.033	0.10	0.29	0.059	0.086	0.036	0.24	0.041	0.14	0.036
IM CT3	0.026	0.11	0.00093	0.0067	0.013	0.083	0.12	0.038	0.31	0.012	0.11	0.018	0.07	0.022
IM CT4	0.016	0.05	0.0042	0.0043	0.011	0.045	0.049	0.02	0.88	0.006	0.049	0.011	0.025	0.011
IM CT5	0.0062	0.0056	(0.011)	0.0011	0.0061	0.016	0.0095	0.0059	(1.48)	0.0024	0.01	0.0069	0.007	0.0064
IM CT6	0.0039	0.0054	0.006	0.004	0.011	0.014	0.011	0.011	0.0014	0.0069	0.011	0.011	0.013	0.012

Product Code	Zn
IM CT1	0.28
IM CT2	0.19
IM CT3	0.11
IM CT4	0.045
IM CT5	0.0098
IM CT6	0.03
Set of 6 Only	

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Section: Cu/Zn Alloys

Cu/Zn Alloys (Brass)

Product Code	Al	As	B	Bi	C	Cd	Co	Cr	Cu	Fe	Hg	Mg	Mn	Ni
NIST-1114	-	-	-	-	-	-	-	-	96.45	0.017	-	-	-	0.021
NIST-C1114	-	-	-	-	-	-	-	-	96.45	0.017	-	-	-	0.021
MBH-31X B9 L	0.0005	0.0053	0.00003	0.0068	-	-	-	-	96.05	0.0168	-	-	0.017	0.0129
NIST-1113	-	-	-	-	-	-	-	-	95.03	0.043	-	-	-	0.057
NIST-C1113	-	-	-	-	-	-	-	-	95.03	0.043	-	-	-	0.057
BAS-C30.10	<0.002	<0.005	-	<0.002	-	-	-	-	93.80	<0.005	-	-	<0.005	<0.01
NIST-1112	-	-	-	-	-	-	-	-	93.38	0.070	-	-	-	0.10
NIST-C1112	-	-	-	-	-	-	-	-	93.38	0.070	-	-	-	0.10
NIST-1117	-	-	-	-	-	-	-	-	93.01	0.014	-	-	-	0.02
NIST-C1117	-	-	-	-	-	-	-	-	93.01	0.014	-	-	-	0.02
NIST-1116	-	-	-	-	-	-	-	-	90.37	0.046	-	-	-	0.048
MBH-31X B23 D	0.0048	0.0482	-	0.0463	-	0.001	0.0472	-	89.57	0.06	-	-	0.0053	0.047
MBH-31X B8 J	(0.001)	0.0074	-	0.030	-	0.0155	0.0072	(0.0005)	89.37	0.132	-	-	0.0006	0.0421
BAS-CURM30.09	<0.001	<0.001	-	<0.001	-	-	-	-	89.53	0.0005	-	-	<0.0003	<0.0003
NIST-1115	-	-	-	-	-	-	-	-	87.96	0.13	-	-	-	0.074
NIST-C1115	-	-	-	-	-	-	-	-	87.96	0.13	-	-	-	0.074
NIST-1111	-	-	-	-	-	-	-	-	87.14	0.01	-	-	-	0.022
MBH-31X B7 K	0.0012	0.0031	0.003	0.0009	-	0.0011	0.0122	0.006	85.10	0.099	-	-	0.0031	0.0252
PB MS10	-	0.014	-	0.37	-	-	-	-	84.26	0.28	-	-	0.016	0.025

Product Code	P	Pb	S	Sb	Se	Si	Sn	Zn
NIST-1114	0.009	0.012	-	-	-	-	0.027	3.47
NIST-C1114	0.009	0.012	-	-	-	-	0.027	3.47
MBH-31X B9 L	-	0.0549	-	0.0075	0.0029	0.0036	0.0245	3.83
NIST-1113	0.008	0.026	-	-	-	-	0.064	4.80
NIST-C1113	0.008	0.026	-	-	-	-	0.064	4.80
BAS-C30.10	<0.01	-	-	<0.005	-	<0.005	<0.01	6.10
NIST-1112	0.009	0.057	-	-	-	-	0.120	6.30
NIST-C1112	0.009	0.057	-	-	-	-	0.120	6.30
NIST-1117	0.002	0.069	-	-	-	-	0.021	6.87
NIST-C1117	0.002	0.069	-	-	-	-	0.021	6.87
NIST-1116	0.008	0.042	-	-	-	-	0.044	9.44
MBH-31X B23 D	0.03	0.046	0.053	0.0448	-	0.0046	0.06	9.97
MBH-31X B8 J	0.0026	0.082	0.045	0.0254	-	(0.002)	0.0311	10.23
BAS-CURM30.09	-	<0.001	-	<0.001	-	<0.001	<0.001	10.45
NIST-1115	0.05	0.013	-	-	-	-	0.10	11.73
NIST-C1115	0.05	0.013	-	-	-	-	0.10	11.73
NIST-1111	-	0.013	-	-	-	-	0.019	12.81
MBH-31X B7 K	-	0.0335	-	0.06	-	0.0125	0.0866	14.50
PB MS10	-	0.02	-	(0.009)	-	0.12	0.052	14.83

Size	Grade	Type	Form
Ø 31x19mm		CRM	W
31x31x19mm		CRM	C
Ø 40x17mm		CRM	CC
Ø 31x19mm		CRM	W
31x31x19mm		CRM	C
Ø 50x12mm		CRM	C
Ø 31x19mm		CRM	W
31x31x19mm		CRM	C
Ø 32x19mm		CRM	W
32x32x19mm		CRM	C
Ø 32x19mm		CRM	W
Ø 40x15mm		CRM	CC
Ø 42x17mm		CRM	CC
Ø 50x12mm		CRM	C
Ø 32x19mm		CRM	W
32x32x19mm		CRM	C
Ø 32x19mm		CRM	W
Ø 42x17mm		CRM	CC
Ø 50x20-25mm		RM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Zn Alloys (Brass)

Product Code	Al	As	B	Bi	C	Cd	Co	Cr	Cu	Fe	Hg	Mg	Mn	Ni
NIST-1110	-	-	-	-	-	-	-	-	84.59	0.033	-	-	-	0.053
MBH-31X B22 F	0.0402	0.165	0.0043	0.17	-	0.0117	0.139	-	82.47	0.158	-	-	-	0.154
CTIF-UZ53	-	0.01	-	-	-	-	-	-	82.60	0.025	-	-	<0.001	0.025
CTIF-L23	-	0.051	-	-	-	-	-	-	81.20	0.246	-	-	-	0.033
BAS-C30.07	<0.002	<0.005	-	<0.002	-	-	-	-	82.00	<0.005	-	-	<0.005	<0.01
MBH-31X B6 K	0.0010	0.0009	-	0.0010	-	0.0037	0.0063	<0.0005	79.90	0.0097	-	-	0.0039	0.0066
MBH-31X B5 K	0.001	0.0054	0.002	0.0061	-	0.0005	0.062	0.002	76.22	0.056	-	-	0.0006	0.0085
BAS-C30.06	<0.001	<0.001	-	<0.002	-	-	-	-	74.80	<0.005	-	-	<0.005	<0.01
BAS-CURM48.04	<0.001	0.034	-	0.014	-	<0.0003	-	<0.002	72.68	0.008	-	0.0005	0.012	0.096
BAS-C48.06-1	0.002	0.008	-	0.004	-	0.008	-	0.0006	71.60	0.02	-	0.001	0.006	0.11
MBH-31X B4 M	0.0011	0.0516	-	0.0103	-	0.0236	0.0263	0.0038	70.60	0.111	-	-	0.0011	0.0649
BAS-C48.03-1	0.007	0.079	-	0.029	-	0.013	-	0.0005	70.45	<0.001	-	0.001	0.040	0.030
MBH-31X B21 D	0.121	0.108	0.005	0.114	-	-	-	-	69.24	0.129	-	-	0.0647	0.107
CTIF-L6	0.139	-	-	-	-	-	-	-	66.55	0.085	-	-	0.055	1.21
BAS-CURM30.05	<0.001	<0.001	-	<0.003	-	-	-	-	69.48	<0.003	-	-	<0.0005	<0.0005
BAS-CURM48.05	<0.002	<0.001	-	<0.0005	-	<0.003	-	<0.0005	68.69	0.066	-	<0.0005	0.016	0.117
PB MS6	1.01	-	-	-	-	-	-	-	64.26	0.43	-	-	0.61	0.58
BAS-CURM48.02	0.013	0.025	-	0.004	-	<0.0005	-	0.004	67.16	0.053	-	<0.0005	0.067	<0.001
BAS-CURM48.01	<0.001	0.067	-	0.038	-	<0.003	-	<0.0005	66.98	0.049	-	0.0008	<0.001	0.134
MBH-31X B3 L	0.287	0.0144	0.0021	0.0098	-	0.0108	0.0212	0.0022	64.57	0.0541	-	-	0.0072	0.0431

Product Code	P	Pb	S	Sb	Se	Si	Sn	Zn
NIST-1110	-	0.033	-	-	-	-	0.051	15.20
MBH-31X B22 F	0.207	0.152	0.03	0.161	-	(0.047)	0.16	15.92
CTIF-UZ53	0.055	0.025	-	-	-	0.145	0.205	16.67
CTIF-L23	-	0.058	-	-	-	0.28	0.20	17.90
BAS-C30.07	-	<0.01	-	<0.005	-	<0.005	<0.01	17.95
MBH-31X B6 K	-	0.0122	-	0.0011	-	0.015	0.00	19.93
MBH-31X B5 K	-	0.021	-	0.0057	-	0.001	0.045	23.60
BAS-C30.06	-	<0.01	-	-	-	<0.005	<0.005	25.15
BAS-CURM48.04	0.006	0.043	0.011	0.026	-	0.004	0.018	26.99
BAS-C48.06-1	0.002	0.02	0.006	0.006	-	0.006	0.03	28.17
MBH-31X B4 M	0.0302	0.0450	0.0114	0.0118	-	(0.002)	0.053	28.97
BAS-C48.03-1	<0.001	0.0540	0.004	0.097	-	<0.002	0.047	29.15
MBH-31X B21 D	0.10	0.12	(0.002)	0.13	-	0.147	0.132	29.50
CTIF-L6	-	0.205	-	-	-	1.25	0.25	30.26
BAS-CURM30.05	-	<0.002	-	<0.005	-	<0.001	<0.001	30.53
BAS-CURM48.05	0.007	<0.003	0.013	<0.0005	-	0.026	0.083	31.00
PB MS6	-	0.068	-	-	-	0.68	0.20	32.16
BAS-CURM48.02	0.012	0.084	0.007	0.037	-	0.01	0.035	32.58
BAS-CURM48.01	0.016	0.106	<0.001	0.047	-	0.041	<0.002	32.60
MBH-31X B3 L	-	0.0194	-	0.0159	-	0.0126	0.0149	34.95

Size	Grade	Type	Form
Ø 32x19mm		CRM	W
Ø 42x18mm		CRM	CC
Ø 60x6mm		CRM	CC
Ø 60x6mm	Mushroom	CRM	CC
Ø 50x12mm	C24000	CRM	
Ø 40x15mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 50x12mm		CRM	
Ø 50x12mm	C26000	CRM	
Ø 50x12mm	C26000	CRM	
Ø 40x17mm		CRM	CC
Ø 50x12mm	C26130	CRM	
Ø 42x18mm		CRM	CC
Ø 60x6mm	Mushroom	CRM	CC
Ø 50x12mm		CRM	C
Ø 50x12mm		CRM	
Ø 50x20-25mm		RM	
Ø 50x12mm		CRM	
Ø 50x12mm		CRM	
Ø 40x15mm		CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Zn Alloys (Brass)

Product Code	Al	As	B	Bi	C	Cd	Co	Cr	Cu	Fe	Hg	Mg	Mn	Ni
MBH-31X B28 A	0.034	-	0.056	-	-	0.0072	-	0.0072	64.02	0.049	0.0007	-	0.094	0.083
BAS-CURM30.04	<0.001	<0.001	-	<0.003	-	-	-	-	64.34	0.009	-	-	<0.001	<0.001
BAS-C30.14	<0.005	<0.005	-	<0.005	-	-	-	-	60.50	<0.01	-	-	2.4	1.0
MBH-31X TB2 H	0.088	0.11	0.0.0013	0.04	-	0.0014	0.087	0.009	62.50	0.087	-	-	0.205	0.01
MBH-31X TB1 J	0.21	0.153	0.006	0.049	-	0.0114	-	0.084	61.39	0.038	-	-	0.314	0.22
BAS-C30.17	<0.005	<0.005	-	<0.005	-	-	-	-	61.60	1.40	-	-	<0.005	0.01
BAS-C30.13	<0.005	<0.005	-	<0.005	-	-	-	-	60.60	<0.005	-	-	1.9	<0.01
BAS-C30.12	<0.005	<0.005	-	<0.002	-	-	-	-	60.85	<0.005	-	-	0.90	0.52
MBH-31X TB3 K	0.0045	0.0454	(0.005)	0.003	-	0.0043	-	-	61.58	0.0282	-	-	0.0244	0.0637
BAS-C38.06	<0.001	<0.005	-	<0.001	-	-	-	-	(62.0)	<0.002	-	-	<0.002	<0.005
BAS-C38.06-1	<0.001	<0.001	-	<0.0005	-	-	-	-	(62.0)	<0.005	-	-	<0.001	<0.005
BAS-CURM30.11	<0.001	<0.001	-	<0.002	-	-	-	-	59.86	-	-	-	0.23	1.7
BAS-C38.04	0.02	0.04	-	0.008	-	-	-	-	(61.0)	0.04	-	-	0.22	0.06
BAS-CURM30.16	<0.001	<0.005	-	<0.001	-	-	-	-	60.53	1.14	-	-	<0.001	<0.001
BAS-C38.03	0.06	0.08	-	0.008	-	-	-	-	(61.0)	0.05	-	-	0.07	0.13
BAS-C38.02	0.004	0.06	-	0.005	-	-	-	-	(61.0)	0.09	-	-	0.14	0.03
BAS-C38.05	0.12	0.01	-	0.01	-	-	-	-	(61.0)	0.008	-	-	0.02	0.19
BAS-C38.01	0.003	0.03	-	<0.0005	-	-	-	-	(61.0)	0.01	-	-	0.009	0.01

Product Code	P	Pb	S	Sb	Se	Si	Sn	Zn
MBH-31X B28 A	-	0.081	0.0018	-	-	-	0.0126	35.47
BAS-CURM30.04	-	0.003	-	<0.001	-	0.016	0.009	35.62
BAS-C30.14	-	<0.01	-	<0.005	-	<0.005	<0.005	36.05
MBH-31X TB2 H	-	0.097	-	0.052	-	(0.029)	0.103	36.50
MBH-31X TB1 J	-	0.201	-	0.104	0.006	(0.093)	0.231	36.90
BAS-C30.17	-	0.01	-	<0.005	-	<0.005	<0.01	36.95
BAS-C30.13	-	<0.01	-	<0.01	-	<0.005	<0.005	37.45
BAS-C30.12	-	<0.01	-	<0.005	-	<0.005	<0.01	37.65
MBH-31X TB3 K	-	0.169	-	0.0222	-	0.016	0.089	37.92
BAS-C38.06	-	<0.005	-	<0.005	-	<0.002	<0.002	(37.95)
BAS-C38.06-1	-	<0.002	-	<0.002	-	<0.002	<0.002	(37.98)
BAS-CURM30.11	-	0.005	-	<0.001	-	<0.001	<0.002	38.17
BAS-C38.04	-	0.03	-	0.12	-	0.12	0.02	(38.32)
BAS-CURM30.16	-	<0.005	-	<0.001	-	<0.005	<0.002	38.33
BAS-C38.03	-	0.06	-	0.08	-	0.07	0.05	(38.34)
BAS-C38.02	-	0.10	-	0.06	-	0.01	0.09	(38.41)
BAS-C38.05	-	0.02	-	0.01	-	0.14	0.01	(38.46)
BAS-C38.01	-	0.20	-	0.02	-	<0.0005	0.20	(38.52)

Size	Grade	Type	Form
Ø 42x18mm	C26800	CRM	CC
Ø 50x12mm		CRM	C
Ø 50x12mm		CRM	
Ø 42x18mm	C85500	CRM	CC
Ø 40x15mm		CRM	CC
Ø 50x12mm		CRM	
Ø 50x12mm		CRM	
Ø 50x12mm	C28000	CRM	
Ø 42x18mm	C85500	CRM	CC
Ø 50x12mm	C27400	CRM	
Ø 50x12mm	C27400	CRM	
Ø 50x12mm		CRM	C
Ø 50x12mm	C85500	CRM	
Ø 50x12mm		CRM	C
Ø 50x12mm	C85500	CRM	
Ø 50x12mm	C85500	CRM	
Ø 50x12mm	C85500	CRM	
Ø 50x12mm	C85500	CRM	

Values listed in mass %; () Uncertified Value

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Cu/Zn Alloys (Brass)

Product Code	Al	As	B	Bi	C	Cd	Co	Cr	Cu	Fe	Hg	Mg	Mn	Ni
BAS-C30.15	<0.002	<0.005	-	<0.002	-	-	-	-	60.60	0.55	-	-	<0.005	<0.01
BAS-CURM30.15	<0.001	<0.005	-	<0.001	-	-	-	-	60.66	0.50	-	-	<0.001	<0.0001
BAS-C30.03	<0.002	<0.005	-	<0.005	-	-	-	-	60.60	<0.005	-	-	<0.005	<0.01
MBH-31X B2 M	(0.0010)	0.0049	-	0.0105	-	-	-	-	60.42	0.0146	-	-	0.0147	0.0121
CTIF-L1-1	0.01	-	-	-	-	-	-	-	59.70	0.017	-	-	-	0.106
BAS-C30.22	<0.003	0.011	-	<0.005	-	-	-	-	58.28	0.006	-	-	<0.005	<0.01
BAS-C30.02	<0.002	<0.005	-	<0.005	-	-	-	-	55.60	<0.005	-	-	<0.005	<0.005
MBH-31X B1 P	0.015	0.0047	0.0017	0.0102	-	0.0013	-	0.002	55.75	0.0319	-	-	0.0141	0.0078
BAS-C30.01	<0.002	<0.005	-	0.005	-	-	-	-	51.48	<0.005	-	-	<0.005	<0.005

Product Code	P	Pb	S	Sb	Se	Si	Sn	Zn
BAS-C30.15	-	<0.01	-	<0.005	-	<0.005	<0.01	38.80
BAS-CURM30.15	-	<0.005	-	<0.001	-	<0.005	<0.002	38.88
BAS-C30.03	-	<0.01	-	<0.005	-	<0.005	<0.01	39.30
MBH-31X B2 M	0.0121	0.0103	-	0.0111	-	0.0047	0.0113	39.50
CTIF-L1-1	0.08	0.06	-	-	-	0.36	0.046	39.70
BAS-C30.22	-	1.05	-	<0.012	-	<0.005	0.009	40.62
BAS-C30.02	-	<0.01	-	<0.005	-	<0.005	<0.01	44.35
MBH-31X B1 P	0.0176	0.0126	-	0.0073	-	0.006	0.0196	44.40
BAS-C30.01	-	<0.01	-	<0.005	-	<0.005	<0.01	48.47

Size	Grade	Type	Form
Ø 50x12mm		CRM	
Ø 50x12mm		CRM	C
Ø 50x12mm	C28000	CRM	
Ø 42x18mm	C85500	CRM	CC
Ø 60x5mm	Mushroom	CRM	CC
Ø 50x12mm	C37100	CRM	
Ø 50x12mm		CRM	
Ø 40x15mm		CRM	CC
Ø 50x12mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Zn Chips (Brass)

Product Code	Al	As	Bi	Cd	Cr	Cu	Fe	Mg	Mn	Ni	Pb	Sb	S	Sb
BAS-CURM30.09C	<0.001	<0.001	<0.001	-	-	89.53	0.0005	-	<0.0003	<0.0003	<0.001	<0.001	-	<0.001
BAS-CURM48.04C	<0.001	0.034	0.014	<0.0003	<0.002	72.68	0.008	0.0005	0.012	0.096	0.006	0.043	0.011	0.026
BAS-CURM30.05C	<0.001	<0.001	<0.003	-	-	69.48	<0.003	-	<0.0005	<0.0005	<0.002	<0.005	-	<0.005
BAS-BCS-CRM 344	-	-	-	-	-	68.98	-	-	-	-	-	-	-	-
BAS-CURM48.05C	<0.002	<0.001	<0.0005	<0.003	<0.0005	68.69	0.066	<0.0005	0.016	0.117	0.007	<0.003	0.013	<0.0005
BAS-CURM48.02C	0.013	0.025	0.004	<0.0005	0.004	67.16	0.053	<0.0005	0.067	<0.001	0.012	0.084	0.007	0.037
BAS-CURM48.01C	<0.001	0.067	0.038	<0.003	<0.0005	66.98	0.049	0.0008	<0.001	0.134	0.016	0.106	<0.001	0.047
BAS-CURM30.04C	<0.001	<0.001	<0.003	-	-	64.34	0.009	-	<0.001	<0.001	0.003	<0.001	-	<0.001
BAM-229	-	0.00217	-	-	-	63.334	0.01061	-	-	0.01114	(0.00106)	0.0192	-	0.00072
BAS-CURM30.16C	<0.001	<0.005	<0.001	-	-	60.53	1.14	-	<0.001	<0.001	<0.005	<0.001	-	<0.001
BAS-CURM30.15C	<0.001	<0.005	<0.001	-	-	60.66	0.50	-	<0.001	<0.0001	<0.005	<0.001	-	<0.001

Product Code	Se	Si	Sn	Zn
BAS-CURM30.09C	-	<0.001	<0.001	10.45
BAS-CURM48.04C	-	0.004	0.018	26.99
BAS-CURM30.05C	-	<0.001	<0.001	30.53
BAS-BCS-CRM 344	-	-	-	30.98
BAS-CURM48.05C	-	0.026	0.083	31.00
BAS-CURM48.02C	-	0.01	0.035	32.58
BAS-CURM48.01C	-	0.041	<0.002	32.60
BAS-CURM30.04C	-	0.016	0.009	35.62
BAM-229	0.0034	-	0.00485	36.63
BAS-CURM30.16C	-	<0.005	<0.002	38.33
BAS-CURM30.15C	-	<0.005	<0.002	38.88

	Size	Grade	Type	Form
Chips	100g		CRM	
Chips	100g	C26000	CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	

Cu/Zn Alloys Sets (Brass)

Product Code	Ag	Al	As	Be	Bi	Cd	Cu	Fe	Mn	Ni	P	Pb	S	Sb
IM M11	0.0038	0.04	0.072	0.000091	0.00063	0.023	95.71	0.24	0.003	0.0059	0.028	0.006	0.047	0.00044
IM M12	0.009	0.055	0.054	0.00085	0.00056	0.016	93.35	0.15	0.0081	0.018	0.022	0.016	0.049	0.0019
IM M13	0.019	0.015	0.034	0.0019	0.0026	0.011	91.46	0.085	0.035	0.073	0.015	0.042	0.023	-
IM M14	0.026	0.008	0.0031	0.0065	0.0026	0.0054	88.35	0.04	0.05	0.14	0.0073	0.071	0.012	0.0006
IM M15	0.032	0.0021	0.015	0.0072	0.0043	0.0012	94.71	0.015	0.069	0.25	0.0027	0.096	0.0019	0.00096

Product Code	Si	Sn	Te	Zn
IM M11	0.0032	0.015	0.0065	3.57
IM M12	0.012	0.1	0.011	6.19
IM M13	0.031	0.066	0.0031	8.01
IM M14	0.06	0.013	0.0021	11.13
IM M15	0.082	0.004	-	4.44
Set of 5 Only				

Size	Grade	Type	Form
Ø 39x25mm		CRM	
Ø 39x25mm		CRM	
Ø 39x25mm		CRM	
Ø 39x25mm		CRM	
Ø 39x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Zn Alloys Sets (Brass)

Product Code	Cu	Zn
IM MB1	60.66	39.39
IM MB2	67.17	32.8
IM MB3	73.26	26.67
IM MB4	78.77	21.2
IM MB5	84.25	15.63
IM MB6	90.07	9.95
IM MB7	95.00	4.99
Set of 7 Only		

Product Code	Cd	Cr	Cu	Se	Zn
IM MJ1	0.00355	0.0120	67.77	0.00062	Rem.
IM MJ2	0.00377	0.0044	66.40	0.00037	Rem.
IM MJ3	0.00165	0.00158	67.39	0.00035	Rem.
IM MJ4	0.00130	0.00374	68.06	0.0124	Rem.
IM MJ5	0.00036	0.00065	(67.82)	0.00288	Rem.
Set of 5 Only					

Product Code	Cu	Zn	Zr
IM MJJ1	67.82	Rem.	0.0454
IM MJJ2	(68.03)	Rem.	0.00017
IM MJJ3	67.87	Rem.	0.00070
IM MJJ4	67.75	Rem.	0.0074
Set of 4 Only			

Product Code	Al	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Sn
IM MG1	0.04	0.00058	91.14	0.0081	0.0013	0.048	(0.0019)	0.049	0.00077	0.0062
IM MG2	(0.0026)	0.00039	90.08	0.0067	0.0007	0.0022	0.0012	0.0048	(0.00084)	0.018
IM MG3	0.02	0.0014	93.19	0.062	0.0096	0.013	0.018	0.015	0.0026	0.033
IM MG4	-	0.0017	94.00	0.091	0.024	0.0042	0.012	0.008	0.0045	0.023
IM MG5	0.0011	0.0026	95.09	0.149	0.0036	0.0021	0.0069	0.0054	0.0061	0.013
IM MG6	0.0067	0.00088	92.27	0.028	0.045	0.03	0.0026	0.031	0.0015	0.053

Product Code
IM MG1
IM MG2
IM MG3
IM MG4
IM MG5
IM MG6
Set of 6 Only

Size	Grade	Type	Form
Ø 40x20mm		CRM	W
Ø 40x20mm		CRM	W
Ø 40x20mm		CRM	W
Ø 40x20mm		CRM	W
Ø 40x20mm		CRM	W
Ø 40x20mm		CRM	W
Ø 40x20mm		CRM	W

Size	Grade	Type	Form
Ø 40x28mm		CRM	W
Ø 40x28mm		CRM	W
Ø 40x28mm		CRM	W
Ø 40x28mm		CRM	W
Ø 40x28mm		CRM	W

Size	Grade	Type	Form
Ø 40x28mm		CRM	W
Ø 40x28mm		CRM	W
Ø 40x28mm		CRM	W
Ø 40x28mm		CRM	W

Size	Grade	Type	Form
Ø 40x30mm		CRM	W
Ø 40x30mm		CRM	W
Ø 40x30mm		CRM	W
Ø 40x30mm		CRM	W
Ø 40x30mm		CRM	W
Ø 40x30mm		CRM	W

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Cu/Zn Alloys Sets (Brass)

Product Code	As	Bi	Cu	Fe	Ni	P	Pb	Sb	Si	Sn	Zn
NCS HS28704-1	0.0430	0.0016	59.89	0.288	0.015	0.084	0.318	0.023	-	0.0047	39.01
NCS HS28704-2	0.0038	0.0028	61.88	0.116	0.0032	0.039	0.108	0.0046	0.0029	0.0051	37.53
NCS HS28704-3	0.0094	0.0043	69.08	0.052	0.006	0.011	0.018	0.0072	-	0.0081	30.44
NCS HS28704-4	0.0270	0.0084	80.90	0.110	0.013	0.013	0.017	0.01	-	0.01	18.75
NCS HS28704-5	0.0079	0.0066	85.06	0.028	0.0045	0.0052	0.029	0.0091	0.0019	0.011	14.79
NCS HS28704-6	0.0019	0.0054	90.02	0.024	0.0045	0.0071	0.0084	0.0031	-	<0.0010	9.76
NCS HS28704-7	0.0021	0.0019	95.90	0.012	0.0047	0.0046	0.0028	0.0013	0.0024	<0.0010	4.02

Product Code
NCS HS28704-1
NCS HS28704-2
NCS HS28704-3
NCS HS28704-4
NCS HS28704-5
NCS HS28704-6
NCS HS28704-7
Set of 7 Only

Size	Grade	Type	Form
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	

Product Code	Bi	Cu	Fe	P	Pb	Sb	Zn
NCS HS43717-1	0.0081	(61.96)	0.242	0.061	0.022	0.025	Rem.
NCS HS43717-2	0.0015	(61.71)	0.131	0.035	0.042	0.0046	Rem.
NCS HS43717-3	0.0029	(61.33)	0.076	0.018	0.255	0.0083	Rem.
NCS HS43717-4	0.0049	(60.63)	0.046	0.092	0.074	0.016	Rem.
NCS HS43717-5	0.00075	(62.40)	0.018	0.0046	0.132	0.0026	Rem.
Set of 5 Only							

Size	Grade	Type	Form
Ø 35x40mm		CRM	
Ø 35x40mm		CRM	
Ø 35x40mm		CRM	
Ø 35x40mm		CRM	
Ø 35x40mm		CRM	

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Cu/Zn Alloys Sets (Brass)

Product Code	As	Bi	Cu	Fe	P	Pb	Sb	Zn
NCS HS43714-1	0.016	0.0084	(65.73)	0.251	0.041	0.013	0.025	Rem.
NCS HS43714-2	0.046	0.0016	(68.37)	0.138	0.024	0.028	0.0046	Rem.
NCS HS43714-3	0.126	0.003	(67.24)	0.078	0.012	0.042	0.0084	Rem.
NCS HS43714-4	0.078	0.0048	(65.66)	0.041	0.0087	0.079	0.014	Rem.
NCS HS43714-5	0.027	0.00073	(68.6)	0.024	0.0054	0.139	0.0025	Rem.
Set of 5 Only								

Size	Grade	Type	Form
Ø 32x40mm		CRM	
Ø 32x40mm		CRM	
Ø 32x40mm		CRM	
Ø 32x40mm		CRM	
Ø 32x40mm		CRM	

Product Code	Ag	Al	As	Be	Bi	Cd	Cu	Fe	Mn	Ni	P	Pb	S	Sb
IM MH1	0.0029	0.001	0.067	0.0088	0.0037	0.026	65.93	0.017	0.035	0.26	0.016	0.0065	0.0034	0.0004
IM MH2	0.011	0.019	0.041	0.0015	0.0022	0.018	68.25	0.027	0.011	0.22	0.0055	0.021	0.0055	0.024
IM MH3	0.0065	0.0081	0.016	0.0003	0.0011	0.0089	71.28	0.081	0.085	0.10	0.0035	0.078	0.009	0.013
IM MH4	-	0.0027	0.0011	0.0045	0.0006	0.0029	69.94	0.13	0.0017	0.052	0.0022	0.33	0.0043	0.017
IM MH5	0.025	0.014	0.0038	0.00004	-	0.0012	72.87	0.19	0.072	0.0072	0.0011	0.20	0.018	0.0035

Product Code	Si	Sn	Te	Zn
IM MH1	0.074	0.14	0.0004	Rem.
IM MH2	0.054	0.097	0.0015	Rem.
IM MH3	0.031	0.024	0.0046	Rem.
IM MH4	0.016	0.011	0.0035	Rem.
IM MH5	0.0039	0.0021	0.0047	Rem.
Set of 5 Only				

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Product Code	As	Bi	Cu	Fe	P	Pb	Sb	Zn
NCS HS43715-1	-	0.0049	60.33	0.046	0.0092	0.074	0.016	Rem.
NCS HS43715-2	-	0.00075	62.40	0.018	0.0046	0.132	0.0026	Rem.
NCS HS43715-3	0.016	0.0084	65.73	0.251	0.041	0.013	0.025	Rem.
NCS HS43715-4	0.048	0.0016	68.39	0.153	0.022	0.028	0.0051	Rem.
NCS HS43715-5	0.088	0.003	58.96	0.338	0.013	0.391	0.011	Rem.
NCS HS43715-6	0.199	0.0061	71.88	0.473	0.038	0.251	0.02	Rem.
NCS HS43715-7	-	-	55.39	-	0.062	0.563	-	Rem.
Set of 7 Only								

Size	Grade	Type	Form
Ø 35x20mm		CRM	
Ø 35x20mm		CRM	
Ø 35x20mm		CRM	
Ø 35x20mm		CRM	
Ø 35x20mm		CRM	
Ø 35x20mm		CRM	
Ø 35x20mm		CRM	

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Cu/Zn/Pb Alloys (Leaded Brass)

Product Code	Ag	Al	As	B	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N
MBH-31X B27 B	-	0.0015	0.048	(0.0005)	0.032	-	-	-	-	80.65	0.111	-	0.0059	-
MBH-31X TB5 A	0.213	0.0458	0.349	-	0.314	-	0.501	0.0229	(0.20)	55.84	0.178	-	0.445	-
IARM-75B	(0.005)	(0.005)	(0.004)	-	(0.001)	(0.004)	-	(0.003)	-	60.63	0.060	-	(0.003)	-
PB MS2	-	0.15	-	-	(0.031)	-	-	-	-	64.44	0.063	-	1.0	-
MBH-31X B26 E	-	1.12	0.112	0.011	0.096	-	0.0172	0.113	-	62.80	1.08	-	0.5	-
PB MSC13	-	1.43	0.052	-	0.11	-	0.085	-	-	61.15	(1.15)	-	2.57	-
MBH-31X B18 J	-	0.0236	0.0196	-	0.0051	-	-	-	-	59.82	0.0193	-	0.0011	-
MBH-31X 7835.4 J	-	0.525	0.142	0.0021	0.0169	-	0.0088	0.0027	-	67.13	0.035	-	-	-
BS-857B-4	(0.002)	0.339	0.0004	-	-	(0.003)	-	-	-	(62.40)	0.30	-	0.003	-
BS-857B-3	(0.002)	-	-	-	-	(0.003)	-	-	-	(62.40)	0.30	-	0.003	-
BS-857B-2	(0.002)	-	-	-	-	(0.003)	-	-	-	(62.40)	0.30	-	0.003	-
MBH-31X CZ114 A	-	0.714	-	-	0.0107	-	-	-	-	57.10	0.74	-	1.475	-
BS-857B-1	(0.002)	-	-	-	-	-	-	-	-	61.30	0.30	-	0.003	-
MBH-31X 7835.6 B	0.0022	0.625	0.006	0.0035	0.0031	-	0.0017	0.0013	-	60.52	(0.023)	-	-	-
MBH-31X 7835.3 H	0.0193	0.039	0.0693	-	0.0283	-	0.0052	0.022	-	60.91	0.17	-	-	-
IARM-87B	(0.001)	0.20	0.007	-	0.003	0.003	-	0.007	(0.002)	60.90	0.290	-	0.006	-
IARM-76C	(0.002)	(0.004)	(0.003)	-	-	0.003	-	-	-	60.40	0.013	-	(0.001)	-
MBH-31X 7835.5 A	-	0.078	0.104	-	-	-	-	-	-	91.25	0.126	-	-	-
IARM-72B	(0.002)	-	(0.003)	-	-	0.002	-	-	-	90.08	0.007	-	-	(0.0002)

Product Code	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Zn	Size	Grade	Type	Form
MBH-31X B27 B	0.0315	-	0.015	0.492	0.008	0.0243	-	0.0044	0.985	17.65	Ø 42X18mm		CRM	CC
MBH-31X TB5 A	0.079	-	-	0.576	-	0.174	-	(0.122)	0.107	40.63	Ø 42x15mm		CRM	CC
IARM-75B	0.020	-	0.003	0.63	(0.001)	(0.004)	-	(0.003)	0.59	38.00	Ø 38X19mm	C48200	CRM	W
PB MS2	0.34	-	-	0.64	-	-	-	0.079	0.64	32.62	Ø 50x20-25mm		RM	
MBH-31X B26 E	1.68	-	0.054	0.752	-	0.116	-	0.195	1.62	29.81	Ø 40x15mm		CRM	CC
PB MSC13	0.48	-	-	0.86	-	0.11	-	0.14	0.87	30.99	Ø 50x20-25mm		RM	
MBH-31X B18 J	0.0143	-	0.0117	0.916	<0.005	0.0129	-	(0.018)	0.046	39.11	Ø 42X18mm	C37000	CRM	CC
MBH-31X 7835.4 J	0.477	-	0.121	1.049	-	0.068	-	-	0.07	30.36	Ø 40x15mm		CRM	CC
BS-857B-4	0.61	-	0.003	1.20	(0.001)	-	-	0.005	1.13	34.91	Ø 38X12mm	C85700	RM	CCC
BS-857B-3	0.61	-	0.003	1.21	(0.001)	-	-	0.004	1.13	34.91	Ø 38X12mm	C85700	RM	CCC
BS-857B-2	0.61	-	0.003	1.21	(0.001)	-	-	0.003	1.13	34.91	Ø 38X12mm	C85700	RM	CCC
MBH-31X CZ114 A	0.0183	-	0.0018	1.219	-	(0.0032)	-	(0.0064)	0.511	38.25	Ø 38x15mm		CRM	W
BS-857B-1	0.61	-	0.004	1.22	-	-	-	-	1.14	34.91	Ø 38X12mm	C85700	RM	CCC
MBH-31X 7835.6 B	(0.017)	-	0.0165	1.52	0.007	0.0125	0.0004	0.01	0.091	37.00	Ø 40x15mm		CRM	CC
MBH-31X 7835.3 H	0.217	-	(0.05)	1.53	-	0.102	0.0029	0.010	0.107	36.86	Ø 40x15mm		CRM	CC
IARM-87B	0.095	-	0.008	1.58	(0.001)	0.014	-	0.004	0.78	36.10	Ø 38X19mm	C85700	CRM	C
IARM-76C	0.003	<0.005	0.003	1.60	(0.001)	(0.004)	-	(0.003)	0.66	37.20	Ø 38X19mm	C48500	CRM	W
MBH-31X 7835.5 A	0.249	-	0.018	1.64	-	0.114	-	-	0.116	6.23	Ø 42x18mm		CRM	CC
IARM-72B	0.004	0.002	0.005	1.99	0.0015	0.006	-	(0.002)	0.029	7.81	Ø 38X19mm	C31400	CRM	W

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Cu/Zn/Pb Alloys (Leaded Brass)

Product Code	Ag	Al	As	B	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N
MBH-31X 7835.2 K	0.0102	0.060	0.028	0.0023	0.0099	-	0.0020	0.0290	-	64.49	0.0309	-	-	-
MBH-31X B19 Q	-	0.053	0.0092	-	0.0115	-	-	-	-	58.23	0.0143	-	0.015	-
MBH-31X 7835.1 S	0.0061	0.0445	0.0051	(0.0009)	0.010	-	0.0014	0.0144	-	61.56	0.137	-	-	-
BS-360B	0.006	(<0.001)	0.002	-	-	(<0.002)	-	(<0.002)	(0.0001)	(61.20)	0.117	-	0.0094	-
BAM-375	0.0166	0.027	0.0231	-	0.007	-	0.00859	0.01964	-	58.32	0.207	-	0.0222	-
IARM-73C	0.006	0.002	0.004	-	0.011	(0.002)	0.0013	0.002	0.001	61.30	0.199	(0.001)	0.002	-
BAS-CURM H30.24	-	<0.001	<0.001	-	<0.001	-	-	-	-	58.87	0.005	-	<0.001	-
MBH-31X 7835.8 A	0.463	-	0.143	-	0.0112	-	0.0087	0.313	-	69.93	0.10	-	0.093	-
NIST 1124	-	-	-	-	(0.0202)	-	-	(0.0014)	-	(62.50)	0.21	-	(0.0009)	-
PB MSA11	-	0.10	0.066	-	0.11	-	(0.10)	-	-	63.16	0.51	-	0.14	-
MBH-31X B20 N	-	0.0025	0.0028	-	0.0025	-	-	-	-	58.53	0.024	-	0.0005	-
BS-836A-4	0.023	(0.0013)	0.008	-	-	(0.002)	-	-	-	84.7	0.026	-	(0.001)	-
BS-836A-3	0.023	(0.0014)	0.008	-	-	(0.02)	-	-	-	84.7	0.025	-	(0.001)	-

Product Code	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Zn	Size	Grade	Type	Form
MBH-31X 7835.2 K	0.0462	-	0.0226	2.07	0.0075	0.0358	-	0.0193	0.152	32.94	Ø 42x18mm		CRM	CC
MBH-31X B19 Q	0.0141	-	0.047	2.43	(0.002)	0.0095	-	0.0248	0.0278	39.08	Ø 40X17mm	C37700	CRM	CC
MBH-31X 7835.1 S	0.057	-	0.0162	2.75	(0.002)	0.0106	(0.001)	0.005	0.304	34.98	Ø 40x15mm		CRM	CC
BS-360B	0.040	0.0007	(<0.002)	2.77	(<0.0005)	0.017	-	0.002	0.15	35.70	Ø 38X19mm	C36000	CRM	
BAM-375	0.1053	-	(0.00086)	2.90	-	0.0122	-	0.0122	0.209	38.02	Ø 40x30mm		CRM	W
IARM-73C	0.095	-	0.003	2.97	0.003	0.008	-	0.003	0.256	35.10	Ø 38X19mm	C36000	CRM	W
BAS-CURM H30.24	<0.001	(0.2)	-	3.02	-	<0.001	-	<0.001	<0.001	37.92	Ø 40x15mm		RM	CC
MBH-31X 7835.8 A	0.158	-	0.122	3.15	-	0.115	-	-	0.156	34.83	Ø 40x15mm		CRM	CC
NIST 1124	0.0801	-	(0.0224)	3.363	-	0.02325	-	-	0.3112	35.19	Ø 39X19mm	C36000	CRM	CCC
PB MSA11	0.55	-	-	3.51	-	0.11	-	0.19	0.38	31.07	Ø 50x20-25mm		RM	
MBH-31X B20 N	0.021	-	0.0039	4.43	(0.004)	0.0039	-	(0.005)	0.0244	37.03	Ø 42X17mm		CRM	CC
BS-836A-4	0.46	-	0.086	4.58	0.041	0.068	-	(0.0019)	4.58	4.64	Ø 40x15mm	C83600	CRM	CCC
BS-836A-3	0.46	-	0.084	4.58	0.041	0.068	-	(0.0021)	4.58	4.59	Ø 40x15mm	C83600	CRM	CCC

Cu/Zn/Pb Chips (Leaded Brass)

Product Code	Ag	Al	As	Bi	Cd	Cu	Fe	Mg	Mn	Ni	P	Pb	S	Sb
BAM NR 223	-	(<0.002)	0.0084	0.0018	-	58.74	0.091	-	(<0.001)	0.0214	0.0003	2.13	0.0021	0.004
BAS-BCS-CRM 385	-	(<0.005)	-	-	-	58.70	0.15	-	(<0.005)	0.13	-	2.24	-	(<0.01)
IPT 40	0.002	0.01	-	-	0.049	58.10	0.007	-	-	0.0012	-	2.45	-	0.023

Product Code	Se	Si	Sn	Zn
BAM NR 223	(<0.0001)	(<0.003)	0.089	38.82
BAS-BCS-CRM 385	-	-	0.27	38.50
IPT 40	-	-	0.18	39.10

	Size	Grade	Type	Form
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Zn/Pb Alloy Sets (Leaded Brass)

Product Code	Al	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn		
IM WG1	0.096	0.0013	60.99	0.0084	0.26	0.20	0.029	0.71	(0.062)	(0.0046)	0.29	Rem.		
IM WG2	(0.00095)	0.016	56.99	0.42	(0.0024)	0.0051	-	2.66	(0.0024)	(0.021)	(0.0025)	Rem.		
IM WG3	0.041	0.0057	58.20	0.31	0.037	0.029	0.013	2.29	0.018	-	0.091	Rem.		
IM WG4	0.073	0.014	60.05	0.10	0.12	0.16	0.02	1.41	(0.042)	(0.016)	0.21	Rem.		
IM WG5	0.058	0.0094	59.32	0.18	0.074	0.078	0.016	1.66	0.034	-	0.14	Rem.		
IM WG6	0.02	0.023	60.67	0.18	0.21	0.29	0.044	3.70	(0.0078)	(0.019)	0.40	Rem.		

Product Code
IM WG1
IM WG2
IM WG3
IM WG4
IM WG5
IM WG6
Set of 6 Only

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Product Code	Al	Bi	Cu	Fe	Mn	Ni	P	Pb	S	Sb	Si	Sn	Zn
NCS HS43724-1	0.0749	(0.011)	59.95	0.205	0.119	1.474	(0.004)	0.414	(0.00077)	(0.0056)	0.0049	0.0099	Rem.
NCS HS43724-2	0.0116	(0.005)	57.77	0.0426	0.184	0.795	(0.0075)	0.76	(0.0015)	(0.0021)	0.0093	0.0979	Rem.
NCS HS43724-3	0.177	(0.003)	57.09	0.0104	-	0.347	(0.0141)	1.421	(0.00099)	(0.0116)	0.052	0.192	Rem.
NCS HS43724-4	0.452	(0.0049)	58.64	0.703	0.0188	0.104	(0.0111)	1.81	(0.0006)	(0.0102)	0.007	0.293	Rem.
NCS HS43724-5	0.761	(0.001)	58.76	0.107	0.0517	0.0286	(0.10)	2.405	(0.001)	(0.0048)	0.209	0.689	Rem.
NCS HS43724-6	0.2622	(0.003)	59.60	0.613	0.0345	0.386	(0.0274)	1.393	(0.00094)	(0.0291)	0.0425	0.206	Rem.

Product Code
NCS HS43724-1
NCS HS43724-2
NCS HS43724-3
NCS HS43724-4
NCS HS43724-5
NCS HS43724-6
Set of 6 Only

Size	Grade	Type	Form
Ø 40x20mm		CRM	
Ø 40x20mm		CRM	
Ø 40x20mm		CRM	
Ø 40x20mm		CRM	
Ø 40x20mm		CRM	
Ø 40x20mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Zn/Pb Alloy Sets (Leaded Brass)

Product Code	Al	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
NCS HS28703-1	-	0.0009	73.00	0.028	0.0048	0.003	0.0043	2.77	0.0036	-	0.019	23.99
NCS HS28703-2	0.015	0.0015	64.43	0.036	0.174	0.0023	0.012	1.87	0.0034	0.0012	0.032	33.45
NCS HS28703-3	-	0.0015	60.28	0.047	0.0046	0.0019	0.0042	0.766	0.0061	-	0.108	38.79
NCS HS28703-4	0.064	0.0024	59.14	0.167	0.031	0.0027	0.011	1.50	0.0077	0.0016	0.102	38.85
NCS HS28703-5	0.034	0.0025	58.07	0.11	0.029	0.0025	0.02	1.81	0.013	-	0.269	39.59
NCS HS28703-6	0.271	0.001	56.62	0.037	0.05	0.0023	0.044	0.581	0.022	-	0.478	41.76
NCS HS28703-7	0.364	0.0083	59.55	0.502	0.464	0.0035	0.02	3.06	0.029	0.0077	0.750	34.92

Product Code
NCS HS28703-1
NCS HS28703-2
NCS HS28703-3
NCS HS28703-4
NCS HS28703-5
NCS HS28703-6
NCS HS28703-7
Set of 7 Only

Size	Grade	Type	Form
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	
Ø 35x28mm		CRM	

Product Code	Al	As	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM WN1	0.33	0.035	0.023	58.44	0.23	0.57	0.29	0.031	0.51	0.099	0.16	1.0	Rem.
IM WN2	0.24	0.011	0.035	60.38	0.29	0.73	0.19	0.051	1.58	0.10	0.22	0.68	Rem.
IM WN3	0.14	0.032	0.02	62.32	0.062	0.39	0.098	0.034	2.62	0.02	0.12	0.39	Rem.
IM WN4	0.047	0.021	0.0094	57.97	0.11	0.13	0.05	0.014	0.68	0.061	0.036	0.13	Rem.
IM WN5	0.0004	0.03	0.0028	64.36	0.0085	0.002	0.0049	0.0051	3.78	0.0035	0.0013	0.019	Rem.

Product Code
IM WN1
IM WN2
IM WN3
IM WN4
IM WN5
Set of 5 Only

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought



Special milling machine HK81F



Technical features

Semi-automatic machine for reproducible surface preparation of non-ferrous metal samples for emission and X-ray spectrometer analysis.

- Compact desk-top machine
- Fully contained working compartment with halogen lighting
- Continuous setting of spindle and cutting speed
- Display of cutting speed, frequency, voltage and current
- Clean operation and millings collection container
- Automatic sample feeding with adjustable speed and exact depth setting.

The standard machine and control unit comes with the following accessories: three-point-chuck with reverse brackets, set of tools, lubricant, dust brush, tool for cutter positioning and exchange, transport handles.

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Section: Cu/Sn Alloys

Cu/Sn Alloys (Tin Bronze)

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N	Ni
MBH-32X CSN1 A	-	-	-	-	-	-	-	-	Rem.	0.0020	-	-	-	(0.0001)
BAS-C11.01	-	<0.005	<0.005	<0.0005	-	-	-	-	Rem.	<0.005	<0.001	<0.005	-	0.006
MBH-32X PB20 A	-	<0.001	0.0011	-	(0.0014)	-	-	-	95.22	0.0013	-	(0.007)	0.009	0.009
IARM-77B	(0.002)	(0.001)	(0.001)	(0.004)	0.003	-	-	-	95.20	0.002	-	(0.002)	(0.0001)	0.002
BAS-C11.02	-	<0.005	<0.005	<0.0005	-	-	-	-	Rem.	<0.005	<0.001	<0.005	-	0.006
ERM-EB378	0.00266	(<0.0001)	0.00995	(<0.0001)	-	0.01007	0.0089	0.0311	94.13	0.0182	0.00287	(0.000074)	-	0.00183
ERM-EB377	0.00644	0.00451	(<0.0010)	0.00422	-	(<0.0001)	(<0.0002)	0.00669	94.04	0.01042	(<0.0001)	0.00921	-	0.01074
MBH-32X PB13 E	0.0205	0.0251	0.0391	0.0224	-	-	0.0088	-	92.48	0.0549	-	0.0440	-	0.0953
BAS-C11.03	-	<0.005	<0.005	<0.0005	-	-	-	-	Rem.	<0.005	<0.001	<0.005	-	<0.005

Product Code	O	P	Pb	S	Sb	Se	Si	Sn	Te	Ti	Zn	Zr
MBH-32X CSN1 A	-	0.0007	-	-	-	-	-	0.306	-	-	0.0039	-
BAS-C11.01	-	0.009	0.01	<0.001	<0.005	-	<0.005	3.40	-	-	<0.005	-
MBH-32X PB20 A	-	0.196	0.0045	0.003	0.0012	-	0.0046	4.55	-	-	0.007	-
IARM-77B	(0.002)	0.148	0.016	0.002	0.005	-	(0.003)	4.66	-	-	0.007	-
BAS-C11.02	-	0.02	0.02	<0.001	<0.005	-	<0.005	5.50	-	-	<0.005	-
ERM-EB378	-	0.0602	(0.00042)	(0.00091)	0.00861	(<0.0002)	(<0.0010)	5.74	0.0085	(0.00294)	(0.00073)	(0.00017)
ERM-EB377	-	(<0.0010)	0.00449	(0.00068)	0.0013	0.0055	(0.0134)	5.92	(<0.0001)	(<0.0001)	0.01006	-
MBH-32X PB13 E	-	0.089	0.109	0.015	0.092	-	0.053	6.55	-	-	0.301	-
BAS-C11.03	-	0.04	0.01	<0.001	<0.005	-	<0.005	7.40	-	-	<0.005	-

Product Code
MBH-32X CSN1 A
BAS-C11.01
MBH-32X PB20 A
IARM-77B
BAS-C11.02
ERM-EB378
ERM-EB377
MBH-32X PB13 E
BAS-C11.03

Size	Grade	Type	Form
Ø 22x20mm		CRM	W
Ø 50x10-12mm	C52400	RM	C
Ø 38x17mm	C51000	CRM	CW
Ø 38x19mm	C51000	CRM	W
Ø 50x10-12mm		RM	C
Ø 40x30mm		CRM	
Ø 40x30mm	C90200	CRM	
Ø 40x15mm		CRM	CC
Ø 50x10-12mm		RM	C

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn Alloys (Tin Bronze)

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N	Ni
MBH-32X PB23 A	-	(0.0004)	0.0011	-	0.004	-	-	-	92.04	(0.0005)	-	(0.0006)	0.0033	0.0033
ERM-EB374	0.00121	(<0.0001)	(0.00043)	(0.00022)	-	(<0.0001)	(<0.0001)	(<0.0001)	92.22	0.0040	(<0.0001)	0.00043	-	0.00327
MBH-32X PB14 D	-	(0.0009)	0.0331	0.224	-	-	0.0013	-	90.26	0.0056	0.0003	(0.0002)	-	0.144
BAS-C11.04	-	<0.005	<0.005	<0.0005	-	-	-	-	Rem.	<0.005	<0.001	<0.005	-	<0.005
CTIF-B5	-	0.039	-	-	-	-	-	-	Rem.	0.18	-	0.082	-	2.28
MBH-32X PB10 P	-	(0.0016)	0.0126	0.034	0.0062	-	-	-	87.14	0.0043	-	(0.0004)	0.054	0.0130
CTIF-B2	-	(0.003)	-	-	-	-	-	-	85.90	0.051	-	-	-	(0.004)
MBH-32X SN3 G	-	(0.14)	0.0323	-	-	-	0.046	-	81.70	0.14	-	0.067	-	0.464

Product Code	O	P	Pb	S	Sb	Se	Si	Sn	Te	Ti	Zn	Zr
MBH-32X PB23 A	-	0.319	0.0042	0.0015	0.0025	-	0.0016	7.56	-	-	0.002	-
ERM-EB374	-	0.170	0.00083	(0.0013)	(0.00063)	(<0.0002)	(<0.0010)	7.60	(<0.0001)	(<0.0001)	0.00404	(<0.0001)
MBH-32X PB14 D	-	(0.008)	0.048	0.065	0.055	-	(0.0025)	9.00	-	-	0.038	-
BAS-C11.04	-	0.05	0.01	<0.001	<0.005	-	<0.005	9.60	-	-	<0.005	-
CTIF-B5	-	0.041	0.48	0.067	0.47	-	0.049	9.90	-	-	0.42	-
MBH-32X PB10 P	-	0.003	0.0182	0.0144	0.0134	0.0074	(0.0006)	12.37	-	-	0.0256	-
CTIF-B2	-	0.17	0.02	0.048	(<0.002)	-	0.17	13.55	-	-	0.11	-
MBH-32X SN3 G	-	0.646	0.159	0.035	0.362	-	0.0247	16.14	-	-	0.150	-

Product Code
MBH-32X PB23 A
ERM-EB374
MBH-32X PB14 D
BAS-C11.04
CTIF-B5
MBH-32X PB10 P
CTIF-B2
MBH-32X SN3 G

Size	Grade	Type	Form
Ø 49x17mm	C52100	CRM	CW
Ø 40x30mm		CRM	
Ø 40x17mm		CRM	CC
Ø 50x10-12mm		RM	C
Ø 60x6mm	Mushroom	CRM	CC
Ø 40x17mm		CRM	CC
Ø 60x6mm	Mushroom	CRM	CC
Ø 40x15mm		CRM	CC

Cu/Sn Chips (Tin Bronze)

Product Code	Cu	Ni	Sn
DH-SL02-09	87.01	0.265	11.92

Values listed in mass %; () Uncertified Value

	Size	Grade	Type	Form
Chips	50g		RM	

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn Alloys Sets (Tin Bronze)

Product Code	Al	As	Bi	Cd	Fe	Mg	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM BL1	0.11	0.058	0.024	0.06	0.38	0.051	0.062	0.25	0.49	0.25	0.053	0.059	2.58	0.68
IM BL2	0.15	0.039	0.014	0.04	0.21	0.11	0.055	0.37	0.29	0.14	0.039	0.031	4.04	0.40
IM BL3	0.019	0.025	0.0099	0.022	0.10	-	0.026	0.13	0.084	0.065	0.021	0.015	6.12	0.15
IM BL4	-	0.0089	0.0058	0.0092	0.014	-	0.0092	0.015	0.01	0.013	0.0095	0.011	8.38	0.017
IM BL5	0.00052	0.00057	0.0015	0.0015	0.0061	0.003	0.0011	0.0074	0.0042	0.0069	0.0039	(0.0038)	11.05	0.0078

Product Code
IM BL1
IM BL2
IM BL3
IM BL4
IM BL5
Set of 5 Only

Size	Grade	Type	Form
Ø 40x27mm		CRM	
Ø 40x27mm		CRM	
Ø 40x27mm		CRM	
Ø 40x27mm		CRM	
Ø 40x27mm		CRM	

Product Code	Al	Fe	Ni	P	Pb	Sn	Zn
NCS HS45721-1	0.00096	0.116	0.31	0.33	0.072	4.06	0.22
NCS HS45721-2	0.00096	0.014	0.24	0.062	0.091	5.39	0.47
NCS HS45721-3	0.00085	0.034	0.178	0.154	0.031	6.34	0.43
NCS HS45721-4	0.00098	0.063	0.118	0.218	0.013	7.16	0.33
NCS HS45721-5	0.004	0.089	0.053	0.289	0.049	8.27	0.24
NCS HS45721-6	0.0013	0.019	0.18	0.31	0.02	6.52	0.34
Set of 6 Only							

Size	Grade	Type	Form
Ø 39x30mm			
Ø 39x30mm			
Ø 39x30mm			
Ø 39x30mm			
Ø 39x30mm			
Ø 39x30mm			

Product Code	Ag	Al	As	Bi	Cu	Fe	Mg	Mn	Ni	P	Pb	S	Sb	Si
IM CM1	0.01	-	0.0098	0.010	Rem.	0.019	-	-	0.0086	0.0088	0.012	-	0.012	-
IM CM2	0.0061	-	0.0068	0.0072	Rem.	0.0064	-	-	0.0055	0.0058	0.0067	-	0.0068	-
IM CM3	0.0029	-	0.0036	0.0033	Rem.	0.012	-	-	0.0031	0.0041	0.0038	-	0.004	-
IM CM4	0.0011	-	0.0011	0.00093	Rem.	0.0042	-	-	0.0011	0.0009	0.0023	-	0.0019	-
IM CM5	-	-	(0.015)	0.014	Rem.	0.0094	-	-	0.014	0.015	0.019	-	0.018	-

Product Code	Sn	Zn
IM CM1	0.61	0.021
IM CM2	0.84	0.0061
IM CM3	1.06	0.006
IM CM4	1.30	0.002
IM CM5	1.14	0.013
Set of 5 Only		

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Pb Alloys (Leaded Tin Bronze)

Product Code	Ag	Al	As	Au	B	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg
MBH-32X PB11 G	-	<0.001	0.20	-	-	-	0.033	-	-	0.097	-	90.54	0.566	0.0041
MBH-32X LB15 E	0.0217	(0.001)	0.0273	-	-	-	(0.13)	-	-	0.0051	-	73.60	0.0012	-
MBH-32X LB16 A	0.0016	(0.001)	-	-	-	-	0.0119	-	-	-	-	74.42	0.004	-
MBH-32X LB14 G	0.07	<0.005	0.05	-	-	-	0.72	-	-	0.09	-	Rem.	0.01	-
MBH-32X LB13 C	0.0063	0.0011	0.131	-	-	-	0.0721	-	-	0.0293	-	84.87	0.016	-
BS-922B-1	(0.001)	(0.001)	0.001	-	-	-	-	-	-	-	-	88.40	0.010	-
BS-922B-2	(0.001)	(0.001)	0.001	-	-	-	-	-	-	-	-	88.40	0.008	-
BS-922B-3	(0.001)	(0.001)	0.001	-	-	-	-	-	-	-	-	88.40	0.008	-
BS-922B-4	(0.001)	(0.001)	0.001	-	-	-	-	-	-	-	-	88.40	0.007	-
BS-922B-5	(0.001)	(0.001)	0.001	-	-	-	-	-	-	-	-	88.40	0.006	-
MBH-32X LB17 A	0.911	0.388	1.51	-	-	-	0.220	-	0.151	0.0083	0.0008	74.83	0.488	-
IARM-184A	0.01	0.0016	0.01	-	-	-	0.03	(0.004)	-	(0.001)	(0.001)	(74.0)	0.003	-
IARM-91E	0.016	0.002	0.008	-	(0.0005)	0.001	0.11	(0.003)	0.0008	0.0024	(0.0005)	81.3	0.11	(0.0003)
CTIF-B10	-	0.17	0.009	-	-	-	-	-	-	-	-	Rem.	0.17	-
Product Code	Mn	N	Nb	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Zn	
MBH-32X PB11 G	0.201	-	-	0.904	-	0.885	1.038	0.0227	0.478	-	0.099	3.40	1.50	
MBH-32X LB15 E	-	-	-	0.123	-	0.0035	21.42	0.032	0.127	-	0.0008	4.51	0.064	
MBH-32X LB16 A	-	-	-	0.793	-	(0.002)	18.78	0.0012	(0.001)	-	-	5.55	0.458	
MBH-32X LB14 G	<0.005	-	-	0.26	-	0.06	15.50	0.02	0.075	-	<0.005	5.70	0.60	
MBH-32X LB13 C	0.0005	-	-	0.828	-	0.0161	7.59	0.115	0.0186	-	(0.0035)	5.80	0.52	
BS-922B-1	(0.002)	-	-	0.61	-	0.037	1.33	0.002	-	-	(0.001)	5.80	3.95	
BS-922B-2	(0.002)	-	-	0.61	-	0.031	1.33	0.002	-	-	(0.001)	5.80	3.91	
BS-922B-3	(0.002)	-	-	0.61	-	0.026	1.33	0.002	-	-	(0.001)	5.80	3.83	
BS-922B-4	(0.002)	-	-	0.61	-	0.021	1.33	0.002	-	-	(0.001)	5.80	3.82	
BS-922B-5	(0.002)	-	-	0.61	-	0.017	1.33	0.002	-	-	(0.001)	5.80	3.78	
MBH-32X LB17 A	0.296	-	-	0.465	-	0.051	9.83	-	4.10	-	-	5.97	0.634	
IARM-184A	0.002	-	-	0.30	-	0.008	19.0	0.021	0.27	-	0.002	6.00	0.37	
IARM-91E	0.001	(0.0004)	(0.0005)	0.3	(0.001)	0.027	7.6	0.030	0.17	0.003	0.002	6.60	3.70	
CTIF-B10	<0.01	-	-	0.97	-	0.015	4.03	0.05	1.09	-	<0.1	6.60	2.55	
Product Code											Size	Grade	Type	Form
MBH-32X PB11 G											Ø 40x15mm		CRM	CC
MBH-32X LB15 E											Ø 40x15mm		CRM	CC
MBH-32X LB16 A											Ø 32x17mm		CRM	W
MBH-32X LB14 G											Ø 40x15mm		CRM	CC
MBH-32X LB13 C											Ø 40x15mm		CRM	CC
BS-922B-1											Ø 41x12mm	C92200	RM	
BS-922B-2											Ø 41x12mm	C92200	RM	
BS-922B-3											Ø 41x12mm	C92200	RM	
BS-922B-4											Ø 41x12mm	C92200	RM	
BS-922B-5											Ø 41x12mm	C92200	RM	
MBH-32X LB17 A											Ø 40x15mm		CRM	CC
IARM-184A											Ø 38x19mm	C94100	CRM	C
IARM-91E											Ø 38x19mm	C93200	CRM	C
CTIF-B10											Ø 60x6mm		CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Pb Alloys (Leaded Tin Bronze)

Product Code	Ag	Al	As	Au	B	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg
BS-938-1	0.0048	(<0.002)	(0.004)	-	-	-	-	-	-	-	-	77.10	(0.015)	-
MBH-32X SN6 A	1.159	0.0313	0.764	0.0073	-	-	0.158	-	0.0903	0.655	0.0074	86.39	0.099	-
BS-903B	-	(0.001)	0.003	-	-	-	-	(0.0004)	-	-	-	86.70	0.049	-
MBH-32X LB10 F	0.0459	0.0188	0.146	-	-	-	0.0563	-	-	0.0395	-	77.23	0.0045	-
CTIF-B11-1	-	-	-	-	-	-	-	-	-	-	-	84.5	0.20	-
BAS-CURM50.03	-	0.0005	0.11	-	-	-	0.051	-	-	-	-	77.42	0.018	-
BS-929	(<0.005)	(<0.00005)	0.0017	-	-	-	(<0.005)	(<0.005)	-	0.0031	(<0.005)	85.30	0.0030	-
BAS-CURM50.01	-	0.018	0.22	-	-	-	0.029	-	-	-	-	74.08	0.243	-
MBH-32X LB12 D	-	(0.001)	0.0897	-	-	-	0.0231	-	-	0.0751	-	79.27	0.0223	-
BS-CC905	-	0.0007	0.004	-	-	-	-	0.003	-	-	-	85.40	0.048	-
IARM-92C	0.05	0.001	0.01	-	-	-	0.01	-	-	-	-	80.40	0.01	-
MBH-32X 93700 A	-	-	-	-	-	-	-	-	-	0.0004	-	80.43	0.0011	-
CTIF-B13	-	0.016	0.065	-	-	-	-	-	-	-	-	86.35	0.25	-

Product Code	Mn	N	Nb	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Zn
BS-938-1	(0.001)	-	-	0.49	-	(0.059)	14.8	0.009	0.033	-	(<0.004)	7.16	0.26
MBH-32X SN6 A	0.0024	-	-	0.203	-	-	1.559	0.018	0.323	-	-	7.31	1.17
BS-903B	0.0004	-	-	0.50	-	0.073	0.10	0.006	0.003	-	0.002	7.90	4.39
MBH-32X LB10 F	-	-	-	0.695	-	0.0063	12.46	0.010	0.557	-	0.008	8.26	0.426
CTIF-B11-1	0.02	-	-	2.06	-	0.07	2.0	0.098	0.73	-	0.20	8.30	2.0
BAS-CURM50.03	0.037	-	-	2.89	-	0.159	8.86	0.064	0.24	-	0.005	8.41	1.72
BS-929	(<0.00005)	-	-	3.37	0.0031	0.119	1.98	(0.001)	0.008	-	(0.003)	9.07	0.0055
BAS-CURM50.01	0.024	-	-	2.24	-	0.113	11.74	0.113	0.59	-	0.007	9.45	1.17
MBH-32X LB12 D	-	-	-	0.433	-	0.383	9.06	0.094	0.442	-	<0.001	9.52	0.584
BS-CC905	0.0014	-	-	1.51	-	0.059	0.58	0.015	0.011	-	0.003	9.68	2.89
IARM-92C	-	-	-	0.17	-	0.08	9.5	0.027	0.076	<0.002	0.002	9.70	0.15
MBH-32X 93700 A	-	-	0.307	-	-	(0.0015)	8.38	0.0017	0.0051	-	-	9.95	0.78
CTIF-B13	0.046	-	-	0.50	-	0.21	0.99	0.07	0.243	-	0.085	10.05	1.09

Product Code
BS-938-1
MBH-32X SN6 A
BS-903B
MBH-32X LB10 F
CTIF-B11-1
BAS-CURM50.03
BS-929
BAS-CURM50.01
MBH-32X LB12 D
BS-CC905
IARM-92C
MBH-32X 93700 A
CTIF-B13

	Size	Grade	Type	Form
	Ø 38x12mm	C93800	RM	
	Ø 40x15mm		CRM	CC
	Ø 38x12mm	C90300	RM	
	Ø 40x15mm	C94400M	CRM	CC
Mushroom	Ø 60x6mm		CRM	CC
	Ø 50x12mm		CRM	
	Ø 50x19mm	C92900	CRM	
	Ø 50x12mm		CRM	
	Ø 40x15mm		CRM	CC
	Ø 32x20mm		RM	
	Ø 38x19mm	C93700	CRM	C
	Ø 42x15mm	C93700	CRM	CCC
Mushroom	Ø 60x6mm		CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Pb Alloys (Leaded Tin Bronze)

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cu	Fe	Mn	Ni	P	Pb	S
BS-905A-1	(<0.002)	(<0.003)	(0.001)	-	-	-	-	87.3	0.015	(<0.003)	0.018	0.055	0.030	-
BS-905A-2	0.002	(<0.005)	0.002	-	(0.002)	-	-	(87.3)	0.014	(<0.005)	0.018	0.056	0.032	(0.004)
BS-905A-3	(<0.002)	(<0.005)	0.002	-	(0.001)	-	-	(87.3)	0.013	(<0.005)	0.018	0.052	0.033	(0.004)
BS-905A-4	(<0.002)	(<0.005)	0.002	-	(0.002)	-	-	(87.3)	0.012	(<0.005)	0.018	0.049	0.033	(0.004)
BAS-CURM50.02	-	<0.001	<0.001	<0.0005	-	-	-	77.89	0.055	0.003	0.005	0.041	11.28	<0.001
CTIF-B14	-	<0.01	0.04	-	-	-	-	87.0	0.11	0.02	0.30	0.64	0.50	0.02
MBH-32X LB11 D	0.118	0.0022	0.0315	0.0338	-	-	0.0202	77.97	0.0025	(0.0003)	0.565	0.007	10.17	0.053
CTIF-B4	-	-	-	-	-	-	-	83.75	0.021	-	0.57	0.52	2.53	0.019
BAS-CURM50.04	-	0.014	0.06	0.10	-	-	-	76.11	0.10	0.028	1.10	0.032	9.94	0.14
MBH-32X SN1 F	-	(0.0010)	0.0111	-	-	-	0.0136	80.34	0.0014	(0.0002)	1.931	0.0022	5.66	0.0126
MBH-32X SN7 A	0.305	1.071	-	0.052	-	0.0385	0.443	80.30	(0.06)	0.0010	0.175	0.056	2.60	-
CTIF-B3	-	0.10	-	-	-	-	-	80.20	0.20	-	1.50	0.45	1.60	0.04
MBH-32X SN2 J	0.0107	0.0119	-	0.119	-	-	0.0343	81.17	0.041	0.0246	1.025	0.220	2.06	0.0106
MBH-32X SN4 A	-	0.034	0.0468	-	-	-	0.151	77.88	0.06	0.0065	0.556	0.988	1.059	0.040
Product Code	Sb	Si	Sn	Zn							Size	Grade	Type	Form
BS-905A-1	0.004	(<0.004)	10.25	2.27							Ø 38x12mm	C90500	RM	
BS-905A-2	0.004	(<0.005)	10.30	2.30							Ø 38x12mm	C90500	RM	
BS-905A-3	0.004	(<0.005)	10.30	2.30							Ø 38x12mm	C90500	RM	
BS-905A-4	0.004	(<0.005)	10.30	2.20							Ø 38x12mm	C90500	RM	
BAS-CURM50.02	<0.005	0.021	10.31	0.128							Ø 50x12mm	C93700	CRM	
CTIF-B14	0.08	0.075	10.75	0.15							Mushroom Ø 60x6mm		CRM	CC
MBH-32X LB11 D	0.111	(0.002)	10.87	0.124							Ø 40x15mm		CRM	CC
CTIF-B4	0.10	0.015	11.10	1.34							Mushroom Ø 60x6mm		CRM	CC
BAS-CURM50.04	0.50	0.011	11.30	0.66							Ø 50x12mm		CRM	
MBH-32X SN1 F	0.0274	(0.0006)	11.65	0.259							Ø 42x18mm	C92710	CRM	CC
MBH-32X SN7 A	0.263	-	12.60	1.96							Ø 40x15mm		CRM	CC
CTIF-B3	0.20	0.07	12.80	2.20							Mushroom Ø 60x6mm		CRM	CC
MBH-32X SN2 J	0.106	0.009	14.22	0.940							Ø 40x15mm		CRM	CC
MBH-32X SN4 A	0.102	(0.004)	18.80	0.342							Ø 42x18mm		CRM	CC

Values listed in mass %; () Uncertified Value

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Cu/Sn/P Alloys (Phosphor Bronze)

Product Code	Ag	Al	As	Bi	C	Co	Cr	Cu	Fe	Mg	Mn	N	Ni	O
MBH-32X PB10 P	-	(0.0016)	0.0126	0.034	0.0062	-	-	87.85	0.0043	-	0.0005	-	0.054	-
MBH-32X PB14 D	-	(0.0009)	0.0331	0.224	-	0.0013	-	90.26	0.0056	0.0003	(0.0002)	0.144	0.144	-
BAS-C54.01-1	-	0.009	0.04	-	-	-	-	Rem.	0.01	<0.001	0.13	-	0.26	-
BAS-CURM54.01	-	0.04	0.044	-	-	-	-	95.42	0.028	0.008	0.158	-	0.348	-
MBH-32X PB13 E	0.0205	0.0251	0.0549	0.0224	-	0.0088	-	92.48	0.0549	-	0.0440	-	0.0953	-
BS-510A	-	<0.002	0.0008	-	-	-	-	95.10	0.005	-	<0.002	-	0.020	-
MBH-32X 52100 A	0.0011	0.0009	0.0009	0.0019	(0.0006)	-	-	92.10	0.0008	-	-	-	0.0111	-
IARM-77B	(0.002)	(0.001)	(0.001)	(0.004)	0.003	-	-	95.20	0.002	-	(0.002)	(0.0001)	0.002	(0.002)
MBH-32X PB20 A	-	<0.001	0.0011	-	(0.0014)	-	-	95.22	0.0013	-	(0.007)	0.009	0.009	-
MBH-32X 51000 A	0.0022	0.0007	-	-	-	-	-	94.87	0.0024	-	-	-	0.0084	-
MBH-32X PB23 A	-	(0.0004)	0.0011	-	0.004	-	-	92.04	(0.0005)	-	(0.0006)	0.0033	0.0033	-
BAS-CURM54.03	-	<0.001	0.006	-	-	-	-	87.14	0.005	<0.0003	(0.0004)	-	0.0130	-
Product Code	P	Pb	S	Sb	Se	Si	Sn	Zn			Size	Grade	Type	Form
MBH-32X PB10 P	0.003	0.0182	0.0144	0.0134	0.0074	(0.0006)	12.37	0.256			Ø 40x17mm		CRM	CC
MBH-32X PB14 D	(0.008)	0.048	0.065	0.055	-	(0.0025)	9.00	0.038			Ø 40x17mm		CRM	CC
BAS-C54.01-1	0.05	0.29	0.03	0.08	-	0.006	3.20	0.31			Ø 50x12mm		CRM	
BAS-CURM54.01	0.053	0.307	0.023	0.070	-	0.039	3.17	0.346			Ø 50x12mm		CRM	
MBH-32X PB13 E	0.089	0.109	0.015	0.092	-	0.053	6.55	0.301			Ø 40x15mm		CRM	CC
BS-510A	0.11	0.016	0.008	(0.003)	-	<0.003	4.60	0.21			Ø 38x12mm	C51000	CRM	
MBH-32X 52100 A	0.146	0.0031	0.0008	-	-	-	7.73	0.0026			Ø 40x15mm	C52100	CRM	
IARM-77B	0.148	0.016	0.002	0.005	-	(0.003)	4.66	0.007			Ø 38x19mm	C51000	CRM	W
MBH-32X PB20 A	0.196	0.0045	0.003	0.0012	-	0.0046	4.55	0.007			Ø 38x17mm	C51000	CRM	CW
MBH-32X 51000 A	0.300	0.0032	0.0021	-	-	-	4.85	0.0105			Ø 38x15mm	C51000	CRM	
MBH-32X PB23 A	0.319	0.0042	0.0015	0.0025	-	0.0016	7.56	0.002			Ø 49x17mm		CRM	CW
BAS-CURM54.03	0.954	0.003	<0.001	0.0007	-	<0.002	7.30	0.003			Ø 50x12mm		CRM	

Cu/Sn/P Chips (Phosphor Bronze)

Product Code	Al	As	Bi	Cu	Fe	Mg	Mn	Ni	P	Pb	S	Sb	Si	Sn
BAS-CURM54.01C	0.04	0.044	-	95.42	0.028	0.008	0.158	0.348	0.053	0.307	0.023	0.07	0.039	3.17
NIM-GBW02135	-	-	-	91.73	-	-	-	-	0.106	-	-	-	-	7.92
NIM-GBW02134	-	-	-	92.85	-	-	-	-	0.238	-	-	-	-	6.82
NIM-GBW02136	-	-	-	93.70	0.011	-	-	-	0.372	0.021	-	0.0058	0.0012	5.79
NIM-GBW02133	-	-	-	93.72	-	-	-	-	0.423	-	-	-	-	5.79
BAS-BCS-CRM 374	(<0.005)	-	(0.007)	89.50	(<0.005)	-	-	0.014	0.59	0.064	0.012	(0.01)	(<0.005)	9.80
BAS-CURM54.03C	<0.001	<0.001	-	92.56	0.015	<0.003	<0.003	0.0006	0.786	0.0012	<0.001	<0.001	<0.002	6.67
Product Code	Zn			Size	Grade	Type	Form							
BAS-CURM54.01C	0.346			Chips	100g	CRM								
NIM-GBW02135	-			Chips	150g	CRM								
NIM-GBW02134	-			Chips	150g	CRM								
NIM-GBW02136	-			Chips	150g	CRM								
NIM-GBW02133	-			Chips	150g	CRM								
BAS-BCS-CRM 374	0.006			Chips	100g	CRM								
BAS-CURM54.03C	<0.002			Chips	100g	CRM								

Values listed in mass %; () Uncertified Value

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Cu/Sn/P/Pb Alloys (Leaded Phosphor Bronze)

Product Code	Ag	Al	As	Bi	C	Co	Cr	Cu	Fe	Mg	Mn	N	Ni	O
BS-544B	0.0173	(0.0009)	0.0043	-	0.0031	(0.0012)	(0.0007)	88.20	0.087	-	(0.0009)	(0.0007)	0.068	0.0005
BAS-CURM54.02	-	0.02	0.023	-	-	-	-	92.87	0.102	0.0020	0.101	-	0.109	-
IARM-78B	0.008	(0.002)	<0.003	(0.001)	<0.002	<0.0005	-	87.70	0.02	-	(0.002)	-	0.077	-
MBH-33X 54400 A	0.0124	0.0009	0.0156	-	-	0.0013	-	86.79	0.072	-	-	-	0.244	-
BAS-CURM54.05	-	0.055	0.063	-	-	-	-	84.78	0.051	0.0021	0.078	-	1.28	-
MBH-32X PB11 G	-	0.081	0.198	0.031	-	0.090	-	90.44	0.399	0.0091	0.132	-	0.898	-

Product Code	P	Pb	S	Sb	Si	Sn	Zn
BS-544B	0.0258	3.90	0.0249	0.0244	0.0042	4.06	3.51
BAS-CURM54.02	0.107	0.663	0.03	0.026	0.012	5.53	0.41
IARM-78B	0.19	3.87	0.010	0.01	<0.002	4.73	3.55
MBH-33X 54400 A	0.243	4.69	0.0251	0.0362	-	3.97	3.87
BAS-CURM54.05	0.501	1.14	0.063	0.111	0.006	11.36	0.554
MBH-32X PB11 G	0.946	0.995	0.0148	0.584	0.123	3.31	1.71

Size	Grade	Type	Form
Ø 38x19mm	C54400	CRM	
Ø 50x12mm		CRM	
Ø 38x19mm	C54400	CRM	W
Ø 38x15mm	C54400	CRM	W
Ø 50x12mm		CRM	
Ø 40x15mm		CRM	CC

Cu/Sn/P/Pb Chips (Leaded Phosphor Bronze)

Product Code	Al	As	Cu	Fe	Mg	Mn	Ni	P	Pb	S	Sb	Si	Sn
BAS-CURM54.02C	0.02	0.023	92.87	0.102	0.002	0.101	0.109	0.107	0.663	0.03	0.026	0.012	5.53
BAS-CURM54.04C	0.074	0.106	86.54	0.316	0.0009	0.419	0.536	0.25	0.79	0.046	0.33	0.065	9.47
BAS-CURM54.05C	0.055	0.063	84.78	0.051	0.0021	0.078	1.28	0.501	1.14	0.063	0.111	0.006	11.36

Product Code	Zn
BAS-CURM54.02C	0.41
BAS-CURM54.04C	1.09
BAS-CURM54.05C	0.554

	Size	Grade	Type	Form
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Ni Alloys (Nickel-Tin Bronze)

Product Code	Ag	Al	As	B	Bi	C	Co	Cr	Cu	Fe	Mn	Nb	Ni	P
IARM-267A	0.002	0.003	(0.004)	-	(0.005)	(0.003)	(0.002)	(0.001)	87.8	0.019	0.002	-	5.10	0.037
MBH-36X SP1 A	0.005	0.002	-	0.0007	0.0039	-	0.057	-	84.9	0.45	0.084	(0.031)	8.33	(0.003)

Product Code	Pb	S	Sb	Se	Si	Sn	Ti	Zn
IARM-267A	0.026	0.0014	<0.03	0.002	0.003	4.95	-	2.06
MBH-36X SP1 A	0.0115	0.005	0.0177	-	0.004	5.75	(0.0004)	0.344

Size	Grade	Type	Form
Ø 38x19mm	C94700	CRM	C
Ø 40x15mm		CRM	CC

Cu/Sn/Ni Alloy Set (Nickel-Tin Bronze)

Product Code	Al	Bi	Fe	Ni	P	Pb	S	Sb	Se	Si	Sn	Zn
IM BN1	0.00286	0.118	0.495	0.226	0.123	0.0239	0.113	0.117	0.00335	(0.00839)	6.47	0.135
IM BN2	0.00371	0.0707	0.589	1.64	0.0769	0.00514	0.213	0.0656	0.0104	-	6.21	0.369
IM BN3	0.00126	0.00098	0.153	1.04	0.00038	0.0054	(0.0017)	0.0088	-	-	9.29	0.0625
IM BN4	0.00055	0.00595	0.0216	0.635	0.0066	0.0145	0.112	0.0055	0.0134	(0.00064)	9.81	0.00771
IM BN5	0.0245	0.0298	0.00731	2.69	0.0634	0.00612	0.0018	0.0314	0.00636	(0.00211)	11.82	0.056

Product Code
IM BN1
IM BN2
IM BN3
IM BN4
IM BN5
Set of 5 Only

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Zn Alloys (Tin Brass)

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mn	Ni	P	Pb
CTIF-L2	-	0.485	-	-	-	-	-	-	61.55	-	0.35	0.71	-	0.408
CTIF-L20-1	-	(0.06)	0.099	-	-	-	-	-	85.20	0.039	0.13	0.223	0.026	0.274
IARM-74A	(0.002)	<0.01	(<0.01)	-	(0.012)	-	-	-	(61.30)	0.010	<0.01	0.010	0.006	0.02
BAS-C42.21-1	-	0.005	<0.005	0.012	-	-	-	-	66.10	0.060	<0.005	0.096	0.081	0.23
BAS-CURM42.21	-	0.003	<0.003	0.013	-	-	-	-	66.78	0.119	<0.001	0.120	0.087	0.259
BS-464	-	<0.005	<0.005	0.08	-	-	-	-	Rem.	<0.005	0.02	0.009	(0.001)	0.034
BS-464A	-	(0.001)	<0.002	0.013	-	-	-	-	60.60	0.0002	0.004	0.012	0.001	0.056
BS-482A	-	(0.003)	<0.002	0.020	-	-	-	-	60.0	<0.002	(0.007)	<0.003	<0.002	0.50
IARM-74B	-	0.003	<0.01	-	-	-	-	-	60.4	0.011	<0.01	0.006	<0.002	0.017
IARM-83B	(0.002)	0.002	-	-	0.003	-	(0.003)	(0.003)	58.70	0.970	0.130	0.010	0.004	0.017
BS-675	-	<0.01	<0.005	-	(0.0004)	-	-	-	(58.5)	0.73	0.11	<0.01	<0.01	<0.01

Product Code	S	Sb	Si	Sn	Te	Ti	Zn
CTIF-L2	-	-	0.202	0.48	-	-	35.55
CTIF-L20-1	-	-	0.106	0.49	-	-	13.30
IARM-74A	0.001	<0.01	(<0.01)	0.50	-	-	38.14
BAS-C42.21-1	0.007	0.19	0.081	0.54	-	-	Rem.
BAS-CURM42.21	0.034	0.25	0.15	0.60	-	-	31.61
BS-464	0.007	<0.005	-	0.61	-	-	39.0
BS-464A	(0.001)	<0.01	-	0.62	-	-	38.73
BS-482A	0.0012	(0.002)	-	0.65	-	-	38.80
IARM-74B	0.0012	(0.002)	-	0.70	-	-	38.90
IARM-83B	(0.001)	(0.004)	(0.003)	0.85	-	-	39.30
BS-675	(0.0013)	<0.01	<0.02	0.92	<0.02	0.92	39.70

	Size	Grade	Type	Form
Mushroom	Ø 60x6mm		CRM	CC
Mushroom	Ø 60x5mm		CRM	CC
	Ø 38X19mm	C46400	CRM	W
	Ø 50x12mm		CRM	
	Ø 50x12mm		CRM	
	Ø 38X19mm	C46400	RM	
	Ø 38X19mm	C46400	RM	
	Ø 38X19mm	C48200	RM	
	Ø 38X19mm	C46400	CRM	W
	Ø 38X19mm	C67500	CRM	W
	Ø 38X19mm	C67500	CRM	W

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Zn Alloys (Tin Brass)

Product Code	Al	As	B	Be	Bi	C	Cd	Co	Cu	Fe	Mg	Mn	N	Ni
MBH-31X NB2 H	0.168	0.097	-	-	0.10	-	-	-	62.21	0.112	-	0.151	-	0.0578
NIST-1107	-	-	-	-	-	-	-	-	61.21	0.037	-	-	-	0.098
CTIF-L22	-	-	-	-	-	-	-	-	83.00	0.15	<0.05	<0.001	-	0.105
CTIF-UZ52-3	-	-	-	0.014	-	-	-	-	81.18	0.32	0.04	0.002	-	0.084
CTIF-L21	-	0.103	-	-	-	-	-	-	82.50	0.086	-	0.004	-	0.156
MBH-31X NB3 H	0.094	0.074	0.0026	-	0.093	(0.002)	-	-	72.45	0.113	-	0.0166	-	0.0299
MBH-31X B24 D	(0.002)	0.0116	-	-	0.0126	-	0.0008	-	95.65	0.0342	-	0.0030	-	0.134
MBH-31X NB4 J	0.178	0.0062	0.0009	-	0.104	-	-	-	63.71	0.235	-	0.0053	-	0.23
BAS-C42.25-1	0.02	0.10	-	-	<0.002	-	-	-	58.50	<0.005	-	0.13	-	<0.005
MBH-32X PB15 A	0.045	0.123	-	-	-	-	-	0.0509	96.07	0.116	0.0275	0.0125	0.212	0.212

Product Code	P	Pb	S	Sb	Si	Sn	Zn
MBH-31X NB2 H	0.139	0.239	0.0019	0.099	0.107	1.009	35.47
NIST-1107	-	0.18	-	-	-	1.04	37.34
CTIF-L22	0.06	0.123	-	0.088	0.05	1.05	15.00
CTIF-UZ52-3	0.068	0.11	-	0.08	0.12	1.06	16.90
CTIF-L21	-	0.209	-	-	0.036	1.50	15.40
MBH-31X NB3 H	0.15	0.197	(0.006)	0.265	0.145	1.67	24.64
MBH-31X B24 D	0.0065	0.05	0.050	0.118	-	1.93	1.99
MBH-31X NB4 J	0.23	0.067	(0.0032)	0.45	0.230	2.01	32.57
BAS-C42.25-1	0.06	<0.01	(0.0032)	0.45	<0.002	2.20	Rem.
MBH-32X PB15 A	0.0873	0.174	-	0.026	0.043	2.21	0.76

	Size	Grade	Type	Form
	Ø 42x17mm		CRM	CC
	Ø 32x19mm	C46400	CRM	W
Mushroom	Ø 60x6mm		CRM	CC
	Ø 60x4-6mm		CRM	CC
Mushroom	Ø 60x6mm		CRM	CC
	Ø 42x18mm		CRM	CC
	Ø 40x15mm		CRM	CC
	Ø 42x17mm		CRM	CC
	Ø 50x12mm		CRM	CC
	Ø 40x15mm		CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Zn Alloys (Tin Brass)

Product Code	Ag	Al	As	Au	B	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg
MBH-31X 7835.7 A	-	0.0084	-	-	-	-	0.048	-	0.0047	0.012	-	88.87	0.03	-
BAS-CURM42.25	-	0.021	0.118	-	-	-	<0.001	-	-	-	-	57.78	0.003	-
MBH-33X GM20 A	0.141	(0.001)	0.196	-	-	-	0.031	-	0.0229	0.0382	0.015	87.58	0.57	-
MBH-32X PB12 F	0.015	<0.005	0.052	-	-	-	0.06	-	-	0.015	-	Rem.	0.065	-
MBH-33X GM29 A	0.0026	-	0.0017	-	-	-	0.0019	-	-	-	(0.0004)	89.36	0.0102	-
BS-903D	(0.006)	(0.0001)	0.0014	-	-	-	(0.004)	(<0.005)	-	(0.0009)	-	86.7	0.0058	-
IARM-89C	0.005	0.002	0.003	-	-	-	(0.01)	0.002	-	(0.002)	-	87.60	0.004	-
CTIF-B12	-	0.52	0.111	-	-	-	-	-	-	-	-	85.65	0.162	-
CTIF-UE12	-	-	-	-	-	-	-	-	-	-	-	85.70	0.10	-
CTIF-B1	-	0.061	-	-	-	-	-	-	-	-	-	83.00	0.085	-

Product Code	Mn	N	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Te	Ti	Zn
MBH-31X 7835.7 A	-	-	0.943	-	0.08	0.137	0.0075	0.0327	-	0.039	2.29	-	-	7.50
BAS-CURM42.25	0.169	-	<0.001	-	0.05	0.0023	0.005	<0.001	-	<0.001	2.72	-	-	39.20
MBH-33X GM20 A	0.219	0.999	0.999	-	0.063	0.106	-	2.004	-	-	4.07	-	-	3.87
MBH-32X PB12 F	(0.002)	0.221	0.21	-	0.08	0.045	0.01	0.18	-	<0.005	5.05	-	-	0.14
MBH-33X GM29 A	(0.0005)	0.0289	0.0289	-	0.138	0.05	0.0024	0.0015	-	0.0027	6.12	-	-	4.23
BS-903D	-	(0.0004)	0.284	0.0011	0.059	0.101	0.0090	0.0121	(0.0006)	(0.0003)	8.55	(0.001)	-	4.14
IARM-89C	0.001	-	0.008	(0.01)	0.004	0.17	0.001	0.008	-	0.003	9.10	-	-	3.10
CTIF-B12	0.235	-	2.63	-	0.52	0.201	0.013	0.117	-	0.05	9.57	-	-	0.60
CTIF-UE12	0.03	-	0.46	-	0.70	0.08	0.01	0.01	-	-	11.90	-	-	1.00
CTIF-B1	-	-	0.063	-	0.034	0.202	0.03	0.444	-	0.053	15.10	-	-	0.88

Product Code
MBH-31X 7835.7 A
BAS-CURM42.25
MBH-33X GM20 A
MBH-32X PB12 F
MBH-33X GM29 A
BS-903D
IARM-89C
CTIF-B12
CTIF-UE12
CTIF-B1

	Size	Grade	Type	Form
	Ø 40x15mm	C31600	CRM	CC
	Ø 50x12mm		CRM	
	Ø 40x15mm		CRM	W
	Ø 40x15mm		CRM	CC
	Ø 33x19mm		RM	W
	Ø 38x19mm	C90300	CRM	W
	Ø 38x19mm	C90300	CRM	C
Mushroom	Ø 60x6mm		CRM	CC
Mushroom	Ø 60x6mm		CRM	CC
Mushroom	Ø 60x6mm	C91000M	CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Zn Chips (Tin Brass)

Product Code	Al	As	Bi	Cu	Fe	Mg	Mn	Ni	P	Pb	S	Sb	Si	Sn	
BAS-CURM42.21C	0.003	<0.003	0.013	66.78	0.119	-	<0.001	0.12	0.087	0.259	0.034	0.25	0.15	0.6	
BAS-CURM42.25C	0.021	0.118	<0.001	57.78	0.003	0.169	-	<0.001	0.05	0.0023	0.005	<0.001	<0.001	2.72	
Product Code	Zn										Size	Grade	Type	Form	
BAS-CURM42.21C	31.61										Chips	100g		CRM	
BAS-CURM42.25C	39.20										Chips	100g		CRM	

Cu/Sn/Zn Alloy Sets (Tin Brass)

Product Code	Al	As	Bi	C	Cd	Co	Cu	Fe	Mg	Mn	Ni	P	Pb	S	
IM WL1	0.082	0.001	0.0093	(0.0050)	0.0017	0.001	95.54	0.072	(0.00036)	0.0041	0.44	0.012	0.013	0.02	
IM WL2	0.057	0.0078	0.0073	(0.0082)	0.0023	0.0065	97.49	0.13	0.00097	0.0038	0.32	0.016	0.011	0.0073	
IM WL3	0.0034	0.02	0.005	(0.010)	0.01	0.0096	96.51	0.2	0.0016	0.38	0.22	0.021	0.0083	0.0088	
IM WL4	-	0.0034	0.0026	(0.0032)	0.0068	0.013	96.41	0.012	-	-	0.019	-	0.0066	0.005	
IM WL5	0.0014	0.0011	0.0011	-	0.0038	0.019	97.62	0.0025	-	0.00073	0.0014	-	0.003	0.0019	
IM WL6	0.1	0.024	0.012	(0.016)	0.025	0.019	95.76	0.31	0.015	0.14	0.091	0.032	0.016	0.017	
Product Code	Sb	Si	Sn	Zn								Size	Grade	Type	Form
IM WL1	-	0.057	0.22	3.52								Ø 40x25mm			
IM WL2	0.005	0.046	0.32	1.56								Ø 40x25mm			
IM WL3	0.0085	0.0037	0.37	2.21								Ø 40x25mm			
IM WL4	-	0.0019	0.55	2.97								Ø 40x25mm			
IM WL5	-	0.0009	0.73	1.61								Ø 40x25mm			
IM WL6	0.011	0.13	0.8	2.48								Ø 40x25mm			
Set of 6 Only															

Product Code	Al	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn			
IM WK1	0.11	0.014	59.97	0.28	0.12	0.024	0.03	0.17	0.024	0.3	0.11	Rem.			
IM WK2	0.078	0.011	60.54	0.16	0.086	0.21	0.018	0.33	0.018	0.23	1.34	Rem.			
IM WK3	0.044	0.009	62.09	0.065	0.044	0.13	0.018	0.11	0.012	0.15	0.49	Rem.			
IM WK4	0.013	0.0052	63.28	0.085	0.02	0.07	0.011	0.047	0.006	0.8	1.04	Rem.			
IM WK5	0.0042	0.0011	64.92	0.0095	0.0055	0.0052	0.0056	0.0063	0.0029	0.0064	0.47	Rem.			
Product Code												Size	Grade	Type	Form
IM WK1												Ø 40x25mm		CRM	
IM WK2												Ø 40x25mm		CRM	
IM WK3												Ø 40x25mm		CRM	
IM WK4												Ø 40x25mm		CRM	
IM WK5												Ø 40x25mm		CRM	
Set of 5 Only															

Product Code	Cu	Sn	Zn			
IM ME2	71.29	0.87	Rem.			
IM ME3	70.7	1.11	Rem.			
IM ME4	69.4	1.21	Rem.			
IM ME5	68.53	1.42	Rem.			
Set of 4 Only						
Product Code			Size	Grade	Type	Form
			Ø 40x30mm		CRM	W
			Ø 40x30mm		CRM	W
			Ø 40x30mm		CRM	W
			Ø 40x30mm		CRM	W

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Zn/Pb Alloys (Leaded Tin Brass - Red Brass/Gunmetal)

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mn	N	Ni	O
MBH-31X NB1 H	-	(0.004)	0.61	0.0065	-	-	(0.0006)	-	68.32	0.037	0.051	-	0.52	-
CTIF-L4-1	-	0.104	-	-	-	-	-	-	61.70	0.466	0.109	-	0.227	-
CTIF-L5-1	-	0.64	0.13	-	-	-	-	-	60.90	(1.0)	0.50	-	0.494	-
MBH-31X 7835.9 A	2.12	0.092	0.107	0.81	-	0.0673	0.0813	-	78.48	0.408	0.009	-	0.10	-
BAS-CURM42.22	-	0.042	0.217	0.046	-	-	-	-	70.46	0.230	0.122	-	0.061	-
BAS-CURM42.23	-	0.008	0.168	0.034	-	-	-	-	74.36	0.354	0.019	-	0.168	-
MBH-33X RB1 A	0.0174	0.0048	0.003	0.0029	-	-	-	0.0013	83.24	0.928	0.0167	-	0.0539	-
BAS-CURM42.24	-	0.067	0.065	0.054	-	-	-	-	62.45	0.066	0.065	-	0.025	-
IARM-250A	(0.020)	(0.002)	-	0.02	<0.005	-	(0.002)	<0.003	80.2	0.17	(<0.002)	-	0.33	(0.002)
MBH-33X GM4 AC	0.012	<0.001	0.022	0.013	-	-	0.020	-	84.88	0.024	<0.001	-	1.50	-
MBH-33X RB2 A	0.0029	0.0352	0.0211	0.101	-	-	-	0.0017	82.67	0.493	0.0028	-	0.255	-
MBH-32X PB11 G	-	0.081	0.20	0.031	-	-	0.090	-	90.44	0.399	0.132	-	0.898	-
CTIF-B22-1	-	-	-	-	-	-	-	-	83.0	<0.10	-	-	2.50	-
MBH-33X GM24 A	0.0046	-	0.001	0.0009	-	-	-	0.0013	88.88	0.0083	<0.0005	-	0.0087	-
MBH-33X 54400 A	0.012	0.001	0.015	-	-	-	0.0013	-	(86.80)	0.072	-	-	0.250	-
MBH-33X GM8 G	0.1018	-	0.0114	0.062	-	-	0.0222	-	83.64	0.033	-	-	0.1491	-
BS-544B	0.0173	(0.0009)	0.0043	-	0.0031	-	(0.0012)	(0.0007)	88.2	0.087	(0.0009)	(0.0007)	0.068	0.0005

Product Code	P	Pb	S	Sb	Se	Si	Sn	Zn
MBH-31X NB1 H	0.0223	0.504	0.0024	0.0057	-	0.004	0.535	29.76
CTIF-L4-1	-	2.017	-	-	-	0.12	0.693	34.60
CTIF-L5-1	(0.15)	2.99	-	0.174	-	(0.47)	0.88	31.50
MBH-31X 7835.9 A	0.0039	1.48	0.0161	0.445	0.34	-	1.024	14.34
BAS-CURM42.22	0.177	1.10	<0.001	0.173	-	0.042	1.10	26.32
BAS-CURM42.23	0.128	0.575	0.045	0.356	-	0.015	1.63	22.13
MBH-33X RB1 A	0.02	5.02	0.0044	0.432	-	0.063	2.137	7.95
BAS-CURM42.24	0.226	0.91	0.012	0.06	-	0.093	2.25	33.75
IARM-250A	0.003	7.20	0.046	0.052	-	0.003	2.46	9.70
MBH-33X GM4 AC	0.002	5.20	0.105	0.01	-	0.001	2.60	5.80
MBH-33X RB2 A	0.0208	3.85	0.078	0.019	-	0.0116	3.19	9.14
MBH-32X PB11 G	0.946	0.995	0.0148	0.584	-	0.123	3.306	1.71
CTIF-B22-1	-	6.0	0.03	0.05	-	<0.1	3.50	4.0
MBH-33X GM24 A	0.19	3.35	0.003	0.0012	-	0.0028	3.85	3.67
MBH-33X 54400 A	0.245	4.68	0.025	0.036	-	-	3.95	3.85
MBH-33X GM8 G	0.0062	6.21	0.0083	0.0237	-	-	4.03	5.71
BS-544B	0.0258	3.9	0.0249	0.0244	-	0.0042	4.06	3.51

	Size	Grade	Type	Form
Mushroom	Ø 42x17mm		CRM	CC
	Ø 60x6mm		CRM	CC
	Ø 60x5mm		CRM	CC
	Ø 42x15mm		CRM	CC
	Ø 50x10mm		CRM	
	Ø 50x12mm		CRM	
	Ø 42x17mm	C83810	CRM	W
	Ø 50x12mm		CRM	
	Ø 38x19mm	C84400	CRM	C
	Ø 40x17mm		CRM	W
	Ø 42x17mm		CRM	W
	Ø 40x15mm		CRM	CC
	Ø 60x5mm		CRM	CC
	Ø 44x17mm		RM	W
	Ø 38x15mm	C54400	CRM	W
Ø 33x19mm	C83800	CRM	W	
Ø 38x19mm	C54400	CRM		

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Zn/Pb Alloys (Leaded Tin Brass - Red Brass/Gunmetal)

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mn	N	Ni	O
BAS-CURM71.31	0.046	0.023	0.11	0.03	-	-	-	0.039	83.0	0.118	0.037	-	1.98	-
MBH-33X GM21 A	0.694	0.255	0.464	0.452	-	0.255	-	-	Rem.	0.751	-	-	0.129	-
IARM-86D	0.022	0.002	0.007	0.042	0.003	-	0.004	(0.001)	(84.5)	0.035	0.0011	-	0.40	-
BAS-CURM71.33	<0.002	<0.001	<0.001	<0.002	-	-	-	<0.0005	83.6	0.018	<0.0005	-	0.938	-
CTIF-B21	-	-	-	-	-	-	-	-	83.0	0.285	-	-	1.21	-
CTIF-B32	-	0.085	0.0056	-	-	-	-	-	74.65	0.11	-	-	1.49	-
BAS-CURM71.32	0.029	<0.001	0.213	<0.002	-	-	-	<0.0005	82.69	0.056	<0.005	-	0.57	-
IARM-90C	0.011	0.002	0.002	0.01	(0.003)	-	(0.0012)	(0.001)	87.5	0.10	0.003	-	0.26	(0.001)
CTIF-B20-1	-	0.04	-	-	-	-	-	-	83.35	0.165	-	-	0.51	-
BS-932F	-	<0.005	0.01	-	<0.005	-	-	-	(81.99)	0.05	<0.005	<0.005	0.4	0.014
IARM-91D	(0.020)	<0.003	0.001	0.06	0.002	-	0.012	<0.001	82.0	0.024	<0.001	-	0.43	-
MBH-33X GM6 K	0.0148	0.0012	0.158	0.0359	-	-	0.0100	-	86.51	0.0256	0.0022	-	0.890	-
CTIF-B23-1	-	0.02	-	-	-	-	-	-	83.45	(0.04)	-	-	0.086	-
CTIF-B31	-	(0.031)	-	-	-	-	-	-	78.65	(0.015)	-	-	0.489	-
MBH-33X GM7 J	0.050	0.011	0.103	0.119	-	-	0.095	-	85.40	0.05	0.0088	-	0.511	-
CTIF-B30-1	-	(<0.05)	0.0088	-	-	-	-	-	76.5	0.07	0.10	-	1.19	-

Product Code	P	Pb	S	Sb	Se	Si	Sn	Zn
BAS-CURM71.31	0.06	6.07	0.059	0.128	-	0.02	4.06	3.98
MBH-33X GM21 A	0.05	6.99	0.080	1.049	-	0.0156	4.55	5.05
IARM-86D	0.072	5.40	0.029	0.112	-	0.002	4.90	4.60
BAS-CURM71.33	<0.001	6.84	<0.001	<0.002	-	<0.005	4.96	3.60
CTIF-B21	(0.004)	3.79	0.047	0.18	-	0.135	5.13	6.22
CTIF-B32	0.041	16.1	0.027	0.13	-	0.075	5.96	1.21
BAS-CURM71.32	<0.001	4.14	0.082	<0.002	-	<0.001	6.07	6.02
IARM-90C	0.028	1.40	0.01	0.023	(0.001)	0.001	6.30	4.30
CTIF-B20-1	0.072	5.1	0.115	0.52	-	0.055	6.35	3.77
BS-932F	0.03	7.3	0.036	0.2	-	0.017	6.40	3.4
IARM-91D	0.09	7.80	0.017	0.12	<0.002	0.002	6.50	3.20
MBH-33X GM6 K	0.0041	3.94	0.090	0.259	-	(0.0009)	6.58	1.409
CTIF-B23-1	0.07	7.2	0.019	0.384	-	0.025	7.18	1.46
CTIF-B31	-	11.79	0.028	0.475	-	(0.047)	7.65	0.79
MBH-33X GM7 J	0.082	1.119	0.064	0.1092	-	(0.003)	9.61	2.72
CTIF-B30-1	0.05	9.6	0.075	0.214	-	(<0.06)	11.10	1.0

	Size	Grade	Type	Form
	Ø 50x12mm		CRM	
	Ø 33x19mm		CRM	W
	Ø 38x19mm	C83600	CRM	C
	Ø 50x12mm		CRM	
Mushroom	Ø 60x6mm		CRM	CC
Mushroom	Ø 60x6mm	C94500M	CRM	CC
	Ø 50x12mm		CRM	
	Ø 38x19mm	C92200	CRM	C
Mushroom	Ø 60x5mm		CRM	CC
	Ø 38x19mm	C93200	CRM	
	Ø 38x3mm	C93200	CRM	C
	Ø 33x19mm		CRM	W
Mushroom	Ø 60x5mm	C93200M	CRM	CC
Mushroom	Ø 60x6mm	C93600	CRM	CC
	Ø 42x18mm	C92400M	CRM	W
Mushroom	Ø 60x5mm		CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Sn/Zn/Pb Chips (Leaded Tin Brass - Red Brass/Gunmetal)

Product Code	Ag	Al	As	Bi	Cr	Cu	Fe	Mn	Ni	P	Pb	S	Sb	Se
BAS-CURM42.22C	-	0.042	0.217	0.046	-	70.46	0.23	0.122	0.061	0.177	1.10	<0.001	0.173	-
BAS-CURM42.23C	-	0.008	0.168	0.034	-	74.36	0.354	0.019	0.168	0.128	0.575	0.045	0.356	-
BAS-CURM42.24C	-	0.067	0.065	0.054	-	62.45	0.066	0.065	0.025	0.226	0.91	0.012	0.060	-
DH-SL02-06	-	0.059	0.025	-	-	83.05	1.79	0.044	0.221	0.017	0.891	0.059	0.06	-
BAS-CURM71.31C	0.046	0.023	0.11	0.03	0.039	83.0	0.118	0.037	1.98	0.06	6.07	0.059	0.128	-
NIM-GBW02140	-	-	-	-	-	72.25	-	-	-	-	17.62	-	-	-
IPT-10B	-	-	0.019	-	-	85.20	0.211	-	0.33	0.003	4.74	0.068	0.114	-
BAS-CURM71.33C	<0.002	<0.001	<0.001	<0.002	<0.0005	83.6	0.018	<0.0005	0.938	<0.001	6.84	<0.001	<0.002	-
BAS-CURM71.32C	0.029	<0.001	0.213	<0.002	<0.0005	82.69	0.056	<0.005	0.57	<0.001	4.14	0.082	<0.002	-
BAS-BCS-CRM 183/4	-	-	0.13	0.005	-	84.08	0.056	-	1.30	0.09	3.15	0.11	0.23	-
BAS-CURM50.03C	-	0.005	0.11	0.051	-	77.42	0.018	0.037	2.89	0.159	8.86	0.064	0.24	-
DH-SL02-01	-	0.022	0.076	0.006	-	81.84	0.677	0.035	0.795	0.046	1.17	-	0.104	-
BAS-CURM50.01C	-	0.018	0.22	0.029	-	74.08	0.243	0.024	2.24	0.113	11.74	0.113	0.59	-
BAS-BCS-CRM 207/2	-	0.013	0.066	0.04	-	87.35	0.029	-	0.28	(0.018)	0.70	-	0.10	-
BAM NR 228	-	(0.0001)	0.024	0.0086	-	85.34	0.036	(<0.001)	0.109	0.019	1.24	0.036	0.078	0.0012
BAS-CURM50.02C	-	<0.001	<0.001	<0.0005	-	77.89	0.055	0.003	0.005	0.051	11.28	<0.001	<0.005	-
BAS-CURM50.04C	-	0.014	0.06	0.1	-	76.11	0.10	0.028	1.10	0.032	9.94	0.14	0.50	-

Product Code	Si	Sn	Zn
BAS-CURM42.22C	0.042	1.10	26.32
BAS-CURM42.23C	0.015	1.63	22.13
BAS-CURM42.24C	0.093	2.25	33.75
DH-SL02-06	0.043	2.78	10.89
BAS-CURM71.31C	0.02	4.06	3.98
NIM-GBW02140	-	4.24	5.37
IPT-10B	-	4.61	4.73
BAS-CURM71.33C	<0.005	4.96	3.60
BAS-CURM71.32C	<0.001	6.07	6.02
BAS-BCS-CRM 183/4	-	7.27	3.47
BAS-CURM50.03C	0.005	8.41	1.72
DH-SL02-01	-	8.84	6.30
BAS-CURM50.01C	0.007	9.45	1.17
BAS-BCS-CRM 207/2	0.016	9.74	1.60
BAM NR 228	-	9.76	3.32
BAS-CURM50.02C	0.021	10.31	0.128
BAS-CURM50.04C	0.011	11.30	0.66

	Size	Grade	Type	Form
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		RM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	80g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		RM	
Chips	100g		RM	
Chips	100g		RM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		RM	
Chips	100g		RM	

Values listed in mass %; () Uncertified Value

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Cu/Sn/Zn/Pb Alloy Sets (Leaded Tin Brass - Red Brass/Gunmetal)

Product Code	Al	As	Bi	Fe	Mn	N	Ni	P	Pb	S	Sb	Si	Sn	Zn
IM B11	0.18	0.14	0.12	0.42	0.26	-	2.41	0.70	(6.97)	(0.025)	0.58	0.23	3.19	3.54
IM B12	(0.077)	0.11	0.07	0.31	0.15	-	1.46	0.59	(5.48)	(0.011)	0.43	0.13	4.18	5.73
IM B13	0.034	0.052	0.028	0.17	0.082	-	0.29	0.32	4.52	(0.0039)	0.24	0.076	5.01	7.23
IM B14	(0.0021)	(0.01)	0.003	0.083	0.025	-	0.083	0.029	3.82	(0.0029)	0.075	(0.0097)	7.69	10.22

Product Code
IM B11
IM B12
IM B13
IM B14
Set of 4 Only

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Product Code	Al	As	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM BB1	0.019	0.086	0.032	84.82	0.33	0.081	0.061	0.055	1.55	0.6	0.037	8.10	3.90
IM BB2	0.32	0.12	0.024	84.09	0.28	0.12	0.097	0.085	2.64	0.49	0.055	7.11	4.70
IM BB3	0.0021	0.0079	0.0021	80.88	0.037	0.0012	2.42	(0.014)	6.73	0.052	0.0044	3.36	6.23
IM BB4	0.0062	0.029	0.011	81.32	0.086	0.02	1.20	0.03	6.14	0.21	0.018	2.58	8.11
IM BB5	0.0145	0.051	0.018	82.25	0.14	0.054	0.49	0.037	5.18	0.31	0.028	4.11	7.21
IM BB6	0.04	0.16	0.041	83.54	0.31	0.15	0.23	0.12	3.52	0.62	0.083	5.47	5.40

Product Code
IM BB1
IM BB2
IM BB3
IM BB4
IM BB5
IM BB6
Set of 6 Only

Size	Grade	Type	Form
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	

Product Code	Al	Bi	Cu	Fe	Ni	P	Pb	Sb	Si	Sn	Zn
VS 2807-83	(0.0029)	(0.025)	(78.7)	0.062	0.81	0.55	12.5	0.80	(0.045)	6.30	1.17
VS 2808-83	(0.0034)	(0.031)	(79.7)	0.100	0.50	0.30	10.6	0.50	(0.025)	7.3	0.71
VS 2809-83	(0.0049)	(0.039)	(81.1)	0.209	0.31	0.2000	9.0	0.34	(0.011)	8.3	0.38
VS 2810-83	(0.0084)	(0.041)	(81.9)	0.35	0.21	0.088	7.3	0.27	(0.0017)	9.4	0.26
VS 2811-83	(0.021)	(0.062)	(83.0)	0.60	0.110	(0.059)	5.4	(0.12)	(0.0021)	10.5	(0.14)

Product Code
VS 2807-83
VS 2808-83
VS 2809-83
VS 2810-83
VS 2811-83
Set of 5 Only

Size	Grade	Type	Form
40x40x25mm		CRM	
40x40x25mm		CRM	
40x40x25mm		CRM	
40x40x25mm		CRM	
40x40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Section: Cu/P Alloys Set

Cu/P Alloys Set

Product Code	As	Bi	Cu	Fe	Ni	P	Pb	Sb	Se	Sn	Te	Zn
IM CO2	0.005	0.0049	Rem.	0.096	0.013	11.6	0.07	0.065	(0.0045)	0.35	(0.0055)	0.15
IM CO3	0.011	0.015	Rem.	0.11	0.10	8.56	0.10	0.14	(0.0073)	0.037	(0.008)	0.24
IM CO4	0.016	0.0086	Rem.	0.29	0.25	5.54	0.29	0.092	(0.010)	0.13	(0.012)	0.029
IM CO5	0.0023	0.00095	Rem.	0.11	0.0082	9.45	0.0044	0.034	(0.0015)	0.55	(0.0023)	0.061

Product Code
IM CO2
IM CO3
IM CO4
IM CO5
Set of 4 Only

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Section: Cu/Ag Alloys

Cu/Ag Alloys

Product Code	Ag	Al	C	Co	Cr	Fe	Mn	N	Ni	O	P	Pb	S	Si
IARM-160A	3.03	(<0.01)	0.003	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(0.0002)	(<0.01)	(0.003)	(0.004)	(<0.01)	(<0.003)	(<0.01)
IARM-159A	3.48	(<0.01)	(0.002)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(0.0003)	(<0.01)	(0.0006)	(<0.01)	(<0.01)	(<0.01)	(<0.01)

Product Code	Sn	Zn	Zr
IARM-160A	(<0.01)	(<0.01)	0.4
IARM-159A	(<0.01)	(<0.01)	(<0.01)

Size	Grade	Type	Form
Ø 38x19mm	N/A	RM	W
Ø 38x19mm	N/A	RM	W

Values listed in mass %; () Uncertified Value

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Section: Cu/Al Alloys

Cu/Al Alloys (Aluminum Bronze)

Product Code	Ag	Al	As	Be	Bi	Co	Cr	Cu	Fe	Mg	Mn	Ni	P	Pb
BAS-CURM30.21	-	1.44	<0.001	-	-	-	-	56.23	0.003	-	<0.001	1.11	-	0.004
BAS-C30.21-1	-	1.44	<0.005	-	-	-	-	56.00	<0.005	-	<0.005	<0.005	-	<0.005
BAS-C43.03-1	-	1.60	<0.005	-	<0.005	-	-	79.70	0.07	-	<0.002	<0.005	-	0.10
BAM-368	-	1.972	0.0246	-	-	-	-	77.049	0.01927	0.00621	0.02028	0.0258	0.00899	0.01313
MBH-31X B16 H	0.0052	1.98	0.0056	0.0042	-	0.0023	-	58.37	0.0162	-	0.0029	0.0076	-	0.0295
BAS-CURM30.20	-	2.32	<0.001	<0.002	-	-	-	61.46	-	-	<0.001	-	-	<0.002
BAS-CURM43.02	-	2.40	0.083	<0.001	-	-	-	76.21	0.128	-	0.035	0.068	-	0.064
BAS-CURM43.01	-	2.75	0.118	<0.002	-	-	-	74.36	0.008	-	0.064	0.121	-	<0.002
BAS-C30.18-1	-	2.91	<0.005	-	<0.003	-	-	64.36	<0.005	-	<0.005	<0.005	-	<0.01
MBH-31X B15 H	0.0071	2.98	0.0048	0.0074	-	0.0046	-	59.07	0.0176	-	0.0122	0.0102	-	0.0073
BAS-CURM30.18	-	3.28	<0.005	<0.001	-	-	-	63.66	0.006	-	<0.001	<0.001	-	<0.005
MBH-32X ALB7 C	-	4.01	0.056	-	-	-	0.061	84.40	4.82	0.0039	0.383	4.96	0.057	0.029
MBH-31X B14 G	0.013	4.02	0.0091	0.0103	-	0.0109	-	60.13	0.0183	-	0.0117	0.019	-	0.0104
BAS-C30.19-1	-	4.65	<0.005	-	<0.002	-	-	69.90	<0.005	-	<0.005	<0.01	-	<0.01
ERM-EB388	-	4.972	-	-	-	-	-	89.27	0.0303	-	0.0512	0.0074	-	0.00097
BAS-CURM51.11	-	5.27	<0.001	-	-	-	-	93.95	0.06	-	<0.001	0.012	0.035	0.33
MBH-31X B17 F	-	6.05	(0.015)	<0.001	-	-	-	60.00	(0.02)	-	<0.001	(0.01)	-	(0.05)
BAS-C51.12-1	-	6.06	0.11	-	-	-	-	Rem.	2.90	-	1.25	0.11	<0.005	0.25

Product Code	S	Sb	Si	Sn	Zn
BAS-CURM30.21	-	<0.002	0.213	2.01	40.08
BAS-C30.21-1	-	<0.01	0.18	1.96	Rem.
BAS-C43.03-1	-	<0.01	<0.005	<0.005	Rem.
BAM-368	(0.00185)	-	0.013	0.0147	Rem.
MBH-31X B16 H	-	0.0126	0.197	2.13	37.18
BAS-CURM30.20	-	<0.002	0.17	0.14	35.71
BAS-CURM43.02	-	<0.001	0.038	0.06	20.82
BAS-CURM43.01	-	<0.001	0.0063	0.116	22.44
BAS-C30.18-1	-	<0.005	0.10	0.65	Rem.
MBH-31X B15 H	-	0.0111	(0.109)	0.944	36.80
BAS-CURM30.18	-	<0.001	0.13	0.58	32.33
MBH-32X ALB7 C	-	-	0.399	0.30	0.527
MBH-31X B14 G	-	0.0139	0.051	0.486	36.52
BAS-C30.19-1	-	<0.01	<0.005	1.07	Rem.
ERM-EB388	-	-	-	0.857	4.81
BAS-CURM51.11	-	-	0.159	0.027	0.111
MBH-31X B17 F	-	<0.001	(0.007)	0.01	(33.9)
BAS-C51.12-1	-	-	<0.01	0.18	0.42

Size	Grade	Type	Form
Ø 50x12mm		CRM	
Ø 50x12mm		RM	
Ø 50x12mm		RM	
Ø 40x30mm	C68700	CRM	W
Ø 40X15mm		CRM	CC
Ø 50x12mm		CRM	
Ø 50x12mm		CRM	
Ø 50x12mm		RM	
Ø 42X18mm		CRM	CC
Ø 50x12mm		CRM	
Ø 42x18mm		CRM	CC
Ø 40X15mm		CRM	CC
Ø 50x12mm		RM	
Ø 40x30mm		CRM	
Ø 50x12mm		CRM	
Ø 40X15mm	C61000M	CRM	CC
Ø 50x12mm		RM	

Values listed in mass %; () Uncertified Value

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Cu/Al Alloys (Aluminum Bronze)

Product Code	Ag	Al	As	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N
MBH-32X CA12 A	0.001	6.14	-	-	-	(0.002)	-	(0.0003)	-	90.48	0.657	0.0005	0.029	-
IARM-81B	(0.004)	(6.70)	0.058	<0.001	-	0.002	-	-	0.002	91.20	0.047	-	0.012	-
MBH-32X 61400 A	0.001	6.81	-	-	-	-	-	-	-	89.99	2.74	0.005	0.082	-
BAS-C51.13-1	-	6.93	0.21	-	-	-	-	-	-	Rem.	2.05	-	0.77	-
CTIF-3610Q	-	7.10	-	-	-	-	0.09	-	-	82.32	3.98	-	0.045	-
BS-642C	-	7.13	0.0008	-	(<0.005)	(<0.005)	-	(<0.005)	0.0009	90.40	0.11	0.0014	0.0148	(<0.005)
BS-642B	-	7.17	0.0015	-	(<0.005)	0.0013	-	(<0.005)	0.0014	89.90	0.285	0.0032	0.069	(<0.0005)
BAS-CURM51.13	-	7.30	0.215	-	-	-	-	-	-	88.79	1.81	-	0.898	-
CTIF-CA25	-	7.97	-	-	-	-	-	-	-	79.25	6.10	-	0.51	-
CTIF-LH1-1	-	7.99	-	-	-	-	-	-	-	64.90	4.48	-	5.18	-
CTIF-CA12	-	8.00	-	-	-	-	-	-	-	84.10	2.77	-	3.09	-
CTIF-CA20	-	8.00	-	-	-	-	0.05	-	-	87.15	0.79	-	1.85	-
CTIF-2794H	-	8.04	-	-	-	-	-	-	-	90.30	0.81	-	(0.008)	-
CTIF-3301Z	-	8.10	-	-	-	-	-	-	-	87.30	4.00	-	0.26	-
MBH-32X ALB12 A	0.044	8.29	-	-	-	-	-	0.0056	-	82.90	1.094	0.0013	0.958	-
BAS-CURM51.14	-	8.42	0.44	-	-	-	-	-	-	88.57	0.72	-	0.55	-
CTIF-3300M	-	8.73	-	-	-	-	-	-	-	89.50	0.45	-	0.165	-
MBH-32X ALB11 A	-	8.80	-	0.0194	0.120	-	-	0.089	-	80.58	3.81	0.075	1.13	-

Product Code	Ni	O	P	Pb	S	Sb	Si	Sn	Zn	Zr	Size	Grade	Type	Form
MBH-32X CA12 A	0.088	-	-	(0.0017)	-	-	2.57	0.0157	0.0405	-	Ø 42x18mm	C95600	CRM	W
IARM-81B	0.003	-	0.004	0.006	<0.001	0.003	1.84	0.008	0.176	-	Ø 38x19mm	C64200	CRM	W
MBH-32X 61400 A	0.0242	-	0.0008	(0.0007)	-	(0.0004)	0.0124	0.301	0.06	-	Ø 42x15mm	C61400	CRM	W
BAS-C51.13-1	0.053	-	0.021	0.12	-	-	0.16	0.19	0.30	-	Ø 50x12mm	-	RM	-
CTIF-3610Q	5.40	-	-	0.23	-	-	0.065	0.25	0.51	-	Ø 60x6mm	Mushroom	CRM	CC
BS-642C	0.0363	(<0.0005)	0.004	0.0109	(<0.0005)	(<0.0005)	2.20	0.0061	0.039	(<0.0005)	Ø 38x19mm	C64200	CRM	W
BS-642B	0.222	(<0.0005)	0.004	0.0152	(<0.0005)	0.0004	2.15	0.0056	0.128	(<0.0005)	Ø 38x19mm	C64200	CRM	W
BAS-CURM51.13	0.057	-	0.022	0.104	-	-	0.174	0.270	0.335	-	Ø 50x12mm	-	CRM	-
CTIF-CA25	5.74	-	-	0.03	-	-	0.084	0.177	0.252	-	Ø 60x5mm	Mushroom	CRM	CC
CTIF-LH1-1	0.0944	-	0.079	0.022	-	0.081	0.205	(0.007)	16.9	-	Ø 60x5mm	Mushroom	CRM	CC
CTIF-CA12	1.385	-	-	0.047	-	-	0.058	0.036	0.45	-	Ø 60x5mm	Mushroom	CRM	CC
CTIF-CA20	1.18	-	-	0.18	-	-	0.17	0.19	0.41	-	Ø 60x5mm	Mushroom	CRM	CC
CTIF-2794H	0.70	-	-	0.0038	-	-	0.048	0.106	0.0084	-	Ø 60x6mm	Mushroom	CRM	CC
CTIF-3301Z	0.125	-	-	0.032	-	-	0.057	0.028	0.06	-	Ø 60x6mm	Mushroom	CRM	CC
MBH-32X ALB12 A	6.33	-	0.101	0.0018	-	-	0.0202	0.310	0.0625	-	Ø 41x15mm	-	CRM	W
BAS-CURM51.14	0.219	-	0.012	0.003	-	-	0.286	0.113	0.656	-	Ø 50x12mm	-	CRM	-
CTIF-3300M	0.205	-	-	0.205	-	-	0.415	0.205	0.085	-	Ø 60x6mm	Mushroom	CRM	CC
MBH-32X ALB11 A	4.33	-	0.045	0.118	-	0.093	0.069	0.0289	0.576	-	Ø 40x15mm	-	CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Al Alloys (Aluminum Bronze)

Product Code	Ag	Al	As	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N
MBH-32X ALB1 P	-	8.83	0.0083	-	-	-	-	-	0.0052	81.85	3.11	0.0092	0.057	-
MBH-32X ALB11 B	-	8.85	-	0.082	0.064	-	-	0.018	-	80.38	3.99	0.072	1.29	-
IARM-235A	<0.005	8.90	<0.005	(0.004)	-	0.009	-	0.01	0.010	81.20	4.07	-	1.17	(0.001)
BAS-C52.56-1	-	8.90	-	-	-	-	-	-	0.140	Rem.	4.60	0.09	0.74	-
MBH-32X CA31 A	0.0008	8.95	-	-	-	0.006	-	0.0029	0.0026	82.24	4.06	0.0008	0.336	-
CTIF-CA26	-	9.10	-	-	-	-	-	-	-	81.25	4.36	-	0.188	-
BS-623A	-	9.12	(0.006)	-	-	(0.002)	-	-	-	88.13	2.19	-	0.273	-
CTIF-CA31	-	9.15	-	-	-	-	-	-	-	76.50	3.18	0.02	3.27	-
MBH-32X CA23 A	0.0008	9.19	-	-	-	(0.005)	-	-	0.0018	81.05	3.63	0.0003	1.298	-
IARM-79B	0.002	9.19	-	(0.003)	-	0.002	-	(0.002)	(0.003)	88.40	2.13	-	0.16	-
IARM-79C	<0.005	9.20	0.003	-	-	0.003	-	<0.005	(0.002)	87.60	2.28	-	0.20	-
BS-623	-	9.24	<0.01	-	-	(0.002)	-	-	-	(88.1)	2.25	-	0.16	-
BS-CC954	-	9.28	0.003	-	-	(0.007)	-	-	-	84.0	3.61	-	0.353	-
BAS-C52.55-1	-	9.30	-	-	-	-	-	-	0.05	Rem.	4.90	0.13	1.10	-
MBH-32X CA7 A	0.0009	9.37	-	-	-	0.0028	-	0.0003	0.0028	88.06	2.09	0.0004	0.151	-
CTIF-3296L	-	9.40	-	-	-	-	-	-	-	88.55	0.07	-	0.37	-
CTIF-2151R	-	9.43	-	-	-	-	-	-	-	84.75	4.48	-	0.73	-
MBH-32X ALB6 K	0.0082	9.69	0.0116	-	-	-	-	0.139	-	80.77	2.71	0.0104	0.787	-

Product Code	Ni	O	P	Pb	S	Sb	Si	Sn	Zn	Zr	Size	Grade	Type	Form
MBH-32X ALB1 P	5.74	-	0.0145	0.207	-	-	0.106	0.0134	0.0228	-	Ø 42x18mm	-	CRM	CC
MBH-32X ALB11 B	4.44	-	0.0249	0.0316	0.203	0.007	0.015	0.0062	0.508	-	Ø 40x~17mm	-	CRM	CC
IARM-235A	4.44	(0.001)	0.012	0.012	0.002	(0.004)	0.061	0.018	0.083	-	Ø 38x19mm	C95800	CRM	C
BAS-C52.56-1	5.60	-	-	0.17	-	-	0.15	0.11	0.28	-	Ø 50x12mm	-	CRM	-
MBH-32X CA31 A	4.28	-	(0.003)	(0.0024)	-	-	0.036	0.0037	0.041	-	Ø 42x18mm	C63200	CRM	W
CTIF-CA26	4.87	-	-	0.058	-	-	0.035	0.005	0.038	-	Ø 60x5mm	Mushroom	CRM	CC
BS-623A	0.146	-	<0.002	0.001	(<0.0005)	<0.002	0.014	0.002	0.008	-	Ø 38x19mm	C62300	RM	-
CTIF-CA31	7.51	-	-	0.02	-	-	0.064	0.036	0.145	-	Ø 60x5mm	Mushroom	CRM	CC
MBH-32X CA23 A	4.71	-	0.0011	(0.0026)	-	-	0.026	0.0164	0.031	-	Ø 50x18mm	C63000	CRM	W
IARM-79B	0.075	-	0.005	(0.003)	(0.002)	-	0.019	0.017	0.013	-	Ø 38x19mm	C62300	CRM	W
IARM-79C	0.55	-	0.006	<0.005	<0.001	<0.005	0.033	0.010	0.014	-	Ø 38x19mm	C62300	CRM	W
BS-623	0.10	-	0.013	<0.01	(0.002)	<0.01	0.046	0.01	0.05	-	Ø 38x19mm	C62300	RM	-
BS-CC954	1.12	-	0.013	0.13	(0.002)	0.004	0.092	0.061	1.30	-	Ø 32x17mm	C95400	RM	-
BAS-C52.55-1	4.60	-	-	0.14	-	-	0.03	0.03	0.10	-	Ø 50x12mm	-	CRM	-
MBH-32X CA7 A	0.234	-	-	(0.004)	-	-	0.017	0.0172	0.006	-	Ø 42x18mm	C62300	CRM	W
CTIF-3296L	0.41	-	-	0.30	-	-	0.20	0.06	0.62	-	Ø 60x6mm	Mushroom	CRM	CC
CTIF-2151R	0.56	-	-	<0.005	-	-	0.015	<0.01	<0.01	-	Ø 60x6mm	Mushroom	CRM	CC
MBH-32X ALB6 K	5.42	-	(0.006)	0.0749	-	-	0.073	0.12	0.126	-	Ø 40x15mm	-	CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Al Alloys (Aluminum Bronze)

Product Code	Ag	Al	As	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N
BS-630B	-	9.78	0.0007	-	(<0.0005)	0.0067	-	0.0017	0.0017	80.80	3.90	0.0009	0.281	(<0.0005)
CTIF-2152S	-	9.78	-	-	-	-	-	-	-	85.05	3.99	-	0.42	-
MBH-32X CA1 A	0.0012	9.79	-	-	-	(0.007)	-	-	0.0049	80.03	4.63	0.0003	0.260	-
CTIF-4149G	-	9.84	-	-	-	-	-	-	-	84.95	2.00	-	0.21	-
CTIF-CA37	-	9.84	-	0.0118	-	-	-	-	0.085	76.79	6.85	0.08	0.752	-
BS-630C	-	9.90	0.0007	-	(<0.0005)	0.006	-	0.0019	0.003	80.70	3.82	0.0011	0.325	(<0.0005)
CTIF-3297Y	-	9.94	-	-	-	-	-	-	-	87.41	1.875	-	0.0312	-
BAS-C52.51-1	-	10.00	-	-	-	-	-	-	<0.01	Rem.	4.30	<0.01	<0.01	-
BS-630A	-	10.05	(0.002)	-	-	0.005	-	-	-	81.0	3.73	-	0.11	-
MBH-32X ALB2 K	0.021	10.08	0.011	-	-	-	-	0.286	0.0973	79.64	4.27	0.0183	0.341	-
CTIF-3299J	-	10.10	-	-	-	-	-	-	-	87.60	0.38	-	1.12	-
CTIF-CA10	-	10.10	-	-	-	-	-	-	-	80.70	4.55	-	0.33	-
IARM-80C	-	10.10	0.006	-	-	0.008	-	0.008	0.013	80.50	3.86	-	0.58	(0.0003)
BS-954A	-	10.17	(0.006)	-	-	-	-	-	-	85.64	3.50	-	0.10	-
BS-954B	-	10.20	(0.005)	-	-	(0.004)	-	-	-	83.90	3.90	-	0.27	-
BS-954C	-	10.21	(0.006)	-	-	(0.005)	-	-	-	83.90	3.90	-	0.29	-
CTIF-CA27	-	10.25	-	-	-	-	0.012	-	-	81.10	2.81	-	1.195	-
BS-955B	0.014	10.30	(0.002)	-	-	-	-	-	-	81.50	3.79	-	0.12	-

Product Code	Ni	O	P	Pb	S	Sb	Si	Sn	Zn	Zr	Size	Grade	Type	Form
BS-630B	4.88	(<0.0005)	0.0028	0.0056	0.0013	(<0.0005)	0.0166	0.0289	0.254	(<0.0005)	Ø 38x19mm	C63000	CRM	W
CTIF-2152S	0.68	-	-	<0.005	-	-	0.015	-	<0.01	-	Ø 60x6mm	C65220	CRM	CC-Mush.
MBH-32X CA1 A	4.94	-	0.003	0.007	-	-	0.09	0.018	0.162	-	Ø 42x18mm	C95820	CRM	CC
CTIF-4149G	1.96	-	-	0.15	-	-	0.18	0.34	0.37	-	Ø 60x6mm	Mushroom	CRM	CC
CTIF-CA37	4.98	-	-	0.0503	-	-	0.04	0.147	0.364	-	Ø 60x5mm	Mushroom	CRM	CC
BS-630C	4.82	(<0.0005)	0.0043	0.0093	(<0.0005)	0.0003	0.064	0.0152	0.234	(<0.0005)	Ø 38x19mm	C63000	CRM	W
CTIF-3297Y	0.011	-	-	0.112	-	-	0.149	0.105	0.264	-	Ø 60x6mm	Mushroom	CRM	CC
BAS-C52.51-1	5.10	-	-	<0.01	-	-	<0.01	<0.01	0.02	-	Ø 50x12mm	C62400	CRM	-
BS-630A	4.81	-	<0.01	0.0069	(0.001)	<0.001	0.037	0.019	0.17	-	Ø 38x12-19mm	C63000	RM	-
MBH-32X ALB2 K	4.42	-	0.029	0.147	-	-	0.245	0.0715	0.174	-	Ø 42x18mm	-	CRM	CC
CTIF-3299J	0.21	-	-	0.11	-	-	0.136	0.106	0.19	-	Ø 60x6mm	Mushroom	CRM	CC
CTIF-CA10	3.39	-	-	0.16	-	-	0.46	0.16	0.067	-	Ø 60x5mm	C95500M	CRM	CC-Mush.
IARM-80C	4.71	0.0007	0.004	0.004	(0.001)	(0.005)	0.077	0.003	0.096	-	Ø 38x19mm	C63000	CRM	W
BS-954A	0.20	-	0.012	0.016	-	-	0.029	0.033	0.30	-	Ø 38x19mm	C95400	RM	-
BS-954B	1.38	-	0.012	0.047	(<0.0005)	<0.003	0.07	0.07	0.10	-	Ø 38x19mm	C95400	RM	-
BS-954C	1.38	-	0.011	0.050	(<0.0005)	(0.001)	0.07	0.08	0.09	-	Ø 38x19mm	C95400	RM	-
CTIF-CA27	3.88	-	-	0.11	-	-	0.127	0.054	0.428	-	Ø 60x5mm	Mushroom	CRM	CC
BS-955B	4.11	-	0.017	0.051	-	<0.002	0.05	0.024	0.052	-	Ø 38x12mm	C95500	RM	-

Values listed in mass %; () Uncertified Value

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Cu/Al Alloys (Aluminum Bronze)

Product Code	Ag	Al	As	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N
IARM-93B	(0.004)	10.33	<0.01	-	-	0.007	-	0.006	(0.007)	85.40	3.87	-	0.024	-
CTIF-3011G	-	10.35	-	-	-	-	-	-	-	84.80	1.98	-	1.165	-
CTIF-CA22	-	10.45	-	-	-	-	-	-	-	80.50	2.51	-	0.745	-
CTIF-CA11	-	10.50	-	-	-	-	-	-	-	84.50	1.27	0.10	0.78	-
IARM-204A	0.009	10.55	(<0.01)	-	-	0.006	-	0.008	0.008	83.30	3.87	-	0.052	-
BS-955C	0.014	10.68	(<0.002)	-	-	-	-	-	-	80.60	4.04	-	0.06	-
BAS-CURM52.52	-	10.69	-	-	-	-	-	-	0.0004	79.26	6.02	0.004	0.145	-
IARM-94B	0.017	10.80	<0.01	-	-	(0.006)	-	0.011	0.017	80.60	3.99	-	0.071	-
CTIF-CA21	-	10.82	-	-	-	-	0.0095	-	-	81.90	3.45	-	0.30	-
CTIF-CA3	-	10.90	-	-	-	-	-	-	-	86.50	0.80	-	0.06	-
CTIF-CA13	-	11.20	-	-	-	-	-	-	-	82.45	3.82	-	1.22	-
MBH-32X ALB10 A	-	11.25	0.017	-	-	(0.0022)	-	-	0.0103	74.28	4.23	0.0029	1.73	-
CTIF-2154V	-	11.25	-	-	-	-	-	-	-	85.00	3.05	-	0.12	-
CTIF-CA35	-	11.40	-	-	-	-	-	-	-	75.60	6.10	-	1.60	-
CTIF-4065P	-	11.85	-	-	-	-	-	-	-	81.20	3.40	-	0.075	-
CTIF-2158W	-	11.95	-	-	-	-	-	-	-	85.00	2.53	-	0.26	-
CTIF-CA36	-	12.60	-	0.058	-	-	-	-	0.041	77.30	3.00	0.10	0.13	-
MBH-32X ALB9 B	0.042	13.86	0.0275	-	-	(0.006)	-	0.0259	(0.064)	79.24	3.13	0.205	0.09	-

Product Code	Ni	O	P	Pb	S	Sb	Si	Sn	Zn	Zr	Size	Grade	Type	Form
IARM-93B	0.088	-	(0.002)	0.012	0.002	(0.012)	0.024	0.009	0.17	-	Ø 38x19mm	C95400	CRM	C
CTIF-3011G	2.00	-	-	0.10	-	-	0.16	0.125	0.25	-	Ø 60x6mm	C62400	CRM	CC
CTIF-CA22	4.54	-	-	0.0243	-	-	0.32	0.30	0.605	-	Ø 60x5mm	C95510M	CRM	CC-Mush.
CTIF-CA11	1.95	-	-	0.11	-	-	0.25	0.26	0.21	-	Ø 60x5mm	Mushroom	CRM	CC
IARM-204A	1.95	-	0.007	0.004	(0.002)	(<0.01)	0.034	0.005	0.22	-	Ø 38x19mm	C95410	CRM	C
BS-955C	4.31	-	0.012	0.003	-	(<0.002)	0.025	0.003	0.15	-	Ø 38x12mm	C95500	RM	
BAS-CURM52.52	3.56	-	-	0.074	-	-	0.011	0.044	0.094	-	Ø 50x12mm		CRM	
IARM-94B	4.31	-	0.011	0.004	0.002	(0.011)	0.028	(0.003)	0.14	-	Ø 38x19mm	C95500	CRM	C
CTIF-CA21	3.09	-	-	0.05	-	-	0.07	0.07	0.10	-	Ø 60x5mm	C62400	CRM	CC
CTIF-CA3	0.80	-	-	0.15	-	-	0.08	0.20	0.30	-	Ø 60x5mm	C95300	CRM	CC-Mush.
CTIF-CA13	0.50	-	-	0.023	-	-	0.11	(0.01)	0.65	-	Ø 60x5mm	Mushroom	CRM	CC
MBH-32X ALB10 A	7.58	-	0.04	0.107	-	-	0.169	0.202	0.315	-	Ø 42x18mm	Mushroom	CRM	CC
CTIF-2154V	0.41	-	-	<0.005	-	-	0.015	<0.01	<0.01	-	Ø 60x6mm	C62200	CRM	CC
CTIF-CA35	3.80	-	-	0.10	-	-	0.25	0.30	0.56	-	Ø 60x5mm	Mushroom	CRM	CC
CTIF-4065P	3.18	-	-	0.03	-	-	0.034	0.18	0.03	-	Ø 60x6mm	Mushroom	CRM	CC
CTIF-2158W	0.10	-	-	<0.005	-	-	0.015	<0.01	0.01	-	Ø 60x6mm	Mushroom	CRM	CC
CTIF-CA36	6.30	-	-	0.015	-	-	0.11	0.20	0.24	-	Ø 60x5mm	Mushroom	CRM	CC
MBH-32X ALB9 B	1.21	-	(0.054)	0.377	-	-	0.282	0.061	1.17	-	Ø 42x18mm		CRM	CC

Values listed in mass %; () Uncertified Value

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Cu/Al Chips (Aluminum Bronze)

Product Code	Al	As	Bi	Cd	Cr	Cu	Fe	Mg	Mn	Ni	P	Pb	Sb	Si
BAS-BCS-CRM 179/2	2.22	(0.008)	-	(0.003)	-	58.50	1.02	-	0.86	0.56	-	0.35	-	0.044
BAS-CURM30.20C	2.32	<0.001	<0.002	-	-	61.46	-	-	<0.001	-	-	<0.002	<0.002	0.17
BAS-CURM43.02C	2.40	0.083	<0.001	-	-	76.21	0.128	-	0.035	0.068	-	0.064	<0.001	0.038
BAS-CURM43.01C	2.75	0.118	<0.002	-	-	74.36	0.008	-	0.064	0.121	-	<0.002	<0.001	0.0063
BAS-CURM30.18C	3.28	<0.005	<0.001	-	-	63.66	0.006	-	<0.001	<0.001	-	<0.005	<0.001	0.13
BAS-CURM51.11C	5.27	<0.001	-	-	-	93.95	0.06	-	<0.001	0.012	0.035	0.33	-	0.159
BAS-CURM51.12C	6.36	0.111	-	-	-	88.29	2.87	-	1.33	0.112	<0.001	0.219	-	0.005
BAS-CURM51.13C	7.30	0.215	-	-	-	88.79	1.81	-	0.898	0.057	0.022	0.104	-	0.174
BAS-CURM52.54C	7.85	-	-	-	<0.005	81.59	3.31	<0.005	1.2	5.4	-	0.086	-	0.022
BAS-CURM51.14C	8.42	0.44	-	-	-	88.57	0.72	-	0.55	0.219	0.012	0.003	-	0.286
BAS-BCS-CRM 304/1	9.71	-	-	-	-	80.23	4.64	-	0.12	4.82	-	0.01	-	0.08
BAS-CURM52.52C	10.69	-	-	-	0.0004	79.26	6.02	0.004	0.145	3.56	-	0.074	-	0.011

Product Code	Sn	Zn
BAS-BCS-CRM 179/2	0.70	35.80
BAS-CURM30.18C	0.58	32.33
BAS-CURM43.02C	0.06	20.82
BAS-CURM43.01C	0.116	22.44
BAS-CURM30.18C	0.58	32.33
BAS-CURM51.11C	0.027	0.111
BAS-CURM51.12C	0.196	0.45
BAS-CURM51.13C	0.27	0.335
BAS-CURM52.54C	0.135	0.39
BAS-CURM51.14C	0.113	0.656
BAS-BCS-CRM 304/1	0.03	0.31
BAS-CURM52.52C	0.044	0.094

Values listed in mass %; () Uncertified Value

	Size	Grade	Type	Form
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Al Alloys Sets (Aluminum Bronze)

Product Code	Al	As	Bi	Cd	Cr	Cu	Fe	Mg	Mn	Ni	P	Pb	Sb	Si
IM WO1	1.40	0.057	0.00028	0.013	0.011	79.09	0.13	0.00068	0.014	0.0045	0.0025	0.15	0.0077	0.044
IM WO2	1.77	0.041	0.0016	0.032	0.0092	77.88	0.049	0.0068	0.15	0.027	0.0086	0.098	0.0013	0.014
IM WO3	2.14	0.014	0.0046	0.038	0.0026	77.63	0.028	0.0046	0.051	0.10	0.0056	0.053	0.0036	-
IM WO4	2.50	0.03	0.0094	0.0064	0.00034	76.21	0.022	0.013	0.074	0.067	0.013	0.02	0.0059	0.0016

Product Code	Sn	Zn
IM WO1	0.012	Rem.
IM WO2	0.058	Rem.
IM WO3	0.0071	Rem.
IM WO4	0.13	Rem.
Set of 4 Only		

Size	Grade	Type	Form
Ø 40x35mm		CRM	
Ø 40x35mm		CRM	
Ø 40x35mm		CRM	
Ø 40x35mm		CRM	

Product Code	Al	As	Bi	Cd	Co	Cr	Cu	Fe	Mn	Ni	P	Pb	Sb	Si
IM WR1	0.496	0.203	0.00109	0.00045	0.00196	0.00049	55.72	0.0577	1.051	3.534	0.00122	0.0496	0.00046	1.097
IM WR2	1.092	0.0129	0.00642	0.00548	0.0021	0.00705	56.99	0.802	1.631	2.683	0.0311	0.291	0.00566	0.817
IM WR3	1.683	0.0492	0.0118	0.00807	0.0106	0.0149	58.95	0.184	1.674	1.799	0.0126	0.514	0.0150	0.566
IM WR4	2.297	0.00528	0.0211	0.0154	0.0154	0.0190	60.07	0.600	2.254	0.989	0.0213	0.683	0.0247	0.279
IM WR5	3.024	0.00129	0.0278	0.0200	0.0196	0.0253	61.20	0.141	3.070	0.251	0.0282	0.885	0.0334	0.0485

Product Code	Sn	Zn
IM WR1	0.605	Rem.
IM WR2	0.453	Rem.
IM WR3	0.254	Rem.
IM WR4	0.100	Rem.
IM WR5	0.0116	Rem.
Set of 5 Only		

Size	Grade	Type	Form
Ø 40x25mm		CRM	W
Ø 40x25mm		CRM	W
Ø 40x25mm		CRM	W
Ø 40x25mm		CRM	W
Ø 40x25mm		CRM	W

Product Code	Al	Fe	Cu	Mn
NCS HS43712-1	7.76	4.94	Rem.	2.63
NCS HS43712-2	8.78	4.17	Rem.	2.92
NCS HS43712-3	9.75	3.51	Rem.	2.01
NCS HS43712-4	11.73	2.45	Rem.	1.37
NCS HS43712-5	10.85	1.63	Rem.	0.61
Set of 5 Only				

Size	Grade	Type	Form
Ø 32x45mm		CRM	
Ø 32x45mm		CRM	
Ø 32x45mm		CRM	
Ø 32x45mm		CRM	
Ø 32x45mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Al Alloys Sets (Aluminum Bronze)

Product Code	Al	As	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM BF1	10.9	0.061	0.00042	Rem.	(6.20)	0.0059	2.49	(0.012)	0.23	(0.002)	0.26	0.011	0.57
IM BF2	9.96	0.05	0.0025	Rem.	(5.40)	0.12	3.54	(0.053)	0.15	(0.013)	0.25	0.081	0.40
IM BF3	9.58	0.038	0.0039	Rem.	4.50	0.28	4.43	0.0098	0.11	0.028	0.20	0.17	0.27
IM BF4	9.12	0.022	0.0057	Rem.	3.25	0.39	5.24	0.13	0.059	0.037	0.097	0.25	0.10
IM BF5	8.35	0.0039	0.01	Rem.	2.44	0.5	6.03	0.16	0.014	0.048	0.028	0.35	0.018

Product Code
IM BF1
IM BF2
IM BF3
IM BF4
IM BF5
Set of 5 Only

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Product Code	Al	As	Bi	Cd	Cr	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM BO1	3.16	0.00033	0.0003	0.00035	0.00327	0.0158	0.0167	0.00517	(0.0004)	0.00384	0.00035	(0.00471)	2.54	7.10
IM BO2	4.03	0.00199	0.00197	0.00182	0.00037	0.00569	0.00102	0.00204	(0.00227)	(0.00214)	0.00226	0.00979	1.83	6.26
IM BO3	4.67	0.00662	0.0066	0.0057	0.00548	0.0752	0.00884	0.0683	0.0055	0.0537	0.00568	0.0552	1.17	5.07
IM BO4	6.15	0.0115	0.0107	0.00881	0.0091	0.137	0.00612	0.111	0.010	0.102	0.0104	0.0951	0.704	4.28
IM BO5	7.02	0.0161	0.0152	0.0134	0.0145	0.218	0.0772	0.0355	0.0155	0.0299	0.0152	0.0135	0.117	3.08

Product Code	Zr
IM BO1	(0.00014)
IM BO2	(0.00187)
IM BO3	(0.0106)
IM BO4	(0.0074)
IM BO5	(0.0204)
Set of 5 Only	

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Product Code	Al	As	Bi	Cd	Cr	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM BP1	8.935	0.00094	0.00053	0.00054	0.00037	0.00305	0.00535	0.243	0.00055	0.00055	0.00052	(0.00544)	0.00043	0.010
IM BP2	6.136	0.00215	0.00222	0.00214	0.00267	0.0184	0.0189	1.032	0.00208	0.00238	0.00468	0.0220	0.00199	0.024
IM BP3	7.120	0.0098	0.0102	0.00928	0.0104	0.0743	0.152	1.850	0.00661	0.0103	0.0108	0.0804	0.0106	0.176
IM BP4	4.632	0.0238	0.0207	0.0226	0.0217	0.0131	0.304	2.522	0.0238	0.0229	0.0215	0.183	0.0229	0.343
IM BP5	3.769	0.0361	0.0349	0.0356	0.0374	0.200	0.411	3.528	0.0189	0.0347	0.0356	0.266	0.0336	0.459

Product Code
IM BP1
IM BP2
IM BP3
IM BP4
IM BP5
Set of 5 Only

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Al/Pb Chips (Special Copper Aluminum Alloys)

Product Code	Al	Cr	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
DH-SL02-08	4.15	0.009	81.67	2.54	0.711	2.82	0.027	1.31	0.083	0.052	4.78	1.85
DH-SL02-03	12.50	-	76.88	5.76	0.057	-	-	0.588	0.329	0.226	2.17	1.36
DH-SL02-04	12.51	0.009	77.0	5.70	0.057	-	-	0.581	0.336	0.22	2.16	1.36
DH-SL02-05	12.53	-	76.82	5.66	0.056	-	0.008	0.76	0.35	0.22	2.14	1.36

Product Code
DH-SL02-08
DH-SL02-03
DH-SL02-04
DH-SL02-05

	Size	Grade	Type	Form
Chips	50g		RM	
Chips	50g		RM	
Chips	50g		RM	
Chips	50g		RM	

Special Copper Aluminum Alloys Set

Product Code	Al	As	Bi	C	Cd	Co	Cu	Fe	Mg	Mn	Ni	P	Pb	S
IM BJ1	2.88	0.011	0.013	(0.005)	0.016	0.027	(88.93)	0.011	0.0058	0.6	6.97	0.0022	0.0025	0.021
IM BJ2	2.46	0.0089	0.0095	(0.007)	0.011	0.02	(89.97)	0.038	0.0098	0.42	6.47	0.011	0.0043	0.014
IM BJ3	1.97	0.0072	0.0071	(0.015)	0.0076	0.014	(91.25)	0.12	0.0065	0.21	5.87	0.014	0.0081	0.0082
IM BJ4	1.50	0.0031	0.0042	(0.020)	0.0048	0.0076	(92.0)	0.2	0.0035	0.013	5.49	0.013	0.01	0.0049
IM BJ5	1.09	0.0018	0.0013	(0.024)	0.00075	0.0024	(92.88)	0.28	0.0017	0.003	5.00	0.019	0.017	0.0023

Product Code	Sb	Si	Sn	Zn
IM BJ1	0.0012	(0.11)	(0.11)	0.02
IM BJ2	0.003	(0.091)	(0.08)	0.038
IM BJ3	0.0056	(0.047)	(0.049)	0.22
IM BJ4	0.0088	(0.015)	(0.014)	0.36
IM BJ5	0.01	(0.0071)	(0.0034)	0.51
Set of 5 Only				

	Size	Grade	Type	Form
	Ø 40x25mm	C99700	CRM	
	Ø 40x25mm		CRM	
	Ø 40x25mm		CRM	
	Ø 40x25mm		CRM	
	Ø 40x25mm		CRM	

Other Cu/Al Alloys

Product Code	Al	As	B	Bi	Cd	Co	Cu	Fe	Mn	Ni	P	Pb	S	Sb
MBH-31X B25 B	0.47	0.0284	(0.0045)	0.0594	-	-	56.95	0.056	0.127	0.236	0.093	0.298	-	0.0843
MBH-31X B26 E	1.12	0.112	0.0011	0.096	0.0172	0.113	62.80	1.08	0.474	1.68	0.054	0.752	-	0.116

Product Code	Si	Sn	Zn
MBH-31X B25 B	(0.254)	0.613	40.83
MBH-31X B26 E	0.195	1.62	29.81

	Size	Grade	Type	Form
	Ø 42x17mm		CRM	CC
	Ø 37x18mm		CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Section: Cu/Si Alloys

Cu/Si Alloys (Silicon Bronze)

Product Code	Ag	Al	As	Be	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N	Ni
MBH-37X 65500 A	-	0.0028	-	0.0014	(0.0044)	-	-	0.0029	95.75	0.035	-	0.96	-	0.0059
BS-655A	-	(0.002)	<0.002	-	(0.0006)	-	-	-	95.74	0.075	-	0.91	-	0.0080
BS-655C	-	(<0.005)	0.0006	(<0.0005)	(<0.005)	-	(<0.005)	0.0021	95.60	0.052	(<0.0005)	0.958	(<0.0005)	0.0030
IARM-82B	-	0.002	<0.002	-	(0.003)	-	-	0.004	95.30	0.08	-	1.04	<0.0005	0.011
BS-655B	-	(<0.005)	0.0004	(<0.0005)	0.0012	-	(<0.005)	0.0006	95.70	0.042	(<0.0005)	0.928	(<0.0005)	0.0043
MBH-31X WSB6 E	-	0.0311	0.0048	-	-	0.0004	0.0079	-	94.47	0.088	-	0.900	-	0.1114
IARM-150A	(<0.01)	(<0.01)	-	-	(<0.01)	-	-	-	Rem.	0.045	-	1.05	-	0.013

Product Code	O	P	Pb	S	Sb	Si	Sn	Zn	Zr
MBH-37X 65500 A	-	0.0046	0.0034	0.0010	-	3.13	0.0426	0.0353	-
BS-655A	-	(0.004)	0.008	(0.0006)	<0.002	3.14	0.07	0.02	-
BS-655C	(<0.001)	0.0035	0.0047	0.0007	(<0.0005)	3.22	0.0049	0.0152	-
IARM-82B	(0.001)	0.004	0.011	0.003	<0.01	3.22	0.017	0.38	-
BS-655B	-	0.0047	0.0205	0.0010	0.0002	3.25	0.0053	0.0248	(<0.0005)
MBH-31X WSB6 E	-	0.0206	0.225	-	0.0022	3.60	0.071	0.450	-
IARM-150A	-	0.005	0.011	(0.001)	(<0.03)	3.93	0.016	0.03	-

Size	Grade	Type	Form
Ø 38x15mm	C65500	CRM	W
Ø 38x19mm	C65500	CRM	
Ø 38x19mm	C65500	CRM	
Ø 38x19mm	C65500	CRM	W
Ø 38x19mm	C65500	CRM	
Ø 40x15mm	C87300	CRM	CC
Ø 38x3mm	C87200	CRM	C

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Si Alloys Sets (Silicon Bronze)

Product Code	Fe	Mn	Ni	P	Pb	Si	Sn	Zn
IM BE1	0.047	1.69	0.012	0.051	0.28	2.34	0.014	0.52
IM BE2	0.078	1.35	0.29	0.024	0.023	2.82	0.041	0.027
IM BE3	0.10	1.10	0.10	0.039	0.012	3.26	0.13	0.19
IM BE4	0.19	0.51	0.048	0.007	0.0061	3.91	0.11	0.13
IM BE5	0.23	1.20	0.20	0.013	0.0052	2.08	0.30	0.36
Set of 5 Only								

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Product Code	As	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn	Size	Grade	Type	Form
NCS HS43709-1	0.001	0.089	(1.21)	0.075	0.015	0.010	0.001	(2.83)	0.50	0.90	Ø 30x57mm		CRM	
NCS HS43709-2	0.0017	0.16	(1.21)	0.13	0.026	0.017	0.0017	(3.03)	0.30	0.55	Ø 30x57mm		CRM	
NCS HS43709-3	0.0026	0.21	(1.24)	0.18	0.036	0.024	0.0025	(3.04)	0.19	0.36	Ø 30x57mm		CRM	
NCS HS43709-4	0.0042	0.34	(1.25)	0.26	0.056	0.036	0.0042	(3.04)	0.12	0.23	Ø 30x57mm		CRM	
NCS HS43709-5	0.0068	0.56	(1.17)	0.41	0.088	0.059	0.0066	(2.93)	0.07	0.16	Ø 30x57mm		CRM	
Set of 5 Only														

Product Code	Al	As	Bi	Fe	Mg	Mn	Ni	P	Pb	S	Sb	Si	Sn	Zn
IM BH1	0.027	0.0047	0.018	1.67	0.0065	0.25	0.96	0.0047	0.74	0.012	0.066	4.77	0.044	2.03
IM BH2	0.079	0.015	0.014	1.28	0.0066	0.54	0.74	0.023	0.57	0.0092	0.042	4.14	0.21	2.99
IM BH3	0.14	0.022	0.0091	0.96	0.0075	1.0	0.53	0.039	0.40	0.0062	0.026	3.07	0.37	3.84
IM BH4	0.22	0.054	0.006	0.55	0.0057	1.46	0.28	0.059	0.24	0.0064	0.016	2.29	0.55	4.91
IM BH5	0.29	0.071	0.0019	0.093	0.0024	1.80	0.047	0.073	0.015	0.0055	0.0054	1.45	0.69	5.58
IM BH6	0.32	0.078	0.018	0.35	0.01	0.80	0.39	0.078	0.017	0.016	0.056	1.51	0.32	6.27

Product Code
IM BH1
IM BH2
IM BH3
IM BH4
IM BH5
IM BH6
Set of 6 Only

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Si/Zn Alloys (Silicon Brass)

Product Code	Ag	Al	As	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	P	Pb
IARM-313A	0.002	-	-	-	-	-	(0.001)	75.4	0.011	-	(0.001)	0.004	0.09	0.04
IARM-151B	(0.01)	0.002	(0.002)	0.005	-	-	(0.003)	84.0	0.025	-	0.002	0.011	0.003	0.013
CTIF-LS3	-	0.43	-	-	-	-	-	76.0	0.10	-	0.15	0.11	0.011	0.58
MBH-37X 226 A	-	0.002	-	0.006	-	-	0.0023	91.58	1.51	-	0.577	0.0024	0.0022	(0.001)
IARM-151A	(<0.01)	(<0.01)	-	(<0.01)	-	-	-	(81.77)	0.076	-	0.002	0.009	0.006	0.02
CTIF-LS1	-	(0.02)	-	-	-	-	-	77.7	0.448	-	0.039	0.55	0.128	0.213
CTIF-LS2	-	0.156	-	-	-	-	-	79.6	1.022	-	0.22	1.11	0.064	0.886

Product Code	S	Sb	Si	Sn	Zn	Zr
IARM-313A	(0.001)	0.016	3.09	0.006	21.4	-
IARM-151B	<0.001	(0.001)	3.11	0.009	12.94	-
CTIF-LS3	-	0.107	3.30	0.15	19.0	-
MBH-37X 226 A	0.0005	-	3.55	0.003	2.82	(0.0002)
IARM-151A	(<0.01)	(<0.03)	3.95	(0.006)	14.02	-
CTIF-LS1	-	-	4.35	0.243	16.3	-
CTIF-LS2	-	0.0103	4.91	0.338	11.6	-

Values listed in mass %; () Uncertified Value

	Size	Grade	Type	Form
	Ø 38x19mm	C69300	CRM	W
	Ø 38x19mm	C87500	CRM	C
Mushroom	Ø 60x5mm		CRM	CC
	Ø 57x17mm		CRM	W
	Ø 38x3mm	C87500	CRM	C
Mushroom	Ø 60x5mm		CRM	CC
Mushroom	Ø 60x5mm		CRM	CC

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Si/Zn Alloys Sets (Silicon Brass)

Product Code	Al	As	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM WB1	0.062	0.013	0.0076	78.41	0.049	0.69	0.032	0.00098	0.20	0.025	4.80	0.13	Rem.
IM WB2	0.072	0.043	0.0094	78.97	0.13	0.64	0.096	0.0084	0.42	0.055	3.86	0.0041	Rem.
IM WB3	0.035	0.026	0.0029	79.45	0.28	0.44	0.025	0.023	0.23	0.01	3.55	0.22	Rem.
IM WB4	0.083	0.02	0.0056	80.48	0.35	0.14	0.051	0.06	0.099	0.031	3.06	0.018	Rem.
IM WB5	0.018	0.0075	0.0023	80.88	0.46	0.05	0.019	0.083	0.012	0.0038	2.79	0.27	Rem.
IM WB6	0.0075	0.0043	0.0011	81.11	0.66	0.011	0.0068	0.12	0.0037	0.0025	1.99	0.049	Rem.
IM WB7	0.041	0.052	0.0084	77.69	0.033	0.88	0.068	0.017	0.098	0.031	3.95	0.39	Rem.

Product Code
IM WB1
IM WB2
IM WB3
IM WB4
IM WB5
IM WB6
IM WB7
Set of 7 Only

Size	Grade	Type	Form
Ø 40x12mm		CRM	
Ø 40x12mm		CRM	
Ø 40x12mm		CRM	
Ø 40x12mm		CRM	
Ø 40x12mm		CRM	
Ø 40x12mm		CRM	
Ø 40x12mm		CRM	

Product Code	Al	As	Bi	Cu	Fe	P	Pb	Sb	Si	Sn	Zn
IM WC1	0.0034	0.0043	0.0028	75.10	0.031	0.015	0.046	0.0034	0.26	0.0032	Rem.
IM WC2	0.0016	0.0024	0.002	75.05	0.015	0.011	0.031	0.0023	0.41	0.0025	Rem.
IM WC3	0.0018	0.0011	0.00093	75.28	0.021	0.0058	0.0085	0.001	0.89	0.0011	Rem.
IM WC4	0.00096	-	0.00047	75.32	0.0067	0.0048	0.0051	0.0008	0.76	0.001	Rem.
IM WC5	0.00084	0.0022	0.0019	75.03	0.18	-	0.0055	0.0011	0.48	0.0044	Rem.
IM WC6	0.0019	0.00097	0.0012	75.32	0.051	0.0037	0.0036	0.00057	0.58	0.0028	Rem.

Product Code
IM WC1
IM WC2
IM WC3
IM WC4
IM WC5
IM WC6
Set of 6 Only

Size	Grade	Type	Form
Ø 40x12mm		CRM	W
Ø 40x12mm		CRM	W
Ø 40x12mm		CRM	W
Ø 40x12mm		CRM	W
Ø 40x12mm		CRM	W
Ø 40x12mm		CRM	W

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Section: Cu/Ni Alloys

Cu/Ni Alloys

Product Code	Ag	Al	As	B	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn
MBH-36X CN21 A	0.0064	1.95	0.0067	-	-	-	-	0.0021	0.0079	0.005	92.17	0.0316	-	0.0391
BAS-C62.12	-	-	-	-	-	-	-	-	0.081	-	89.42	0.45	0.002	1.59
MBH-36X CN1 P	-	0.055	-	-	-	-	<0.01	-	0.12	0.20	Rem.	1.85	0.035	1.85
IARM-84B	0.005	(0.002)	-	-	-	-	(0.01)	-	0.013	(0.003)	87.9	1.30	-	0.62
HRT CU2014	-	-	-	-	-	-	-	-	-	-	86.96	1.60	-	0.82
MBH-36X CN12 A	-	2.41	-	0.0055	-	-	0.0101	-	0.0056	-	83.79	0.105	0.072	0.402
BAS-C62.13	-	-	-	-	-	-	-	-	0.055	-	Rem.	<0.005	0.014	0.95
MBH-36X CN23 A	0.042	0.007	0.047	-	-	-	-	0.0021	0.0509	0.0021	70.22	0.14	-	0.0095
MBH-36X CN13 A	-	2.65	-	(0.0017)	-	-	(0.0033)	-	(0.001)	(0.0004)	(81.46)	0.87	0.0039	0.442
MBH-36X CN11 A	-	1.457	-	-	-	-	(0.001)	-	0.0049	0.38	77.56	0.992	0.0241	4.34
MBH-36X CN2 J	-	0.005	-	-	-	0.0045	0.004	-	0.264	0.24	80.78	1.70	0.0006	1.26
MBH-36X CN3 M	0.0099	-	-	(0.0025)	0.0042	-	0.020	-	0.0701	0.0259	76.60	0.996	0.075	0.726

Product Code	N	Nb	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Ti	Zn	Zr
MBH-36X CN21 A	-	-	5.50	-	0.053	0.051	-	-	-	-	0.038	-	0.0203	-
BAS-C62.12	-	-	7.94	-	-	0.053	0.034	-	-	0.109	0.11	-	0.180	-
MBH-36X CN1 P	-	-	9.50	-	0.055	0.04	0.008	-	-	0.10	0.25	-	0.35	-
IARM-84B	-	-	10.03	-	0.004	0.008	0.008	(0.002)	-	0.01	0.014	-	0.082	-
HRT CU2014	-	-	10.49	-	-	(0.005)	-	-	-	-	(0.005)	-	(0.01)	-
MBH-36X CN12 A	-	0.001	13.05	-	0.0011	0.0037	-	-	-	0.040	(0.0011)	-	0.157	-
BAS-C62.13	-	-	14.20	-	-	0.046	0.12	-	-	0.071	0.06	-	0.01	-
MBH-36X CN23 A	-	-	14.38	-	0.0299	0.115	-	-	-	-	0.102	-	14.88	-
MBH-36X CN13 A	-	-	14.52	-	0.0011	(0.0013)	(0.0018)	-	-	0.012	(0.0011)	-	0.0017	-
MBH-36X CN11 A	-	0.124	14.96	-	(0.002)	(0.003)	0.0012	-	-	0.083	(0.002)	-	(0.006)	-
MBH-36X CN2 J	-	(0.032)	15.47	-	0.015	0.048	0.035	-	-	0.044	0.061	0.0102	0.0358	-
MBH-36X CN3 M	-	0.03	19.55	-	0.049	0.223	0.0153	-	-	0.349	0.19	-	1.014	-

Product Code
MBH-36X CN21 A
BAS-C62.12
MBH-36X CN1 P
IARM-84B
HRT CU2014
MBH-36X CN12 A
BAS-C62.13
MBH-36X CN23 A
MBH-36X CN13 A
MBH-36X CN11 A
MBH-36X CN2 J
MBH-36X CN3 M

Size	Grade	Type	Form
Ø 40x17mm		CRM	CC
Ø 50x10-12mm		RM	
Ø 40x17mm		CRM	CC
Ø 38x3mm	C70600	CRM	W
Ø 38x15mm	C70600	RM	
Ø 40x15mm		CRM	W
Ø 50x10-12mm		RM	
Ø 40x17mm		CRM	CC
Ø 38x15mm		CRM	W
Ø 40x15mm		CRM	W
Ø 40x17mm		CRM	CC
Ø 40x15mm	C71000	CRM	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Ni Alloys

Product Code	Ag	Al	As	B	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn
BAS-C62.14	-	-	-	-	-	-	-	-	0.03	-	Rem.	1.49	0.002	0.24
BAS-C62.15	-	-	-	-	-	-	-	-	0.042	-	Rem.	2.36	0.004	0.23
MBH-36X CN4 K	-	0.0013	-	-	-	0.0077	0.0053	-	0.052	0.022	69.48	2.67	(0.0004)	0.164
MBH-36X CN10 B	-	1.346	-	(0.012)	-	-	0.0107	-	0.122	1.491	61.63	4.76	-	0.552
MBH-36X CN9 J	-	0.094	-	0.0065	-	-	0.0098	-	0.323	1.84	64.96	0.722	-	1.019
MBH-36X CN8 J	-	(0.030)	-	0.005	-	0.0518	0.013	-	0.121	1.38	65.78	1.65	-	0.951
BAS-C62.11	-	-	-	-	-	-	-	-	<0.005	-	Rem.	0.60	0.03	0.52
MBH-36X CN7 F	-	-	-	(0.004)	-	(0.014)	0.0106	-	0.108	1.51	65.58	1.021	0.0041	0.659
IARM-236A	-	0.003	-	<0.007	-	0.003	0.01	-	0.004	0.002	66.7	0.91	-	1.04
NIST-1276A	-	-	-	-	-	-	-	0.0002	0.045	-	67.8	0.56	0.12	1.01
MBH-36X CN5 P	-	-	-	-	-	-	(0.010)	-	0.023	0.15	Rem.	0.35	0.010	0.22
MBH-36X CN6 H	-	0.063	-	-	-	0.0331	0.0072	-	0.059	2.65	63.80	0.792	-	0.458

Product Code	N	Nb	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Ti	Zn	Zr
BAS-C62.14	-	-	20.20	-	-	0.01	0.083	-	-	0.022	0.12	-	0.12	-
BAS-C62.15	-	-	25.90	-	-	0.016	0.023	-	-	0.014	0.03	-	0.04	-
MBH-36X CN4 K	-	0.0139	27.49	-	0.0079	(0.023)	0.0076	-	-	0.025	0.009	(0.004)	0.041	-
MBH-36X CN10 B	-	0.45	28.35	-	(0.009)	0.013	0.030	-	-	0.906	0.0164	0.227	0.058	0.08
MBH-36X CN9 J	-	1.40	28.90	-	0.008	0.02	0.013	-	-	0.413	0.0291	0.15	0.06	0.0019
MBH-36X CN8 J	-	0.585	28.94	-	0.019	0.037	0.0119	-	-	0.309	0.0502	(0.038)	0.107	-
BAS-C62.11	-	-	29.80	-	-	<0.005	<0.005	-	-	0.36	0.04	-	0.097	-
MBH-36X CN7 F	-	0.58	29.95	-	(0.021)	0.028	0.0151	-	-	0.304	0.039	(0.037)	0.203	0.003
IARM-236A	0.0002	0.92	30.00	0.002	0.003	0.004	0.003	<0.005	-	0.19	0.005	<0.005	0.002	-
NIST-1276A	-	-	30.50	-	0.006	0.004	-	0.0004	0.005	-	0.023	-	0.038	-
MBH-36X CN5 P	-	0.42	30.50	-	0.04	0.015	0.08	-	-	0.65	0.01	0.02	0.22	-
MBH-36X CN6 H	-	0.196	31.21	-	0.0104	0.033	0.0051	-	-	0.154	-	0.057	0.388	0.049
IARM-85C	<0.0003	-	31.30	(0.003)	0.003	0.004	0.002	-	-	0.01	0.005	-	0.057	-

Product Code
BAS-C62.14
BAS-C62.15
MBH-36X CN4 K
MBH-36X CN10 B
MBH-36X CN9 J
MBH-36X CN8 J
BAS-C62.11
MBH-36X CN7 F
IARM-236A
NIST-1276A
MBH-36X CN5 P
MBH-36X CN6 H
IARM-85C

Size	Grade	Type	Form
Ø 50x10-12mm		RM	
Ø 50x10-12mm		RM	
Ø 40x17mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 40x17mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 50x10-12mm		RM	
Ø 40x17mm		CRM	CC
Ø 38x19mm	C96400	CRM	C
Ø 32x19mm	C71500	CRM	
Ø 40x15mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 38x19mm	C71500	CRM	W

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Ni Chips

Product Code	C	Co	Cu	Fe	Mg	Mn	Ni	Pb	S	Si	Sn	Zn
BAS-CURM62.12C	-	0.081	89.42	0.45	0.002	1.59	7.94	0.053	0.034	0.109	0.111	0.18
BAS-BCS-CRM 180/2	0.04	-	68.12	0.68	-	0.75	30.35	(0.003)	0.006	(0.018)	-	-

Product Code
BAS-CURM62.12C
BAS-BCS-CRM 180/2

	Size	Grade	Type	Form
Chips	100g		RM	
Chips	100g		CRM	

Cu/Ni Alloys Sets

Product Code	As	Bi	Cu	Fe	Ni	P	Pb	Sb
IM MN5-1	(0.0007)	0.00011	Rem.	0.0041	3.21	(0.00027)	0.0062	0.00019
IM MN5-2	(0.0011)	0.00071	Rem.	0.033	4.50	0.01	0.12	0.00078
IM MN5-3	(0.0017)	0.0012	Rem.	0.062	5.29	0.016	0.016	0.0013
IM MN5-4	(0.0038)	0.0018	Rem.	0.083	5.90	0.026	0.024	0.0019
Set of 4 Only								

Size	Grade	Type	Form
Ø 35x30mm		CRM	
Ø 35x30mm		CRM	
Ø 35x30mm		CRM	
Ø 35x30mm		CRM	

Product Code	Co	Fe	Mn	Ni	Pb	Si	Sn	Zn
IM N1	0.005	0.0056	0.0018	25.38	0.0019	0.007	0.0089	0.019
IM N2	0.023	0.35	0.21	24.28	0.011	0.025	0.012	0.16
IM N3	0.055	0.77	0.50	22.57	0.020	0.062	0.023	0.33
IM N4	0.080	1.07	0.71	21.39	0.039	0.130	0.038	0.47
Set of 4 Only								

Size	Grade	Type	Form
Ø 35x30mm		CRM	
Ø 35x30mm		CRM	
Ø 35x30mm		CRM	
Ø 35x30mm		CRM	

Product Code	Al	Bi	Cu	Fe	Ni	P	Pb	S	Sb	Se	Si	Sn	Zn
IM BM1	0.596	0.538	Rem.	1.08	0.518	0.00443	0.0241	0.063	0.00431	0.0125	1.400	0.00551	0.351
IM BM2	0.188	0.201	Rem.	0.507	1.27	0.00973	0.0163	0.191	0.549	0.0956	0.985	0.0162	0.0565
IM BM3	0.109	0.104	Rem.	0.00679	2.180	0.0941	0.00784	0.480	0.110	0.454	0.565	0.104	0.0198
IM BM4	0.00840	0.011	Rem.	0.102	2.93	0.213	0.00231	0.0201	0.200	0.200	0.398	0.196	0.119
IM BM5	0.00276	0.00658	Rem.	0.0107	3.67	0.578	0.00134	0.0104	0.0152	(0.00554)	0.105	0.539	0.281

Product Code
IM BM1
IM BM2
IM BM3
IM BM4
IM BM5
Set of 5 Only

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Values listed in mass %; () Uncertified Value

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Cu/Ni Alloys Sets

Product Code	Al	As	Bi	C	Cd	Co	Cu	Fe	Mg	Mn	Ni	P	Pb	S
IM NB1	0.071	0.024	0.011	(0.04)	0.016	0.01	75.51	0.11	0.017	0.029	23.77	0.025	(0.011)	0.0019
IM NB2	0.043	0.0045	0.0082	(0.019)	0.0053	0.023	74.73	0.085	0.0059	0.46	24.38	0.03	(0.014)	0.0084
IM NB3	0.120	0.0076	0.007	(0.034)	0.0082	0.017	73.20	0.14	0.013	0.23	25.87	0.019	(0.011)	0.011
IM NB4	0.013	0.0097	0.004	(0.018)	0.0064	0.013	73.45	0.21	0.028	0.015	25.78	0.0085	(0.0084)	-
IM NB5	0.0014	0.011	0.001	(0.012)	0.0012	0.0067	73.42	0.28	0.036	0.57	24.94	0.0036	(0.006)	0.028

Product Code	Sb	Si	Sn	Zn
IM NB1	0.0025	0.093	0.0038	0.052
IM NB2	0.0036	0.13	0.014	0.037
IM NB3	0.0057	0.068	0.04	0.20
IM NB4	0.0092	0.024	0.065	0.33
IM NB5	0.012	0.0057	0.10	0.57
Set of 5 Only				

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Product Code	Al	As	Bi	C	Cd	Co	Cu	Fe	Mg	Mn	Ni	P	Pb	S
IM NC1	-	0.0056	0.0011	0.032	0.0142	0.0062	Rem.	0.0501	0.0016	0.552	23.17	0.0147	0.0025	0.0709
IM NC2	0.0219	0.0104	0.0046	-	0.0189	0.0115	Rem.	0.290	0.0024	0.413	24.21	-	0.0021	0.0837
IM NC3	0.229	0.0167	0.0077	(0.0036)	0.012	0.0282	Rem.	0.106	0.0561	0.148	24.68	0.0312	0.0027	(0.0202)
IM NC4	0.332	0.0251	0.0117	0.05	0.0049	0.101	Rem.	0.426	0.017	0.0172	25.39	0.0113	0.012	0.0022
IM NC5	0.0749	0.0427	0.0213	0.005	0.0018	0.151	Rem.	0.369	0.0861	0.0623	25.82	0.0222	0.0409	-

Product Code	Sb	Si	Sn	Zn
IM NC1	0.0024	0.0854	0.0374	0.776
IM NC2	0.0049	0.196	0.0457	0.508
IM NC3	0.0084	0.0609	0.0171	0.244
IM NC4	0.0113	0.0197	0.0087	0.0099
IM NC5	0.0161	0.0198	0.0044	0.0152
Set of 5 Only				

Size	Grade	Type	Form
Ø 40x32mm		CRM	
Ø 40x32mm		CRM	
Ø 40x32mm		CRM	
Ø 40x32mm		CRM	
Ø 40x32mm		CRM	

Product Code	C	Cu	Fe	Mn	Ni	Pb	S	Zn
IM NA1	(0.020)	Rem.	2.52	1.51	7.19	0.081	(0.081)	0.80
IM NA2	(0.023)	Rem.	2.03	1.03	9.05	0.056	(0.065)	0.55
IM NA3	(0.019)	Rem.	1.15	0.60	10.35	0.035	(0.036)	0.30
IM NA4	(0.012)	Rem.	0.50	0.21	12.15	0.0066	(0.0069)	0.019
Set of 4 Only								

Size	Grade	Type	Form
Ø 28x25mm		CRM	
Ø 28x25mm		CRM	
Ø 28x25mm		CRM	
Ø 28x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Ni/Zn Alloys

Product Code	Ag	Al	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	P	Pb	S
ERM-EB387	-	-	-	-	-	-	75.18	0.0617	-	0.0796	5.02	-	0.00108	-
MBH-34X NS1 F	0.069	(0.003)	(0.0018)	-	0.052	0.0003	58.63	0.064	0.002	0.0009	7.81	0.014	0.0141	(0.0004)
BAS-C65.26	-	-	-	-	-	-	56.70	<0.01	<0.01	0.70	11.90	0.11	0.06	0.0006
MBH-34X NS2 F	0.0026	-	-	-	0.0118	(0.001)	61.09	0.085	<0.0005	0.0013	13.39	0.0091	0.063	(0.020)
BAS-C65.27	-	-	-	-	-	-	57.00	0.26	<0.01	0.13	13.90	0.02	0.04	0.03
MBH-34X NS3 F	0.10	<0.001	-	-	0.0922	-	64.16	0.285	<0.001	0.0377	14.96	0.0295	0.178	(0.0028)
BAS-C65.28	-	-	-	-	-	-	56.90	0.13	0.01	0.57	15.30	0.07	0.06	0.03
MBH-34X NS5 G	0.011	0.08	-	-	0.20	-	58.09	0.25	-	0.10	16.50	0.10	0.92	-
MBH-34X NS4 F	0.0324	0.0454	-	-	0.152	-	64.97	0.449	0.0009	0.304	16.61	0.057	0.071	0.011
BAS-C65.29	-	-	-	-	-	-	58.90	0.39	0.01	0.17	16.80	0.07	0.11	0.07
BAS-C65.30	-	-	-	-	-	-	55.00	1.00	-	0.09	19.80	0.05	0.25	0.04

Product Code	Si	Sn	Zn
ERM-EB387	-	0.00301	19.57
MBH-34X NS1 F	(0.002)	0.011	33.41
BAS-C65.26	<0.002	<0.01	30.50
MBH-34X NS2 F	(0.003)	0.019	25.31
BAS-C65.27	<0.002	0.01	28.70
MBH-34X NS3 F	(0.002)	0.056	19.96
BAS-C65.28	0.01	0.15	26.70
MBH-34X NS5 G	0.12	0.13	23.50
MBH-34X NS4 F	0.102	0.0301	17.09
BAS-C65.29	0.02	0.08	23.40
BAS-C65.30	0.158	0.04	23.50

Values listed in mass %; () Uncertified Value

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 42x18mm		CRM	CC
Ø 50x10-12mm		RM	
Ø 42x17mm	C76200	CRM	CC
Ø 50x10-12mm		RM	
Ø 42x18mm		CRM	CC
Ø 50x10-12mm	C76700	RM	
Ø 40x15mm	C77000	CRM	CC
Ø 42x18mm		CRM	CC
Ø 50x10-12mm		RM	
Ø 50x10-12mm		RM	

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Ni/Zn Chips

Product Code	Al	As	Bi	Cu	Fe	Mg	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
BAS-CURM30.21C	1.44	<0.001	-	56.23	0.003	-	<0.001	1.11	-	0.004	<0.002	0.213	2.01	40.08
BAS-CURM30.11C	<0.001	<0.001	<0.002	59.86	-	-	0.23	1.70	-	0.005	<0.001	<0.001	<0.002	38.17
NIM-GBW02103	-	0.0098	0.0019	Rem.	0.47	0.033	0.32	14.87	0.048	0.019	0.002	0.146	-	20.81
NIST-880	-	-	-	54.51	0.004	-	<0.001	18.13	-	0.002	-	-	-	27.30

Product Code
BAS-CURM30.21C
BAS-CURM30.11C
NIM-GBW02103
NIST-880

	Size	Grade	Type	Form
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	
Chips	100g		CRM	

Cu/Ni/Zn Alloys Sets

Product Code	C	Co	Cu	Fe	Mn	Ni	P	S	Si	Zn	Size	Grade	Type	Form
IM WH1	(0.0046)	0.0061	68.16	0.0052	0.53	5.70	0.0029	0.0055	0.01	Rem.	Ø 40x25mm		CRM	
IM WH2	(0.0058)	0.017	69.14	0.038	0.36	6.34	0.0072	0.0071	0.038	Rem.	Ø 40x25mm		CRM	
IM WH3	(0.007)	0.031	70.18	0.11	0.25	3.44	0.013	0.011	0.072	Rem.	Ø 40x25mm		CRM	
IM WH4	(0.0075)	0.048	71.15	0.13	0.11	4.14	0.015	0.017	0.12	Rem.	Ø 40x25mm		CRM	
IM WH5	(0.0087)	0.028	72.28	0.22	0.011	4.89	0.017	0.021	0.17	Rem.	Ø 40x25mm		CRM	
Set of 5 Only														

Product Code	Al	As	Bi	C	Cd	Co	Cu	Fe	Mg	Mn	Ni	P	Pb	S
IM WM1	0.083	0.00026	0.011	0.0044	0.0046	0.021	69.06	0.011	0.0054	0.38	5.03	0.0018	0.018	0.017
IM WM2	0.05	0.003	0.014	0.0052	0.022	0.017	68.41	0.022	0.019	0.53	6.66	0.023	0.011	-
IM WM3	0.033	0.0053	0.0055	0.0058	0.0024	0.011	69.85	0.077	0.0042	0.19	6.09	0.0052	0.0073	0.0073
IM WM4	0.008	0.0072	0.0029	0.0072	0.0021	0.0099	71.1	0.13	0.0027	0.011	5.36	0.0057	0.0044	0.0058
IM WM5	0.0012	0.0089	0.0007	0.009	0.00077	0.0021	68.99	0.22	0.00056	0.0024	4.68	0.016	0.002	0.003

Product Code	Sb	Si	Sn	Zn
IM WM1	0.00098	0.0026	0.0036	25.35
IM WM2	0.013	0.0067	0.011	24.18
IM WM3	0.0043	0.037	0.098	23.57
IM WM4	0.0059	0.071	0.075	23.19
IM WM5	0.0068	0.094	0.035	25.90
Set of 5 Only				

Size	Grade	Type	Form
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	
Ø 40x25mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Ni/Zn Alloys Sets

Product Code	Al	As	Bi	Cd	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM WP1	0.02	0.0012	0.0008	0.0019	67.15	0.02	0.0069	5.45	0.02	0.52	0.001	(0.01)	0.0042	Rem.
IM WP2	0.009	0.0049	0.0052	0.0052	65.08	0.12	0.04	7.79	0.0067	0.82	0.0052	(0.0091)	0.11	Rem.
IM WP3	0.002	0.011	0.0012	0.011	63.05	0.20	0.15	10.24	0.0079	1.52	0.012	(0.03)	0.18	Rem.
IM WP4	0.039	0.015	0.016	0.016	60.91	0.31	0.35	12.38	0.011	(2.0)	0.015	(0.04)	0.26	Rem.
IM WP5	0.049	0.021	0.021	0.026	58.70	0.026	0.49	15.63	0.0027	(1.8)	0.028	(0.027)	0.33	Rem.
IM WP6	-	-	-	-	69.37	-	-	4.27	-	(2.41)	-	-	-	Rem.

Product Code
IM WP1
IM WP2
IM WP3
IM WP4
IM WP5
IM WP6
Set of 6 Only

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Product Code	As	Bi	Cu	Fe	Mg	Mn	Ni	P	Pb	Sb	Si	Zn
NCS HS45716-1	0.0039	0.0102	75.85	0.86	0.0096	0.97	2.06	0.0032	0.064	0.0103	0.015	(20.14)
NCS HS45716-2	0.007	0.007	75.44	0.63	0.032	0.65	3.50	0.0051	0.040	0.0072	0.060	(19.62)
NCS HS45716-3	0.0104	0.0039	75.43	0.35	0.05	0.37	4.95	0.009	0.025	0.004	0.118	(18.68)
NCS HS45716-4	0.014	0.002	75.87	0.23	0.069	0.24	6.42	0.016	0.015	0.002	0.333	(16.79)
NCS HS45716-5	0.02	0.0011	75.82	0.085	0.11	0.104	7.85	0.022	0.0056	0.0011	0.498	(15.48)

Product Code
NCS HS45716-1
NCS HS45716-2
NCS HS45716-3
NCS HS45716-4
NCS HS45716-5
Set of 5 Only

Size	Grade	Type	Form
Ø 38x30mm		CRM	
Ø 38x30mm		CRM	
Ø 38x30mm		CRM	
Ø 38x30mm		CRM	
Ø 38x30mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Other Cu/Ni Alloys

Product Code	Ag	Al	B	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	Nb	Ni
MBH-37X 218 B	-	0.0018	-	-	-	-	-	0.176	97.29	0.0209	-	0.0022	-	1.892
MBH-37X 218 A	-	0.0022	-	-	0.0022	-	0.0013	0.032	96.57	0.074	-	0.083	-	2.52
MBH-36X 274 A	-	0.0013	-	-	-	-	0.0028	0.531	96.23	0.0779	-	0.0148	-	2.54
CTIF-UN3S	-	0.110	-	-	-	-	-	-	92.65	0.30	-	0.073	-	3.45
MBH-31X B29 A	-	0.219	-	-	-	0.0144	-	0.062	67.08	0.144	-	0.0625	-	4.11
CTIF-CN2	-	(0.005)	-	-	(0.005)	-	-	-	88.5	1.60	-	1.10	(0.005)	7.80
BAS-CURM62.12	-	-	-	-	-	-	0.081	-	89.42	0.45	0.002	1.59	-	7.94
BAM-367	-	-	-	-	0.00287	-	0.0498	-	87.88	1.443	0.0347	0.723	-	9.72
MBH-34X 79830 A	-	0.0012	-	-	(0.0052)	-	(0.0012)	-	45.88	0.079	-	0.311	-	9.76
CTIF-CUNI10	-	-	-	-	(0.009)	-	-	-	87.4	1.69	-	0.70	-	10.08
BS-706A	-	(0.002)	-	-	0.004	-	0.007	-	87.80	1.30	-	0.66	-	10.18
MBH-36X 70600 A	-	(0.0008)	-	-	(0.0017)	-	0.0087	-	86.70	1.619	-	0.759	-	10.65

Product Code	P	Pb	S	Sb	Si	Sn	Te	Ti	Zn	Zr	Size	Grade	Type	Form
MBH-37X 218 B	-	0.0014	-	-	0.564	0.0032	-	-	0.0054	-	Ø 38x15mm	C70260	CRM	W
MBH-37X 218 A	0.0014	0.0025	0.007	-	0.58	0.015	-	-	0.027	-	Ø 38x17mm	C70260	CRM	W
MBH-36X 274 A	-	0.0021	0.0035	-	0.594	0.014	-	-	0.0395	<0.005	Ø 46x17mm	C18000	CRM	W
CTIF-UN3S	-	0.20	-	-	1.24	0.215	-	-	1.62	-	Ø 60x6mm		RM	
MBH-31X B29 A	3.33	0.146	-	-	-	0.0328	-	-	24.75	-	Ø 40x15mm		CRM	CC
CTIF-CN2	-	0.055	0.028	-	0.24	(0.005)	-	-	0.50	-	Ø 60x5mm		CRM	
BAS-CURM62.12	-	0.053	0.034	-	0.109	0.111	-	-	0.18	-	Ø 50x12mm		RM	
BAM-367	0.0124	0.0298	0.0162	-	-	0.0105	-	-	0.0715	-	Ø 40x30mm	C70600	CRM	
MBH-34X 79830 A	0.0047	2.033	(0.0005)	0.0041	-	0.1158	-	-	41.80	-	Ø 38x15mm	C79830	CRM	W
CTIF-CUNI10	-	0.0027	(0.002)	-	-	(<0.01)	-	-	0.033	-	Ø 60x5mm	C70600	CRM	
BS-706A	0.006	0.008	0.012	0.0006	<0.005	0.011	-	-	0.13	-	Ø 38x12mm	C70600	RM	
MBH-36X 70600 A	0.0062	0.0086	0.0136	-	-	0.0090	-	-	0.115	-	Ø 40x15mm	C70600	CRM	W

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Other Cu/Ni Alloys

Product Code	Ag	Al	B	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	Nb	Ni
BS-706B	-	<0.003	-	-	(0.004)	-	0.005	-	87.00	1.56	-	0.61	-	10.90
CTIF-CN4	-	(0.020)	-	-	(0.001)	-	-	-	88.5	1.80	-	1.50	0.70	11.20
CTIF-CN1	-	(0.003)	-	-	(0.002)	-	-	-	85.0	1.10	-	0.80	(0.10)	12.30
MBH-36X CN24 A	0.0466	(0.001)	-	-	0.0436	-	0.0096	0.0065	52.56	0.127	-	23.60	-	15.41
MBH-36X SP2 A	0.0181	0.0003	0.0005	(0.0027)	-	-	0.119	-	74.91	(0.09)	0.0002	0.0019	-	15.72
ERM-EB389	-	-	-	0.0044	-	0.0016	0.077	0.0153	74.30	0.107	0.067	0.415	-	24.70
CTIF-CN33	-	(0.010)	-	0.0212	0.020	0.006	-	-	67.1	1.60	<0.06	0.45	0.06	29.75
BS-715A	-	(0.01)	-	-	0.03	-	-	-	68.0	0.61	-	0.82	-	30.22
MBH-37X HK7 A	-	-	-	-	-	-	-	-	59.30	1.72	-	-	-	30.70
MBH-36X 71500 A	-	(0.002)	-	-	0.0240	-	0.0163	-	66.75	0.888	-	0.850	-	31.25

Product Code	P	Pb	S	Sb	Si	Sn	Te	Ti	Zn	Zr	Size	Grade	Type	Form
BS-706B	0.009	0.006	0.009	<0.002	<0.002	0.006	-	-	0.054	-	Ø 38x19mm	C70600	RM	
CTIF-CN4	-	0.006	(0.001)	-	(0.01)	(0.058)	-	-	0.07	-	Ø 60x5mm		CRM	
CTIF-CN1	-	0.085	0.046	-	(0.05)	(0.005)	-	-	0.20	-	Ø 60x5mm		CRM	
MBH-36X CN24 A	0.0037	0.0056	-	-	-	-	(0.002)	-	8.0	-	Ø 40x17mm		CRM	CCC
MBH-36X SP2 A	(0.0006)	0.026	0.003	0.006	(0.0023)	8.92	-	(0.0008)	0.029	-	Ø 40x15mm		CRM	CC
ERM-EB389	0.0093	0.0098	-	0.0046	-	0.0262	-	0.066	0.1125	0.098	Ø 40x30mm	C71300	CRM	
CTIF-CN33	0.02	0.053	0.013	-	0.47	(0.003)	0.0224	-	0.37	-	Ø 60x5mm		CRM	
BS-715A	0.006	(0.007)	0.001	(0.003)	0.01	0.008	-	-	0.10	-	Ø 38x19mm	C71500	RM	
MBH-37X HK7 A	-	5.32	-	-	-	2.30	-	-	0.38	-	Ø 40x10mm		RM	CC
MBH-36X 71500 A	0.0076	0.0113	0.0448	-	-	0.0113	-	-	0.151	-	Ø 40x15mm	C71500	CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Section: Cu/Mn Alloys

Cu/Mn Alloys (Manganese Bronze)

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N	Ni
CTIF-LH12	-	1.13	-	-	-	-	-	-	62.75	(1.2)	-	0.125	-	0.505
BS-675B	(0.0016)	(<0.005)	0.0009	(<0.005)	(<0.001)	(0.0002)	(0.0002)	(0.0002)	58.7	1.10	-	0.175	(0.0002)	0.0071
MBH-31X MNB5 R	0.0195	3.24	0.0021	-	-	-	0.066	0.0116	55.14	0.989	-	0.188	-	1.32
MBH-31X B10 M	-	0.358	0.0087	0.0215	-	-	0.0390	0.0192	60.18	(1.39)	-	0.205	-	1.475
BS-675A	-	<0.002	0.003	-	(0.0007)	-	-	-	58.50	1.12	-	0.320	-	0.019
MBH-31X B11 H	-	0.0262	0.0061	0.0054	-	-	-	-	60.72	0.802	-	0.653	-	1.033
MBH-31X MNB6 C	0.0509	0.0148	0.0107	-	-	-	0.0107	-	70.01	0.0607	-	0.871	-	0.261
MBH-32X ALB4 H	-	7.87	0.013	-	-	-	-	0.022	79.61	3.55	0.153	1.028	-	7.03
BAS-CURM52.54	-	7.85	-	-	-	-	-	<0.005	81.59	3.31	<0.005	1.20	-	5.40
BAS-CURM51.12	-	6.36	0.111	-	-	-	-	-	88.29	2.87	-	1.33	-	0.112
CTIF-LH5-1	-	3.65	-	-	-	-	-	-	66.00	1.26	-	1.37	-	1.57
CTIF-3018F	-	7.25	-	-	-	-	-	-	81.90	4.44	-	1.56	-	4.52
MBH-32X ALB8 E	0.0099	6.38	0.145	-	-	-	0.554	0.36	77.17	5.54	0.015	1.562	-	6.68

Product Code	O	P	Pb	S	Sb	Se	Si	Sn	Te	Zn	Size	Grade	Type	Form
CTIF-LH12	-	-	0.21	-	-	-	(0.06)	0.83	-	33.15	Ø 60x5mm	Mushroom	CRM	CC
BS-675B	(0.0006)	0.002	0.071	0.0002	0.0011	(0.001)	(<0.005)	0.92	(0.0001)	39.3	Ø 38x19mm	C67500	CRM	CC
MBH-31X MNB5 R	-	0.0399	0.157	-	(0.006)	-	0.528	1.228	-	37.11	Ø 42x17mm	-	CRM	CC
MBH-31X B10 M	-	-	0.0274	-	0.0124	-	0.0389	0.0310	-	36.05	Ø 42x18mm	-	CRM	CC
BS-675A	-	0.010	0.074	(0.0005)	0.0011	-	(0.005)	0.80	-	39.10	Ø 38x12mm	C67500	RM	CC
MBH-31X B11 H	-	-	0.0134	-	0.0057	-	(0.0063)	0.0117	-	36.65	Ø 40x15mm	-	CRM	CC
MBH-31X MNB6 C	-	0.0226	0.016	-	0.0128	-	0.0196	0.031	-	28.53	Ø 42x18mm	-	CRM	CC
MBH-32X ALB4 H	-	0.036	0.12	-	-	-	0.252	0.085	-	0.264	Ø 42x18mm	-	CRM	CC
BAS-CURM52.54	-	-	0.086	-	-	-	0.022	0.135	-	0.390	Ø 50x12mm	-	CRM	CC
BAS-CURM51.12	-	<0.001	0.219	-	-	-	0.005	0.196	-	0.450	Ø 50x12mm	-	CRM	CC
CTIF-LH5-1	-	-	0.11	-	-	-	0.114	0.141	-	25.72	Ø 60x6mm	Mushroom	CRM	CC
CTIF-3018F	-	-	0.0227	-	-	-	0.09	0.055	-	0.0598	Ø 60x6mm	Mushroom	RM	CC
MBH-32X ALB8 E	-	0.171	0.071	0.024	-	-	0.603	0.312	-	0.352	Ø 40x15mm	-	CRM	CC

Values listed in mass %; () Uncertified Value

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Cu/Mn Alloys (Manganese Bronze)

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	N	Ni
MBH-31X B12 G	-	0.081	0.0181	0.0198	-	-	-	-	60.51	0.43	-	1.72	-	0.491
CTIF-UZHR8	-	5.35	-	-	-	-	-	-	81.18	2.95	-	1.90	-	<0.005
CTIF-CA30	-	7.55	-	-	-	-	-	-	81.60	5.20	-	2.05	-	3.10
MBH-31X HT38 A	-	0.96	0.0008	-	0.003	-	-	-	58.77	0.053	-	2.60	-	0.0242
MBH-31X B13 G	-	0.0148	0.012	0.0116	-	-	-	-	60.03	0.182	-	2.84	-	0.212
IARM-88C	-	5.82	(0.003)	-	(0.004)	-	0.0010	(0.008)	64.60	2.99	-	2.96	-	0.27
CTIF-LH7-1A	-	3.16	-	-	-	-	-	-	63.40	(2.35)	-	2.96	-	0.70
MBH-31X MNB4 F	0.0131	3.91	0.0125	-	-	-	0.0312	-	64.62	1.728	-	2.97	-	0.347
BS-863B	-	(5.15)	(0.001)	-	(0.003)	-	(0.002)	(0.003)	(62.8)	(2.7)	(0.001)	(3.08)	(<0.005)	(0.059)
CTIF-LH2-1	-	6.50	-	-	-	-	-	-	61.20	3.15	-	3.19	-	3.27
CTIF-LH6-1	-	6.09	-	-	-	-	-	-	63.18	3.13	-	4.54	-	3.19
MBH-31X HT31 A	-	6.70	0.0006	-	0.006	-	-	-	66.67	2.90	-	5.27	-	0.196
MBH-32X ALB13 A	-	7.09	-	-	-	-	0.0011	-	84.96	1.171	-	5.39	-	1.381

Product Code	O	P	Pb	S	Sb	Se	Si	Sn	Te	Zn	Size	Grade	Type	Form
MBH-31X B12 G	-	-	0.0244	-	0.0194	-	(0.0207)	0.0229	-	36.67	Ø 40x15mm		CRM	CC
CTIF-UZHR8	-	-	<0.005	-	-	-	0.01	-	-	29.5	Ø 60x6mm		CRM	
CTIF-CA30	-	-	0.142	-	-	-	0.15	0.099	-	0.066	Ø 60x5mm		CRM	
MBH-31X HT38 A	-	0.0024	0.051	(0.001)	(0.0006)	-	0.869	0.039	-	36.66	Ø 50x18mm	C67400	CRM	W
MBH-31X B13 G	-	-	0.0188	-	0.0056	-	(0.032)	0.0127	-	36.67	Ø 40x15mm		CRM	CC
IARM-88C	-	0.020	0.13	(0.001)	(0.003)	-	0.09	0.14	-	22.80	Ø 38x19mm	C86300	CRM	C
CTIF-LH7-1A	-	-	0.327	-	-	-	0.055	0.227	-	(26.85)	Ø 60x5mm	C86200	CRM	CC-Mush.
MBH-31X MNB4 F	-	0.0274	0.221	-	0.0189	-	0.103	0.547	-	25.59	Ø 42x18mm		CRM	CC
BS-863B	(<0.005)	(0.005)	(0.021)	(<0.005)	(0.029)	-	(0.016)	(0.023)	-	(26.1)	Ø 38x19mm		CRM	
CTIF-LH2-1	-	-	0.103	-	-	-	0.057	0.051	-	22.40	Ø 60x5mm	Mushroom	CRM	CC
CTIF-LH6-1	-	-	0.25	-	-	-	0.20	0.257	-	19.04	Ø 60x6mm	Mushroom	CRM	CC
MBH-31X HT31 A	-	(0.0003)	0.02	(0.0003)	(0.0011)	-	0.041	0.0149	-	18.19	Ø 50x18mm		CRM	W
MBH-32X ALB13 A	-	0.009	(0.0009)	(0.0007)	-	-	0.086	0.0072	-	0.0194	Ø 35x15mm		CRM	W

Values listed in mass %; () Uncertified Value

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Cu/Mn Chips (Manganese Bronze)

Product Code	Al	As	Bi	Cd	Cu	Fe	Mg	Mn	Ni	P	Pb	S	Sb	Se
NIM-GBW02101	0.26	-	0.0024	-	58.0	0.89	-	0.73	-	0.0076	0.19	-	0.0091	-

Product Code	Si	Sn	Zn
NIM-GBW02101	-	0.54	Rem.

	Size	Grade	Type	Form
Chips	100g		CRM	

Cu/Mn Alloys Sets (Manganese Bronze)

Product Code	Ag	As	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM CK1	0.012	0.013	Rem.	0.029	1.06	0.44	0.0011	0.0021	0.0049	0.049	0.13	0.24
IM CK2	0.0094	0.010	Rem.	0.11	1.51	0.38	0.0022	0.0062	0.0015	0.091	-	0.14
IM CK3	0.0066	0.0095	Rem.	0.17	1.78	0.27	0.0043	0.0098	0.0026	0.033	0.075	0.095
IM CK4	0.0041	0.0055	Rem.	0.26	1.91	0.13	0.0056	0.017	0.0041	0.0025	0.042	0.065
IM CK5	-	0.0015	Rem.	0.29	2.30	0.011	-	-	0.0051	0.011	0.0048	0.033
IM CK6	0.0012	0.0039	Rem.	0.40	2.64	0.073	0.013	-	0.0052	0.21	0.025	0.034

Product Code
IM CK1
IM CK2
IM CK3
IM CK4
IM CK5
IM CK6
Set of 6 Only

Size	Grade	Type	Form
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	
Ø 40x30mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Mn Alloys Sets (Manganese Bronze)

Product Code	Al	As	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Si	Sn	Zn
IM MA1	1.51	0.085	0.002	55.50	0.073	3.37	0.39	0.10	0.16	0.0061	0.071	1.04	Rem.
IM MA2	3.35	0.008	0.0029	60.88	1.27	1.30	0.011	0.015	0.02	0.0019	0.042	0.41	Rem.
IM MA3	-	0.029	0.028	57.04	0.55	0.78	0.13	0.04	0.049	0.14	0.50	0.74	Rem.
IM MA4	0.33	-	-	57.40	0.20	2.75	0.69	0.15	-	0.20	0.27	0.015	Rem.
IM MA5	1.04	0.11	0.020	58.51	0.70	1.97	1.01	0.062	1.20	0.072	0.65	0.046	Rem.
IM MA6	2.15	0.013	0.0072	60.45	1.72	0.50	0.056	0.019	0.60	0.016	0.013	0.13	Rem.

Product Code
IM MA1
IM MA2
IM MA3
IM MA4
IM MA5
IM MA6
Set of 6 Only

Size	Grade	Type	Form
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	
Ø 10x100mm		CRM	

Product Code	Bi	Cu	Fe	Mn	Ni	P	Pb	Sb	Sn	Zn	Size	Grade	Type	Form
IM WF1	0.00059	56.47	0.097	2.16	0.01	(0.0012)	0.01	0.00058	0.012	Rem.	Ø 44x30mm		CRM	
IM WF2	0.00091	57.66	0.21	1.79	0.04	(0.0032)	0.04	0.0018	0.045	Rem.	Ø 44x30mm		CRM	
IM WF3	0.0015	58.66	0.29	1.36	0.10	0.0075	0.07	0.0036	0.072	Rem.	Ø 44x30mm		CRM	
IM WF4	0.0021	60.50	0.42	0.57	0.15	0.0095	0.10	0.0045	0.11	Rem.	Ø 44x30mm		CRM	
IM WF5	0.0030	58.77	0.68	0.52	0.18	0.014	0.14	0.0061	0.16	Rem.	Ø 44x30mm		CRM	
IM WF6	0.00095	59.78	0.05	0.98	0.074	0.002	0.026	-	0.028	Rem.	Ø 44x30mm		CRM	
Set of 6 Only														

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Mn/Pb Alloys (Leaded Manganese Bronze)

Product Code	Ag	Al	As	Bi	C	Co	Cr	Cu	Fe	Mn	Ni	P	Pb	S
MBH-31X MNB1 C	-	0.599	-	-	-	-	-	67.77	0.268	0.188	0.053	-	1.44	-
CTIF-L3-1	-	1.22	0.073	-	-	-	-	58.5	0.357	0.214	0.993	0.0306	1.32	-
CTIF-L7	-	0.308	-	-	-	-	-	55.60	0.031	0.62	0.020	-	0.71	-
CTIF-LH11	-	0.46	-	-	-	-	-	66.80	0.36	0.71	2.91	-	1.26	-
PB MS2	-	0.15	-	(0.031)	-	-	-	64.44	0.063	1.00	0.34	-	0.64	-
MBH-31X MNB2 D	0.041	0.272	0.0201	-	-	0.0086	-	63.75	0.548	2.05	0.118	0.0246	0.983	-
MBH-31X HT37 A	-	0.0004	0.0011	-	0.003	-	-	60.33	0.0344	2.88	0.0105	0.003	0.623	<0.0005
MBH-31X MNB3 E	0.0162	0.584	0.0179	-	-	0.0556	-	(66.18)	1.15	3.08	0.348	0.0259	0.504	-
CTIF-LH13	-	2.00	-	-	-	-	-	55.75	(2.0)	3.14	3.22	-	0.67	-
CTIF-LH10	-	2.66	-	-	-	-	-	59.05	(1.0)	3.57	3.57	-	1.76	-
MBH-31X MNB11 A	-	1.19	0.001	0.0021	(0.009)	0.0046	0.0046	57.36	0.337	11.99	4.46	0.0186	1.61	(0.0007)
MBH-31X MNB12 B	-	0.70	0.0077	0.0204	0.0125	0.0040	0.0013	56.03	0.313	18.37	0.497	0.0521	1.96	(0.0012)

Product Code	Sb	Si	Sn	Zn
MBH-31X MNB1 C	-	0.128	0.105	29.37
CTIF-L3-1	0.032	0.0256	1.62	Rem.
CTIF-L7	-	0.13	0.038	55.60
CTIF-LH11	-	0.88	0.44	26.20
PB MS2	-	0.079	0.64	Rem.
MBH-31X MNB2 D	0.0177	0.579	0.289	31.30
MBH-31X HT37 A	0.0007	1.38	0.0116	34.69
MBH-31X MNB3 E	0.0056	1.35	0.459	25.97
CTIF-LH13	-	0.21	1.19	31.80
CTIF-LH10	-	1.30	0.203	28.90
MBH-31X MNB11 A	0.0051	0.071	0.161	22.85
MBH-31X MNB12 B	0.0072	0.0487	0.194	21.76

	Size	Grade	Type	Form
	Ø 42x18mm		CRM	CC
	Ø 60x5mm	C69700	CRM	CC
Mushroom	Ø 60x5mm		CRM	CC
Mushroom	Ø 60x5mm		CRM	CC
	Ø 50x20-25mm		RM	
	Ø 40x15mm		CRM	CC
	Ø 40x18mm	C67300	CRM	W
	Ø 40x15mm		CRM	CC
Mushroom	Ø 60x5mm		CRM	CC
Mushroom	Ø 60x5mm		CRM	CC
	Ø 42x18mm		CRM	CC
	Ø 42x18mm	C99750	CRM	CC

Cu/Mn/Pb Chips (Leaded Manganese Bronze)

Product Code	Al	As	Bi	Cd	Cu	Fe	Mg	Mn	Ni	P	Pb	S	Sb	Se
BAS-BCS-CRM 390	0.83	-	-	(0.011)	57.10	0.83	-	1.30	0.033	-	1.04	-	-	-
BAM NR 224	0.0012	0.0025	0.0006	-	57.40	0.136	-	1.70	0.038	0.0112	1.13	0.0004	0.0026	(<0.0001)

Product Code	Si	Sn	Zn
BAS-BCS-CRM 390	(0.023)	0.34	38.60
BAM NR 224	(0.002)	0.066	39.40

	Size	Grade	Type	Form
Chips	100g		CRM	
Chips	100g		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Section: Cu/Bi and Cu/Bi/Se Alloys

Cu/Bi Alloys

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mn	Ni	P	Pb
MBH-32X SEB6 C	-	-	0.083	0.615	-	0.0036	0.231	-	85.66	0.151	-	0.86	0.0118	0.0463
MBH-31X BIB4 B	-	0.391	-	0.897	-	0.0014	0.0317	-	61.32	0.153	-	0.205	0.0144	0.093
MBH-31X BIB2 D	-	0.41	0.020	1.00	-	0.0095	0.055	-	Rem.	0.23	-	0.465	0.031	0.155
MBH-32X SEB5 C	-	(0.001)	-	1.056	-	0.0051	0.0156	-	87.21	0.0430	-	0.317	0.072	0.268
MBH-31X BIB1 D	-	0.125	0.031	1.89	-	0.0102	-	-	59.60	0.053	0.0275	0.257	0.046	0.158
IARM-266A	0.001	0.002	0.004	2.37	(0.002)	-	(0.001)	(0.002)	(87.0)	0.035	0.002	0.46	0.032	0.01
IARM-265A	(0.002)	0.003	(0.005)	2.40	-	-	(0.001)	(0.001)	(90.0)	0.013	(0.002)	0.69	0.024	0.011
MBH-32X SEB4 E	-	<0.01	0.007	2.50	-	0.002	0.32	-	Rem.	0.09	-	0.015	0.005	0.04
IARM-263A	0.006	0.002	0.003	2.55	<0.005	-	0.001	0.002	(78.0)	0.047	0.002	0.66	0.04	0.022
MBH-32X SEB4 D	-	(0.3)	(0.016)	(2.62)	-	(0.0025)	(0.29)	-	(79.5)	(0.215)	-	(0.047)	(0.011)	(0.06)
MBH-32X SEB7 A	-	-	0.038	3.58	-	0.0074	0.119	-	85.46	0.074	-	1.165	0.0206	0.343
IARM-264A	(0.005)	0.003	(0.004)	3.60	(0.004)	-	0.001	(0.002)	(87.3)	0.048	0.002	0.54	0.027	0.057
MBH-31X BIB3 C	-	0.0298	0.057	4.05	-	0.0029	-	-	62.48	0.099	0.243	0.098	0.0175	0.149
MBH-32X SEB1 D	-	-	0.0402	4.25	-	0.0033	0.0478	-	81.88	0.071	-	0.102	0.0021	0.197
MBH-32X SEB2 D	0.0443	-	0.0160	4.57	-	0.0255	0.0133	-	86.56	0.074	-	0.0449	0.036	0.104
IARM-211A	0.005	0.002	(0.01)	5.00	-	-	(0.001)	(0.002)	88.4	0.004	(0.003)	0.003	0.19	0.014
MBH-32X SEB3 E	-	-	0.0325	6.47	-	0.0095	0.0491	-	86.47	0.0113	-	1.214	0.0139	0.296

Product Code	S	Sb	Se	Si	Sn	Zn
MBH-32X SEB6 C	-	0.235	0.322	-	7.14	4.55
MBH-31X BIB4 B	0.0011	0.0059	0.0073	0.0475	0.512	36.26
MBH-31X BIB2 D	0.0010	0.078	0.0050	0.145	1.17	33.50
MBH-32X SEB5 C	0.050	0.0334	0.471	-	5.18	5.30
MBH-31X BIB1 D	(0.0010)	0.01	0.0033	0.167	0.465	37.15
IARM-266A	0.002	0.01	0.001	0.002	6.90	3.48
IARM-265A	(0.002)	0.015	(0.002)	0.003	4.40	2.45
MBH-32X SEB4 E	-	0.035	0.11	-	9.8	7.30
IARM-263A	0.002	0.06	0.002	0.003	3.50	15.80
MBH-32X SEB4 D	-	(0.018)	(0.105)	-	(9.15)	(7.10)
MBH-32X SEB7 A	0.067	0.262	1.19	-	3.2	4.42
IARM-264A	0.0013	0.074	(0.001)	0.003	3.03	5.33
MBH-31X BIB3 C	(0.0005)	0.0417	0.003	0.061	0.111	32.46
MBH-32X SEB1 D	0.0052	0.305	0.812	-	4.26	7.81
MBH-32X SEB2 D	0.03	0.0222	0.044	-	6.96	1.40
IARM-211A	0.002	0.057	-	0.003	6.23	0.006
MBH-32X SEB3 E	-	0.108	1.30	-	2.96	0.887

Values listed in mass %; () Uncertified Value

Size	Grade	Type	Form
Ø 40x17mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 42x18mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 38x19mm	C89835	CRM	C
Ø 38x19mm	C89833	CRM	C
Ø 40x15mm		CRM	CC
Ø 38x19mm		CRM	CC
Ø 42x17mm		CRM	CC
Ø 42x17mm		CRM	CC
Ø 38x19mm	C89831	CRM	C
Ø 40x17mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 40x15mm		CRM	CC
Ø 38x19mm	C89320	CRM	C
Ø 40x15mm		CRM	CC

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Cu/Bi Alloys Set

Product Code	As	Bi	Cu	Fe	Ni	P	Pb	S	Sb	Sn	Zn
NCS HS43723-1	(0.029)	3.002	59.387	0.448	(0.98)	0.015	0.0054	(0.0011)	(0.0022)	1.038	Rem.
NCS HS43723-2	(0.015)	0.414	60.903	0.193	(0.32)	0.0088	0.105	(0.0015)	(0.030)	0.306	Rem.
NCS HS43723-3	(0.0054)	1.561	60.088	0.137	(2.13)	0.087	0.0161	(0.012)	(0.014)	0.518	Rem.
NCS HS43723-4	(0.0097)	0.826	60.14	0.645	(2.94)	0.0039	0.0209	(0.015)	(0.10)	2.007	Rem.
NCS HS43723-5	(0.002)	0.108	61.642	0.0113	(0.11)	0.0016	0.0059	(0.0018)	(0.0047)	3.02	Rem.

Product Code
NCS HS43723-1
NCS HS43723-2
NCS HS43723-3
NCS HS43723-4
NCS HS43723-5
Set of 5 Only

Size	Grade	Type	Form
Ø 40x45mm	C89831	CRM	
Ø 40x45mm		CRM	
Ø 40x45mm		CRM	
Ø 40x45mm		CRM	
Ø 40x45mm		CRM	

Cu/Bi/Se Alloys

Product Code	Ag	Al	As	Bi	C	Co	Cr	Cu	Fe	Mn	N	Ni	O	P
IARM-228A	0.003	0.002	0.003	1.53	0.003	0.001	0.001	89.0	0.052	0.001	<0.0005	0.45	(0.002)	0.032
IARM-226A	0.004	0.002	0.003	1.70	0.003	0.001	(0.001)	86.7	0.054	0.002	<0.0005	0.54	(0.001)	0.005
IARM-227A	0.004	0.002	0.003	2.30	0.003	0.001	(0.001)	85.9	0.060	0.001	(0.0002)	0.53	0.0013	0.003

Product Code	Pb	S	Sb	Se	Si	Sn	Zn
IARM-228A	0.026	0.004	0.01	0.67	0.002	4.1	4.1
IARM-226A	0.04	0.005	0.004	0.93	0.002	5.1	4.8
IARM-227A	0.042	0.005	<0.01	1.21	0.002	5.1	4.7

Size	Grade	Type	Form
Ø 38x19mm	C89520M	CRM	C
Ø 38x19mm	C89520M	CRM	C
Ø 38x19mm	C89520M	CRM	C

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Section: Special Copper Calibration Sets

Special Copper Calibration Sets

Product Code	Ag	Al	As	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	P
NCS HS43720-1	0.0011	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.001	99.995	0.0003	0.0003	<0.0001	<0.0002	0.0006
NCS HS43720-2	0.092	0.12	0.29	0.035	-	0.006	0.095	0.075	98.50	0.11	0.005	0.059	0.039	0.071
NCS HS43720-3	0.003	0.019	0.015	0.001	-	-	-	0.81	98.77	0.1	0.081	-	0.053	0.001
NCS HS43720-4	-	1.16	0.023	0.005	-	-	-	-	59.79	-	-	0.57	0.390	0.025
NCS HS43720-5	-	9.44	-	-	-	-	-	-	78.22	3.34	-	2.97	4.46	0.018
NCS HS43720-6	-	0.19	-	-	0.1	-	0.49	-	66.53	1.08	0.07	1.06	29.45	0.012
NCS HS43720-7	-	-	0.024	0.006	0.008	-	0.59	-	85.43	1.18	-	1.09	11.07	0.010

Product Code	Pb	S	Sb	Se	Si	Sn	Te	Zn	Zr
NCS HS43720-1	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003
NCS HS43720-2	0.041	0.04	0.061	0.006	0.034	0.059	0.059	0.12	-
NCS HS43720-3	0.004	-	0.006	-	0.042	0.002	-	-	0.13
NCS HS43720-4	0.55	-	-	-	1.04	0.42	-	35.49	-
NCS HS43720-5	0.11	-	0.006	-	0.30	0.26	-	0.73	-
NCS HS43720-6	0.049	0.02	0.021	-	0.25	0.10	-	0.58	-
NCS HS43720-7	0.025	0.014	0.006	-	0.10	0.059	-	0.42	-
Set of 7 Only									

Size	Grade	Type	Form
Ø 35x25mm		CRM	
Ø 35x25mm		CRM	
Ø 35x25mm		CRM	
Ø 35x25mm		CRM	
Ø 35x25mm		CRM	
Ø 35x25mm		CRM	
Ø 35x25mm		CRM	

Product Code	As	Bi	Co	Cu	Fe	Mg	Ni	P	Pb	S	Sb	Sn	Zn
NCS HS43722-1	(0.026)	(0.0005)	(0.024)	Rem.	0.536	(0.073)	(0.05)	0.195	0.098	(0.0056)	(0.006)	(0.10)	0.294
NCS HS43722-2	(0.0094)	(0.005)	(0.048)	Rem.	1.37	(0.20)	(0.03)	0.051	0.05	(0.0028)	(0.0021)	(0.048)	0.047
NCS HS43722-3	(0.0043)	(0.0022)	(0.10)	Rem.	2.25	(0.015)	(0.009)	0.027	0.031	(0.0009)	(0.0022)	(0.030)	0.122
NCS HS43722-4	(0.002)	(0.0110)	(0.14)	Rem.	2.61	(0.0840)	(0.0024)	0.111	0.01	(0.0009)	(0.021)	(0.015)	0.0031
NCS HS43722-5	(0.020)	(0.022)	(0.01)	Rem.	2.37	(0.011)	(0.001)	0.0054	0.0063	(0.0019)	(0.011)	(0.0054)	0.027

Product Code
NCS HS43722-1
NCS HS43722-2
NCS HS43722-3
NCS HS43722-4
NCS HS43722-5
Set of 5 Only

Size	Grade	Type	Form
Ø 40x45mm		CRM	
Ø 40x45mm		CRM	
Ø 40x45mm		CRM	
Ø 40x45mm		CRM	
Ø 40x45mm		CRM	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Section: Setting-Up Samples

U. Nell SUS

Product Code	Ag	Al	As	Au	B	Be	Bi	Cd	Co	Cr	Cu	Fe	Mg	Mn
SUS-RC11+	(0.0007)	(0.0004)	(0.0001)	-	-	-	(0.0001)	(0.0001)	(0.0003)	(0.0001)	(99.99)	(0.0005)	(0.0001)	(0.0001)
SUS-RC12+	(0.01)	(0.10)	(0.09)	-	(0.008)	(0.003)	(0.008)	(0.05)	(0.05)	(0.04)	(96.0)	(0.10)	(0.005)	(0.04)
SUS-RC14+	(<0.01)	(<0.01)	(<0.01)	-	-	-	(<0.01)	(<0.01)	-	(1.0)	(98.0)	(<0.01)	(<0.01)	(<0.02)
SUS-RC20+	-	-	-	-	-	-	-	-	-	-	(99.9)	-	-	-
SUS-RC32+	-	(1.5)	-	-	-	-	-	-	-	-	(60.0)	(0.30)	-	(0.50)
SUS-RC33+	-	(10.0)	-	-	-	-	-	-	-	-	(80.0)	(4.5)	-	(0.4)
SUS-RC36+	-	-	-	-	-	-	-	-	-	-	(80.0)	(0.01)	-	-
SUS-RC38+	-	-	-	-	-	-	-	-	-	-	(65.0)	(0.50)	-	(0.75)
SUS-RC40+	-	(9.0)	-	-	-	-	-	-	-	-	(82.0)	(1.5)	-	(5.0)
SUS-RC110+	(0.006)	(0.003)	(0.003)	(0.003)	-	(0.0003)	(0.003)	(0.004)	(0.003)	(0.004)	(98.0)	(0.005)	(0.004)	(0.004)

Product Code	Ni	O	P	Pb	S	Sb	Se	Si	Sn	Te	Ti	Zn	Zr	Zr
SUS-RC11+	(0.0005)	-	(0.0001)	(0.0002)	(0.001)	(0.0001)	(0.0001)	(0.0001)	(0.0004)	(0.0001)	-	(0.0002)	-	-
SUS-RC12+	(0.05)	-	(0.10)	(0.08)	(0.05)	(0.05)	(0.02)	(0.08)	(0.20)	(0.040)	(0.02)	(0.20)	(0.025)	(0.025)
SUS-RC14+	(<0.02)	-	(<0.01)	(<0.02)	(<0.01)	-	-	(<0.02)	(<0.01)	(<0.01)	-	(<0.02)	(0.10)	(0.10)
SUS-RC20+	-	(0.0000038)	-	(0.60)	-	-	-	(0.50)	(0.20)	-	-	(35.0)	-	-
SUS-RC32+	(1.5)	-	-	(0.01)	-	-	-	-	-	-	-	(0.20)	-	-
SUS-RC33+	(4.0)	-	-	(12.0)	-	(0.30)	-	-	(7.0)	-	-	(0.40)	-	-
SUS-RC36+	(1.7)	-	-	(0.01)	(0.015)	-	-	-	-	-	-	(0.02)	-	-
SUS-RC38+	(30.0)	-	-	(0.02)	-	-	-	-	-	-	-	(0.01)	-	-
SUS-RC40+	(2.0)	-	-	(0.005)	(0.004)	(0.006)	(0.004)	(0.003)	(0.006)	(0.007)	(0.001)	(0.005)	(<0.002)	(<0.002)
SUS-RC110+	(0.003)	-	(0.003)	-	-	-	-	-	-	-	-	-	-	-

Product Code
SUS-RC11+
SUS-RC12+
SUS-RC14+
SUS-RC20+
SUS-RC32+
SUS-RC33+
SUS-RC36+
SUS-RC38+
SUS-RC40+
SUS-RC110+

Size	Grade	Type	Form
Ø 41x43mm		SUS	
Ø 39x40mm		SUS	
Ø 40x40mm		SUS	
Ø 40x40mm		SUS	
Ø 35x40mm		SUS	
Ø 40x40mm		SUS	
Ø 40x40mm		SUS	
Ø 40x40mm		SUS	
Ø 40x40mm		SUS	
Ø 39x40mm		SUS	
Ø 40x40mm		SUS	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Special SUS Samples for ARL Spectrometers

Product Code	Al	As	Cd	Cr	Cu	Fe	Mg	Mn	Ni	Pb	Sb	Se	Si	Sn
OES-RC11	(0.0002)	(0.0003)	(0.0003)	(0.0002)	-	(0.0003)	-	-	(0.0015)	(0.0003)	-	(0.0002)	(0.0005)	(0.0003)
OES-RC32	(1.60)	-	-	-	(58.0)	(0.60)	-	(1.80)	(0.10)	(0.70)	-	-	(0.70)	(0.30)
OES-RC33	(9.49)	-	-	-	-	(4.64)	-	(0.30)	(5.77)	(0.005)	-	-	-	-
OES-RC36	-	-	-	-	Rem.	(0.035)	(0.001)	-	(1.629)	(15.09)	(0.12)	-	-	(7.51)
OES-RC40	(8.30)	-	-	-	-	(1.30)	-	(6.10)	(1.70)	(0.02)	-	-	-	-

Product Code	Zn
OES-RC11	(0.0003)
OES-RC32	(36.0)
OES-RC33	(0.21)
OES-RC36	(1.938)
OES-RC40	(0.04)

Size	Grade	Type	Form
Ø 40x40mm		SUS	
Ø 40x40mm		SUS	
Ø 40x40mm		SUS	
Ø 40x40mm		SUS	
Ø 40x40mm		SUS	

MBH SUS Samples

Product Code	Ag	Al	As	Bi	C	Co	Cr	Cu	Fe	Mg	Mn	N	Ni	O
MBH-165X ALB1SUS	-	(9.0)	(0.005)	(0.015)	-	-	(0.01)	(82.0)	(2.8)	(0.04)	(0.08)	-	(5.3)	-
MBH-165X CUSUS1	(0.000005)	(0.000005)	(0.000005)	(0.000005)	(0.00005)	(0.00001)	(0.000001)	-	(0.0008)	(0.000001)	(0.000001)	(0.0006)	(0.0001)	(0.037)
MBH-165X MNB5SUS	-	(3.2)	-	-	-	-	-	(55.0)	(0.55)	-	(0.2)	-	(1.1)	-
MBH-165X PB10SUS	-	(0.001)	(0.02)	(0.02)	-	(0.01)	(0.001)	(89.0)	(0.002)	-	(<0.001)	-	(0.06)	-

Product Code	P	Pb	S	Sb	Se	Si	Sn	Zn
MBH-165X ALB1SUS	-	(0.20)	-	-	-	(0.10)	(0.03)	(0.06)
MBH-165X CUSUS1	(0.0001)	(0.0011)	(0.0011)	(0.00001)	(0.000005)	(0.000005)	(0.00007)	(0.00004)
MBH-165X MNB5SUS	-	(0.2)	-	-	-	(0.40)	(1.6)	(38.0)
MBH-165X PB10SUS	(0.002)	(0.04)	(0.03)	(0.15)	(0.01)	(0.001)	(11.0)	(0.05)

Size	Grade	Type	Form
Ø 40x18mm		SUS	CC
Ø 50x45mm		SUS	W
Ø 40x17mm		SUS	CC
Ø 42x18mm		SUS	CC

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

Brammer SUS Samples

Product Code	Ag	Al	As	Be	C	Ca	Co	Cr	Cu	Fe	Mg	Mn	Ni	O
BS-SUCU1+	(0.0012)	(0.0001)	(0.0001)	(0.0001)	(0.0003)	(0.0001)	(0.0001)	(0.0001)	(99.96)	(0.0002)	(0.0001)	(0.0001)	(0.0002)	(0.0300)
BS-SU863	-	(4.87)	(<0.005)	-	(0.002)	-	(<0.005)	(0.0005)	(62.70)	(2.30)	(<0.005)	(2.85)	(0.06)	-
BS-903C	-	(0.002)	(0.005)	-	-	-	-	-	(86.60)	(0.05)	-	(0.002)	(0.52)	-

Product Code	P	Pb	S	Sb	Si	Sn	Te	Zn	Zr
BS-SUCU1+	(0.0001)	(0.0001)	(0.0003)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	-
BS-SU863	(0.0081)	(0.040)	(0.0003)	(0.009)	(0.025)	(0.031)	-	(27.10)	(<0.005)
BS-903C	(0.07)	(0.11)	(<0.002)	(0.01)	(0.002)	(7.8)	-	(4.9)	-

Size	Grade	Type	Form
Ø 45x40mm		SUS	
Ø 38x40mm		SUS	
Ø 38x12mm		SUS	

Other SUS Samples

Product Code	Al	As	Bi	Cd	Cu	Fe	Mn	Ni	Pb	Sb	Si	Sn	Zn
CTIF-EA1+	-	(0.009)	-	-	(57.80)	(0.14)	-	(0.065)	(2.95)	-	(<0.01)	(0.20)	(38.50)
PB MSD+	(0.12)	(0.078)	(0.11)	(0.083)	(79.73)	(0.14)	(0.75)	(0.15)	(0.095)	(0.090)	(4.09)	(0.12)	-
BAS C38.07	(0.1)	(0.1)	(0.1)	-	(60.0)	(0.1)	(0.2)	(0.2)	(0.2)	(0.1)	(0.03)	(0.2)	-

Product Code
CTIF-EA1+
PB MSD+
BAS C38.07

Size	Grade	Type	Form
Ø 40x18mm		SUS	
Ø 45x22mm		CRM	
Ø 50x10mm		SUS	

Values listed in mass %; () Uncertified Value

C=Cast CC=Chill Cast CCC=Continuous Chill Cast CW=Concast/Wrought W=Wrought

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BAM NR 223	32	BAS-C30.17	25	BAS-CURM42.22C	51	BAS-CURM71.31C	51	BS-905A-1	41	CTIF-B20-1	50
BAM NR 224	82	BAS-C30.18-1	54	BAS-CURM42.23	49	BAS-CURM71.32	50	BS-905A-2	41	CTIF-B21	50
BAM NR 228	51	BAS-C30.19-1	54	BAS-CURM42.23C	51	BAS-CURM71.32C	51	BS-905A-3	41	CTIF-B22-1	49
BAM-229	27	BAS-C30.21-1	54	BAS-CURM42.24	49	BAS-CURM71.33	50	BS-905A-4	41	CTIF-B23-1	50
BAM-365	13	BAS-C30.22	26	BAS-CURM42.24C	51	BAS-CURM71.33C	51	BS-922B-1	39	CTIF-B3	41
BAM-367	76	BAS-C38.01	25	BAS-CURM42.25	47	BAS-CURM H30.24	32	BS-922B-2	39	CTIF-B30-1	50
BAM-368	54	BAS-C38.02	25	BAS-CURM42.25C	48	BCR-017A	8	BS-922B-3	39	CTIF-B31	50
BAM-369	8	BAS-C38.03	25	BAS-CURM43.01	54	BCR-017B	12	BS-922B-4	39	CTIF-B32	50
BAM-370	8	BAS-C38.05	25	BAS-CURM43.01C	60	BCR-022A	8	BS-922B-5	39	CTIF-B4	41
BAM-371	8	BAS-C38.06	25	BAS-CURM43.02	54	BCR-022B	8	BS-929	40	CTIF-B5	36
BAM-372	8	BAS-C38.07	88	BAS-CURM43.02C	60	BCR-054R	8	BS-932F	50	CTIF-CA10	58
BAM-373/1	18	BAS-C38.06-1	25	BAS-CURM48.01	24	BCR-058	8	BS-938-1	40	CTIF-CA11	56
BAM-373/2	18	BAS-C38.07	88	BAS-CURM48.01C	27	BCR-074A	9	BS-954A	58	CTIF-CA12	55
BAM-373/3	18	BAS-C42.21-1	45	BAS-CURM48.02	24	BS-110B	8	BS-954B	58	CTIF-CA13	56
BAM-375	32	BAS-C43.03-1	54	BAS-CURM48.02C	27	BS-172 Be-1	21	BS-954C	58	CTIF-CA20	55
BAM-376	17	BAS-C48.03-1	24	BAS-CURM48.04	24	BS-14500	18	BS-955B	58	CTIF-CA21	56
BAM-379/1	8	BAS-C48.06-1	24	BAS-CURM48.04C	27	BS-17500	21	BS-955C	60	CTIF-CA22	60
BAM-379/2	8	BAS-C51.12-1	54	BAS-CURM48.05	24	BS-18150	22	BS-CC905	40	CTIF-CA25	55
BAM-379/3	8	BAS-C51.13-1	55	BAS-CURM48.05C	27	BS-18150A	22	BS-CC954	56	CTIF-CA26	56
BAM-M381	9	BAS-C52.51-1	58	BAS-CURM50.01	40	BS-360B	32	BS-SU863	88	CTIF-CA27	58
BAM-M382	9	BAS-C52.56-1	56	BAS-CURM50.01C	51	BS-464	45	BS-SUCU1+	88	CTIF-CA3	58
BAM-M383A	9	BAS-CURM09.01	17	BAS-CURM50.02	41	BS-464A	45	CAN-CUAR-1	13	CTIF-CA30	79
BAM-M383B	9	BAS-CURM09.01C	13	BAS-CURM50.02C	51	BS-482A	45	CAN-CUPD-1	13	CTIF-CA31	56
BAM-M383C	9	BAS-CURM09.02	17	BAS-CURM50.03	40	BS-510A	42	CTIF-2151R	56	CTIF-CA35	60
BAM-M384A	9	BAS-CURM09.02C	13	BAS-CURM50.03C	51	BS-544B	43	CTIF-2152S	58	CTIF-CA36	60
BAM-M384B	9	BAS-CURM09.03	17	BAS-CURM50.04	40	BS-623	56	CTIF-2154V	60	CTIF-CA37	58
BAM-M390	8	BAS-CURM09.03C	13	BAS-CURM50.04C	51	BS-623A	56	CTIF-2158W	60	CTIF-CN1	77
BAM-M391	8	BAS-CURM09.04	17	BAS-CURM51.11	54	BS-630A	58	CTIF-2794H	55	CTIF-CN2	76
BAM-M392	8	BAS-CURM09.04C	13	BAS-CURM51.11C	61	BS-630B	58	CTIF-3011G	60	CTIF-CN33	77
BAS-BCS-CRM 179/2	61	BAS-CURM09.05	17	BAS-CURM51.12	78	BS-630C	58	CTIF-3018F	78	CTIF-CN4	77
BAS-BCS-CRM 180/2	71	BAS-CURM30.04	25	BAS-CURM51.12C	61	BS-642B	55	CTIF-3296L	56	CTIF-CuBeCo6	20
BAS-BCS-CRM 183/4	51	BAS-CURM30.04C	27	BAS-CURM51.13	55	BS-642C	55	CTIF-3297Y	58	CTIF-CUN10	76
BAS-BCS-CRM 207/2	51	BAS-CURM30.05	27	BAS-CURM51.13C	61	BS-655A	65	CTIF-3299J	58	CTIF-EA1+	88
BAS-BCS-CRM 304/1	61	BAS-CURM30.05C	27	BAS-CURM51.14	55	BS-655B	65	CTIF-3300M	55	CTIF-L1-1	26
BAS-BCS-CRM 344	27	BAS-CURM30.09	23	BAS-CURM51.14C	61	BS-655C	65	CTIF-3301Z	55	CTIF-L2	45
BAS-BCS-CRM 374	42	BAS-CURM30.09C	27	BAS-CURM52.52	60	BS-675	45	CTIF-3610Q	55	CTIF-L20-1	45
BAS-BCS-CRM 385	32	BAS-CURM30.11	25	BAS-CURM52.52C	61	BS-675A	78	CTIF-4065P	58	CTIF-L21	46
BAS-BCS-CRM 390	82	BAS-CURM30.11C	74	BAS-CURM52.54	78	BS-675B	78	CTIF-4149G	58	CTIF-L22	46
BAS-BCS-CRM 399	13	BAS-CURM30.15	26	BAS-CURM52.54C	61	BS-706A	76	CTIF-4583	20	CTIF-L23	24
BAS-C11.01	35	BAS-CURM30.15C	27	BAS-CURM54.01	42	BS-706B	77	CTIF-4584	20	CTIF-L3-1	82
BAS-C11.02	35	BAS-CURM30.16	25	BAS-CURM54.01C	42	BS-715A	77	CTIF-4766	20	CTIF-L4-1	49
BAS-C11.03	35	BAS-CURM30.16C	27	BAS-CURM54.02	43	BS-836A-3	32	CTIF-4868	20	CTIF-L5-1	49
BAS-C30.01	26	BAS-CURM30.18	54	BAS-CURM54.02C	43	BS-836A-4	32	CTIF-4872	20	CTIF-L6	24
BAS-C30.02	26	BAS-CURM30.18C	61	BAS-CURM54.03	43	BS-857B-1	31	CTIF-4873	20	CTIF-L7	82
BAS-C30.03	26	BAS-CURM30.20	54	BAS-CURM54.03C	43	BS-857B-2	31	CTIF-B1	47	CTIF-LH10	82
BAS-C30.06	24	BAS-CURM30.20C	61	BAS-CURM54.04C	43	BS-857B-3	31	CTIF-B10	39	CTIF-LH11	82
BAS-C30.07	24	BAS-CURM30.21	54	BAS-CURM54.05	43	BS-857B-4	31	CTIF-B11-1	40	CTIF-LH1-1	55
BAS-C30.12	25	BAS-CURM30.21C	74	BAS-CURM54.05C	43	BS-863B	79	CTIF-B12	47	CTIF-LH12	78
BAS-C30.13	25	BAS-CURM42.21	45	BAS-CURM62.12	69	BS-903B	40	CTIF-B13	40	CTIF-LH13	82
BAS-C30.14	25	BAS-CURM42.21C	48	BAS-CURM62.12C	71	BS-903C	88	CTIF-B14	41	CTIF-LH2-1	79
BAS-C30.15	26	BAS-CURM42.22	49	BAS-CURM71.31	50	BS-903D	47	CTIF-B2	36	CTIF-LH5-1	78

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CTIF-LH6-1	79	ERM-EB388	54	IARM-93B	60	IM BO2	63	IM CS7	10	IM MJ1	28
CTIF-LH7-1A	79	ERM-EB389	77	IARM-94B	60	IM BO3	63	IM CS7D	10	IM MJ2	28
CTIF-LS1	67	HRT CU2014	69	IM 4	13	IM BO4	63	IM CS7R	10	IM MJ3	28
CTIF-LS2	67	IARM-151A	67	IM 5	13	IM BO5	63	IM CT1	22	IM MJ4	28
CTIF-LS3	67	IARM-151B	67	IM BB1	52	IM BP1	63	IM CT2	22	IM MJ5	28
CTIF-UE12	46	IARM-158B	21	IM BB2	52	IM BP2	63	IM CT3	22	IM MJJ1	28
CTIF-UN3S	76	IARM-158C	21	IM BB3	52	IM BP3	63	IM CT4	22	IM MJJ2	28
CTIF-UZ52-3	46	IARM-159A	53	IM BB4	52	IM BP4	63	IM CT5	22	IM MJJ3	28
CTIF-UZ53	24	IARM-160A	53	IM BB5	52	IM BP5	63	IM CT6	22	IM MJJ4	28
CTIF-UZHR8	79	IARM-184A	39	IM BB6	52	IM CF1	16	IM CU10/1	14	IM MN5-1	71
DH-SL02-01	51	IARM-204A	60	IM BE1	66	IM CF2	16	IM CU100	14	IM MN5-2	71
DH-SL02-02	13	IARM-211A	83	IM BE2	66	IM CF3	16	IM CU100/5	14	IM MN5-3	71
DH-SL02-03	64	IARM-226A	84	IM BE3	66	IM CF4	16	IM CU300	14	IM MN5-4	71
DH-SL02-04	64	IARM-227A	84	IM BE4	66	IM CF5	16	IM CU50	12	IM N1	71
DH-SL02-05	64	IARM-228A	84	IM BE5	66	IM CF6	16	IM CU600/1	14	IM N2	71
DH-SL02-06	51	IARM-235A	56	IM BF1	63	IM CG1	22	IM CU90	12	IM N3	71
DH-SL02-08	64	IARM-236A	70	IM BF2	63	IM CG2	22	IM CUS10	12	IM N4	71
DH-SL02-09	36	IARM-250A	49	IM BF3	63	IM CG3	22	IM CUS20	12	IM NA1	72
E CUI/10	11	IARM-263A	83	IM BF4	63	IM CG4	22	IM MA1	81	IM NA2	72
E CUI/4	11	IARM-264A	83	IM BF5	63	IM CG5	22	IM MA2	81	IM NA3	72
E CUI/5	11	IARM-265A	83	IM BH1	66	IM CH6	22	IM MA3	81	IM NA4	72
E CUI/6X	11	IARM-266A	83	IM BH2	66	IM CH7	22	IM MA4	81	IM NB1	72
E CUI/8X	11	IARM-267A	44	IM BH3	66	IM CH8	22	IM MA5	81	IM NB2	72
E CUI/9X	11	IARM-278A	18	IM BH4	66	IM CH9	22	IM MA6	81	IM NB3	72
E CUII/3	12	IARM-279A	21	IM BH5	66	IM CK1	80	IM MB1	28	IM NB4	72
E CUII/4	12	IARM-313A	67	IM BH6	66	IM CK2	80	IM MB2	28	IM NB5	72
E CUII/4X	12	IARM-71B	20	IM BI1	52	IM CK3	80	IM MB3	28	IM NC1	72
E CUII/6X	12	IARM-72B	31	IM BI2	52	IM CK4	80	IM MB4	28	IM NC2	72
E CUII/8X	12	IARM-73C	32	IM BI3	52	IM CK5	80	IM MB5	28	IM NC3	72
E CUIII/10	12	IARM-74A	45	IM BI4	52	IM CK6	80	IM MB6	28	IM NC4	72
E CUIII/2	12	IARM-74B	45	IM BJ1	64	IM CM1	38	IM MB7	28	IM NC5	72
E CUIII/4	12	IARM-75B	31	IM BJ2	64	IM CM2	38	IM ME2	48	IM WB1	68
E CUIII/6	12	IARM-76C	31	IM BJ3	64	IM CM3	38	IM ME3	48	IM WB2	68
E CUIII/7	12	IARM-77B	35	IM BJ4	64	IM CM4	38	IM ME4	48	IM WB3	68
E CUIII/7X	12	IARM-78B	43	IM BJ5	64	IM CM5	38	IM ME5	48	IM WB4	68
E CUIII/8	12	IARM-79B	56	IM BL1	38	IM CO2	53	IM MG1	28	IM WB5	68
E CUIII/8X	12	IARM-79C	56	IM BL2	38	IM CO3	53	IM MG2	28	IM WB6	68
E CUIII/9	12	IARM-80C	58	IM BL3	38	IM CO4	53	IM MG3	28	IM WB7	68
E CUIII/9X	12	IARM-81B	55	IM BL4	38	IM CO5	53	IM MG4	28	IM WC1	68
ERM-EB074A	11	IARM-82B	65	IM BL5	38	IM CP1	14	IM MG5	28	IM WC2	68
ERM-EB074B	11	IARM-83B	45	IM BM1	71	IM CP2	14	IM MG6	28	IM WC3	68
ERM-EB074C	11	IARM-84B	69	IM BM2	71	IM CP3	14	IM MH1	30	IM WC4	68
ERM-EB075A	11	IARM-85C	70	IM BM3	71	IM CP4	14	IM MH2	30	IM WC5	68
ERM-EB075B	11	IARM-86D	50	IM BM4	71	IM CP5	14	IM MH3	30	IM WC6	68
ERM-EB075C	11	IARM-87B	31	IM BM5	71	IM CP6	14	IM MH4	30	IM WF1	81
ERM-EB374	36	IARM-88C	79	IM BN1	44	IM CS1	15	IM MH5	30	IM WF2	81
ERM-EB377	34	IARM-89C	47	IM BN2	44	IM CS2	15	IM MI1	27	IM WF3	81
ERM-EB378	34	IARM-90C	50	IM BN3	44	IM CS3	15	IM MI2	27	IM WF4	81
ERM-EB385	9	IARM-91D	50	IM BN4	44	IM CS4	15	IM MI3	27	IM WF5	81
ERM-EB386	9	IARM-91E	39	IM BN5	44	IM CS5	15	IM MI4	27	IM WF6	81
ERM-EB387	73	IARM-92C	40	IM BO1	63	IM CS6	10	IM MI5	27	IM WG1	33

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IM WG2	33	MBH-165X MNB5SUS	87	MBH-31X MNB2 D	82	MBH-32X SEB1 D	83	MBH-36X CN6 H	70	NCS HS43715-1	30
IM WG3	33	MBH-165X PB10SUS	87	MBH-31X MNB3 E	82	MBH-32X SEB2 D	83	MBH-36X CN7 F	70	NCS HS43715-2	30
IM WG4	33	MBH-31X 7835.1 S	32	MBH-31X MNB4 F	79	MBH-32X SEB3 E	83	MBH-36X CN8 J	70	NCS HS43715-3	30
IM WG5	33	MBH-31X 7835.2 K	35	MBH-31X MNB5 R	78	MBH-32X SEB4 D	83	MBH-36X CN9 J	70	NCS HS43715-4	30
IM WG6	33	MBH-31X 7835.3 H	31	MBH-31X MNB6 C	78	MBH-32X SEB4 E	83	MBH-36X SP1 A	44	NCS HS43715-5	30
IM WH1	74	MBH-31X 7835.4 J	31	MBH-31X NB1 H	49	MBH-32X SEB5 D	83	MBH-36X SP2 A	77	NCS HS43715-6	30
IM WH2	74	MBH-31X 7835.5 A	31	MBH-31X NB2 H	46	MBH-32X SEB6 C	83	MBH-37X 65500 A	65	NCS HS43715-7	30
IM WH3	74	MBH-31X 7835.6 B	31	MBH-31X NB3 H	46	MBH-32X SEB7 A	83	MBH-37X 218 A	76	NCS HS43716A-1	15
IM WH4	74	MBH-31X 7835.7 A	47	MBH-31X NB4 J	46	MBH-32X SN1 F	41	MBH-37X 218 B	76	NCS HS43716A-2	15
IM WH5	74	MBH-31X 7835.8 A	32	MBH-31X TB1 J	25	MBH-32X SN2 J	41	MBH-37X 226 A	67	NCS HS43716A-3	15
IM WK1	48	MBH-31X 7835.9 A	49	MBH-31X TB2 H	25	MBH-32X SN3 G	37	MBH-37X HK7 A	77	NCS HS43716A-4	15
IM WK2	48	MBH-31X B1 P	26	MBH-31X TB3 K	25	MBH-32X SN4 A	41	MBH-38X C1 C	8	NCS HS43716A-5	15
IM WK3	48	MBH-31X B10 M	78	MBH-31X TB4 F	25	MBH-32X SN6 A	40	MBH-39X 17866 AG	10	NCS HS43716A-6	15
IM WK4	48	MBH-31X B11 H	78	MBH-31X TB5 A	31	MBH-32X SN7 A	41	MBH-39X 17867 AD	10	NCS HS43716A-7	15
IM WK5	48	MBH-31X B12 G	79	MBH-31X WSB6 E	65	MBH-33X 54400 A	43	MBH-39X 17868 AG	10, 17	NCS HS43716A-8	15
IM WL1	48	MBH-31X B13 G	79	MBH-32X 61400 A	55	MBH-33X GM20 A	47	MBH-39X 17869 AF	10, 17	NCS HS43716A-9	15
IM WL2	48	MBH-31X B14 G	54	MBH-32X 93700 A	40	MBH-33X GM21 A	50	MBH-39X 17870 AG	10	NCS HS43717-1	29
IM WL3	48	MBH-31X B15 H	54	MBH-32X ALB1 P	56	MBH-33X GM24 A	49	MBH-39X 17871 C	10	NCS HS43717-2	29
IM WL4	48	MBH-31X B16 H	54	MBH-32X ALB10 A	60	MBH-33X GM29 A	47	MBH-39X 17872 A	10	NCS HS43717-3	29
IM WL5	48	MBH-31X B17 F	54	MBH-32X ALB11 A	55	MBH-33X GM4 AC	49	MBH-39X 17873 A	10, 17	NCS HS43717-4	29
IM WL6	48	MBH-31X B18 J	31	MBH-32X ALB11 B	56	MBH-33X GM6 K	50	MBH-39X 27866 A	17	NCS HS43717-5	29
IM WM1	74	MBH-31X B19 Q	32	MBH-32X ALB12 A	55	MBH-33X GM7 J	50	MBH-39X 27869 A	17	NCS HS43720-1	85
IM WM2	74	MBH-31X B2 M	26	MBH-32X ALB13 A	79	MBH-33X GM8 G	49	NCS HS28703-1	34	NCS HS43720-2	85
IM WM3	74	MBH-31X B20 N	32	MBH-32X ALB2 K	58	MBH-33X RB1 A	49	NCS HS28703-2	34	NCS HS43720-3	85
IM WM4	74	MBH-31X B21 D	24	MBH-32X ALB4 H	78	MBH-33X RB2 A	49	NCS HS28703-3	34	NCS HS43720-4	85
IM WM5	74	MBH-31X B22 F	24	MBH-32X ALB6 K	56	MBH-34X 79830 A	76	NCS HS28703-4	34	NCS HS43720-5	85
IM WN1	34	MBH-31X B23 D	23	MBH-32X ALB7 C	54	MBH-34X NS1 F	73	NCS HS28703-5	34	NCS HS43720-6	85
IM WN2	34	MBH-31X B24 D	46	MBH-32X ALB8 E	78	MBH-34X NS2 F	73	NCS HS28703-6	34	NCS HS43720-7	85
IM WN3	34	MBH-31X B25 B	64	MBH-32X ALB9 B	60	MBH-34X NS3 F	73	NCS HS28703-7	34	NCS HS43722-1	85
IM WN4	34	MBH-31X B26 E	64	MBH-32X CA1 A	58	MBH-34X NS4 F	73	NCS HS28704-1	29	NCS HS43722-2	85
IM WN5	34	MBH-31X B27 B	31	MBH-32X CA12 A	55	MBH-34X NS5 G	73	NCS HS28704-2	29	NCS HS43722-3	85
IM WO1	62	MBH-31X B28 A	25	MBH-32X CA23 A	56	MBH-36X 274 A	76	NCS HS28704-3	29	NCS HS43722-4	85
IM WO2	62	MBH-31X B29 A	72	MBH-32X CA31 A	56	MBH-36X 70600 A	76	NCS HS28704-4	29	NCS HS43722-5	85
IM WO3	62	MBH-31X B3 L	24	MBH-32X CA7 A	56	MBH-36X 71500 A	77	NCS HS28704-5	29	NCS HS43723-1	84
IM WO4	62	MBH-31X B4 M	24	MBH-32X CSN1 A	35	MBH-36X CBC2 E	20	NCS HS28704-6	29	NCS HS43723-2	84
IM WP1	75	MBH-31X B5 K	24	MBH-32X LB10 F	40	MBH-36X CBC3 D	20	NCS HS28704-7	29	NCS HS43723-3	84
IM WP2	75	MBH-31X B6 K	24	MBH-32X LB11 D	41	MBH-36X CBC4 D	20	NCS HS43709-1	66	NCS HS43723-4	84
IM WP3	75	MBH-31X B7 K	23	MBH-32X LB12 D	40	MBH-36X CBC5 A	20	NCS HS43709-2	66	NCS HS43723-5	84
IM WP4	75	MBH-31X B8 J	23	MBH-32X LB13 C	39	MBH-36X CCR1 E	21	NCS HS43709-3	66	NCS HS43724-1	33
IM WP5	75	MBH-31X B9 L	23	MBH-32X LB14 G	39	MBH-36X CN1 P	69	NCS HS43709-4	66	NCS HS43724-2	33
IM WP6	75	MBH-31X BIB1 C	83	MBH-32X LB15 E	39	MBH-36X CN10 B	70	NCS HS43709-5	66	NCS HS43724-3	33
IM WR1	62	MBH-31X BIB2 C	83	MBH-32X LB16 A	39	MBH-36X CN11 A	69	NCS HS43712-1	62	NCS HS43724-4	33
IM WR2	62	MBH-31X BIB3 C	83	MBH-32X LB17 A	39	MBH-36X CN12 A	69	NCS HS43712-2	62	NCS HS43724-5	33
IM WR3	62	MBH-31X BIB4 B	83	MBH-32X PB10 P	42	MBH-36X CN13 A	69	NCS HS43712-3	62	NCS HS43724-6	33
IM WR4	62	MBH-31X CZ114 A	31	MBH-32X PB11 G	39	MBH-36X CN2 J	69	NCS HS43712-4	62	NCS HS45716-1	75
IM WR5	62	MBH-31X HT31 A	79	MBH-32X PB12 F	47	MBH-36X CN21 A	69	NCS HS43712-5	62	NCS HS45716-2	75
IPT-10B	51	MBH-31X HT37 A	82	MBH-32X PB13 E	42	MBH-36X CN23 A	69	NCS HS43714-1	30	NCS HS45716-3	75
IPT-40	32	MBH-31X HT38 A	79	MBH-32X PB14 D	42	MBH-36X CN24 A	77	NCS HS43714-2	30	NCS HS45716-4	75
IPT-64	13	MBH-31X MNB1 C	82	MBH-32X PB15A	46	MBH-36X CN3 M	69	NCS HS43714-3	30	NCS HS45716-5	75
MBH-165X ALB1SUS	87	MBH-31X MNB11 A	82	MBH-32X PB20 A	42	MBH-36X CN4 K	70	NCS HS43714-4	30	NCS HS45721-1	38
MBH-165X CUSUS1	87	MBH-31X MNB12 B	82	MBH-32X PB23 A	42	MBH-36X CN5 P	70	NCS HS43714-5	30	NCS HS45721-2	38

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