



BREITLÄNDER

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REFERENZMATERIAL - NE-METALLE

REFERENCE MATERIAL - NF-METALS

Katalog Nr.3 / Catalogue No.3

VORWORT

B R E I T L Ä N D E R Eichproben + Labormaterial GMBH ist Spezialanbieter von Referenzproben seit dem Jahre 1972. Mit ca. 15000 Proben, die in unserer Datenbank erfaßt sind, bieten wir das umfangreichste Angebot an Referenzproben auf dem Weltmarkt. Unsere Datenbank gibt Auskunft über die Verfügbarkeit einer gesuchten Probe; der simultane Suchmodus erfaßt bis zu 8 Element-Konzentrationsbereiche von ppb bis 100%.

Da wir nur mit der Herstellung von Silikatglas-Monitorproben für die RFA befaßt sind, können wir unsere Kunden herstellerunabhängig beraten und das am besten geeignete Referenzmaterial für Kalibrierung, Kontrolle oder Rekalibration empfehlen. Mit einem Lagerbestand von mehr als 2000 verschiedenen Proben können wir gängige Referenzmaterialien in den meisten Fällen prompt ausliefern. Zusätzlich zum eigentlichen Referenzmaterial können wir eine geeignete Probenvorbereitung empfehlen und dies mit unseren Maschinen auch praktisch demonstrieren, sowohl für die Metalle, als auch für oxidische Materialien.

Referenzmaterialien, CRMs und RMs sind im ISO Guide 30: 1992 „Begriffe und Definitionen im Zusammenhang mit Referenzmaterialien“ von der Internationalen Organisation für Standardisierung (ISO) definiert.

„**CRM**“ steht für „Certified Reference Material“ oder **zertifiziertes Referenzmaterial**, auch als „ZRM“ abgekürzt. CRM - von einem Zertifikat begleitetes Referenzmaterial mit einem oder mehreren Eigenschaftswerten, die durch ein Verfahren zertifiziert sind. Dieses Verfahren bescheinigt, daß die Werte auf ein exaktes Maß der Einheit zurückverfolgt werden können, in dem die Eigenschaftswerte ausgedrückt sind, und daß für jeden zertifizierten Wert eine Unsicherheit mit festgelegtem Zuverlässigkeitswert gegeben ist. CRMs werden zertifiziert durch eine anerkannte Zertifizierungsorganisation nach erprobten Verfahren, gemäß ISO Guide 35: 1989 „Zertifizierung von Referenzmaterialien – allgemeine und statistische Grundsätze“. Solche Zertifizierungsorganisationen sind gewöhnlich staatliche oder staatlich anerkannte Institutionen. Ein CRM hat die höchste hierarchische Stellung, die ein Referenzmaterial erhalten kann, weil eine direkte Rückführbarkeit zu SI-Einheiten angestrebt wird und wegen des ihm zugeschriebenen Vertrauens, das der Herausgeber genießt.

„**RM**“ steht für „Reference Material“ oder **Referenzmaterial**. RM - Material oder Substanz mit einem oder mehreren Eigenschaftswerten, die ausreichend homogen und konstant sind, um zur Eichung eines Instruments, zur Bewertung eines Meßverfahrens oder zur Zuweisung von Materialwerten verwendet zu werden. Solche Referenzproben sind normalerweise im Rahmen einer Ringanalyse von verschiedenen Analytikern untersucht und werden mit einem Analysezertifikat ausgeliefert, das nicht immer alle Zertifizierungsvorschriften nach ISO Guide 35 erfüllt, oder auf anderen Zertifizierungskriterien beruht, z.B. durch Rückführbarkeitsmessungen auf NIST-Standards (traceability to NIST). Einige Hersteller geben sehr gut dokumentierte Zertifikate heraus, das Zustandekommen der Analysewerte (Anzahl der unabhängigen Laboratorien, Methoden, Unsicherheiten etc) ist jedoch nicht bei allen Herausgebern vollständig beschrieben.

„**SUS**“ steht für „Setting-Up Samples“ oder **Rekalibrierproben**. Es sind Materialien besonders geprüfter Homogenität, die angegebene quantitative Zusammensetzung ist jedoch nicht zertifiziert. Solche Proben werden zur Überprüfung und Aufrechterhaltung der Signalstabilität des Spektrometers benutzt, indem ihnen bei der Kalibrierung mit CRMs und RMs ein entsprechender Meßwert zugewiesen wird. Solche Proben werden auch als Geräte-Monitorproben bezeichnet, die Beschaffung einer hinreichenden Anzahl von Proben aus einer Schmelze wird angeraten, um neuerliche Dateneingabe bei nicht identischer Folgeschmelze zu vermeiden.

„**Kontrollproben**“ sind eigentlich den Referenzproben zuzurechnen, es handelt sich normalerweise um typische Legierungsqualitäten. Sie sind hinreichend gut analysiert für den gewünschten Einsatzzweck, nämlich für die statistische Kontrolle des Spektrometers für Qualitätssicherungsaufgaben, Überprüfung von Kalibrierung und Rekalibrierungsbedarf.

Die Referenzmaterialien dieses Kataloges sind entsprechend den o.g. Kategorien gekennzeichnet. CRMs müssen nicht von einer regierungsamtlichen Organisation herausgegeben werden, allerdings ist die Akkreditierung (Qualitätssicherung nach ISO 900x) eines Herausgebers oder eines an der Ringuntersuchung beteiligten Labors keine hinreichende Qualifizierung für eine Einstufung als CRM nach ISO Guide 30. Nur wenn der Herausgeber eine staatliche Einrichtung ist oder eine spezielle Akkreditierung gemäß ISO Guide 34 für das entsprechende Material besitzt, ist dies als CRM gekennzeichnet. Es sei ausdrücklich daraufhingewiesen, daß ein ISO 900x akkreditierter Herausgeber von Referenzmaterial durch eine solche Registrierung keine CRMs produziert.

Die in unseren Katalogen angegebenen Analysedaten sind als typische Werte zu betrachten, normalerweise in Gewichtsprozenten ausgedrückt, falls nicht als ppm, µg/g, mg/kg oder anders gekennzeichnet. Sie wurden sorgfältig nach Herstellerangaben dokumentiert, Irrtum und auch Änderungen durch Folgeschmelzen kann nicht ausgeschlossen werden, gültig ist allein das zu der Probe mitgelieferte Zertifikat. Klammerwerte kennzeichnen nicht zertifizierte, nur informative Werte. Da Referenzproben aus Homogenitätsgründen normalerweise nur in sehr begrenzter Stückzahl zertifiziert werden können, haben Folgeschmelzen keine identische, sondern eine sehr ähnliche Zusammensetzung; auch die Probenabmessung kann sich ändern. Wir geben Ihnen gerne die tatsächlich vorliegenden Werte an, auch die Unsicherheiten, Bestimmungsmethoden etc. Sie können dies vor Bestellung bei uns erfragen. Wir geben Ihnen ferner alle weiteren uns vom Hersteller überlassenen Informationen. Zur Beachtung: prüfen Sie, ob die Werte des mitgelieferten Zertifikates Ihren Erfordernissen entsprechen bevor Sie ein gekauftes Referenzmaterial benutzen; wir akzeptieren nach Abstimmung Rückgaben innerhalb von 60 Tagen nach Lieferung nur für unbenutztes Material.

Die Auswahl geeigneter Referenzproben ist von besonderer Wichtigkeit für Ihre interne Qualitätssicherung und gegenüber Forderungen externer Abnahmegesellschaften. Dabei sind zwei Kriterien von besonderer Bedeutung: der o.g. metrologische Status der verschiedenen Proben und die Kongruenz des zu untersuchenden Materials mit dem der Referenzproben. Vergleichbares Probengefüge und gleiche Probenvorbereitung sind dabei wichtige Kriterien, die Kalibrierkurven sollten auf einer möglichst großen Anzahl von matrixähnlichen Referenzproben basieren. Auf die Empfehlungen der Gerätehersteller wird besonders hingewiesen. Bei Einsatz von Qualitätssicherungsprogrammen sollen gemäß internationalen Normen z.B. ISO 900x CRM-Proben eingesetzt werden, sofern diese für das zu untersuchende Material zur Verfügung stehen. Leider ist das Angebot an CRM-Proben beschränkt, so daß in der Praxis eine Kombination von verfügbaren CRM- und RM-Proben notwendig und sinnvoll ist. Aufgrund zufallsbedingter und auch systematischer Unsicherheitseffekte bei allen analytischen Messungen ist es unwahrscheinlich, daß die von einem Anwender erzielten Messwerte eines Referenzmaterials genau mit dem Zertifikat übereinstimmen. Wichtig ist, daß sich die Meßergebnisse in einem für den Verwendungszweck akzeptablen Toleranzbereich bewegen.

In unseren Katalogen sind die technologischen Eigenschaften der Proben, so weit bekannt, angegeben: „wrought“ kennzeichnet gewalzte, gezogene oder geschmiedete Metallproben, „cast“ bezeichnet gegossene Proben und „chill cast“ steht für Proben, die zur schnellstmöglichen Abkühlung, normalerweise auf einem Kupferblock, vergossen wurden. Bei Aluproben liegt bei den zylindrischen Proben im allgemeinen Extrudierung vor, die flachen Pilzproben sind Kokillenproben. Bestimmte Proben, die flüchtige Elemente enthalten, haben einen Kataloghinweis auf diese Konzentrationsbereiche – im Zertifikat sind die tatsächlichen Werte. Da die meisten Aluproben von den Aluminium-Großherstellern kommen (RM-Proben) sind nur die wenigen CRM-Proben als solche im Katalog gekennzeichnet. Bei einer Reihe von geochemischen Referenzproben sind neben der chemischen Zusammensetzung auch eine mineralogische und granulometrische Zusammensetzung angegeben. Auf Anfrage teilen wir Ihnen mit, ob eine solche erweiterte Aussage im Zertifikat gemacht wird.

Bitte fragen Sie auch nach Referenzmaterial an, das Sie nicht in unseren Katalogen finden, wir recherchieren für Sie und können evtl. auch Material für Sie fertigen lassen, dank unserer langjährigen Kontakte zu spezialisierten Instituten und Laboratorien.

Bestellungen erbitten wir per Brief, Fax, e-mail oder auch telefonisch. Bei schriftlichen Aufträgen, die telefonische Aufträge bestätigen, erbitten wir einen entsprechenden Hinweis, um Doppelbestellungen zu vermeiden. Bitte geben Sie an: Menge, vollständige Art.-Nr. lt. Katalog, Materialbezeichnung und Preis, falls bekannt. Unsere Preise verstehen sich in EURO, Erfüllungsort Hamm. Wir berechnen keine separaten Verpackungskosten und liefern Nicht-Gefahrgut franko Werk des Empfängers im Inland. Besondere Zustellbedingungen und Gefahrgut-Transportkosten werden zusätzlich berechnet, Gefahrgut-Artikel sind in unseren Katalogpreislisten gekennzeichnet, die Zusatzkosten richten sich nach Eilbedürftigkeit, bitte fragen Sie an. Alle Verkäufe erfolgen ausschließlich zu unseren allgemeinen Verkaufsbedingungen. Zahlung: innerhalb von 30 Tagen netto Kasse bei gesicherter Bonität, bei Inlandsgeschäften gewähren wir 2% Skonto bei Barzahlung innerhalb von 14 Tagen nach Rechnungsdatum. Wir liefern normalerweise bei Lagerproben prompt nach Auftragsingang, Nicht-Lagerproben beschaffen wir innerhalb von 2-4 Wochen.

Bitte richten Sie Ihre Bestellung an:

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Preface

B R E I T L Ä N D E R Eichproben + Labormaterial GmbH have been specialist in reference materials since 1972. With about 15000 international reference materials included in our database, we supply the world's most comprehensive range of standards. Our database tells you the availability of particular materials of interest with up to 8 selected element or compound concentrations searched for simultaneously in the range from ppb to 100%.

As we specialise in production of XRF-glass-monitor samples only we can advise customers independently and help to select the most appropriate reference material for calibration, control or setting-up. We carry in stock a range of more than 2000 different materials and can satisfy most customer requirements for same day supply. Further to reference materials we can advise the customer on correct sample preparation either in the field of metals or for mineral based materials; we supply from stock sample preparaton machines as well as consumables.

Reference materials, CRMs and RMs, have been defined as per ISO Guide 30: 1992 „Terms and definitions used in connection with reference materials“ issued by the International Standards Organization.

CERTIFIED REFERENCE MATERIAL (CRM): Reference material, accompanied by a certificate, one or more of whose property values are certified by a procedure which establishes its traceability to an accurate realization of the unit in which the property values are expressed, and for which each certified value is accompanied by an uncertainty at a stated level of confidence. The CRMs are certified by a recognized certifying organization using approved certification procedures as instructed in ISO Guide 35: 1989 „Certification of reference materials – General and statistical principles.“ The organization is usually a function of a federal government or recognized by a federal government. A CRM is the highest level to which an analytical reference material can be elevated because it is directly traceable to SI units and because of the attributed confidence in the company or organization which produced the material.

REFERENCE MATERIAL (RM): A material substance one or more of whose property values are sufficiently homogeneous and well established to be used for calibration of an apparatus, the assessment of a measurement method, or for assigning values to materials. The RMs usually have been through interlaboratory testing using many analysts and supplied with a certificate of analysis but do not strictly follow all the procedures of certification as indicated in ISO Guide 35. Certificates of RMs often state that the measurement data are traceable to primary CRMs, mostly expressed as traceability to NIST.

SETTING-UP SAMPLES (SUS): Materials of minimum inhomogeneity to be used for monitoring or adjustment of the analytical signal of instruments. These materials are assigned values during calibration with CRMs or RMs, thus they do not need to have a certified analysis, but a guiding one only. Such standards are also called „recalibration samples“, „drift control samples“ or „monitor samples“.

CHART CONTROL SAMPLES are selected RM-materials, their composition normally correspond to common alloy grades. These samples are sufficiently well analysed for their intended use to keep spectrometers in the state of statistical control and used for quality assurance, to check for calibration and recalibration.

Reference materials in this catalogue have been coded as per above categories. CRMs, certified by a recognized certifying organization, needn't to be governmental, however the accreditation of the issuing laboratory or that of one or more laboratories participating in the analysis does not fulfill the requirements for CRM coding as per ISO Guide 30. Only when the producer is a government agency or holds an accreditation specific to ISO Guide 34 for the material in question we have applied the term CRM in this catalogue. It should be clearly stated, that a reference material supplier, accredited as per ISO 900x does not produce CRMs, because of such a registration.

The analytical data in our catalogues are given in mass percent, unless another unit is indicated (ppm, µg/g, mg/kg). They have to be considered as typical or pilot values, the proper values are to be found in the certificate only, supplied together with the sample. Values in brackets () are not certified and listed for information only. Reference materials can only be produced in a limited number mostly because of homogeneity reasons, thus follow up melts will normally differ slightly in composition and may differ in dimensions between batches. In case you need an exact value or more information on manufacture, material property, methods, uncertainties etc prior to selection, do not hesitate to ask for information. We will pass on to you the information available from the producer, though not all of them supply complete background information. Please note: before using a material check that the values from the certificate are acceptable, material returns are acceptable within 60 days after shipment, please contact us in such cases beforehand, however such returns apply only for unused material.

Selecting appropriate reference materials improves efficiency of your quality assurance programme. Two features are of importance – their metrological status as indicated above and how their properties match those of the user's routine samples. Due to increasing implementation of quality assurance programmes, growing emphasis is put on use of CRMs whenever available. International Standards like ISO 900x request CRMs, however the offer in certain areas is very limited. Therefore the optimum combination of CRMs and RMs has to be used.

Our catalogue indicates the technological properties of the materials whenever available, essential mainly for solid metals, where the prevailing spectral analytical techniques are structure and surface sensitive. The solid metal samples have therefore been marked „wrought“, „cast“ and „chill cast“, the latter meaning rapid solidification, generally achieved by casting on a copper block. Aluminium samples in cylindrical form are usually extruded, the flat „mushroom“ ones are mold cast. Trend inhomogeneity in Al-samples caused by technology for some „burn out“ elements are individually certified by some producers, the range is given in the Al-catalogue, the exact value in the certificate. As most Al-samples are RMs coming from the leading aluminium producers, only the CRMs have been specially coded. Some certificates of geochemical samples not only list the chemical composition, but also the mineral and granulometric composition, on request we will let you know if the certificate indicates such information.

Users are advised to select reference materials close to their own samples. They should have similar structure and be prepared exactly the same way. Calibration should be based on matrix compatible materials and graphs should be made of as many reference materials as available. The instrument manufacturer's recommendations for calibration procedures should be followed. Analytical results always carry uncertainties due to random and systematic errors, thus it is unlikely that the measured value obtained from a CRM or RM exactly fits the certified one, important is that the results obtained are within acceptable tolerance for the applicational method used. In order to validate instrumental calibration classical chemical methods of analysis of customer's own material and parallel running of other CRMs of same matrix is recommended and should indicate possible calibration differences.

Should you look for a particular material you cannot locate in our catalogues, please inquire. We search for available reference materials, there might be new, recently issued materials and in some cases we can have material made and analysed for you. We are in close contact with specialised institutes and companies producing reference materials, as well as with the instrument producers.

Ordering: We accept orders by mail, fax, e-mail or phone. Please clearly indicate written orders of previously given phone orders to avoid double ordering and state in your order: quantity, catalogue number, material description and price, if known. Prices are understood in EURO, fca Hamm, Germany, as per current price list. We do not charge for packing. Transport charges are added, normally air parcel postage, unless courier or airfreight is appropriate or requested, we ship as per customer request. Hazardous goods require special packing and higher transport costs, all items are listed in our price list as „GEFAHRGUT“, please inquire for additional charges depending on your time requirement and possibility of reduced collective transport rates. All sales are executed as per our conditions of sale. Delivery of stocked samples prompt after receipt of order/payment, non-stocked articles we normally have available within 2-4 weeks, faster service at extra charge, depending on source, is possible, too.

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Katalog Nr. 3 - NE-Metalle

Catalogue No. 3 - NF-Metals

Material		Seite / Page
Reinkupfer	Pure Copper	3.1.1
Messing	Brass	3.2.1
Bronzen	Bronzes	3.3.1
Kupferlegierungen, divers	Copper alloys, various	3.4.1
Kupferbasis, Kontrollproben + SUS-Proben	Copper base, control samples + SUS-samples	3.5.1
Nickel + Nickellegierungen	Nickel + nickel alloys	3.6.1
Nickelbasis, SUS-Proben	Nickel base, SUS-samples	3.6.14
Kobaltlegierungen	Cobalt alloys	3.7.1
Kobaltbasis, SUS-Proben	Cobalt, SUS-samples	3.7.2
Zink + Zinklegierungen	Zinc + zinc alloys	3.8.1
Zinkbasis, Kontrollproben + SUS-Proben	Zinc base, control samples + SUS-samples	3.8.6
Blei + Bleilegierungen, einschl. Lote	Lead + lead alloys, incl. solders	3.9.1
Bleibasis, SUS-Proben	Lead base, SUS-samples	3.9.7
Zinn + Zinnlegierungen	Tin + tin alloys	3.10.1
Zinnbasis, SUS-Proben	Tin base, SUS-samples	3.10.2
Titan + Titanlegierungen	Titanium + Titanium alloys	3.11.1
Titanbasis, SUS-Proben	Titanium base, SUS-samples	3.11.2
Magnesiumlegierungen	Magnesium alloys	3.12.1
Magnesiumbasis, SUS-Proben	Magnesium base, SUS-samples	3.12.3
Sonstige Nichteisenmetalle (Mo, Cd + Zr)	Further nonferrous metals (Mo, Cd + Zr)	3.13.1
Edelmetalle	Precious Metals	3.14.1

CRM	Cu	Bi	Zn	Ni	Fe	Ag	Sn	Cr	Pb	Au	Sb	Mn	Ø 40x25 mm + Ø 40x3 mm, wrought
E CuI/9	(99.9)	<0.00002	0.00023	0.00033	0.0006	0.0018	0.00025	0.00003	0.00024	<0.00010	0.00025	0.00007	Reinkupfer, Spuren; Pure Copper, traces Späne + Stangen (Ø 7x80 mm) lieferbar auf Anfrage Chips + rods (Ø 7x80 mm) available on request
E CuI/10	(99.9)	<0.00002	<0.00002	<0.00002	0.0004	0.0016	<0.00002	0.000025	0.00004	<0.00010	<0.00002	0.00004	

CRM	Cu	As	P	Se	Pb	Co	Cd	S	Ø 40x25 mm + Ø 40x3 mm, wrought
E CuIII/1	(99.7)	0.1036	0.0489	0.0499	0.0342	0.0513	0.0314	0.0229	Reinkupfer, Spuren
E CuIII/2	(99.8)	0.0492	0.0259	0.0255	0.0185	0.0263	0.0167	0.0109	Pure Copper, trace elements
E CuIII/3	(99.9)	0.0196	0.0107	0.0103	0.0079	0.0104	0.0063	0.0033	
E CuIII/4	(99.9)	0.0102	0.0050	0.0048	0.0035	0.0052	0.0028	0.0031	
E CuIII/5	(99.9)	0.0049	0.0024	0.0024	0.0018	0.0026	0.0015	0.0021	
E CuIII/6	(99.9)	0.0020	0.0011	0.0010	0.0010	0.0011	0.0006	0.0014	
E CuIII/7	(99.9)	0.0010	0.00046	0.00034	0.00042	0.00043	0.00022	0.0014	
E CuIII/8	(99.9)	0.00055	0.00031	0.00018	0.00025	0.00023	0.00013	0.0014	
E CuIII/9	(99.9)	0.00025	0.00018	0.00010	0.00015	0.00007	0.00007	0.0009	
E CuIII/10	(99.9)	0.00007	0.00009	<0.00002	0.00005	<0.00005	<0.00002	0.0009	

CRM	Ag	Al	As	Bi	Cd	Co	Cr	Fe	Mg	Mn	Ni	P	Pb	S	Sb	Se	Si	Sn	
VS VSMO-0	0.000101	0.000061	0.000025	0.000035	0.000047	0.000073	0.000062	0.000354	0.000059	0.000034	0.000106	0.000091	0.000030	0.00038	0.000117	0.000044	0.00009	0.000093	
VS VSMO-1	0.00070	-	0.000093	0.000026	0.000031	0.000038	0.000045	0.000399	0.000057	0.000056	0.000179	0.000074	0.000176	0.00065	0.000100	0.000055	0.000176	0.000049	
VS VSMO-2	0.00109	0.000101	0.000190	0.000139	0.000154	0.000203	0.000166	0.00030	0.000139	0.00051	0.000540	0.00021	-	0.00345	0.00030	0.000100	0.000117	0.000278	
VS VSMO-3	0.00150	-	0.00040	0.000203	0.000305	-	-	0.00072	-	0.000119	0.00139	0.000139	0.00080	0.00172	0.00051	0.00024	0.000161	0.00038	
VS VSMO-4	0.00267	0.00065	0.00117	0.000417	0.00085	0.00179	0.00125	0.00115	0.00079	0.00082	0.00416	0.00081	0.00140	0.00134	0.00117	0.00092	0.00153	0.00097	
VS VSMO-5	0.00200	0.00049	0.00200	0.00086	0.00153	0.000439	0.00049	0.00191	0.00064	0.00042	0.00245	0.00096	0.00272	0.00145	0.00191	0.00114	0.00058	0.00172	
VS VSMO-6	0.00488	0.00174	0.00520	0.00242	0.00238	0.00295	0.00314	0.0058	0.00181	0.00247	0.0122	0.00275	0.0081	0.0053	0.0053	0.00265	0.0043	0.00456	
VS VSMO-7	0.00183	0.00248	0.00385	0.00146	0.00066	0.00081	0.00108	0.0095	0.00036	0.00157	0.00221	0.0073	0.00351	0.00096	0.00280	0.00209	0.00085	0.00280	
	Te	Zn	Cu	Ø 40x15 mm															
	0.000077	0.000083	Rest	Reinkupfer															
	0.000051	0.000125	Rest	Pure Copper															
	0.00021	-	Rest																
	0.00039	0.00085	Rest																
	0.00092	0.00134	Rest																
	0.00143	0.00335	Rest																
	0.00286	0.0090	Rest																
	0.000110	0.00495	Rest																

RM	Pb	Sb	As	Zn	Ag	Mn	Co	Cr	S	Fe	Cd	Sn	P	Se	Reinkupfer; Pure Copper Ø 40x25 mm				
															Ni	Te	Bi	Cu	
IM CP1	0.0017	0.0011	0.00004	0.00019	0.0012	0.00014	(0.00002)	0.00003	0.00063	0.00093	0.00006	0.00056	0.00020	(<0.0001)	0.00034	0.00030	0.00010	Rest	
IM CP2	0.012	0.016	0.014	0.0092	0.0036	0.00058	0.0038	0.00005	0.0035	0.00080	0.0072	0.00048	0.0011	0.0074	0.0019	0.0011	-	Rest	
IM CP3	0.0081	0.011	0.0064	0.0033	0.0061	0.0030	0.0020	0.0045	0.0060	0.0015	0.0035	0.0017	0.0044	0.0043	0.0013	0.0045	(0.0052)	Rest	
IM CP4	0.0028	0.0047	0.0014	0.0017	0.011	0.0055	0.00040	0.0088	0.0094	0.0044	0.0010	0.0040	0.013	0.0010	0.00034	0.0074	0.0012	Rest	
IM CP5	0.0013	0.0027	0.0065	0.0038	0.0031	0.0048	0.0033	0.0048	0.0021	0.0077	0.00025	0.00021	0.011	0.0036	0.0038	0.00078	0.00095	Rest	
IM CP6	0.00027	0.00004	0.00009	0.00012	0.0019	0.00006	(<0.0001)	0.00003	0.00075	0.00064	-	0.00007	0.00017	(<0.0001)	0.00027	-	-	Rest	

CRM	Bi	Fe	Cd	Si	Mn	As	Ni	Sn	Pb	S	Se	Ag	Sb	Te	P	Zn	Cu	Ø 45x15mm
VS VSM1-1	0.0143	0.043	0.0489	0.0018	0.082	0.0057	0.0126	0.180	0.0114	0.0088	0.0108	0.0053	0.059	0.0041	0.0045	0.0161	Rest	
VS VSM1-2	0.0288	0.0054	0.0203	0.00044	(0.00024)	0.00178	0.1231	0.0073	0.080	0.00147	0.00243	0.00282	0.00512	0.096	0.00086	0.0077	Rest	
VS VSM1-3	0.00043	(0.008)	0.0101	0.0063	0.00290	(0.0005)	0.364	0.00351	0.241	0.00119	0.00035	0.00113	0.00052	0.00099	0.036	0.045	Rest	
VS VSM1-4	0.00228	0.0101	0.00077	(0.0008)	0.00031	0.0077	0.0234	0.0215	0.0272	0.00277	0.093	0.0246	0.226	0.0565	(0.0008)	0.080	Rest	
VS VSM1-5	0.00157	0.0240	0.100	-	0.0207	0.109	0.00267	0.00049	0.00267	(0.008)	(0.00053)	0.236	0.0072	0.0019	0.0155	-	Rest	
VS VSM1-6	0.00100	0.00170	0.0343	(0.00044)	0.000105	0.0279	0.0757	0.0291	0.0059	0.00379	0.0402	0.070	0.0290	0.0175	(0.0008)	0.00390	Rest	
VS VSM1-7	0.0070	0.110	0.078	0.0165	0.0084	0.0492	0.0355	0.074	0.0188	0.0112	0.0070	0.145	0.0144	0.0087	0.095	0.0235	Rest	
VS VSM1-8	0.00330	0.00226	0.00447	0.00224	0.0236	0.0114	0.00272	0.00091	0.0462	(0.01)	0.00067	0.0119	0.00158	0.0281	0.0063	(0.027)	Rest	
VS VSM1-9	0.00045	(0.042)	0.00235	-	0.00105	0.00330	0.149	0.112	0.141	0.00312	0.0223	0.00135	0.124	(0.002)	0.060	(0.012)	Rest	

CRM	Cu	Sb	As	Bi	Cr	Co	Fe	Pb	Mn	Ni	Se	Ag	S	Te	Sn	Zn	Ø 6x100 mm
3 494	99.908	0.00045	0.00026	0.000035	0.00020	0.00005	0.0147	0.00265	0.00037	0.00117	0.000200	0.00505	0.0015	0.000058	0.0070	0.0405	Reinkupfer
3 495	99.944	0.00080	0.00016	0.000050	0.00060	-	0.0096	0.000325	0.00053	0.00054	0.000063	0.00122	0.0013	0.000032	0.00015	0.00122	Pure Copper
3 457	99.96	0.00002	0.00002	0.00002	(0.00003)	(0.00020)	0.00020	0.00005	<0.00001	0.00006	0.00042	0.00081	(0.0004)	0.000029	<0.00002	<0.0011	
3 498	99.98	0.00075	0.0025	0.00020	(0.00003)	0.00028	0.00114	0.00099	(0.00003)	0.00070	0.00175	0.00201	(0.0011)	0.00101	0.00048	0.0024	
3 499	99.79	0.0030	0.0047	0.00105	(0.00005)	0.00005	0.00200	0.0114	(0.00003)	0.0506	0.0095	0.0117	(0.0010)	0.0050	(0.0090)	0.0045	
3 500	99.70	0.0102	0.0140	0.00245	(0.00005)	0.00006	0.0041	0.0128	(0.00002)	0.0603	0.0214	0.0181	(0.0009)	0.0153	(0.0200)	0.0114	

CRM	Bi	Sb	Fe	As	Ni	Pb	Sn	Zn	Cu	Ø 8x140 mm
GB 02111	0.00050	0.00084	0.00093	0.0135	0.0015	0.0012	0.00062	0.0123	Rest	Reinkupfer
GB 02112	0.0053	0.0025	0.0026	0.0022	0.0089	0.0110	-	-	Rest	Pure Copper
GB 02113	0.0013	0.0018	0.0048	0.0013	0.0173	0.0083	0.0017	0.0021	Rest	
GB 02114	0.0026	0.0042	0.0089	0.0043	0.0050	0.0047	0.0037	0.0046	Rest	
GB 02115	0.010	0.0074	0.0157	0.0074	0.0031	0.0031	0.0112	0.0083	Rest	

CRM	Cu	Ag	As	Bi	Fe	Ni	O	Pb	S	Sb	Se	Sn	Te	Zn	Ø 7.9x300 mm
T SSC1	(99.9)	0.00188	0.000116	0.000115	0.00392	0.00176	0.02160	0.00653	0.00196	0.000264	0.000728	0.00549	0.000475	0.00333	Reinkupfer; Pure Copper

CRM	ppm Ag	ppm As	ppm Be	ppm Bi	ppm Cd	ppm Co	ppm Fe	ppm Mg	ppm Mn	ppm Ni	ppm P	ppm Pb	ppm S	ppm Sb	ppm Se	ppm Sn	ppm Te
B 376	163.0	199.9	40.6	200	186.1	207.9	234.6	124	205.9	209	203	236	133	202	210	247.3	215
	ppm Zn	ppm Zr	ppm Al	ppm Cr	ppm Ti	Cu	Ø 40x30 mm										
	217.3	42.2	(181.5)	(400)	(4.5)	Rest	Reinkupfer 99.5; Pure Copper 99.5										

CRM	Sn	Zn	Pb	Fe	Ni	Bi	As	Sb	P	S	Cd	Mg	Ag	Co	Cr	Al	Si	Be
B 366	0.0111	0.00156	0.00108	0.00234	0.00032	-	0.000111	0.000099	0.0263	0.00087	0.000027	-	0.00079	-	-	-	-	-
B 369	-	0.00220	-	-	-	0.00097	-	-	-	-	-	0.000360	-	0.00104	0.00092	-	-	-
B 370	0.00168	-	0.00158	-	-	-	-	0.00156	0.00117	-	-	-	-	-	-	0.00126	0.00187	-
B 371	-	-	-	0.00183	-	-	-	-	-	0.00121	0.000163	-	-	-	-	-	-	0.00115
B 372	-	-	-	-	0.001166	-	0.00103	-	-	-	-	-	0.00090	-	-	-	-	-
B 373/1	-	-	-	-	-	-	-	-	0.00338	-	-	-	-	-	-	-	-	-
B 373/2	-	-	-	-	-	-	-	-	0.02265	-	-	-	-	-	-	-	-	-
B 373/3	-	-	-	-	-	-	-	-	0.04557	-	-	-	-	-	-	-	-	-

Te Ti Zr Mn Cu Ø 40x30 mm, B 373/1-373/3 Ø 50x30 mm

-	-	-	-	Rest	Reinkupfer
-	-	-	-	Rest	Pure Copper
-	-	-	-	Rest	
0.00144	0.00129	-	-	Rest	
-	-	0.00058	0.00114	Rest	
-	-	-	-	Rest	
-	-	-	-	Rest	
-	-	-	-	Rest	

RM	ppm Ag	ppm As	ppm Bi	ppm Cd	ppm Fe	ppm Ni	ppm Pb	ppm Sb	ppm Se	ppm Sn	ppm Te	ppm Zn	ppm Co	ppm B	ppm Mn	ppm S	ppm Cr
IM CS1	53.1	2.3	1.1	1.0	18.4	46.8	60.5	3.0	61.5	52.9	2.1	24.1	0.6	(1.1)	29.0	65.9	(0.3)
IM CS2	45.6	7.9	6.2	7.4	30.5	26.7	38.6	7.5	39.0	33.7	5.6	8.9	3.6	(2.8)	35.3	44.9	35.8
IM CS3	38.9	13.8	12.2	13.4	28.3	11.1	13.3	13.0	15.4	13.3	10.6	31.3	7.4	(4.2)	12.6	18.8	10.9
IM CS4	237.0	42.2	39.6	35.5	82.0	7.2	7.6	36.8	6.7	6.2	32.9	44.0	24.3	(21.7)	8.3	41.0	7.0
IM CS5	320.0	70.5	59.7	66.1	90.9	4.4	5.0	63.9	0.9	0.85	49.9	100.6	37.5	(35.2)	4.3	12.0	1.0

ppm P ppm Si Cu Ø 40x25 mm

57.7	(3.0)	Rest	Reinkupfer
33.8	(9.4)	Rest	High Purity Copper
12.1	(22.2)	Rest	
6.3	(46.5)	Rest	nur Satz/set only
2.0	(54.8)	Rest	

RM	ppm Ag	ppm As	ppm Bi	ppm Cd	ppm Fe	ppm Ni	ppm Pb	ppm Sb	ppm Se	ppm Sn	ppm Te	ppm Zn	ppm Co	ppm B	ppm Mn	ppm S	ppm Cr
IM CS6	8.5	0.20	<0.5	(0.06)	20.8	0.8	(0.4)	1.0	<1.0	10.6	<0.05	1.4	(0.20)	<0.5	0.7	5.4	0.2
IM CS7	13.7	0.9	<0.5	(0.02)	4.9	4.4	0.9	1.0	<1.0	0.5	<0.05	1.2	0.09	<0.5	2.2	7.0	19.7

ppm P ppm Si Cu Ø 40x25 mm

(1.5)	-	Rest	Reinkupfer
2.4	<1.0	Rest	High Purity Copper

B R E I T L Ä N D E R - E I C H P R O B E N

Reinkupfer

(Pure Copper)

3.1.4

CRM	ppm Al	ppm Ni	ppm Fe	ppm Mn	ppm Zn	ppm Ag	ppm As	ppm Bi	ppm Cd	ppm Co	ppm Cr	ppm Mg	ppm Pb	ppm S	ppm P	ppm Sb	ppm Se	ppm Si
B M381	-	0.73	2.8	0.27	5.22	<1	<1	<1	<0.4	<0.4	0.13	(0.34)	0.5	(2.9)	-	<1.5	<1	<5
B M382	(1.5)	1.70	6.0	0.76	6.3	1.88	(0.53)	0.55	0.88	0.75	0.54	1.40	1.03	(2.8)	-	0.72	0.57	<5
B M383	(2.3)	3.59	10.9	1.24	(7.8)	4.70	1.93	1.02	1.48	1.37	1.03	2.37	1.31	(2.8)	-	1.44	(1.16)	<10
B M384	13.0	5.7	32.8	6.88	(12.7)	10.3	5.0	3.34	3.95	3.88	6.53	14.6	5.7	(4.1)	-	12.0	4.24	(5.0)
B M385	28.6	11.9	45.4	10.1	57.9	28.6	11.4	5.81	5.8	6.93	9.81	29.1	11.3	31.3	12.9	19.9	7.2	(7.2)
B M386	36.5	25.0	64.7	13.3	49.5	47.4	24.2	9.6	7.8	5.20	12.4	36.1	23.4	21.9	7.2	31.2	11.6	(14.3)

ppm Sn	ppm Te	ppm Ti	ppm Zr	Cu	Ø 40x30 mm
4.00	-	<0.5	<9	Rest	Reinkupfer RM
4.5	0.62	0.66	<8	Rest	Pure Copper RM
4.7	1.40	1.56	<9	Rest	
(10.2)	7.0	(2.10)	<9	Rest	
18.0	10.0	3.83	(<7)	Rest	
28.3	38.3	33.1	(8.9)	Rest	

RM	ppm Ag	ppm Al	ppm As	ppm B	ppm Be	ppm Bi	ppm Cd	ppm Co	ppm Cr	ppm Fe	ppm Mg	ppm Mn	ppm Ni	ppm P	ppm Pb	ppm S	ppm Sb	ppm Se
KM 4700	465	<1	100	87	<1	66	50	202	14	93	26	2	21	<1	656	22	11	126
KM 4701	394	17	16	<1	<1	27	95	19	22	35	<1	36	120	463	6	47	186	14
KM 4702	201	<1	24	<1	<1	<1	10	40	5	319	<1	3	194	163	514	210	137	23
KM 4703	293	<1	41	<1	<1	49	<1	66	69	686	<1	7	106	156	418	94	3	49
KM 4705	66	<1	103	<1	<1	10	<1	211	58	8	15	66	563	9	191	38	95	187
KM 4707	51	<1	204	<1	72	<1	1	542	36	199	93	1	79	446	52	28	29	93
KM 4708	39	38	385	<1	<1	88	44	636	19	85	<1	12	376	22	22	17	3	9
KM 4709	22	16	291	<1	46	2	17	312	39	60	64	107	30	593	11	14	11	<1

ppm Si	ppm Sn	ppm Te	ppm Zn	ppm Zr	Cu	Ø 40x30 mm
156	1	53	75	<1	Rest	Reinkupfer, Spuren
53	568	9	65	<1	Rest	Pure Copper, traces
102	28	2	5	<1	Rest	
10	36	25	150	<1	Rest	
41	91	160	139	<1	Rest	
2	270	113	415	<1	Rest	
34	347	45	18	<1	Rest	
13	440	76	2	135	Rest	

RM	ppm Ag	ppm Al	ppm As	ppm B	ppm Bi	ppm Cd	ppm Co	ppm Cr	ppm Fe	ppm Li	ppm Mg	ppm Mn	ppm Ni	ppm P	ppm Pb	ppm S	ppm Sb	ppm Se
OK Cu/171	33	25	100	-	0.2	<1	<1	100	99	-	<1	<1	3	<0.2	93	6	33.5	<1
OK Cu/172	104	1.1	6.3	-	97	<1	<1	<1	33	-	<1	<1	32	<0.2	32	7	94	<1
OK Cu/173	18	91	4.5	100	28	<1	30	29	4	69	100	<1	4	89	4.4	3.8	<2	<1
OK Cu/174	17	1.2	29	-	<0.2	77	<1	<1	4.7	-	2	100	99	0.35	1.1	35	<2	38
OK Cu/175	16	2.4	4.3	(30)	<0.2	15	99	<1	3.8	125	26	<1	3	31.5	1	89	<2	90
OK Cu/176	21	<1	<2	<5	0.3	<1	<1	<1	2	-	2	<1	<1	<1	<1	10.5	<2	<1
OK Cu/182	10.9	0.5	0.28	-	<0.02	<0.01	0.02	0.19	2.7	<0.1	0.2	0.11	0.35	<1	0.05	2	0.25	0.16

ppm Si	ppm Sn	ppm Te	ppm Ti	ppm Zn	ppm Zr	Cu	Ø 40x25 mm
<1	100	33	3.0	<1	23	Rest	Reinkupfer
96	0.7	<2	78	32	-	Rest	Pure Copper
4	30.0	0.3	<5.0	<1	-	Rest	
31.4	0.9	<0.5	20	60	80	Rest	
1	0.7	85	2.5	<1	-	Rest	
<1	<1	<2	<5.0	4	-	Rest	
<1	<0.05	0.05	-	1.14	(0.03)	Rest	

RM	ppm Sn	ppm Pb	ppm Zn	ppm Fe	ppm Ni	ppm As	ppm Bi	ppm Sb	ppm Co	ppm Ag	ppm Cd	ppm Si	ppm Mn	ppm Al	ppm Mg	ppm S	ppm P	ppm Cr
4 17866AE	700	52	2680	102	503	541	56	113	395	55	252	156	47	11	11	510	102	284
4 17867AB	53	58	(10)	9	339	417	122	145	3	117	173	10	3	(3)	(2)	41	(12)	(2)
4 17868AF*	150	400	30	20	200	200	250	200	10	300	30	-	20	<10	-	50	10	-
4 17869AD	197	455	1600	570	174	121	660	416	119	432	37	450	1120	109	68	107	449	290
4 17870AF	44	296	48	(9)	65	84	334	337	25	456	36	-	1.3	(4)	(1)	44	14	(2)
4 17871B	119	131	280	80	329	288	690	147	40	222	37	-	7	-	(5)	72	(5)	(5)

ppm Au	ppm Se	ppm Te	ppm In	Cu	Ø 40x17 mm, chill cast
55	30	270	518	Rest	Reinkupfer, Spuren
117	87	104	29	Rest	Pure Copper, traces
300	100	400	10	Rest	
432	300	380	158	Rest	*=Prov. Werte/Values
456	208	52	31	Rest	
51	360	101	-	Rest	

RM	Ag	Sn	Fe	As	Sb	Bi	Zn	Pb	Ni	P	S	Se	Te	Co	B	Ø 45x12 mm
IM CT1	0.057	0.24	0.17	0.32	0.33	0.018	0.28	0.013	0.48	0.082	0.054	0.062	0.053	0.051	0.024	Konverterkupfer
IM CT2	0.042	0.14	0.10	0.22	0.24	0.013	0.19	0.086	0.29	0.059	0.036	0.041	0.036	0.033	0.033	Converter Copper
IM CT3	0.026	0.070	0.083	0.11	0.11	0.0067	0.11	0.31	0.12	0.038	0.012	0.018	0.022	0.013	0.00093	
IM CT4	0.016	0.025	0.045	0.050	0.049	0.0043	0.045	0.88	0.049	0.020	0.0060	0.011	0.011	0.011	0.0042	
IM CT5	0.0062	0.0070	0.016	0.0056	0.010	0.0011	0.0098	(1.48)	0.0095	0.0059	0.0024	0.0069	0.0064	0.0061	(0.011)	

RM	Cu	Pb	Zn	Fe	Ni	As	Bi	Sb	Co	Ag	Cd	Te	Mn	Sn	5x (3x80 mm) Cr	Se	O
4 CuC1A	(99.9)	0.00004	0.00015	0.00020	0.00008	<0.00010	0.00002	<0.00010	<0.00010	0.00078	<0.00001	0.00004	<0.00010	0.00007	<0.00010	0.00007	-
4 CuC1B	(99.9)	0.00008	0.000045	0.00012	0.00010	0.00008	0.00001	0.00006	0.000003	0.0013	<0.000001	0.00003	0.00012	<0.00003	0.000006	-	-
4 CuC1C	(99.9)	(0.000004)	<0.000005	0.00018	0.000025	0.000018	0.00001	0.00001	<0.000001	0.0011	<0.000001	(0.00002)	(0.005ppm)	(0.01ppm)	<0.005ppm	(0.2ppm)	267ppm
4 CuC4	(99.9)	0.00230	0.00220	0.00190	0.00290	0.00190	0.00050	0.00090	0.00030	0.00210	0.00080	0.00080	0.00027	0.00210	0.00030	-	-
4 CuC6	(99.9)	0.01110	0.00400	0.01070	0.01660	0.00980	0.00220	0.00450	0.00330	0.01040	0.00320	0.00300	0.00003	0.01200	0.00010	-	-

Diese Referenzmaterialien in Drahtform sind bestimmt für Kugelfunken Spektrometer; This reference material in wire form is intended for global arc work.

RM	Cr	Sn	Fe	Ni	Si	Mn	Cd	Pb	Co	Al	S	Ag	Mg	Zr	Cu	Ø 45x20 mm, wrought
4 CCR1C	0.855	<0.005	0.015	<0.005	0.01	<0.001	-	0.002	-	0.014	0.002	-	0.001	0.11	Rest	Cr-Kupfer
4 CCZA	0.667	0.0045	0.033	0.0084	0.0031	0.008	0.0027	0.0023	0.0012	0.0003	0.001	0.0019	-	0.049	Rest	Cr-Copper Ø 50x17 mm
4 274A	0.531	0.014	0.0779	2.54	0.594	0.0148	-	0.0021	0.0028	0.0013	0.0035	-	-	<0.005	Rest	Ø 46x17 mm

RM	Cu	Sn	Fe	Ni	Zn	As	Sb	Pb	Bi	P	Ag	Ø 40x13 mm
IM CM1	(99)	0.60	0.020	0.010	0.021	0.010	0.012	0.015	0.0070	0.015	0.010	Sn-Kupfer
IM CM2	(99)	0.88	0.0080	0.0050	0.0067	0.0068	0.0076	0.010	0.0059	0.0060	0.0060	Sn-Copper
IM CM3	(98)	1.10	0.0040	0.0027	0.0058	0.0034	0.0046	0.0070	0.0029	0.0042	0.0027	
IM CM4	(98)	1.57	0.0025	0.0010	0.0020	0.0012	0.0023	0.0040	0.00081	0.00080	0.0014	nur Satz/set only
IM CM5	(98)	1.14	0.012	0.015	0.016	0.017	0.020	0.020	0.010	0.020	0.0094	

3.1.6

CRM Cu ppm O Ø 26x9 mm
H 022B (99.9) 138 Elektrolytkupfer; Copper, electrolytic, Ø 9x50 mm

CRM Cu ppm O Ø 40x30 mm
B 379/1 Rest 38 O in Reinkupfer
B 379/2 Rest 212 O in Pure Copper
B 379/3 Rest 378

CRM Cu ppm P ppm S Ø 40x30mm
H 017A (99.9) 7.0 10.4 Cu-deox.

H 017B Späne lieferbar; Chips available

RM Cu P Sn Pb Zn Ni Al Si As Mn Bi Sb Ø 40x15 mm, chill cast
4 CUP8 90.6 8.9 0.15 0.005 0.02 0.02 <0.002 <0.005 <0.005 <0.001 <0.005 <0.005 Kupfer/Copper, deox.

RM Cu P Sn Pb Zn Ni Fe Si Mn As Sb Bi Al Co Ag Te Ø 50x12 mm
5 CURM09.01 99.8 0.135 <0.001 <0.001 <0.001 <0.001 0.001 <0.001 <0.001 <0.001 <0.001 <0.0005 <0.0005 <0.0005 <0.012 <0.001 Kupfer, deoxid.
5 CURM09.02 99.8 0.078 <0.001 <0.001 <0.001 <0.0005 0.0042 <0.002 <0.0005 <0.001 <0.0005 <0.0005 <0.0005 <0.0005 <0.0055 <0.001 Copper, deoxid.
5 CURM09.03 99.8 0.06 <0.001 <0.001 <0.001 <0.001 0.002 <0.001 <0.001 <0.001 <0.001 <0.0005 <0.0005 <0.0005 0.013 <0.001
5 CURM09.04 99.8 0.0174 <0.001 <0.001 <0.001 <0.0005 0.0047 <0.002 <0.0005 <0.001 <0.0005 <0.0005 <0.0005 <0.0005 0.0033 <0.001
10 C09.05 Rest 0.027 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.0005 <0.001 <0.0005 <0.001 <0.001

RM	Cu	Fe	Pb	Sb	Bi	P	Ni	Sn	Al	Mn	Zn	Ø 40x13 mm, wrought			
IM MG1	91.14	0.0081	0.049	0.00077	0.00058	(0.0019)	0.048	0.0062	0.040	0.0013	Rest	Messing, Spuren			
IM MG2	90.08	0.0067	0.0048	(0.00084)	0.00039	0.0012	0.0022	0.018	(0.0026)	0.0007	Rest	Brass, trace elements			
IM MG3	93.19	0.062	0.015	0.0026	0.0014	0.018	0.013	0.033	0.020	0.0096	Rest				
IM MG4	94.00	0.091	0.008	0.0045	0.0017	0.012	0.0042	0.023	-	0.024	Rest	nur Satz/set only			
IM MG5	95.09	0.149	0.0054	0.0061	0.0026	0.0069	0.0021	0.013	0.0011	0.0036	Rest				
IM MG6	92.27	0.028	0.031	0.0015	0.00088	0.0026	0.030	0.053	0.0067	0.045	Rest				
RM	Cu	Si	Fe	P	Sb	Bi	Sn	Pb	Al	As	Zn	Ø 40x12 mm, wrought			
IM WC1	75.10	0.26	0.031	0.015	0.0034	0.0028	0.0032	0.0046	0.0034	0.0043	Rest	Messing, Spuren			
IM WC2	75.05	0.41	0.015	0.011	0.0023	0.0020	0.0025	0.031	0.0016	0.0024	Rest	Brass, trace elements			
IM WC3	75.28	0.89	0.021	0.0058	0.0010	0.00093	0.0011	0.0085	0.0018	0.0011	Rest				
IM WC4	75.32	0.76	0.0067	0.0048	0.00080	0.00047	0.0010	0.0051	0.00096	-	Rest	nur Satz/set only			
IM WC5	75.03	0.48	0.18	-	0.0011	0.0019	0.0044	0.0055	0.00084	0.0022	Rest				
IM WC6	75.32	0.58	0.051	0.0037	0.00057	0.0012	0.0028	0.0036	0.0019	0.00097	Rest				
RM	Cu	Sb	P	Si	As	Fe	Sn	Pb	Bi	Mn	Ni	Zn	Ø 40x12 mm, wrought		
IM MD1	67.92	0.0096	0.0082	0.078	0.0015	0.043	0.0013	0.19	0.0026	0.097	0.021	Rest	Messing, Spuren		
IM MD2	68.99	0.0011	0.0061	0.059	0.072	0.18	0.0054	0.015	0.0025	0.082	0.050	Rest	Brass, trace elements		
IM MD3	69.43	0.012	0.0043	0.097	0.055	0.086	0.010	0.010	0.0018	0.062	0.070	Rest			
IM MD4	71.53	0.0038	-	0.0066	0.038	0.018	0.21	0.054	0.00053	0.015	0.091	Rest	nur Satz/set only		
IM MD5	71.06	0.0065	0.00089	0.016	0.018	0.081	0.021	0.0023	-	0.017	0.064	Rest			
IM MD6	70.77	0.00058	-	-	(0.00022)	-	0.019	0.044	0.000044	0.00073	0.039	Rest			
RM	Cu	Sn	Pb	Ni	Fe	Si	Mn	As	Sb	Bi	Al	Zn	Ø 50x10 mm, chill cast		
10 C38.01 (61)	0.20	0.20	0.02	0.01	<0.001	0.009	0.03	0.02	0.02	<0.001	0.003	Rest	Messing, Spuren		
10 C38.02 (61)	0.10	0.10	0.04	0.09	0.01	0.14	0.06	0.06	0.06	0.006	0.005	Rest	Brass, trace elements		
10 C38.03 (61)	0.05	0.06	0.13	0.05	0.07	0.07	0.08	0.08	0.08	0.008	0.07	Rest			
10 C38.04 (61)	0.02	0.03	0.06	0.05	0.12	0.22	0.04	0.12	0.12	0.008	0.02	Rest			
10 C38.05 (61)	0.01	0.02	0.18	0.008	0.14	0.02	0.01	0.01	0.01	0.01	0.12	Rest			
10 C38.06 (61)	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	Rest			
RM	Cu	Sn	Pb	Fe	Ni	Al	Si	As	Mn	Bi	Sb	B	C	Zn	Ø 40x15-18 mm, chill cast
4 TB1H	62.2	0.22	0.27	0.070	0.23	0.18	0.088	0.19	0.35	0.053	0.13	-	-	Rest	Messing, Spuren
4 TB2G	61.97	0.105	0.107	0.072	0.093	0.084	0.042	0.101	0.088	0.031	0.051	0.0005	0.0040	Rest	Brass, trace elements
4 TB3J	62.98	0.075	0.110	0.032	0.0401	0.0247	0.0226	0.0496	0.0350	0.0214	0.026	0.0004	0.0023	Rest	
4 TB4F	65.00	0.056	0.0225	0.229	0.0114	(0.0004)	(0.0027)	0.0065	0.0021	0.0056	0.0064	-	0.0018	Rest	

CRM	Cu	Zn	Ni	ppm Fe	ppm Mn	ppm Sn	ppm Pb	40x30 mm
B EB387	75.18	19.57	5.020	617	796	30.1	10.8	CuZn20Ni5
B EB388	89.27	4.81	73.6ppm	303	512	8570	9.69	CuAl5Zn5Sn

RM Cu Zn Ø 40x18 mm, cast

IM MB1	Cu	Zn	Binärmessing
IM MB1	60.66	39.39	Binärmessing
IM MB2	67.17	32.80	Brass, binary
IM MB3	73.26	26.67	
IM MB4	78.77	21.20	
IM MB5	84.25	15.63	
IM MB6	90.07	9.95	
IM MB7	95.00	4.99	

RM Cu Zn Sn Pb Fe Ni Al Si As Mn Bi Sb P S B Ø 40x15 mm, chill cast

4 B1N	56.7	43.76	0.234	0.039	0.0193	0.0089	0.0011	0.0141	0.0029	0.0022	0.0044	0.0040	0.0184	(0.0013)	0.0019	Binärmessing
4 B2L	60.3	39.57	0.151	0.0129	0.0191	0.0125	0.0172	(0.007)	0.0222	0.0249	0.0107	0.0207	-	-	0.0056	Brass-Binaries
4 B3K	65.80	33.89	0.00268	0.024	0.065	0.059	0.0114	0.017	0.0200	0.0187	0.0127	0.0096	-	-	0.0031	
4 B4K	69.46	30.40	0.0075	0.0071	0.016	0.0119	<0.002	<0.005	0.0015	0.0003	(0.0009)	(0.0009)	-	-	0.0015	
4 B5J	76.01	23.90	(0.015)	(0.016)	(0.015)	(0.015)	<0.002	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	
4 B6J	80.61	19.4	<0.005	<0.005	(0.01)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	
4 B7J	84.80	15.01	0.101	0.010	0.018	0.020	<0.005	<0.005	0.0016	0.0002	0.066	0.0019	-	-	0.0030	
4 B8H	90.28	9.52	0.035	0.072	0.0267	0.0083	(0.0013)	0.0051	0.0081	0.0012	0.031	0.0108	-	-	0.0021	
4 B9K	95.20	4.79	(0.0025)	0.0051	0.0028	0.0101	<0.002	(0.0006)	(0.0005)	(0.0001)	<0.001	<0.001	-	-	(0.0007)	
4 B95	94.4	4.99	0.45	<0.001	(0.007)	<0.001	<0.005	(0.01)	(0.008)	<0.001	(0.007)	<0.001	-	-	<0.001	

CRM Cu Fe Sn Pb Al Ni Mn Sb P Bi Zn Ø 40x25 mm

MT M231	(54.9)	0.56	1.42	2.7	0.73	1.11	0.76	0.010	0.011	(0.0037)	(37.3)	Messing, Hauptelemente
MT M232	(56.3)	0.42	1.12	2.47	0.43	0.68	2.47	0.012	0.015	(0.0027)	(35.8)	Brass, major elements
MT M233	(60.5)	0.72	0.93	2.06	1.05	0.41	2.31	0.032	0.020	(0.0053)	(32.0)	
MT M234	(61.7)	0.99	0.59	1.20	0.83	1.43	1.97	0.053	0.031	(0.0101)	(31.1)	nur Satz/set only
MT M235	(59.7)	1.15	0.33	0.84	0.40	2.01	0.95	0.027	(0.038)	(0.0027)	(34.2)	
MT M236	(57.5)	(1.73)	1.33	0.51	(0.04)	0.77	1.34	0.135	(0.014)	(0.0014)	(36.7)	

RM Cu Sn Zn Ø 40x12 mm, wrought

IM ME2	Cu	Sn	Zn	Messing, Hauptelemente
IM ME2	71.29	0.87	Rest	Messing, Hauptelemente
IM ME3	70.70	1.11	Rest	Brass, main elements
IM ME4	69.40	1.21	Rest	
IM ME5	68.35	1.42	Rest	nur Satz/set only

RM Cu Mn Ni Fe Sn Pb Zn Ø 40x15 mm, chill cast

4 B10K	59.3	0.217	1.51	1.83	(0.012)	(0.032)	36.7	Messing, Hauptelemente
4 B11G	62.2	1.09	1.01	0.88	(0.010)	(0.041)	36.2	Brass, main elements
4 B12F	61.4	2.16	0.55	0.45	(0.008)	(0.053)	35.1	
4 B13F	54.4	2.75	0.196	0.187	(0.005)	(0.033)	42.3	

RM Cu Si Al Sn Sn Pb Zn Ø 40x15 mm, chill cast

4 B14F	58.9	0.055	4.22	0.52	0.52	(0.025)	36.2	Messing, Hauptelemente
4 B15G	57.8	0.095	3.19	1.04	1.04	(0.014)	37.7	Brass, main elements
4 B16G	58.0	0.20	2.04	2.17	2.17	(0.04)	37.4	
4 B17F	60.0	(0.007)	6.05	0.010	0.010	(0.05)	(33.9)	

RM	Cu	Sn	Pb	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Zn	Ø 40x15 mm, chill cast		
4 B18J	59.82	0.046	0.916	0.193	0.0143	0.0236	0.018	0.0196	0.0010	0.0051	0.0129	0.0117	<0.005	39.11	Messing, Hauptelemente		
4 B19N	58.84	0.0096	2.495	0.0123	0.0557	0.0120	0.0195	0.0048	0.0071	0.0080	0.0044	0.0126	<0.001	38.52	Brass, main elements		
4 B20M	57.9	(0.06)	5.39	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	-	-	(36.4)			
RM	Cu	Sn	Pb	Ni	Fe	Al	Si	Mn	As	Bi	Sb	P	S	Cr	Cd	Zn	chill cast Ø 40x15 mm
4 B21D	69.24	0.132	0.120	0.107	0.124	0.121	0.147	0.0647	0.108	0.114	0.130	0.100	(0.002)	-	-	29.50	Messing, Hauptel. Brass, main elem.
4 B22E	80.77	0.209	0.209	0.166	0.168	0.125	0.171	0.097	0.169	0.193	0.173	0.157	0.104	-	-	17.32	
4 B23C	89.1	0.055	0.039	0.041	0.049	0.081	0.05	0.057	0.056	0.058	0.054	0.046	0.055	-	-	(10.0)	
4 B24C	95.5	0.016	0.017	0.021	0.017	0.010	(0.009)	0.013	0.021	0.022	0.020	0.010	0.051	-	-	4.14	
4 B25A	58.5	0.49	0.32	0.19	0.08	0.39	0.09	0.12	0.037	0.054	0.044	0.01	<0.005	-	-	Rest	
4 B26C	62.60	1.566	1.08	1.48	1.29	1.123	0.46	0.337	0.108	0.123	0.075	0.0374	(0.0013)	-	-	29.68	
4 B27B	80.65	0.985	0.492	0.0315	0.111	0.0015	0.0044	0.0059	0.048	0.0320	0.0243	0.0150	0.0080	-	-	17.65	
4 B28A	64.1	0.012	0.080	0.080	0.048	0.032	-	0.092	-	-	-	(0.01)	(0.001)	0.070	0.0065	35.5	Prov. Werte/Values

RM	Cu	Sn	Pb	Ni	Fe	Si	Mn	As	Sb	Bi	Al	Zn	Ø 50x10 mm, chill cast	
10 C30.01	51.5	<0.01	0.06	<0.01	0.05	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest	Messing, Hauptelemente	
10 C30.02	55.6	<0.01	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest	Brass, main elements	
10 C30.03	60.2	<0.01	<0.01	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.04	64.8	<0.01	<0.01	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.05	70.0	<0.01	<0.01	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.06	75.0	<0.01	<0.01	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.07	79.8	<0.01	<0.01	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.08	85.1	<0.01	<0.01	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.09	90.2	<0.01	<0.01	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.10	95.3	<0.01	<0.01	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
5 CURM30.11	59.86	<0.002	0.005	1.70	0.002	<0.001	0.23	<0.001	<0.001	<0.002	<0.002	38.4		
10 C30.12	61.4	<0.01	<0.01	0.52	<0.005	<0.005	1.0	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.13	60.6	<0.01	<0.01	<0.01	<0.005	<0.005	1.9	<0.005	<0.005	<0.002	<0.002	Rest		
10 C30.14	59.7	<0.01	<0.01	0.99	<0.005	<0.005	2.6	<0.005	<0.005	<0.002	<0.002	Rest		
5 CURM30.15	60.66	<0.002	<0.005	<0.001	0.50	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	38.88		
5 CURM30.16	60.53	<0.002	<0.005	<0.001	1.14	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	38.33		
10 C30.17	61.7	<0.01	<0.01	<0.01	1.6	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
5 CURM30.18	63.66	0.58	<0.005	<0.001	0.006	0.131	<0.001	<0.005	<0.001	<0.001	3.28	32.33		
10 C30.19	67.4	1.1	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	5.0	Rest	
5 CURM30.20	61.46	0.40	<0.002	<0.001	<0.005	0.17	<0.001	<0.001	<0.002	<0.002	2.32	35.71		
10 C30.21	59.2	2.0	<0.01	<0.01	<0.005	0.22	<0.005	<0.005	<0.005	<0.002	1.7	Rest		
10 C30.22	58.2	<0.01	1.0	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		
5 CURM30.23	58.58	<0.005	2.21	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	39.25		
5 CURM30.24	58.33	<0.002	3.31	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	38.32		
10 C30.25	57.3	<0.01	4.8	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	Rest		

RM	Cu	Sn	Pb	Fe	Ni	Mn	Si	Sb	As	Mg	P	Be	Zn	Ø 60x6 mm, chill cast	
8 UZ51	83.7	1.52	0.19	0.10	0.155	<0.01	-	-	-	-	-	-	14.2	Messing	
8 UZ52-3	81.1	1.06	0.11	0.31	0.084	0.002	0.12	0.08	-	0.04	0.068	0.018	17.0	Brass	
8 UZ53	82.5	0.205	0.025	0.255	0.025	(<0.001)	0.15	-	0.01	-	0.055	-	16.7		

B R E I T L Ä N D E R - E I C H P R O B E N

Messing

(Brass)

3.2.4

RM	Cu	Sn	Pb	Fe	Ni	Mn	Al	Si	Sb	As	P	Ag	Zn	Ø 60x6 mm, chill cast
8 L1	58.85	0.053	0.057	0.02	0.106	-	-	0.383	-	-	-	-	40.55	Messing
8 L2	61.15	0.50	0.40	0.20	0.70	0.35	0.50	0.20	-	-	-	-	35.15	Brass
8 L3	62.5	1.5	1.0	0.40	0.90	0.20	1.0	0.03	-	-	-	-	32.5	
8 L4-1	61.07	0.7	2.0	0.47	0.20	0.1	0.1	0.12	-	-	-	-	34.5	
8 L5	60.5	1.0	3.0	0.90	0.50	0.60	0.30	0.50	0.1	0.1	-	-	32.5	
8 L6	66.5	0.250	0.205	0.085	1.21	0.055	0.141	1.25	-	-	-	-	30.3	
8 L7-1	55.5	0.06	0.7	<0.05	<0.05	0.60	0.30	0.12	-	-	-	-	43.0	
8 L20	85.5	0.56	0.27	0.11	0.205	0.051	0.012	0.042	-	0.122	-	-	13.15	
8 L21	82.5	1.5	0.20	<0.10	0.15	<0.01	<0.02	<0.05	-	0.10	-	-	15.5	
8 L22	84.3	1.0	0.10	0.20	0.10	<0.01	0.02	<0.05	0.10	-	0.05	<0.0	15.0	
8 L23	81.5	0.20	0.06	0.25	<0.05	<0.01	<0.02	0.25	-	0.05	-	-	18.0	

RM	Cu	Sn	Pb	Fe	Ni	Mn	Al	Si	Zn	Ø 60x6 mm, chill cast
8 LH1	64.10	0.15	0.15	4.55	0.50	5.25	7.93	0.17	17.12	Al-Messing
8 LH2	61.82	0.055	0.080	2.98	3.0	3.65	6.20	0.086	22.10	Al-Brass
8 LH5	65.90	0.12	0.18	1.18	1.57	1.23	4.26	0.11	25.49	
8 LH6-1	63.11	0.257	0.25	3.13	3.19	4.54	6.09	0.20	19.10	
8 LH7-1A	63.35	0.227	0.327	(2.35)	0.70	2.96	3.16	0.055	(26.90)	
8 LH10	58.95	0.203	1.76	(1.0)	1.49	3.57	2.66	1.30	29.0	
8 LH11	66.80	0.44	1.26	0.36	2.91	0.71	0.46	0.88	26.20	
8 LH12	64.0	0.80	0.20	1.5	0.50	0.10	1.0	0.05	31.85	
8 LH13	57.0	1.20	0.60	2.2	3.2	3.0	2.0	0.20	30.6	

RM	Cu	Sn	Pb	Fe	Ni	Mn	Al	Si	Zn	Ø 60x6 mm, chill cast
8 UZHR4	66.85	0.40	0.22	1.38	0.52	4.30	2.90	0.06	23.4	Al-Messing
8 UZHR7	59.70	-	<0.005	3.65	<0.005	4.00	6.80	0.01	25.80	Al-Brass
8 UZHR9	60.20	-	<0.005	2.20	<0.005	5.90	3.85	0.01	27.70	

RM	Cu	Al	As	Fe	Mg	Bi	Ni	Mn	Cd	Pb	Sn	Sb	Cr	P	Si	Zn	Ø 40x32 mm
IM WO1	79.09	1.40	0.057	0.13	0.00068	0.00028	0.0045	0.014	0.013	0.15	0.012	0.0077	0.011	0.0025	0.044	Rest	Al-Messing
IM WO2	77.88	1.77	0.041	0.049	0.0068	0.0016	0.027	0.15	0.032	0.098	0.058	0.0013	0.0092	0.0086	0.014	Rest	Al-Brass
IM WO3	77.63	2.14	0.014	0.028	0.0046	0.0046	0.10	0.051	0.038	0.053	0.0071	0.0036	0.0026	0.0056	-	Rest	
IM WO4	76.21	2.50	0.030	0.022	0.013	0.0094	0.067	0.074	0.0064	0.020	0.13	0.0059	0.00034	0.013	0.0016	Rest	nur Satz/set only

CRM	Cu	Sn	Pb	Fe	Ni	Mn	As	P	S	Mg	Al	Si	Zn	Ø 40x30 mm
B 368	77.049	0.0147	0.0131	0.0193	0.0258	0.0203	0.0246	0.00899	(0.0019)	0.00621	1.972	(0.013)	Rest	CuZn20Al2

RM	Cu	Sn	Pb	Ni	Fe	Si	Mn	As	Sb	Bi	Al	Zn	Ø 50x10 mm, chill cast
5 CURM43.01	74.36	0.0116	<0.002	0.121	0.008	0.063	0.064	0.118	<0.001	<0.002	2.75	22.44	Al-Messing
5 CURM43.02	76.21	0.060	0.064	0.068	0.128	0.038	0.035	0.083	<0.001	<0.001	2.40	20.82	Al-Brass
10 C43.03	80.0	<0.01	0.11	<0.003	0.044	<0.005	<0.002	<0.005	<0.01	<0.005	1.41	Rest	

CRM	Cu	Pb	Fe	Sn	Ni	Zn	Ø 31x19 mm, wrought
3 1107	61.21	0.18	0.037	1.04	0.098	37.34	Schiffsmessing; Naval Brass

CRM	Cu	Sn	Pb	Fe	Ni	Sb	Bi	P	Mn	Al	Si	Zn	Ø 40x25 mm					
IM WK1	59.97	0.11	0.17	0.28	0.28	0.024	0.014	0.030	0.13	0.11	0.30	Rest	Schiffsmessing					
IM WK2	60.54	1.34	0.33	0.18	0.21	0.018	0.011	0.017	0.088	0.080	0.29	Rest	Naval Brass					
IM WK3	62.09	0.48	0.11	0.066	0.13	0.012	0.0058	0.017	0.048	0.045	0.16	Rest						
IM WK4	63.25	1.04	0.050	0.085	0.070	0.0068	0.0052	0.010	0.020	0.013	0.052	Rest	nur Satz/set only					
IM WK5	64.92	0.47	0.0062	0.0092	0.0055	0.0027	0.0011	0.0058	0.0055	0.0042	0.0084	Rest						
RM	Cu	Sn	Pb	Ni	P	Fe	Si	Mn	As	Sb	Bi	Al	S	Zn	Ø 50x12 mm, chill cast			
5 CURM42.21	66.78	0.60	0.259	0.120	0.087	0.119	0.15	<0.001	<0.003	0.25	0.013	0.003	0.034	31.61	Schiffsmessing			
5 CURM42.22	70.46	1.10	1.10	0.061	0.177	0.23	0.042	0.122	0.217	0.173	0.046	0.042	<0.001	26.32	Naval Brass			
5 CURM42.23	74.36	1.63	0.575	0.168	0.128	0.354	0.015	0.019	0.168	0.356	0.034	0.008	0.045	22.13				
5 CURM42.24	62.45	2.25	0.91	0.025	0.226	0.066	0.093	0.065	0.065	0.060	0.054	0.067	0.012	33.75				
5 CURM42.25	56.91	2.60	0.006	0.002	0.05	0.001	-	0.15	0.12	0.009	0.001	0.01	0.005	40.14				
RM	Cu	Pb	Sn	Mn	Al	Fe	Ni	P	As	Si	Sb	S	Zn	Ø 38x12 mm, wrought				
6 464A	60.6	0.056	0.62	0.0002	(0.001)	0.013	0.004	0.012	<0.002	<0.01	(0.001)	0.001	38.73	CDA 464	Schiffsmessing			
6 482A	60.0	0.50	0.65	<0.002	(0.003)	0.020	(0.007)	<0.003	<0.002	(0.002)	0.0012	<0.002	38.8	CDA 482	Naval Brass			
RM	Cu	Sn	Pb	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	Zn	Ø 40x15 mm, cast				
4 NB1	69.4	0.48	0.54	0.014	0.10	<0.005	<0.005	0.16	0.13	<0.005	<0.005	0.033	(29.1)	Schiffsmessing				
4 NB2	68.93	1.06	0.293	0.095	0.065	0.085	0.096	0.105	0.116	0.052	0.115	0.091	28.82	Naval Brass				
4 NB3	72.4	1.50	0.10	0.18	0.03	0.11	0.15	0.05	0.11	0.06	0.25	0.17	25.1					
4 NB4	62.8	2.06	0.08	0.226	0.166	0.20	0.20	<0.005	0.006	0.14	0.35	0.31	(33.3)					
CRM	Cu	Fe	Pb	Ni	Mn	Cd	Sb	Sn	Ag	As	Bi	P	Al	Te	Be	Si	Zn	chill c. Ø 39x25mm
IM MH1	65.93	0.017	0.0065	0.26	0.035	0.026	0.0004	0.14	0.0029	0.067	0.0037	0.016	0.0010	0.0004	0.0088	0.074	Rest	Kartusch.
IM MH2	68.25	0.027	0.021	0.22	0.011	0.018	0.024	0.097	0.011	0.041	0.0022	0.0055	0.019	0.0015	0.0015	0.054	Rest	Messing
IM MH3	71.28	0.081	0.078	0.10	0.085	0.0089	0.013	0.024	0.0065	0.016	0.0011	0.0035	0.0081	0.0046	0.0003	0.031	Rest	Cartridge
IM MH4	69.94	0.13	0.33	0.052	0.0017	0.0029	0.017	0.011	-	0.0011	0.0006	0.0022	0.0027	0.0035	0.0045	0.016	Rest	Brass
IM MH5	72.87	0.19	0.20	0.0072	0.072	0.0012	0.0035	0.0021	0.025	0.0038	-	0.0011	0.014	0.0047	0.00004	0.0039	Rest	Satz/set
RM	Cu	Sn	Pb	Zn	Ni	P	Fe	Si	Mn	As	Sb	Bi	Al	S	Mg	Cr	Cd	chill c. Ø 50x12mm
5 CURM48.01	66.98	<0.002	0.106	32.6	0.134	0.016	0.049	0.041	<0.001	0.067	0.047	0.038	<0.001	<0.001	0.0008	<0.0005	<0.0003	Kartusch.
5 CURM48.02	67.16	0.035	0.084	32.58	<0.001	0.012	0.053	0.010	0.067	0.025	0.037	0.004	0.013	0.007	<0.0005	0.004	<0.0005	Messing
5 CURM48.04	72.68	0.018	0.043	26.99	0.096	0.006	0.008	0.004	0.012	0.034	0.026	0.014	<0.001	0.011	0.0005	<0.002	<0.0003	Cartridge
5 CURM48.05	68.69	0.083	<0.003	31.0	0.117	0.007	0.066	0.026	0.016	<0.001	<0.0005	<0.0005	<0.002	0.013	<0.0005	<0.0005	<0.0003	Brass
CRM	Cu	Pb	Fe	Sn	Ni	Zn	Ø 31x19 mm, wrought											
3 1110	84.59	0.033	0.033	0.051	0.053	15.20	Rotgußmessing											
3 1111	87.14	0.013	0.010	0.019	0.022	12.81	Red Brass											

B R E I T L Ä N D E R - E I C H P R O B E N

Messing

(Brass)

3.2.6

CRM	Cu	Mn	Pb	Si	Sn	Sb	Al	Ni	As	Bi	Zn	Ø 40x25 mm					
MT 4337-88	50.1	4.42	-	0.33	0.91	0.33	-	0.26	0.069	0.008	42.8	Mn-Messing					
MT 4338-88	52.0	4.17	0.29	0.57	0.77	0.29	0.14	0.36	0.12	0.012	40.3	Mn-Brass					
MT 4339-88	-	3.04	0.66	0.21	0.63	0.15	0.92	1.19	0.058	-	-	nur Satz/set only					
MT 4340-88	55.0	3.09	0.79	-	0.31	0.082	0.50	0.68	0.040	0.039	38.5						
MT 4341-88	57.2	2.15	1.33	0.076	0.21	0.11	0.83	1.00	0.031	0.012	35.9						
CRM	Mn	Pb	Si	Sn	Sb	Fe	Al	P	Ni	Zn	Cu	Ø 40x25 mm					
MT 6365-92	1.33	2.99	0.26	0.78	0.051	1.06	1.13	0.054	0.67	(30.0)	Rest	Mn-Messing					
MT 6366-92	1.75	2.56	0.35	0.58	0.062	0.81	-	0.075	0.88	33.7	Rest	Mn-Brass					
MT 6367-92	2.31	1.72	0.47	0.41	0.081	0.62	0.58	0.096	1.14	33.3	Rest						
MT 6368-92	2.89	1.18	0.65	0.25	0.099	0.46	0.39	0.12	1.57	34.5	Rest	nur Satz/set only					
MT 6369-92	3.39	0.98	0.90	0.13	0.094	0.38	0.48	0.14	1.92	33.4	Rest						
RM	Cu	Mn	Fe	Pb	Sn	Ni	Bi	Sb	P	Zn	Ø 44x13 mm, wrought						
IM WF1	56.47	2.16	0.097	0.010	0.012	0.010	0.00059	0.00058	(0.0012)	Rest	Mn-Messing						
IM WF2	57.66	1.79	0.21	0.040	0.045	0.040	0.00091	0.0018	(0.0032)	Rest	Mn-Brass						
IM WF3	58.66	1.36	0.29	0.070	0.072	0.10	0.0015	0.0036	0.0075	Rest							
IM WF4	60.50	0.57	0.42	0.10	0.11	0.15	0.0021	0.0045	0.0095	Rest	nur Satz/set only						
IM WF5	58.77	0.52	0.68	0.14	0.16	0.18	0.0030	0.0061	0.014	Rest							
IM WF6	59.78	0.98	0.050	0.026	0.028	0.074	0.00095	-	0.0020	Rest							
RM	Cu	Sn	Pb	Fe	Ni	Al	Si	Mn	As	Sb	P	Co	Ag	Cr	C	Zn	Ø 40x15-18 mm, cast
4 MNB1C	67.77	0.105	1.44	0.268	0.053	0.599	0.128	0.188	-	-	-	-	-	-	-	29.37	Mn-Messing
4 MNB2C	63.02	0.319	1.02	0.66	0.118	0.268	0.233	2.23	-	-	-	-	-	-	-	32.19	Mn-Brass
4 MNB3D	68.20	0.549	0.458	1.306	0.208	0.98	1.36	2.77	0.0052	0.0054	0.0170	0.048	0.0103	-	-	24.10	
4 MNB4E	58.95	1.080	0.640	1.73	3.23	2.16	0.90	4.14	0.0068	(0.006)	0.0252	0.057	0.0171	-	-	27.12	
4 MNB5L	54.14	1.75	0.127	0.56	1.31	3.35	0.49	0.243	-	-	-	-	-	-	-	37.91	
4 MNB6B	70.8	0.007	0.04	0.27	0.26	0.005	(0.007)	0.84	-	-	-	-	-	-	-	(28.0)	
4 MNB11A	57.3	0.170	1.60	0.33	4.3	1.15	0.06	11.9	<0.001	0.006	0.018	0.0045	-	0.0050	0.008	57.3	Prov. Werte
4 MNB12A	56.1	0.225	1.95	0.33	0.47	0.78	0.01	17.9	0.002	0.006	0.020	0.0015	-	0.003	0.011	56.1	Prov. Values
RM	Cu	Si	Mn	Sn	Pb	Fe	Ni	Al	As	P	Mg	Sb	Co	Bi	Zn	Ø 43x20 mm, cast	
4 WSB1H	81.61	5.45	0.049	0.209	0.84	0.249	0.045	1.82	0.109	0.0151	0.0318	0.019	0.405	0.035	8.96	SiMn-Messing	
4 WSB2E	79.22	3.92	0.330	0.402	0.621	0.393	0.154	0.760	0.077	0.021	0.0098	0.0202	0.174	0.0102	13.94	SiMn-Brass	
4 WSB3D	81.14	3.44	1.06	0.607	0.397	0.22	0.371	0.509	0.053	0.033	(0.004)	0.028	0.129	0.0195	11.96		
4 WSB4L	85.4	4.48	1.72	0.83	0.204	0.90	0.255	0.417	0.025	0.048	-	0.080	0.074	-	5.49		
4 WSB5C	90.06	6.07	0.496	1.05	0.100	0.79	0.492	0.218	0.0284	0.080	0.0012	0.124	0.057	0.030	0.343		
4 WSB6D	94.74	2.48	0.248	0.056	0.95	0.032	0.117	0.059	0.0051	(0.020)	(0.001)	0.007	0.247	0.0056	0.881		
4 WSB7A	73.3	4.82	3.19	1.91	0.054	1.73	3.05	3.83	0.076	0.212	-	0.61	(0.002)	0.191	6.80		
RM	Cu	Sn	Pb	Fe	Ni	Mn	Al	Si	P	Sb	Zn	Ø 60x6 mm, chill cast					
8 LS1	78.5	0.25	0.2	0.5	0.5	0.04	0.02	4.2	0.1	0.05	16	Si-Messing; Si-Brass					
RM	Cu	Ni	Mn	Fe	Si	P	Co	S	C	Zn	Ø 40x25 mm, cast						
IM WH1	68.16	5.70	0.56	0.0052	0.010	0.0029	0.0061	(0.0055)	(0.0046)	Rest	MN65-Ni-Messing						
IM WH2	69.14	6.34	0.36	0.038	0.038	0.0072	0.017	(0.0071)	(0.0058)	Rest	MN65-Ni-Brass						
IM WH3	70.18	3.44	0.25	0.11	0.072	0.013	0.031	(0.011)	(0.0070)	Rest							
IM WH4	71.15	4.14	0.11	0.13	0.12	0.015	0.048	(0.017)	(0.0075)	Rest	nur Satz/set only						
IM WH5	72.28	4.89	0.011	0.22	0.17	0.017	0.028	(0.021)	(0.0087)	Rest							

RM	Cu	Ni	Al	Fe	Mn	Co	P	Mg	Pb	As	Cd	Sb	Sn	Si	Bi	S		
IM WM1	69.06	5.03	0.083	0.011	0.38	0.021	0.0018	0.0054	0.018	0.00026	0.0046	0.00098	0.0036	0.0026	0.011	0.017		
IM WM2	68.41	6.66	0.050	0.022	0.53	0.017	0.023	0.019	0.011	0.0030	0.022	0.013	0.011	0.0067	0.014	0.0058		
IM WM3	69.85	6.09	0.033	0.077	0.19	0.011	0.0052	0.0042	0.0073	0.0053	0.0024	0.0043	0.098	0.037	0.0055	0.0073		
IM WM4	71.10	5.36	0.0080	0.13	0.011	0.0099	0.0057	0.0027	0.0044	0.0072	0.0021	0.0059	0.075	0.071	0.0029	0.0058		
IM WM5	68.99	4.68	0.0012	0.22	0.0024	0.0021	0.016	0.00056	0.0020	0.0089	0.00077	0.0068	0.035	0.094	0.00070	0.0030		
	C	Zn	Ø 40x25 mm, cast															
	0.0044	25.35	Ni-Messing															
	0.0052	24.18	Ni-Brass															
	0.0058	23.57																
	0.0072	23.19	nur Satz/set only															
	0.0090	25.90																
RM	Cu	Bi	Sn	Pb	Fe	Ni	Al	Si	As	Mn	Sb	P	S	Se	Cd	B	Zn	Ø 40x18 mm,
4 BIB1B	59.13	2.03	0.540	0.284	0.203	0.309	0.125	0.206	0.0335	0.0112	0.0054	0.014	(0.0034)	0.004	0.0053	-	37.06	Bi-Messing
4 BIB2B	62.05	0.921	1.186	0.0617	0.379	0.466	0.411	0.322	0.084	0.0451	0.119	0.0358	(0.0014)	0.0142	0.0020	-	33.85	Bi-Brass
4 BIB3B	62.48	4.05	0.111	0.149	0.099	0.098	0.0298	0.061	0.057	0.243	0.0417	0.0175	(0.0005)	0.003	0.0029	-	32.46	
4 BIB4A	60.88	0.980	0.400	0.091	0.148	0.175	0.358	0.0018	-	0.0039	0.0144	0.0064	(0.0007)	0.0162	0.0005	0.0008	36.89	
RM	Cu	Sn	Pb	Fe	Ni	Al	Si	Mn	As	Bi	Sb	Cd	Zn	Ø 45x25 mm, chill cast				
PB MS2	64.44	0.64	0.64	0.07	0.34	0.14	0.08	1.00	-	-	-	-	Rest	Messing				
PB MS6	64.24	0.20	0.07	0.43	0.58	0.01	0.68	0.58	-	-	0.015	-	Rest	Brass				
PB MS8	67.61	0.28	0.22	0.10	0.97	0.14	0.91	0.035	0.093	0.07	0.052	-	Rest					
PB MS10	84.26	0.06	0.02	0.28	0.02	-	0.13	0.016	0.011	0.40	0.04	-	Rest					
CRM	Cu	Pb	Sn	Mn	Al	Fe	Si	P	Sb	Bi	As	Ni	Zn	Ø 40x25 mm, cast				
IM WN1	58.44	0.51	1.00	0.57	0.33	0.23	0.16	0.031	0.099	0.023	0.035	0.29	Rest	Automatenmessing				
IM WN2	60.38	1.58	0.68	0.73	0.24	0.29	0.22	0.051	0.10	0.035	0.011	0.19	Rest	Free Cutting Brass				
IM WN3	62.32	2.62	0.39	0.39	0.14	0.062	0.12	0.034	0.020	0.020	0.032	0.098	Rest					
IM WN4	57.97	0.86	0.13	0.13	0.047	0.11	0.036	0.014	0.061	0.0094	0.021	0.050	Rest	nur Satz/set only				
IM WN5	64.36	3.78	0.019	0.0020	(0.0004)	0.0085	(0.0013)	0.0051	0.0035	0.0028	0.030	0.0049	Rest					
RM	Cu	Pb	Sn	Mn	Al	Fe	Ni	P	Sb	Si	Bi	Zn	Ø 40x25 mm, cast					
IM WG1	60.99	0.71	0.29	0.16	0.095	0.0084	0.20	0.029	0.062	0.0046	0.0013	Rest	Automatenmessing					
IM WG2	56.99	2.66	0.0025	0.0024	0.00095	0.42	0.0051	-	0.0024	0.021	0.016	Rest	Free Cutting Brass					
IM WG3	58.20	2.99	0.091	0.037	0.041	0.31	0.029	0.013	0.018	0.014	0.0057	Rest						
IM WG4	60.05	1.41	0.21	0.12	0.073	0.10	0.16	0.020	0.042	0.016	0.014	Rest	nur Satz/set only					
IM WG5	59.32	1.66	0.14	0.074	0.058	0.18	0.078	0.016	0.034	0.022	0.0094	Rest						
IM WG6	60.67	3.70	0.40	0.21	0.020	0.18	0.29	0.044	0.0078	0.019	0.023	Rest						

CRM	Cu	Pb	Sn	Mn	Al	Ni	Sb	Fe	Si	Zn	Ø 40x25 mm						
MT 6319-92	64.1	3.24	1.60	1.05	0.87	0.50	0.15	-	0.19	26.9	PbSn-Messing						
MT 6320-92	65.4	2.70	1.56	0.84	0.70	0.60	0.11	1.12	0.23	26,8	PbSn-Brass						
MT 6321-92	68.6	2.11	1.01	0.59	0.47	0.93	0.080	0.93	0.35	24.9	nur Satz/set only						
MT 6322-92	70.1	1.60	0.82	0.48	0.35	1.33	0.063	-	0.50	23.8							
MT 6323-92	72.5	1.17	0.53	0.37	0.25	1.00	0.045	-	0.88	22.8							
RM	Cu	Pb	Sn	Fe	Ni	Al	P	As	Sb	Co	Si	Se	Bi	Cd	B	Zn	Ø 42x18 mm, cast
4 7835.1P	62.67	2.79	0.421	0.203	0.123	0.012	0.0465	0.0055	0.0048	0.0173	0.054	0.0111	0.0339	0.0004	0.0009	35.20	Pb-Messing
4 7835.3E	60.67	1.35	0.113	0.381	0.253	0.386	0.0378	0.097	0.096	0.0070	0.055	0.003	0.025	-	-	36.50	
4 7835.4H	67.10	1.03	0.046	0.020	0.492	0.561	0.125	0.206	0.188	-	-	-	-	-	-	30.09	
4 7835.5A	91.25	1.64	0.116	0.126	0.249	0.078	0.018	0.104	0.114	-	-	-	-	-	-	6.23	
4 7835.6A	59.67	1.498	0.080	0.091	0.0173	0.546	<0.0005	0.0006	0.0127	0.0005	(0.001)	0.0007	0.0026	0.0010	0.0005		
CRM	Cu	Pb	Sn	Si	Ni	Al	Mn	Bi	Sb	Zn	Ø 40x25 mm						
MT M2151	57.4	-	0.12	2.76	0.41	0.14	0.91	0.017	-	35.8	Messing, divers						
MT M2152	60.8	1.40	0.31	4.07	0.64	0.28	1.74	0.010	0.013	30.1	Brass, divers						
MT M2153	Rest	1.02	0.66	1.50	0.94	-	3.62	0.0081	0.031	24.3	nur Satz/set only						
MT M2154	70.9	0.65	0.060	0.72	2.42	0.68	0.58	0.0061	0.092	21.0							
MT M2155	75.48	0.32	2.03	0.32	3.91	1.06	0.28	0.0056	0.15	16.46							
MT M2156	79.5	0.10	0.023	0.27	6.35	0.14	0.14	0.0030	0.29	13.04							
MT M2157	84.2	0.052	0.90	-	0.26	3.28	0.22	0.0025	0.78	9.23							
MT M2158	89.7	0.025	-	0.083	0.13	-	0.089	0.0012	0.51	6.80							
RM	Cu	Pb	Sn	Mn	Al	Fe	Ni	P	As	Si	Sb	C	S	Zn	Ø 38x12 mm, wrought		
6 675	(58.5)	<0.01	0.92	0.11	<0.01	0.73	<0.01	<0.01	<0.005	<0.02	<0.01	(0.0004)	(0.0013)	39.7	CDA 675	Messing, divers	
6 675A	58.5	0.074	0.80	0.32	<0.002	1.12	0.019	0.010	0.003	(0.005)	0.0011	(0.0007)	(0.0005)	39.1	CDA 675	Brass, divers	
RM	Cu	Pb	Sn	Mn	Al	Fe	Ni	P	As	Si	Sb	Zn	Ø 39x12 mm, cast				
6 857B-1	61.3	1.22	1.14	0.003	0.35	0.30	0.61	0.004	(0.001)	0.004	(0.002)	34.0	CDA857	Messing/Brass, divers			
RM	Cu	Pb	Sn	Mn	Al	Fe	Ni	P	As	Si	Sb	C	S	Zn	Ø 38x12 mm, wrought		
6 314B	89.8	1.68	0.001	0.001	0.001	0.013	0.006	0.0007	0.002	0.01	0.001	0.02	(0.002)	8.57	CDA314	Messing/Brass, divers	

RM	Cu	Sn	Pb	Zn	Ni	P	Fe	Si	Mn	As	Sb	Bi	Al	S	Mg	Ø 50x10 mm, chill cast
10 C11.01	(96)	3.4	0.01	<0.005	0.006	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	Sn-Binärbronze
10 C11.02	(94)	5.5	0.02	<0.005	0.006	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	Sn-Bronze, binary
10 C11.03	(92)	7.4	0.01	<0.005	<0.005	0.03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	
10 C11.04	(90)	9.6	0.01	<0.005	<0.005	0.04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	

CRM	Cu	Sn	Pb	Zn	Ni	Fe	P	Bi	Al	Si	Sb	Mn	As	Mg	Ø 40x25 mm
MT 6205-91	Rest	2.51	4.69	5.80	0.83	0.23	0.023	-	-	0.026	0.34	-	0.045	0.0011	Sn-Bronze
MT 6206-91	84.8	2.66	4.33	6.57	1.01	0.25	0.032	0.0071	0.0020	0.012	-	-	0.050	0.0014	
MT 6207-91	81.9	3.97	4.28	7.64	1.44	0.38	0.063	0.010	-	0.0073	0.52	0.050	0.065	-	nur Satz/set only
MT 6208-91	79.5	4.73	-	8.49	2.01	0.47	0.12	0.016	0.020	-	0.71	0.16	0.095	0.012	
MT 6209-91	77.9	5.33	3.30	8.68	2.58	0.55	0.16	0.021	0.036	-	0.76	0.228	0.10	0.059	

CRM	Sn	Pb	Zn	Ni	Fe	P	Bi	Cu	Ø 40x25 mm
MT 6524-92	2.45	4.38	5.80	0.67	0.17	0.018	0.0073	Rest	Sn-Bronze
MT 6525-92	4.46	2.12	3.49	-	0.048	0.0048	-	Rest	
MT 6526-92	3.91	3.94	4.52	0.38	0.106	0.023	0.0043	Rest	nur Satz/set only
MT 6527-92	4.67	3.32	3.79	0.31	0.093	0.027	0.0033	Rest	
MT 6528-92	5.65	2.63	2.91	0.24	0.081	-	0.0023	Rest	

RM	Sn	P	Fe	Pb	Al	Zn	Ni	As	Cd	Mg	Sb	Mn	Bi	S	Si	Cu	Ø 40x27 mm
IM BL1	2.58	0.49	0.38	0.25	0.11	0.68	0.25	0.058	0.050	0.051	0.053	0.062	0.024	(0.0081)	0.059	Rest	Sn-Bronze
IM BL2	4.04	0.29	0.21	0.14	0.15	0.40	0.37	0.039	0.040	0.11	0.039	0.055	0.014	(0.0063)	0.031	Rest	
IM BL3	6.12	0.084	0.10	0.065	0.019	0.15	0.13	0.025	0.022	-	0.021	0.026	0.0099	-	0.015	Rest	nur Satz/set only
IM BL4	8.38	0.010	0.014	0.013	-	0.017	0.015	0.0089	0.0092	-	0.0095	0.0092	0.0058	(0.022)	0.011	Rest	
IM BL5	11.05	0.0042	0.0061	0.0069	0.0052	0.0078	0.0074	0.00057	0.0015	0.0030	0.0039	0.0011	0.0015	(0.031)	(0.0038)	Rest	

CRM	Cu	Sn	Si	Ni	Fe	P	Pb	Zn	Ø 40x25 mm
MT M1811	91.70	4.40	3.12	0.051	0.24	0.045	0.051	0.51	Sn-Si Bronze
MT M1812	90.87	5.23	2.30	0.065	1.05	0.047	0.054	0.46	
MT M1813	90.63	6.12	1.87	0.073	0.58	0.071	0.022	0.71	nur Satz/set only
MT M1814	90.11	7.29	1.45	0.14	0.77	0.099	0.013	0.30	
MT M1815	87.60	8.46	0.99	0.25	0.088	0.24	0.0061	2.62	

RM	Cu	Sn	Pb	Zn	Ni	P	Fe	Si	Mn	As	Sb	Bi	Al	S	Ag	Cr	chill cast Ø 50x12 mm
5 CURM71.31	82.30	4.38	6.44	4.27	2.07	0.060	0.098	0.006	0.010	0.11	0.11	0.027	0.045	0.050	0.052	<0.01	Rotguß
5 CURM71.32	80.48	6.46	4.43	6.52	0.70	0.016	0.35	0.022	0.046	0.25	0.26	0.051	0.12	0.08	0.034	0.05	Gunmetal
5 CURM71.33	85.15	5.15	5.13	5.16	1.10	0.022	0.003	<0.001	<0.0005	<0.002	<0.001	<0.001	<0.001	0.0010	0.0010	<0.0005	
10 C71.34	Rest	8.20	2.47	1.55	<0.01	0.020	0.29	0.04	0.05	0.18	0.071	0.029	0.007	0.16	0.025	0.03	

RM	Cu	Sn	Pb	Zn	Ni	P	Fe	Si	Mn	As	Sb	Al	Ø 38x12 mm
6 905A-1	(87.3)	10.25	0.30	2.27	0.018	0.055	0.015	(<0.004)	(<0.0003)	(0.001)	0.004	(<0.003)	Sn-Bronze

RM	Cu	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Sb	P	S	As	Co	Ø 42x18 mm, chill cast
4 SN1D	79.93	11.75	5.17	0.804	0.0034	2.17	<0.002	<0.001	0.0018	0.006	0.0025	0.0064	-	-	Sn-Bronze
4 SN2H	82.80	13.54	1.97	1.28	0.0332	1.04	0.0004	0.0028	0.0043	0.100	0.082	0.0326	-	-	
4 SN3E	81.32	16.51	0.270	0.43	0.0782	0.513	0.0004	(0.002)	0.0026	0.260	0.297	0.096	-	-	
4 SN4A	77.86	18.80	1.059	0.341	0.060	0.555	0.034	(0.004)	0.007	0.102	0.988	0.040	0.0473	0.151	

RM	Cu	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	Cr	Ag	S	Ø 40x15 mm, ch.cast
4 GM4Y	83.04	2.50	4.96	7.24	0.0616	2.00	0.005	(0.0013)	0.0116	0.0012	0.009	0.022	0.0108	(0.0003)	0.0120	0.143	Rotguß
4 GM5K	84.66	5.00	4.98	4.21	0.080	0.804	(0.001)	0.0013	0.0148	0.0008	0.080	0.086	0.0107	-	0.0093	0.043	Gunmetal
4 GM6H	84.46	7.31	3.11	2.99	0.131	1.069	0.136	0.124	0.175	0.0912	0.037	0.258	0.0566	0.0019	0.0114	0.070	
4 GM7H	85.49	9.97	0.97	2.29	0.0278	0.500	0.051	0.065	0.133	0.151	0.085	0.111	0.034	0.0146	0.0574	0.0139	
4 GM8E	82.3	4.03	6.78	6.21	0.298	0.115	0.0067	(0.0010)	(0.0051)	0.0010	0.0138	<0.002	0.0213	<0.001	0.105	0.0055	
4 GM24A	88.88	3.85	3.35	3.67	0.0083	0.0087	-	0.0028	0.0010	<0.0005	0.0009	0.0012	0.190	(0.0013)	0.0046	0.003	wrought
4 GM29A	89.36	6.12	0.050	4.23	0.0102	0.0289	-	0.0027	0.0017	(0.0005)	0.0019	0.0015	0.138	(0.0004)	0.0026	0.0024	wrought
4 RB1A	83.24	2.137	5.02	7.95	0.928	0.0539	0.0048	0.063	0.0030	0.0167	0.0029	0.432	0.020	0.0013	0.0174	0.0044	
4 RB2A	82.67	3.19	3.85	9.14	0.493	0.255	0.0352	0.0116	0.0211	0.0028	0.101	0.019	0.0208	0.0017	0.0029	0.078	

RM	Cu	Pb	Sn	Zn	Mn	Al	Fe	Ni	P	As	Si	Sb	C	S	Ø 38x12 mm, wrought
6 544A	88.4	4.16	4.42	3.42	<0.002	(0.0005)	0.092	0.16	0.021	0.011	<0.002	0.040	(0.003)	0.038	Rotguß
6 922B-3	88.4	1.33	5.8	3.83	(0.002)	(0.001)	0.008	0.61	0.026	0.001	(0.001)	0.002	-	-	Gunmetal

CRM	Mn	Ni	Fe	Sn	Si	Zn	Sb	P	Cu	Ø 40x40x25 mm
MT 6309-92	5.05	0.60	0.23	1.01	0.036	-	0.051	0.39	Rest	Mn-Bronze
MT 6310-92	4.47	0.80	0.19	0.74	0.053	0.12	0.073	0.24	Rest	
MT 6311-92	6.67	1.33	0.28	0.53	-	0.25	0.32	0.11	Rest	nur Satz/set only
MT 6312-92	3.80	1.54	0.26	0.36	0.18	0.63	0.22	-	Rest	
MT 6313-92	2.91	1.71	0.19	0.23	-	-	0.15	0.093	Rest	

RM	Cu	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	P	As	Sb	C	S	Ag	Ø 38x12 mm, cast
6 932A	82.9	6.26	7.09	3.35	0.068	0.12	<0.01	<0.01	<0.002	0.005	0.014	0.097	(0.006)	(0.05)	-	CDA 932 Sn-Bronze
6 932E	82.15	7.33	7.3	2.86	0.029	0.16	(<0.001)	(<0.005)	0.0001	0.022	0.048	0.145	(0.004)	0.053	(0.007)	CDA 932

RM	Cu	Sn	Pb	Zn	Fe	Ni	Mn	S	P	Al	Sb	Si	As	Ø 60x6 mm, chill cast
8 B1	83.05	15.0	0.2	1.0	0.05	0.05	-	0.02	0.02	0.15	0.4	0.05	-	SnPb-Bronze
8 B2	85.9	13.5	0.02	0.11	0.05	<0.01	-	0.05	0.17	<0.01	<0.01	0.2	-	
8 B3	80.2	12.8	1.6	2.2	0.2	1.5	0.20	0.04	0.45	0.1	0.2	0.07	-	
8 B4	84.0	10.8	2.5	1.2	<0.05	0.6	-	0.02	0.5	-	0.1	<0.05	-	
8 B5	85.80	9.90	0.49	0.49	0.220	2.28	0.104	0.067	0.051	0.059	0.47	0.059	-	
8 B11	84.85	8.02	1.93	2.05	0.168	2.0	-	0.09	0.056	-	0.70	0.13	-	
8 B12	85.7	9.6	0.2	0.6	0.2	2.6	0.25	0.01	0.5	0.1	0.1	0.05	0.1	
8 B13	86.35	10.05	0.99	1.09	(0.25)	0.50	0.046	0.070	0.215	0.016	0.243	0.085	0.065	
8 B20	83.5	6.3	5.1	3.5	0.15	0.5	-	0.1	0.06	<0.1	0.5	0.06	-	
8 B21	83.0	5.13	3.79	6.22	0.285	1.21	-	0.047	(0.004)	0.13	0.18	-	-	
8 B22	82.3	3.8	5.55	5.30	0.19	2.72	0.01	0.02	-	-	0.055	0.05	-	
8 B23	83.5	7.0	7.1	1.5	<0.1	0.08	-	0.02	0.12	<0.00	0.4	<0.00	-	
8 B30	77.5	9.8	10.0	1.05	0.11	1.0	0.15	0.05	0.06	0.06	0.22	0.06	-	
8 B31	78.6	7.7	11.8	0.8	(0.015)	0.50	-	0.03	-	(0.04)	0.5	(0.05)	-	
8 B32	74.5	5.9	16.0	1.2	0.1	1.5	<0.01	0.03	<0.05	(<0.1)	0.14	<0.1	<0.001	

RM	Cu	Sn	Pb	Zn	Fe	Ni	Mn	S	P	Sb	Ø 60x6 mm, chill cast
8 UE12	85.7	11.9	0.08	0.98	0.10	0.46	0.025	0.01	0.072	<0.01	SnPb-Bronze
8 UE54	85.0	4.34	6.67	1.90	0.007	1.92	-	0.023	0.008	0.07	

RM	Cu	Sn	Pb	Zn	Mn	Al	Fe	Ni	P	As	Si	Sb	S	Ø 38x12 mm, wrought				
6 903B	86.7	7.9	0.10	4.39	0.0004	(0.001)	0.049	0.50	0.073	0.003	0.002	0.003	0.006	CDA 903	Schiffsbronze			
6 922B-3	88.4	5.8	1.33	3.83	(0.002)	(0.001)	0.008	0.61	0.026	0.001	(0.001)	0.002	-	CDA 922	Naval Bronze			
CRM	Cu	Sn	Pb	Sb	Fe	Zn	P	Ni	Si	Al	Bi	Ø 40x25 mm						
MT M871	(77.73)	6.3	12.5	0.80	0.062	1.17	0.55	0.81	(0.045)	(0.0029)	(0.025)	Pb-Bronze						
MT M872	(79.70)	7.3	10.6	0.50	0.100	0.71	0.30	0.50	(0.025)	(0.0034)	(0.031)							
MT M873	(81.08)	8.3	9.0	0.34	0.209	0.38	0.20	0.31	(0.011)	(0.0049)	(0.039)							
MT M874	(81.89)	9.4	7.3	0.27	0.35	0.26	0.088	0.21	(0.0017)	(0.0084)	(0.041)	nur Satz/set only						
MT M875	(82.97)	10.5	5.4	(0.12)	0.60	(0.14)	(0.059)	0.110	(0.0021)	(0.021)	(0.062)							
RM	Cu	Sn	Pb	Zn	Ni	P	Fe	Si	Mn	As	Sb	Bi	Al	S	Ø 50x12 mm, chill cast			
5 CURM50.01	74.08	9.45	11.74	1.17	2.24	0.113	0.243	0.007	0.024	0.22	0.59	0.029	0.018	0.113	Pb-Bronze			
5 CURM50.02	78.84	10.34	10.67	0.006	<0.0005	0.046	<0.001	<0.002	<0.0005	<0.002	<0.0005	<0.0005	<0.001	<0.005				
5 CURM50.03	77.42	8.41	8.86	1.72	2.89	0.159	0.018	0.005	0.037	0.11	0.24	0.051	0.005	0.064				
5 CURM50.04	76.11	11.30	9.94	0.66	1.10	0.032	0.10	0.011	0.028	0.06	0.50	0.10	0.014	0.14				
RM	Cu	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	P	S	Co	Ag	Ø 40x15 mm, chill cast	
4 LB10D	76.16	8.30	12.15	0.44	0.0108	1.71	(0.0006)	0.0005	0.240	0.0011	0.0634	0.635	0.0030	0.010	0.128	0.044	CDA 946D	Pb-Bronze
4 LB11B	77.3	10.6	10.3	0.31	0.019	1.09	<0.002	(0.003)	0.094	0.005	0.034	0.061	0.008	0.047	-	-	CDA 937D	
4 LB12C	75.70	12.50	9.53	1.262	0.042	0.398	(0.0006)	0.0022	0.0064	0.0032	0.0245	0.314	0.173)	0.085	0.078	0.0181	CDA 935B	
4 LB13B	83.58	6.03	8.17	0.58	0.025	1.29	0.013	0.022	0.116	<0.001	0.035	0.028	0.063	0.100	-	-		
4 LB14E	79.01	4.02	15.48	0.028	0.0039	0.099	0.0004	0.0012	0.0658	0.0007	1.142	0.0527	0.0029	(0.019)	0.0072	0.0570		
4 LB15C	78.53	1.163	20.02	0.076	0.0012	0.095	0.0015	0.0009	0.0218	(0.0002)	0.011	0.030	0.0019	(0.024)	0.0048	0.0280	CDA 941C	
RM	Cu	Pb	Sn	Zn	Mn	Al	Fe	Ni	P	As	Si	Sb	C	S	Ag	Ø 38x12 mm, wrought		
6 932E	82.15	7.3	7.33	2.86	0.0001	(<0.001)	0.029	0.16	0.022	0.048	(<0.005)	0.145	(0.004)	0.053	-	Pb-Bronze		
6 937B-1	80.2	9.23	9.7	0.044	(<0.002)	(<0.003)	0.004	0.35	0.012	(0.008)	(<0.003)	0.18	-	0.032	0.015			
6 938-1	77.1	14.8	7.16	0.26	(0.001)	(<0.002)	0.015	0.49	0.059	(0.004)	(<0.004)	0.033	-	0.009	0.0048			

RM	Cu	Si	Mn	Fe	Zn	Ni	Sn	P	Pb	Ø 40x12 mm, wrought					
IM BE1	(95)	2.34	1.69	0.047	0.52	0.012	0.014	0.051	0.028	Si-Bronze					
IM BE2	(95)	2.82	1.35	0.078	0.027	0.29	0.041	0.024	0.023						
IM BE3	(95)	3.26	1.10	0.10	0.19	0.10	0.13	0.039	0.012	nur Satz/set only					
IM BE4	(95)	3.91	0.51	0.19	0.13	0.048	0.11	0.0070	0.0061						
IM BE5	(95)	2.08	1.20	0.23	0.36	0.20	0.30	0.013	0.0052						

RM	Zn	Si	Sn	Al	Ni	S	Sb	P	As	Mg	Bi	Pb	Fe	Mn	Cu	Ø 40x25 mm, cast	
IM BH1	2.03	4.77	0.044	0.027	0.96	0.012	0.066	0.0047	0.0047	0.0065	0.018	0.74	1.67	0.25	Rest	Si-Bronze	
IM BH2	2.99	4.14	0.21	0.079	0.74	0.0092	0.042	0.023	0.015	0.0066	0.014	0.57	1.28	0.54	Rest		
IM BH3	3.84	3.07	0.37	0.14	0.53	0.0062	0.026	0.039	0.022	0.0075	0.0091	0.40	0.96	1.00	Rest	nur Satz/set only	
IM BH4	4.91	2.29	0.55	0.22	0.28	0.0064	0.016	0.059	0.054	0.0057	0.006	0.24	0.55	1.46	Rest		
IM BH5	5.58	1.45	0.69	0.29	0.047	0.0055	0.0054	0.073	0.071	0.0024	0.0019	0.015	0.093	1.80	Rest		
IM BH6	6.27	1.51	0.32	0.32	0.39	0.016	0.056	0.078	0.078	0.01	0.018	0.017	0.35	0.80	Rest		

RM	Cu	Si	Pb	Sn	Zn	Mn	Al	Fe	Ni	P	As	Sb	C	S	Ø 38x12 mm, wrought	
6 655A	95.74	3.14	0.008	0.07	0.02	0.91	(0.002)	0.075	0.008	(0.004)	<0.002	<0.002	(0.0006)	(0.0006)	CDA 655	Si-Bronze

RM	Cu	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Sb	P	S	Mg	Bi	Ø 42x17 mm, chill cast	
4 PB10K	88.77	11.93	0.054	0.0362	0.009	0.0567	<0.0005	0.0015	0.010	0.0009	0.0050	0.0240	0.0189	0.0035	0.0239	P-Bronze	
4 PB11E	90.55	3.75	0.900	1.43	0.75	0.768	(0.001)	0.099	0.199	0.111	0.502	0.799	0.007	0.0022	0.0065		
4 PB12D	91.67	5.35	0.142	0.786	0.190	0.427	<0.001	0.150	0.109	0.334	0.272	0.473	0.012	(0.0004)	0.094	Ø 43x20 mm, cast	
4 PB13C	91.19	7.41	0.195	0.199	0.099	0.212	0.042	0.040	0.060	0.097	0.100	0.211	(0.002)	0.119	0.0130		
4 PB14D	90.26	9.00	0.048	0.038	0.0056	0.144	(0.0009)	(0.0025)	0.0331	(0.0002)	0.055	(0.008)	0.065	0.0003	0.224	CDA 521	
4 PB20A	95.22	4.55	0.0045	0.007	0.0013	0.0090	<0.001	0.0046	0.0011	(0.007)	0.0012	0.196	0.0030	-	-	Ø 38x17 mm, wrought	
4 PB23A	92.04	7.56	0.0042	0.0020	(0.0005)	0.0033	(0.0004)	0.0016	0.0011	(0.0006)	0.0025	0.319	0.0015	-	C=0.004	Ø 49x17 mm, wrought	

	Cu	Sn	Pb	Zn	Ni	P	Fe	Si	Mn	As	Sb	Al	S	Mg	Ø 50x10 mm, chill cast	
5 CURM54.01	95.42	3.17	0.307	0.346	0.348	0.053	0.028	0.039	0.158	0.044	0.070	0.040	0.023	0.008	P-Bronze	
5 CURM54.02	92.87	5.53	0.663	0.410	0.109	0.107	0.102	0.012	0.101	0.023	0.026	0.020	0.030	0.0020		
5 CURM54.03	91.74	7.30	0.003	0.003	0.0019	0.954	0.005	<0.002	<0.0005	0.006	0.0007	<0.001	<0.001	<0.0003	Ø 43x20 mm, cast	
5 CURM54.04	86.54	9.47	0.79	1.09	0.536	0.250	0.316	0.065	0.419	0.106	0.33	0.074	0.046	0.0009		
5 CURM54.05	84.78	11.36	1.14	0.554	1.28	0.501	0.051	0.006	0.078	0.063	0.111	0.055	0.063	0.0021		

RM	Cu	Pb	Sn	Zn	Mn	Al	Fe	Ni	P	As	Si	Sb	S	Ø 38x12 mm, wrought	
6 510A	96.1	0.016	4.6	0.21	<0.002	<0.002	0.005	0.020	0.11	0.0008	<0.003	(0.003)	0.008	CDA 510	P-Bronze

CRM	Cu	Al	Ni	Fe	Mn	Zn	P	Si	Sn	Pb	As	Sb	Ø 40x25 mm		
MT M751	(83.70)	12.35	0.23	1.50	1.35	(0.088)	0.12	(0.056)	0.38	(0.0015)	(0.001)	(0.0035)	Al-Bronze		
MT M752	(85.36)	10.68	0.33	0.87	1.55	0.65	0.057	0.11	0.20	0.018	(0.001)	(0.0074)			
MT M753	(86.51)	9.31	0.56	0.44	1.64	0.98	0.027	0.13	0.098	0.050	(0.001)	(0.0026)	nur Satz/set only		
MT M754	(86.70)	7.96	1.08	0.27	2.20	1.50	0.015	0.21	0.076	0.10	(0.001)	(0.0017)			
MT M755	(86.03)	7.14	1.61	0.17	2.48	1.85	0.0091	0.37	0.038	0.31	(0.001)	(0.0014)			
CRM	Cu	Al	Sn	Pb	Zn	Fe	Ni	Si	Mn	Ø 33x30 mm, wrought					
GB 02121	(87)	7.35	0.289	0.058	1.92	0.98	0.98	0.064	0.182	Al-Bronze					
GB 02122	(87)	8.87	0.161	0.0311	1.01	0.63	1.52	0.094	0.351						
GB 02123	(87)	8.29	0.091	0.0166	0.227	3.92	0.21	0.0505	0.99	nur Satz/set only					
GB 02124	(87)	10.51	0.052	0.0097	0.365	0.38	0.55	0.176	2.54						
GB 02125	(87)	9.36	0.035	0.0123	0.67	1.93	0.35	0.300	0.760						
GB 02126	(80)	10.27	-	-	-	4.51	4.37	0.031	-						
RM	Cu	Al	Fe	Ni	Pb	Si	Sn	Mn	Zn	As	Sb	Bi	P	Ø 40x13 mm	
IM BF1	(80)	10.90	(6.2)	2.49	0.23	0.26	0.011	0.0059	0.57	0.061	(0.0022)	0.00042	(0.012)	Al-Bronze	
IM BF2	(80)	9.96	(5.4)	3.54	0.15	0.25	0.081	0.12	0.40	0.050	(0.013)	0.0025	0.05		
IM BF3	(80)	9.58	4.50	4.43	0.11	0.20	0.17	0.28	0.27	0.038	0.028	0.0039	0.098	nur Satz/set only	
IM BF4	(79)	9.12	3.25	5.24	0.059	0.097	0.25	0.39	0.10	0.022	0.037	0.0057	0.13		
IM BF5	(79)	8.35	2.44	6.03	0.014	0.028	0.35	0.50	0.018	0.0039	0.048	0.010	0.16		
RM	Cu	Al	Sn	Pb	Zn	Ni	P	Fe	Si	Mn	As	Ø 50x10 mm, chill cast			
10 C51.11	(94)	5.0	0.025	0.31	0.07	0.15	0.03	0.07	0.11	<0.005	<0.01	Al-Bronze			
10 C51.12	(88)	6.06	0.18	0.25	0.42	0.11	<0.005	2.90	<0.01	1.25	0.11				
10 C51.13	(89)	6.93	0.19	0.12	0.30	0.053	0.021	2.05	0.16	0.77	0.21				
RM	Cu	Al	Sn	Pb	Zn	Ni	P	Fe	Si	Mn	As	Ø 50x10 mm, chill cast			
5 CURM51.11	93.95	5.27	0.027	0.33	0.111	0.012	0.035	0.060	0.159	<0.001	<0.001	Al-Bronze			
5 CURM51.12	88.29	6.36	0.196	0.219	0.45	0.112	<0.001	2.87	0.005	1.33	0.111				
5 CURM51.13	88.79	7.30	0.270	0.104	0.335	0.057	0.022	1.81	0.174	0.898	0.215				
5 CURM51.14	88.57	8.42	0.113	<0.003	0.656	0.219	0.012	0.72	0.286	0.55	0.44				
RM	Cu	Al	Sn	Pb	Zn	Ni	Fe	Si	Mn	Mg	Cr	Ø 50x10 mm, chill cast			
10 C52.51	(80)	10.0	<0.01	<0.01	0.02	5.1	4.3	<0.01	<0.01	<0.01	<0.01	Al-Bronze			
10 C52.53	(80)	10.7	0.07	0.04	0.11	4.1	5.5	0.10	0.38	0.07	0.19				
10 C52.54	(80)	8.6	0.15	0.11	0.52	6.2	3.4	0.20	1.4	0.19	0.05				
10 C52.55	(83)	9.3	0.03	0.14	0.10	4.0	4.9	0.03	1.1	0.13	0.05				
10 C52.56	(79)	8.9	0.11	0.17	0.28	5.6	4.6	0.15	0.74	0.09	0.14				
RM	Cu	Al	Sn	Pb	Zn	Fe	Ni	Si	As	Mn	P	Mg	Cr	C	Ø 42-43x17-20 mm, chill cast
4 ALB1P	82.0	8.9	0.032	0.21	0.025	3.1	5.8	0.11	0.008	0.060	0.015	0.009	0.006	0.005	Al-Bronze Prov. Werte/Values
4 ALB2J	80.7	9.6	0.095	0.26	0.25	4.1	4.6	0.29	0.007	0.055	0.045	0.003	0.003	0.01	Prov. Werte/Values
4 ALB3Q	79.4	11.56	0.10	0.11	0.325	4.15	3.72	0.135	0.0060	0.374	0.025	0.088	0.0089	-	cast
4 ALB4H	80.0	7.7	0.08	0.13	0.23	3.6	6.8	0.25	0.015	1.1	0.035	0.15	0.028	0.005	Prov. Werte/Values
4 ALB5H	(84.2)	7.50	0.10	0.20	0.28	2.45	4.10	0.08	0.008	1.05	0.030	0.008	0.006	-	cast
4 ALB6J	81.98	8.05	0.147	0.096	0.685	2.53	5.31	0.295	0.012	0.904	0.0101	0.0019	0.009	(0.002)	
4 ALB7B	83.98	3.97	0.351	0.029	0.513	4.97	4.87	0.41	0.048	0.575	0.051	0.013	0.094	-	cast
4 ALB8D	76.29	6.60	0.699	0.35	1.051	5.58	6.50	0.736	0.155	1.67	0.218	0.0152	0.046	0.018	
4 ALB9A	81.3	12.79	0.032	0.285	0.040	3.79	0.773	0.160	(0.001)	0.069	0.019	0.0023	0.013	-	cast
4 ALB10A	74.28	11.25	0.202	0.107	0.315	4.23	7.58	0.169	0.017	1.73	0.040	0.0029	0.0103	(0.0022)	

B R E I T L Ä N D E R - E I C H P R O B E N

Bronzen

(Bronzes)

3.3.6

RM	Cu	Al	Pb	Sn	Zn	Mn	Fe	Ni	P	As	Si	Sb	C	Ag	Ø 38x12 mm, wrought
6 623A	(88.13)	9.12	0.001	0.01	0.008	0.273	2.19	0.146	<0.002	(0.006)	0.014	<0.002	(0.002)	-	Al-Bronze
6 630A	(81.0)	10.05	0.0069	0.019	0.17	0.11	3.73	4.81	<0.01	(0.002)	0.037	<0.001	0.005	-	
6 642A	(91.0)	6.70	0.001	0.018	0.011	0.005	0.17	0.025	0.001	<0.002	1.80	(<0.002)	0.001	-	
6 954A	(85.64)	10.17	0.016	0.033	0.30	0.10	3.50	0.20	0.012	(0.006)	0.029	0.001	0.004	-	
6 954B	(83.9)	10.20	0.047	0.07	0.10	0.27	3.90	1.38	0.012	(0.005)	0.07	(0.001)	(0.005)	-	
6 955B	(81.5)	10.30	0.051	0.024	0.052	0.12	3.79	4.11	0.017	(0.002)	0.05	(0.002)	(0.007)	-	
6 955C	(80.6)	10.68	0.003	0.003	0.15	0.06	4.04	4.31	0.012	(<0.002)	0.025	(<0.002)	-	0.014	

RM	Cu	Al	Pb	Sn	Zn	Fe	Ni	Si	Mn	P	As	Sb	Ø 32-40x17 mm, chill cast	
6 CC954	(84.1)	9.25	0.12	0.060	1.30	3.70	1.05	0.090	0.35	0.014	<0.005	0.004	Al-Bronze	
6 955MOD	(74.9)	10.37	0.035	0.096	1.05	5.46	6.28	0.054	1.61	(<0.002)	(<0.003)	(<0.003)		

RM	Cu	Al	Sn	Pb	Zn	Fe	Ni	Mn	Si	Cd	Ø 60x6 mm, chill cast	
8 3018F	81.9	7.25	0.06	0.02	0.06	4.45	4.5	1.57	0.085	-		
8 3011G	84.8	10.35	0.125	0.10	0.25	1.98	2.0	0.165	0.16	-		
8 4149G	84.95	9.84	0.34	0.15	0.37	2.00	1.96	0.21	0.18	-		
8 2794H	90.3	8.0	0.105	(<0.01)	(<0.01)	0.82	0.69	<0.01	0.048	-		
8 3299J	87.6	10.1	0.106	0.11	0.19	0.38	0.21	1.12	0.136	-		
8 2552K	85.7	12.15	0.41	0.105	0.40	0.175	0.185	0.59	0.21	-		
8 3296L	88.5	9.4	0.06	0.30	0.62	0.07	0.41	0.37	0.20	-		
8 3300M	89.5	8.73	0.205	0.205	0.085	0.45	0.205	0.165	0.415	-		
8 3010O	81.3	7.62	0.82	0.48	1.17	5.63	1.70	1.21	0.046	-		
8 4065P	81.2	11.85	0.18	0.03	0.03	3.4	3.18	0.075	0.034	-		
8 3610Q	82.3	7.10	0.25	0.25	0.51	3.98	5.40	0.045	0.065	0.09		
8 2151R	84.7	9.43	(<0.01)	(<0.005)	(<0.01)	4.48	0.56	0.73	0.015	-		
8 2152S	85.0	9.78	-	(<0.005)	(<0.01)	3.99	0.68	0.42	0.015	-		
8 2154V	85.0	11.25	(<0.01)	(<0.005)	0.01	3.05	0.41	0.12	0.015	-		
8 2158W	85.0	11.95	0.01	(<0.005)	0.01	2.53	0.10	0.26	0.015	-		
8 2805X	84.0	6.95	0.34	0.105	0.26	0.79	1.04	6.42	0.03	-		
8 3297Y	87.4	10.0	0.10	0.11	0.27	1.88	-	0.03	0.15	-		
8 3301Z	87.3	8.1	0.03	0.032	0.06	4.0	0.125	0.26	0.06	-		

RM	Cu	Al	Sn	Pb	Zn	Fe	Ni	Mn	Si	Cd	Mg	Ø 60x6 mm, chill cast	
8 CA3	86.5	10.9	0.20	0.15	0.30	0.80	0.80	0.06	0.08	-	0.007	Al-Bronze	
8 CA10	80.7	10.1	0.16	0.16	0.065	4.55	3.4	0.33	0.45	-	0.07		
8 CA11	85	10	0.25	0.1	0.2	1.3	2.0	0.8	0.25	-	-		
8 CA12	84.1	8.0	0.036	0.047	0.45	2.77	1.385	3.05	0.058	-	-		
8 CA13	82.45	11.2	(0.01)	0.023	0.65	3.82	0.50	1.22	0.11	-	-		
8 CA20	87.15	8.0	0.19	0.18	0.41	0.79	1.18	1.85	0.17	0.05	-		
8 CA21	81.9	10.87	0.07	0.05	0.095	3.45	3.09	0.30	0.07	0.0095	-		
8 CA22	80.5	10.45	0.30	0.24	0.60	2.51	4.54	0.75	0.32	-	-		
8 CA25	79.1	7.97	0.18	0.03	0.25	6.10	5.74	0.51	0.084	-	-		
8 CA26	81.0	9.0	<0.01	0.06	0.04	4.3	4.8	0.20	0.05	0.03	-		
8 CA27	81.1	10.25	0.054	0.11	0.43	2.81	3.88	1.20	0.127	0.012	-		
8 CA30	81.6	7.55	0.099	0.142	0.066	5.2	3.10	2.05	0.15	-	0.02		
8 CA31	76.5	9.15	0.063	0.020	0.145	3.18	7.51	3.27	0.064	-	-		
8 CA35	75.6	11.4	0.30	0.10	0.55	6.1	3.80	1.6	0.25	-	-		
8 CA36	78	12.6	0.2	0.02	0.25	3.0	6.5	0.12	0.1	-	0.1		

CRM	Cu	Be	Si	Ni	Pb	Zn	Fe	Sn	Al	Ø 40x25 mm							
MT M1041	(97.5)	1.71	0.086	0.092	0.0028	(0.035)	0.036	0.18	(0.19)	CuBe-Bronze							
MT M1042	(97.2)	1.92	0.14	0.19	0.0045	0.049	0.084	0.104	(0.11)								
MT M1043	(96.7)	2.44	0.12	0.23	0.0023	0.041	0.28	0.033	(0.064)	nur Satz/set only							
MT M1044	(96.2)	2.64	0.23	0.35	0.0060	0.13	0.079	0.083	(0.027)								
MT M1045	(95.4)	3.2	0.30	(0.081)	0.011	0.23	0.14	0.061	(0.054)								
CRM	Cu	Be	Co	Cr	Si	Fe	31x31x19 mm, chill cast										
3 C1122	(98)	1.92	0.295	(0.002)	0.11	0.16	CuBeCo-Bronze										
RM	Cu	Be	Co	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	Cr	Ag	Ø 40x15-17 mm, wrought			
4 CBC2E	96.96	0.450	2.47	0.009	0.0099	0.0103	0.0208	0.0472	0.0231	0.0205	0.0015	0.0044	0.0020	CuBeCo-Bronze			
4 CBC5A	97.6	0.32	0.14	0.01	0.009	0.038	0.028	1.69	0.021	0.036	(0.001)	0.006	-				
RM	Cu	Be	Co	Pb	Sn	Zn	Mn	Al	Fe	Ni	P	As	Si	C	Ø 38x12 mm, wrought		
6 172Be-1	97.68	1.89	0.206	(0.006)	0.033	0.007	0.001	(0.02)	0.052	0.039	0.003	(0.001)	0.055	(0.001)	CuBeCo-Bronze		
RM	Cu	Be	Co	Sn	Pb	Zn	Fe	Ni	Mn	Si	Al	Cr	Ø 60x6 mm, chill cast				
8 1593	97.32	2.36	0.032	0.005	0.003	<0.002	0.084	0.01	0.013	0.117	0.046	0.0035	CuBeCo-Bronze				
8 1677	98.73	0.85	0.023	0.030	0.033	0.032	0.04	0.029	0.058	0.072	0.044	0.01					
8 1722	96.69	2.19	0.39	0.063	0.031	0.112	0.13	0.106	0.022	0.138	0.105	0.021					
RM	Cu	Be	Co	Sn	Pb	Zn	Fe	Ni	Mo	Si	Al	Ag	Cr	Ø 60x6 mm, chill cast			
8 4583	96.3	0.9	0.005	0.26	0.085	0.10	0.15	2.0	0.07	0.075	0.03	-	-	CuBeCo-Bronze			
8 4584	96.95	2.6	0.045	0.02	(<0.01)	0.03	0.12	0.015	<0.01	0.165	0.035	-	-				
8 4594	95.5	0.130	3.0	(0.002)	0.004	(0.005)	(0.10)	0.055	-	0.116	0.030	0.970	0.067				
8 4640	95.7	0.70	1.35	0.053	0.056	0.055	0.130	1.07	0.063	0.166	0.099	0.495	(0.1)				
8 4763	95.2	0.75	2.10	0.042	0.043	0.05	0.03	0.105	-	0.120	0.05	1.53	-				
8 4766	96.83	1.58	0.64	0.100	0.053	0.070	0.150	0.203	0.008	0.110	0.027	-	(0.2)				
8 4868	96.15	2.92	0.246	0.022	0.023	0.056	0.204	0.038	0.019	0.211	0.044	-	-				
8 4872	97.0	1.93	0.400	0.044	0.019	0.119	0.100	0.103	0.008	0.16	0.059	-	(0.04)				
8 4873	98.5	0.10	0.8	<0.001	<0.001	0.015	0.10	0.05	<0.001	0.05	0.05	-	-				
RM	Cu	Bi	Sn	Pb	Fe	Ni	As	P	Sb	Co	Se	Cd	B	S	Zn	Ø 40x17 mm, chill cast	
4 SEB1C	79.96	5.31	4.23	0.209	0.0293	0.101	0.043	0.0054	0.355	0.0089	0.97	(0.0017)	-	0.0011	8.79	Bi-Bronze	
4 SEB2C	(81.8)	4.36	9.34	0.424	0.078	0.028	0.0094	0.013	0.0120	0.0121	0.026	-	-	-	3.73		
4 SEB3C	(88.4)	(5.4)	2.07	0.109	0.082	1.52	0.0161	0.040	0.054	0.025	1.42	0.0016	0.0021	-	0.85		
4 SEB4C	78.6	2.65	9.26	0.011	0.366	0.0091	0.0012	(0.006)	0.0056	0.48	0.105	0.0004	0.0021	-	8.60		
4 SEB5B	85.5	1.17	5.28	0.0149	0.360	0.308	0.0121	0.183	0.0344	0.0048	0.512	0.0067	0.0028	-	6.64		
4 SEB6C	85.66	0.615	7.14	0.0463	0.151	0.860	0.083	0.0118	0.235	0.231	0.322	0.0036	(0.0004)	-	4.55		
4 SEB7A	85.46	3.58	3.20	0.343	0.074	1.165	0.038	0.0206	0.262	0.119	1.19	0.0074	-	0.067	4.42	Ø 42x17 mm	

CRM	Cu	Ni	Sn	Zn	Pb	Fe	Mn	P	S	Mg	Co	C	Ø 40x30 mm					
B 367	87.88	9.72	0.0105	0.0715	0.0298	1.443	0.723	0.0124	0.0162	0.0347	0.0498	0.00287	Ni-Bronze					
CRM	Cu	Ni	Sn	Zn	Pb	Fe	Sb	Cd	Mn	P	Co	Se	Mg	Ø 31x19 mm, wrought				
3 1276a	67.8	30.5	0.023	0.038	0.004	0.56	0.0004	0.0002	1.01	0.006	0.045	0.0005	0.12	CDA715	Ni-Bronze			
CRM	Ni	Fe	Sb	Pb	Bi	Cu	Ø 30-35x25 mm											
MT 2011	4.90	0.79	0.021	0.093	0.010	Rest	Ni-Bronze											
MT 2012	4.35	-	0.015	0.071	0.0075	Rest												
MT 2013	4.60	0.14	0.011	0.056	0.0053	Rest	nur Satz/set only											
MT 2014	5.18	0.16	0.0073	0.047	0.0040	Rest												
MT 2015	4.01	0.12	0.0055	0.040	0.0022	Rest												
RM	Cu	Ni	Sn	Pb	Zn	Fe	Al	Si	Mn	Nb	C	Ø 60x5 mm						
8 CN1	85.0	12.0	0.04	0.1	0.2	1.0	0.01	0.05	0.8	0.1	0.05	Ni-Bronze						
8 CN2	88.5	8	0.02	0.05	0.4	1.5	0.025	0.2	1.1	0.02	0.02							
RM	Cu	Ni	Mn	Fe	Pb	Zn	S	C	Ø 40x25 mm									
IM NA1	(87)	7.19	1.59	2.55	0.086	0.81	0.080	0.020	Ni-Bronze									
IM NA2	(87)	9.20	1.09	2.05	0.059	0.56	0.064	0.022										
IM NA3	(87)	10.48	0.60	1.18	0.034	0.30	0.036	0.015	nur Satz/set only									
IM NA4	(87)	12.32	0.24	0.57	0.0068	0.018	0.0064	0.0091										
RM	Cu	Ni	Al	Fe	Mn	Co	P	Mg	Pb	As	Cd	Sb	Sn	Bi	S	Zn	Ø 40x25 mm, cast	
IM BJ1	(88.93)	6.97	2.88	0.011	0.60	0.027	0.0022	0.0058	0.0025	0.011	0.016	0.0012	(0.11)	0.013	0.021	0.020	NiAl-Bronze	
IM BJ2	(89.97)	6.47	2.46	0.038	0.42	0.020	0.011	0.0098	0.0043	0.0089	0.011	0.0030	(0.080)	0.0095	0.014	0.038		
IM BJ3	(91.25)	5.87	1.97	0.12	0.21	0.014	0.014	0.0065	0.0081	0.0072	0.0076	0.0056	(0.049)	0.0071	0.0082	0.22	nur Satz/set only	
IM BJ4	(92.00)	5.49	1.50	0.20	0.013	0.0076	0.013	0.0035	0.010	0.0031	0.0048	0.0088	(0.014)	0.0042	0.0049	0.36		
IM BJ5	(92.88)	5.00	1.09	0.28	0.0030	0.0024	0.019	0.0017	0.017	0.0018	0.00075	0.010	(0.0034)	0.0013	0.0023	0.51		

RM	Cu	Ni	Pb	Fe	Si	Mn	S	Mg	Co	Ø 50x10 mm, chill cast								
10 C62.11	(68)	29.9	<0.002	<0.005	0.32	0.33	<0.002	<0.002	<0.002	Ni-Bronze								
10 C62.12	(88)	8.3	0.03	1.5	0.04	1.8	0.08	0.002	<0.002									
10 C62.13	(83)	13.9	0.02	0.93	0.08	1.2	0.05	0.006	0.04									
10 C62.14	(87)	20.8	0.008	0.54	0.04	0.76	0.03	0.002	0.05									
10 C62.15	(79)	27.5	0.01	1.5	0.06	0.43	0.009	<0.002	0.008									
RM	Cu	Ni	Sn	Pb	Fe	Co	Si	Mn	Mg	S	P	Bi	B	C	CuNi Cr	Ø 40x15 mm, chill cast		
4 CN1M	85.3	9.31	0.006	0.008	2.41	0.131	0.058	2.27	(0.003)	0.010	0.008	-	(0.0008)	0.008	0.118	-	(0.019)	0.331
4 CN2J	80.78	15.47	0.061	0.048	1.70	0.264	0.044	1.26	0.0006	0.035	0.015	0.0045	-	0.004	0.240	0.0102	(0.032)	0.0358
4 CN3L	76.3	19.95	0.063	0.053	1.07	0.072	0.490	0.920	0.012	0.029	0.032	-	0.0064	0.035	0.050	Be=0.0163	0.15	0.80
4 CN4K	69.48	27.49	0.009	(0.023)	2.67	0.052	0.025	0.164	(0.0004)	0.0076	0.0079	0.0077	-	0.0053	0.022	(0.004)	0.0139	0.041
4 CN5N	65.1	32.26	0.015	0.027	0.791	0.018	0.80	0.090	0.014	0.074	0.041	-	0.0091	0.0253	0.118	Be=0.011	0.441	0.232
4 CN6G	63.34	33.46	0.0307	0.0066	0.878	0.0440	0.144	0.451	-	0.0109	0.031	0.0058	(0.0016)	0.0180	1.10	0.0066	0.51	0.026
4 CN7F	65.58	29.95	0.039	0.028	1.021	0.108	0.304	0.659	0.0041	0.0151	(0.021)	(0.014)	(0.004)	0.0106	1.51	(0.037)	0.58	0.203
4 CN8H	65.51	30.61	0.046	0.095	0.86	0.104	0.132	0.881	0.021	0.022	0.046	0.103	0.0025	0.0225	1.28	-	0.18	0.159
4 CN9H	Rest	28.0	0.02	0.05	1.6	0.30	0.60	1.25	-	0.007	0.03	0.02	0.022	0.01	2.3	0.22	1.4	-
4 CN10A	61.01	29.3	(0.009)	0.004	4.28	0.081	1.02	0.262	0.0026	0.055	(0.020)	0.014	0.0029	0.064	1.59	0.03	0.89	0.026
RM	Cu	Ni	Sn	Zn	Fe	Al	Si	Mn	Bi	Sb	P	S	Ag	Pb	Mg	Co	B	chill cast Ø 40x15 mm
4 SP1A	84.90	8.33	5.75	0.344	0.45	0.0020	0.004	0.084	0.0039	0.0177	(0.003)	0.005	0.005	0.0115	-	0.057	0.0007	CuNiSn
4 SP2A	74.91	15.72	8.92	0.029	(0.09)	0.0003	(0.0023)	0.0019	(0.0027)	0.006	(0.0006)	0.0030	0.0181	0.026	0.0002	0.119	-	
RM	Cu	Ni	Pb	Fe	Si	Mn	Sn	Zn	Al	P	As	Sb	C	S	Co	Ø 38x12 mm, wrought		
6 706B	87.80	10.9	0.006	1.56	<0.002	0.61	0.006	0.054	<0.003	0.009	<0.0005	<0.002	(0.004)	0.009	0.007	Ni-Bronze		
6 715A	69.0	30.22	(0.007)	0.61	0.10	0.82	0.008	0.10	(0.01)	0.006	(0.0014)	(0.003)	0.03	0.001	0.005			
RM	P	Fe	Pb	Sn	Sb	Bi	Ni	Zn	As	Se	Te	Cu	Ø 40x25 mm, cast					
IM CO2	11.60	0.096	0.070	0.35	0.065	0.0049	0.013	0.15	0.0050	(0.0045)	(0.0055)	Rest	CuP - Vorlegierung					
IM CO3	8.56	0.11	0.10	0.037	0.14	0.015	0.10	0.24	0.011	(0.0073)	(0.0080)	Rest	CuP - pre-alloy					
IM CO4	5.54	0.29	0.29	0.13	0.092	0.0086	0.25	0.029	0.016	(0.010)	(0.012)	Rest	nur Satz/set only					
IM CO5	9.45	0.11	0.0044	0.55	0.034	0.00095	0.0082	0.061	0.0023	(0.0015)	(0.0023)	Rest						
CRM	Cu	Mn	Fe	Mg	Pb	Si	As	Sb	Bi	Ni	Zn	Ø 30x35 mm, cast						
GB 02105	(62)	0.068	0.85	0.0071	0.0072	0.033	0.013	0.0118	0.0070	(14.77)	(20.77)	Neusilber						
GB 02106	(62)	0.15	0.64	0.018	0.0098	0.43	0.0070	0.0063	0.0040	(14.96)	(21.20)	Nickel Silver						
GB 02107	(62)	0.205	0.45	0.029	0.020	0.140	0.034	0.0021	0.0021	(14.85)	(20.82)							
GB 02108	(62)	0.505	0.231	0.058	0.030	0.281	0.0041	0.0036	0.0014	(14.86)	(21.08)							
GB 02109	(62)	0.82	0.112	0.101	0.049	0.089	0.055	0.0015	0.00074	(14.11)	(21.17)							
RM	Cu	Sn	Pb	Ni	P	Fe	Si	Mn	Mg	Co	Zn	Ø 50x10 mm, chill cast						
10 C65.26	56.7	<0.01	0.06	11.9	0.11	<0.01	<0.002	0.70	<0.01	0.0006	30.5	Neusilber						
10 C65.27	57.0	0.01	0.04	13.9	0.02	0.26	<0.002	0.13	<0.01	0.03	28.7	Nickel Silver						
10 C65.28	56.9	0.15	0.06	15.3	0.07	0.13	0.01	0.57	0.01	0.03	26.7							
10 C65.29	58.9	0.08	0.11	16.8	0.07	0.39	0.02	0.17	<0.01	0.07	23.4							
10 C65.30	55.0	0.04	0.25	19.8	0.05	1.0	0.10	0.09	0.01	0.04	23.5							

RM	Cu	Pb	Fe	Ni	Si	Mn	P	S	Mg	Co	C	Cr	Ag	Zn	Ø 40-42x15-18 mm, chill cast
4 NS1F	58.63	0.0141	0.064	7.81	(0.002)	0.0009	0.0140	(0.0004)	0.0020	0.052	(0.0018)	0.0003	-	33.41	Neusilber
4 NS2F	61.09	0.063	0.085	13.39	(0.003)	0.0013	0.0091	(0.020)	<0.0005	0.0118	-	(0.001)	0.0026	25.31	Nickel Silver
4 NS3E	66.30	0.155	0.201	14.86	0.018	0.129	0.013	0.063	0.0011	0.102	0.014	0.0022	0.111	17.99	
4 NS4E	66.71	0.150	0.351	16.95	(0.0009)	0.00099	0.0099	0.012	<0.0001	0.222	-	0.0005	0.0298	15.58	
4 NS5E	54.3	1.13	0.56	19.4	0.051	0.096	0.044	0.017	0.0015	-	-	-	-	24.2	

CRM	Cu	Zn	Pb	Fe	Sn	Ni	P	Ø 31x19 mm, wrought							
3 1115	87.96	11.73	0.013	0.13	0.10	0.074	0.005	Handelsbronze							
3 1116	90.37	9.44	0.042	0.046	0.044	0.048	0.008	Commercial Bronze							
3 1117	93.01	6.87	0.069	0.014	0.021	0.020	0.002								

CRM	Cu	Zn	Pb	Fe	Sn	Ni	P	31x31x19 mm, chill cast							
3 C1115	87.96	11.73	0.013	0.13	0.10	0.074	0.005	Handelsbronze							
3 C1116	90.37	9.44	0.042	0.046	0.044	0.048	0.008	Commercial Bronze							
3 C1117	93.01	6.87	0.069	0.014	0.021	0.020	0.002								

CRM	Cu	Zn	Pb	Fe	Sn	Ni	P	Ø 31x19 mm, wrought							
3 1112	93.38	6.30	0.057	0.070	0.12	0.100	0.009	Gildingmetal							
3 1113	95.03	4.80	0.026	0.043	0.064	0.057	0.008	Gilding Metal							
3 1114	96.45	3.47	0.012	0.017	0.027	0.021	0.009								

CRM	Cu	Zn	Pb	Fe	Sn	Ni	P	31x31x19 mm, chill cast							
3 C1112	93.38	6.30	0.057	0.070	0.12	0.100	0.009	Gildingmetal							
3 C1113	93.03	4.80	0.026	0.043	0.064	0.057	0.008	Gilding Metal							
3 C1114	96.45	3.47	0.012	0.017	0.027	0.021	0.009								

RM	Cu	Ni	Al	Fe	Mn	Co	P	Mg	Pb	As	Cd	Sb	Sn	Si	Bi	S
IM WL1	95.54	0.44	0.082	0.072	0.0041	0.0010	0.012	0.00036	0.013	0.0010	0.0017	-	0.22	0.057	0.0093	0.020
IM WL2	97.49	0.32	0.057	0.13	0.0038	0.0065	0.016	0.00097	0.011	0.0078	0.0023	0.0050	0.32	0.046	0.0073	0.0070
IM WL3	96.51	0.22	0.0034	0.20	0.38	0.0096	0.021	0.0016	0.0083	0.020	0.010	0.0085	0.37	0.0037	0.0050	0.0088
IM WL4	96.41	0.019	-	0.012	-	0.013	-	-	0.0066	0.0034	0.0068	-	0.55	0.0019	0.0026	0.0050
IM WL5	97.62	0.0014	0.0014	0.0025	0.00073	0.019	-	-	0.0030	0.0011	0.0038	0.0006	0.73	0.0009	0.0011	0.0019
IM WL6	95.76	0.091	0.10	0.31	0.14	0.019	0.032	0.015	0.016	0.024	0.025	0.011	0.80	0.13	0.012	0.017

C	Zn	Ø 40x25 mm, cast				
0.0050	3.52	ZnSn-Bronze				
0.0082	1.56					
0.010	2.21	nur Satz/set only				
0.0032	2.97					
-	1.61					
0.016	2.48					

CRM	Cu	Zn	Pb	Fe	Sn	Ni	P	Mn	Cd	Sb	Ag	As	Bi	S	Al	Te
IM MI1	95.69	3.57	0.0060	0.25	0.15	0.0059	0.028	0.0030	0.023	0.000044	0.0038	0.072	0.00063	0.043	0.040	0.0065
IM MI2	93.35	6.19	0.016	0.16	0.10	0.018	0.022	0.0081	0.016	0.0019	0.0090	0.054	0.00056	0.049	0.055	0.011
IM MI3	91.46	8.01	0.042	0.086	0.067	0.073	0.015	0.035	0.011	-	0.020	0.034	0.0026	0.023	0.015	0.0031
IM MI4	88.35	11.13	0.070	0.041	0.013	0.14	0.0073	0.050	0.0054	0.0006	0.026	0.0031	0.0026	0.012	0.0079	0.0021
IM MI5	94.71	4.44	0.096	0.015	0.0040	0.25	0.0026	0.069	0.0012	0.0096	0.033	0.015	0.0043	0.0019	0.0021	-
	Be	Si	Ø 38x25 mm, cast													
	0.000091	0.0032	Gildingmetal													
	0.00085	0.012	Gilding Metal													
	0.0019	0.031														
	0.0065	0.060	nur Satz/set only													
	0.0072	0.082														
RM	Cu	Mn	Pb	Ni	Fe	Si	Sn	Zn	As	Sb	Ag	P	Ø 40x13 mm, wrought			
IM CK1	(98)	1.06	0.0021	0.44	0.029	0.050	0.14	0.24	0.013	0.0049	0.012	0.0011	Mangankupfer			
IM CK2	(98)	1.51	0.0062	0.38	0.11	0.091	0.11	0.14	0.0094	0.0015	0.010	0.0021	Manganese Copper			
IM CK3	(97)	1.76	0.0098	0.27	0.17	0.033	0.075	0.095	0.0099	0.0024	0.0056	0.0038				
IM CK4	(97)	1.93	0.0017	0.13	0.26	0.025	0.042	0.064	0.0054	0.0040	0.0043	0.0055	nur Satz/set only			
IM CK5	(97)	2.30	0.015	0.011	0.29	0.012	0.0047	0.033	0.0014	0.0052	0.0016	0.013				
IM CK6	(96)	2.64	0.0038	0.072	0.40	0.21	0.0025	0.033	0.0039	0.0051	0.0012	0.015				
RM	Cu	Cr	Sn	Pb	Zn	Fe	Ni	Al	Si	Mn	S	Co	Ag	Mg	Cd	Zr
4 CCR1C	-	0.855	<0.005	0.002	0.003	0.015	<0.005	0.014	0.01	<0.001	0.002	-	-	0.001	Ø 45x20 mm, wrought	
4 CCZA	99.22	0.667	0.0045	0.0023	0.0076	0.033	0.0084	0.0003	0.0031	0.0008	0.001	0.0012	0.0019	-	Ø 50x17 mm, wrought	
4 274A	96.23	0.531	0.014	0.0021	0.0395	0.0779	2.54	0.0013	0.594	0.0148	0.0035	0.0028	-	-	Ø 46x17 mm, wrought	
RM	Cd	Sn	Zn	Ag	Cu	Ø 30x15 mm, wrought										
4 CCD1A	1.01	<0.001	(0.0017)	(0.0014)	Rest	CuCd										
4 CCD2A	1.18	0.200	(0.0019)	(0.0012)	Rest											
4 CCD3A	1.10	0.473	(0.0018)	(0.0011)	Rest											
RM	Mg	Al	P	S	Co	Cr	Ag	Cu	Ø 36-40x16 mm, chill cast							
4 CMG10A	0.379	0.024	0.027	0.0024	0.042	0.038	0.076	Rest	CuMg							
4 CMG11A	0.771	0.043	0.079	0.0019	(0.0001)	<0.0005	0.151	Rest								
4 CMG12A	1.16	0.0076	0.09	0.0020	0.089	0.074	0.192	Rest								
RM	Cu	Sn	Pb	Zn	Fe	Ni	Mn	Al	Si	Ø 60x6 mm, chill cast						
8 UN3S	92.65	0.215	0.20	1.65	0.365	3.45	0.073	0.125	1.24	Kupfer, komplex; Copper complex						
CRM	P	Sn	Bi	Fe	Si	Sb	Pb	Cu	Ø 40x40x25 mm							
MT 6013-91	4.72	4.67	0.011	0.060	0.28	0.063	0.034	Rest	Kupferlot							
MT 6014-91	5.24	3.93	0.0016	-	0.18	0.048	0.024	Rest	Copper Alloy Solder							
MT 6015-91	5.73	3.72	0.0030	0.118	0.087	0.029	-	Rest								
MT 6016-91	5.90	3.24	0.0051	0.042	-	0.024	0.0083	Rest	nur Satz/set only							
MT 6017-91	6.28	2.52	0.0076	0.097	-	0.016	0.0095	Rest								

RM	Pb	Sn	Zn	Mn	Al	Fe	Ni	P	Cr	Si	Sb	Be	Co	C	S	Ag
IA 70B	(0.0003)	(0.0002)	<0.001	<0.0003	-	<0.001	<0.0002	0.002	-	<0.0005	(0.0002)	-	<0.003	(0.007)	(0.0005)	0.0011
IA 71B	0.006	0.005	0.005	0.0010	0.040	0.042	0.021	0.004	0.0030	0.060	(0.002)	1.82	0.21	0.003	(0.0004)	(0.002)
IA 72B	1.99	0.029	7.81	-	-	0.007	0.004	0.005	-	(0.002)	0.006	-	-	0.002	0.0015	(0.002)
IA 73B	2.71	0.15	35.38	(0.001)	0.001	0.17	0.059	0.003	-	(0.002)	0.007	-	(0.003)	(0.004)	(0.004)	0.005
IA 74B	0.017	0.70	38.09	<0.01	0.003	0.011	0.006	(0.008)	-	0.003	0.003	-	-	-	(0.003)	(0.005)
IA 75B	0.63	0.59	38.0	(0.003)	(0.005)	0.06	0.02	0.003	-	(0.003)	(0.004)	-	(0.003)	(0.004)	(0.001)	(0.005)
IA 76B	1.94	0.69	36.71	(0.003)	(0.005)	0.060	0.015	0.005	-	-	0.006	-	0.0007	(0.004)	0.003	0.005
IA 77B	0.016	4.66	0.007	(0.002)	(0.001)	0.002	0.002	0.148	-	0.003	0.005	-	-	0.003	0.002	(0.002)
IA 78B	3.87	4.73	3.55	(0.002)	(0.002)	0.02	0.008	0.19	-	<0.002	0.01	-	<0.0005	<0.002	0.010	0.008
IA 79B	(0.003)	0.017	0.013	0.16	9.19	2.13	0.075	0.005	(0.003)	0.019	-	-	(0.002)	0.002	(0.001)	0.002
IA 80B	0.009	0.018	0.078	0.54	10.19	3.31	4.69	0.009	0.012	0.030	(0.004)	-	0.014	(0.01)	(0.001)	0.006
IA 81B	0.006	0.008	0.176	0.012	6.70	0.047	0.003	0.004	0.002	1.84	0.003	-	-	0.002	<0.001	(0.004)
IA 82B	(0.02)	0.015	(0.01)	1.02	(0.012)	0.04	<0.01	(0.004)	-	3.07	<0.01	-	(<0.01)	(0.014)	0.002	(<0.005)
IA 83B	0.017	0.85	39.3	0.13	0.002	0.97	0.010	0.004	(0.003)	(0.003)	(0.004)	-	(0.003)	0.003	(0.001)	(0.002)
IA 84B	0.008	0.014	0.082	0.62	(0.002)	1.30	10.03	0.004	(0.003)	0.013	(0.002)	-	0.013	(0.01)	0.008	0.005
IA 85B	0.005	0.014	0.12	0.53	(<0.01)	0.53	29.60	0.007	-	(<0.01)	(<0.01)	-	0.034	0.011	0.010	-
IA 86A	5.42	4.62	4.25	(0.014)	<0.01	0.028	0.78	0.071	-	<0.005	0.093	-	(<0.01)	(0.011)	0.029	(0.023)
IA 87B	1.58	0.78	36.1	0.006	0.20	0.29	0.095	0.008	(0.002)	0.004	0.014	-	0.007	0.003	(0.001)	(0.01)
IA 88A	0.03	0.04	23.25	3.72	6.03	2.27	0.02	(0.004)	-	0.02	<0.01	-	(<0.01)	(0.022)	(0.002)	-
IA 89B	0.089	8.17	3.96	(<0.01)	(<0.01)	0.013	0.15	0.087	-	(<0.01)	(<0.01)	-	(<0.01)	-	0.018	-
IA 90B	1.66	6.44	2.98	(<0.01)	(<0.01)	0.019	0.69	0.054	-	(<0.01)	0.06	-	(<0.01)	-	0.035	-
IA 91A	6.39	6.71	3.19	<0.01	<0.01	0.08	0.09	0.01	-	<0.005	0.07	-	(<0.01)	(0.010)	0.052	(0.008)
IA 92A	9.58	9.75	0.27	<0.01	<0.01	(0.01)	0.36	0.025	-	<0.005	0.35	-	<0.01	(0.012)	0.036	(0.024)
IA 93A	0.06	0.05	0.18	0.37	10.39	3.77	1.15	0.015	0.01	0.11	(0.02)	-	(<0.01)	(0.016)	(0.003)	(0.002)
IA 94A	0.009	(<0.01)	0.09	0.16	10.63	4.04	4.37	<0.01	-	<0.01	(<0.01)	-	0.01	(0.014)	(0.003)	-

As Cu Ø 31x18.75 mm

(0.0001)	(99.9)	CDA 110	Kupferlegierungen
-	(97.7)	CDA 172	Copper Alloys
(0.003)	(90.08)	CDA 314	
(0.005)	(61.5)	CDA 360	IA 70B - 94A als Satz lieferbar, CBBA-25
<0.01)	(60.4)	CDA 464	available as set, CBBA-25
<0.01	(59.79)	CDA 482	
(0.003)	(60.5)	CDA 485	IA 70B(X)-94A(X) RFA-Proben lieferbar Ø 31x5 mm
(0.001)	(95.2)	CDA 510	XRF-Standards available
<0.003	(87.7)	CDA 544	
-	(88.4)	CDA 623	IA 70B(C)-94A(C) Späne lieferbar 100 g Flaschen
(0.004)	(81.2)	CDA 630	Chips available 100 g bottles
0.058	(91.2)	CDA 642	
(<0.01)	(95.79)	CDA 655	
-	(58.7)	CDA 675	
(0.002	(87.9)	CDA 706	
-	-	CDA 715	
<0.01	(84.66)	CDA 836	
0.007	(60.9)	CDA 857	
(<0.01)	(64.59)	CDA 863	
-	-	CDA 903	
-	-	CDA 922	
(<0.01)	(83.40)	CDA 932	
(<0.01)	(79.58)	CDA 937	
(<0.01)	(83.87)	CDA 954	
(<0.01)	(80.68)	CDA 955	

CRM	Cu	Ni	Fe	Mn	Zn	Zr	Mg	ppm Pb	ppm Cr	ppm Co	ppm Ti	ppm Sn	ppm Bi	ppm Sb	ppm Cd	ppm P	Ø 40x30 mm	
B EB389	74.3	24.7	0.107	0.415	0.1125	0.098	0.067	98	153	770	660	262	44	46	16	93	CuNi25	
RM	Ni	Al	Cd	S	Sn	Si	Zn	Co	Fe	Sb	P	Mg	As	Mn	Pb	Ø 40x30mm + 40x12 mm CuNi		
IM NC1	23.7	-	0.0142	0.0709	0.0374	0.0854	0.776	0.0062	0.0501	0.0024	0.0147	0.0016	0.0056	0.552	0.0025	0.0011	0.0320	Rest
IM NC2	24.21	0.0219	0.0189	0.0837	0.0457	0.196	0.508	0.0115	0.290	0.0049	-	0.0024	0.0104	0.413	0.0021	0.0046	(0.0006)	Rest
IM NC3	24.68	0.229	0.0120	(0.0202)	0.0171	0.0609	0.244	0.0282	0.106	0.0084	0.0312	0.0561	0.0167	0.148	0.0027	0.0077	(0.0036)	Rest
IM NC4	25.39	0.332	0.0049	0.0022	0.0087	0.0197	0.0099	0.101	0.426	0.0113	0.0113	0.0170	0.0251	0.0172	0.0120	0.0117	0.0500	Rest
IM NC5	25.82	0.0749	0.0018	-	0.0044	0.0198	0.0152	0.151	0.369	0.0161	0.0222	0.0861	0.0427	0.0623	0.0409	0.0213	0.0050	Rest

Kontrollproben; Control Chart Samples

RM	Cu	As	Cd	Co	S	Se	Zn	Ø 40x30 mm + 40x50 mm
SL CCu3	(99)	0.0875	0.0096	0.0496	0.0229	0.0475	0.0194	Reinkupfer; Pure Copper

Einstellproben für Rekalibrierung; Setting-Up-Samples for Recalibration

SUS	ppm Pb	ppm Sn	ppm Ni	ppm Bi	ppm Ag	ppm As	ppm Te	ppm Sb	ppm Fe	ppm Mn	ppm Si	ppm Cd	ppm Cr	ppm Be	ppm Al	ppm Mg	ppm Co	ppm Zr
KM 4797	4	<1	21	<1	2	<2	<6	<2	9	<1	3	<1	<1	<1	<2	1	1	1
KM 4875	607	590	600	87	586	495	290	222	510	287	255	411	385	140	324	270	451	123
KM 3563	<5	<5	<5	<5	9	<5	<5	<5	7	<5	<5	<5	<5	<5	<5	<5	<5	<5

ppm Se	ppm P	ppm Zn	ppm S	ppm B	ppm O	Cu	Ø 40x30 mm
<1	<1	<3	8	<1	1276	Rest	Kupfer, SUS
172	506	331	68	-	-	Rest	Copper; SUS
<5	<5	<5	<8	-	-	Rest	

SUS	Cu	O	Sn	Pb	Zn	Fe	Ni	Al	Si	As	Mn	Bi	Sb	Mg	P	S	Cr	Ag
SL RC11	99.99	10ppm	4ppm	2ppm	2ppm	5ppm	5ppm	4ppm	1ppm	1ppm	1ppm	1ppm	1ppm	1ppm	1ppm	10ppm	1ppm	7ppm
SL RC12	96	-	0.5	0.08	0.6	0.2	0.5	0.3	0.2	0.15	0.2	0.015	0.04	0.001	0.2	0.02	0.04	0.08
SL RC14	98	-	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.01	<0.02	<0.01	-	<0.01	<0.01	<0.01	1	<0.01
SL RC32	60	-	0.2	0.6	35	0.3	1.5	1.5	0.5	<0.001	1.8	<0.01	0.05	-	0.005	<0.002	0.01	-
SL RC33	80	-	0.01	0.01	0.2	4.5	4	10	0.1	0.02	0.4	0.01	-	<0.001	0.005	-	<0.005	-
SL RC36	80	-	7	12	0.4	0.01	1.7	<0.005	<0.005	0.02	<0.005	0.005	0.03	<0.005	0.01	-	-	-
SL RC38	65	-	0.005	0.01	0.02	0.5	30	-	0.005	-	0.75	-	-	0.01	0.005	0.015	0.02	-
SL RC40	82	-	0.01	0.02	0.01	1.5	2	9	0.03	<0.01	5	-	-	<0.002	0.004	-	0.005	-
SL RC110	Rest	-	0.006	0.005	0.005	0.005	0.003	0.003	0.003	0.003	0.004	0.003	0.006	0.004	0.003	0.004	0.004	0.006

Be	C	Cd	Co	Se	Te	Ti	Zr	Au	Ø ca. 40x40 mm
-	-	1ppm	3ppm	1ppm	1ppm	-	-	-	Kupferbasisleg., SUS
0.01	<0.005	0.03	0.1	0.02	0.02	0.02	0.001	-	Copper Base Alloy, SUS
-	-	<0.01	-	-	<0.01	-	0.1	-	
-	-	-	-	<0.001	<0.01	-	-	-	
-	-	-	<0.005	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	0.06	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
0.0003	-	0.004	0.003	0.004	0.007	0.001	<0.002	0.003	

SUS	Cu	Zn	Pb	Sn	Al	Ni	Fe	As	Cd	Si	Cr	Se	Sb	Mn	Ø 40x40 mm
BR RC11	99.9	0.0003	0.0003	0.0003	0.0002	0.0015	0.0003	0.0003	0.0003	0.0005	0.0002	0.0002	-	-	Kupferbasisleg., SUS
BR RC32	66	28.5	0.78	0.23	1.08	0.11	0.87	-	-	0.1	-	-	-	1.65	Copper Base Alloy, SUS
BR RC33	85	-	-	-	9.80	4.9	4.0	-	-	-	-	-	-	0.40	
BR RC36	76	1.00	13.12	7.01	-	1.88	0.01	-	-	-	-	-	0.11	-	
BR RC37	60	20	-	-	-	20	-	-	-	-	-	-	-	-	
BR RC40	82	0.04	-	-	8.09	1.57	1.16	-	-	-	-	-	-	6.17	

SUS	Cu	Sn	Pb	Zn	Ni	Fe	Si	Mn	As	Sb	Bi	Al	Ø 50x10 mm, chill cast
10 C38.07	60	0.2	0.2	Rest	0.2	0.1	0.05	0.3	0.1	0.1	0.1	0.1	Messing, SUS; Brass, SUS

SUS	Cu	Sn	Pb	Fe	Ni	Al	Si	Mn	As	Bi	Sb	Cd	Zn	Ø 45x50 mm, chill cast
PB MSB	72.93	0.97	0.53	0.47	0.48	1.82	0.31	3.34	0.046	0.13	0.085	0.084	Rest	Messing, SUS
PB MSC	61.15	0.87	0.86	(1.15)	0.48	1.43	0.14	2.57	0.052	0.11	0.11	0.085	Rest	Brass, SUS
PB MSD	79.73	0.12	0.095	0.14	0.01	0.01	0.05	0.02	0.005	0.01	0.005	0.005	Rest	

RM	ppm Fe	ppm Cu	ppm Pb	ppm As	ppm Se	ppm Bi	ppm Ag	ppm P	ppm Si	ppm Co	ppm Sn	ppm Zn	ppm Sb	ppm Ga	ppm Te	ppm Mn	ppm S	ppm Cr
IA 187A	19	2.2	0.15	0.1	<0.1	<0.1	0.1	<1.0	(18)	1.0	0.4	<0.5	<0.5	<0.5	<0.1	3.0	1.9	(3)
IA 188A	19	1.8	1.0	0.7	0.7	0.9	1.1	1.4	18	1.7	1.1	2.3	1.1	<0.5	0.8	2.3	1.8	(6)
IA 189A	38	9.0	2.9	0.7	2.1	2.6	2.4	3.7	19	3.1	2.2	2.8	3.9	<0.5	1.7	1.9	1.8	(10)
IA 190A	99	17	9.3	28	6.5	11.1	10.9	34	28	8	6.2	8.1	11	<0.5	8.9	1.8	3.3	(1)
IA 191A	7.9	4.2	0.3	13	1.9	<0.1	0.1	<1.0	(5)	545	0.4	1.9	<0.5	<0.5	<0.1	3.1	2.1	2.1
	ppm V	ppm Al	ppm Ti	ppm B	ppm Mg	ppm Be	ppm C	ppm Mo	ppm N	ppm Cd	ppm O	ppm Ca	ppm Tl	Ni	Ø 31x18.5 mm			
	(0.8)	11	(3)	<5	(2)	<1	13	<1	(1)	<0.1	(14)	<10	<0.2	Rest	Nickel, hochrein; High Purity Nickel			
	<0.5	24	(2)	<5	(4)	<1	22	<1	(1)	0.2	(17)	<10	(0.9)	Rest				
	<0.5	44	(3.3)	<5	(8)	<1	23	<1	(1)	0.8	(18)	<10	2.3	Rest	RFA-Proben lieferbar Ø 31x2.25 mm			
	<0.5	50	(6)	<5	(6)	<1	22	<1	(1)	5	(19)	<10	5.8	Rest	XRF Standards available			
	<0.5	1.5	<1	<5	(2)	<1	<0.1	<1	(2)	<0.1	(30)	<10	<0.2	Rest	Späne lieferbar 100 g Flaschen Chips available 100 g bottles			

RM	C	Mn	S	Si	Cu	Fe	Cr	Co	Ti	B	Mg	P	Mo	V	Al
6 200A	0.077	0.15	0.004	0.007	0.004	0.076	(0.001)	0.057	0.043	0.0044	0.013	<0.003	<0.002	0.001	0.029
6 200-1	0.044	0.110	0.001	0.041	0.008	0.048	0.001	0.090	0.021	0.0034	0.031	0.001	0.001	0.001	0.005
6 200-2	0.050	0.245	0.006	0.062	0.053	0.118	0.010	0.106	0.020	0.0035	0.036	0.002	0.001	0.002	0.005
6 200-3	0.014	0.150	0.004	0.012	0.107	0.141	0.008	0.105	0.024	0.0042	0.024	0.002	0.001	0.001	0.005
6 200-4	0.11	0.31	0.007	0.100	0.048	0.290	0.130	0.090	0.019	0.0038	0.032	0.003	0.001	0.002	0.007
	Nb	Pb	Ni	Ø 38x20 mm, 6 200A Ø 38x12 mm, wrought											
	(0.001)	<0.0005	Rest	Reinnickel											
	0.002	0.0011	Rest	Pure Ni											
	0.002	0.0010	Rest												
	0.002	0.001	Rest												
	0.002	0.001	Rest												

RM	Si	Mn	Cu	Fe	Cr	Co	Ti	Al	Mg	C	Ni	Ø 40x15 mm, cast			
4 17518H	0.05	0.43	<0.001	0.52	0.05	1.05	0.032	0.15	0.034	0.007	Rest	Reinnickel			
4 17519J	0.17	0.35	0.06	0.28	0.06	0.77	0.07	0.19	0.20	-	Rest	Pure Nickel			
4 17520H	0.20	0.18	0.09	0.25	0.10	0.48	0.08	0.04	0.06	-	Rest				
4 17521J	0.28	0.11	0.16	0.24	0.16	0.26	0.12	0.03	0.03	-	Rest				
4 17522G	0.32	0.02	0.21	0.06	0.23	0.05	0.32	0.03	<0.005	-	Rest				

RM	C	Si	Cu	Fe	Mn	Cr	Ti	Al	Co	Mo	Mg	Ni	Ø 29x25 mm, wrought					
10 E3918	0.05	1.14	0.005	1.57	0.85	(19.4)	0.72	0.25	0.22	0.49	0.058	Rest	Nimonic 75					
10 E3919	0.07	0.89	0.055	2.62	0.47	(19.6)	0.40	0.15	1.00	0.25	0.040	Rest						
10 E3920	0.07	0.57	0.11	3.02	0.28	(19.25)	0.35	0.13	2.02	0.095	0.020	Rest						
10 E3921	0.11	0.34	0.27	3.50	0.14	(19.35)	0.20	0.045	0.53	0.05	-	Rest						
10 E3922	0.14	0.16	0.50	3.98	0.10	(19.2)	0.08	0.035	0.115	0.03	0.014	Rest						
RM	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Ni	Ø 40x15 mm, cast					
4 754D	0.07	0.66	0.53	0.21	2.22	19.65	0.21	0.23	0.49	0.18	0.002	Rest	Nimonic 75					
4 755D	0.05	0.27	1.07	0.50	1.15	19.69	0.49	0.07	0.83	0.36	0.003	Rest						
RM	C	Si	Cu	Fe	Mn	Cr	Ti	Al	Co	Mo	Mg	Ni	Ø 29x25 mm, wrought					
10 B7004	0.01	0.17	0.14	0.97	0.08	(19.6)	2.63	1.64	0.06	0.06	0.002	Rest	Nimonic 80 A					
10 B7005	0.035	0.23	0.045	0.32	0.16	(19.6)	2.52	1.55	1.04	0.10	0.005	Rest						
10 B7006	0.08	1.03	0.075	0.61	0.25	(19.55)	2.14	1.19	0.35	0.20	0.008	Rest						
10 B7007	0.14	0.66	0.22	0.22	0.53	(19.4)	2.31	1.36	0.15	0.39	0.019	Rest						
10 B7008	0.21	0.36	0.025	0.19	0.02	(19.3)	2.33	1.46	2.00	<0.01	0.030	Rest						
RM	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Ni	Ø 40x15 mm, cast					
4 801D	0.14	0.51	0.56	0.22	0.57	20.75	0.25	0.25	2.19	1.33	0.03	Rest	Nimonic 80 A					
4 803E	0.06	1.05	0.22	0.007	0.33	19.85	0.50	0.50	1.93	1.60	0.0002	Rest						
4 804D	0.07	0.56	0.54	0.21	0.66	19.72	0.09	0.20	2.34	1.33	0.004	Rest						
4 805D	0.20	0.22	1.01	0.54	1.06	19.82	0.10	0.22	2.71	1.06	-	Rest						
RM	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Sn	Pb	W	B	Zr	V	Ag	Te	Bi
4 806D	0.02	<0.01	<0.01	0.10	20.13	0.08	0.30	2.08	1.36	<0.0005	0.0019	0.015	0.006	<0.005	<0.01	<0.0001	<0.0001	<0.0001
4 808C	0.02	0.04	<0.01	0.11	29.73	<0.01	0.03	2.14	1.41	0.030	0.007	0.11	0.014	0.035	0.05	0.007	0.008	0.002
	As	Sb	Ni	Ø 40x15 mm, cast														
	<0.001	<0.0002	Rest	Nimonic 80														
	0.013	0.017	Rest															
RM	C	Si	Cu	Fe	Mn	Cr	Ti	Al	Co	Mo	Mg	Ni	Ø 29x25 mm, wrought					
10 B7009	0.025	0.15	0.03	1.13	0.015	(19.65)	2.59	1.63	16.9	0.05	0.001	Rest	Nimonic 90					
10 B7010	0.05	0.22	0.04	0.62	0.24	(19.7)	2.48	1.61	16.9	0.10	0.004	Rest						
10 B7011	0.095	1.02	0.065	0.34	0.16	(19.7)	2.05	1.20	17.0	0.20	0.010	Rest						
10 B7012	0.16	0.39	0.11	0.25	0.53	(19.65)	2.28	1.25	17.0	0.39	0.018	Rest						
10 B7013	0.22	0.65	0.20	0.22	0.06	(19.6)	2.39	1.46	17.0	<0.01	0.030	Rest						

RM	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Ni	Ø 40x15 mm, cast				
4 901B	0.11	0.51	0.50	0.10	0.57	20.80	0.26	17.02	2.28	1.29	0.020	Rest	Nimonic 90				
4 902B	0.15	0.50	0.51	0.13	0.61	18.80	0.22	17.08	2.26	1.31	0.02	Rest					
4 903C	0.08	1.09	0.25	0.01	0.83	19.84	0.07	17.60	1.86	1.67	0.002	Rest					
4 904C	0.08	0.52	0.50	0.10	0.25	19.9	0.21	16.9	2.26	1.29	0.005	Rest					
4 905C	0.19	0.22	1.08	0.23	1.15	19.89	0.53	16.45	2.92	1.03	-	Rest					
RM	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	S	P	B	Ni	Ø 40x15 mm, cast	
4 1051D	0.166	0.58	0.206	0.115	0.575	15.95	4.50	18.98	1.078	4.35	0.186	0.0015	0.0040	0.0009	Rest	Nimonic 105	
4 1052C	0.19	0.51	0.26	0.13	0.65	15.7	4.48	18.6	1.09	4.08	0.002	-	-	-	Rest		
4 1054B	0.22	0.59	0.23	0.11	0.88	14.44	4.66	19.13	1.24	4.95	0.004	-	-	-	Rest		
4 1055D	0.274	0.24	0.03	0.02	1.26	14.9	3.87	19.9	0.52	3.97	(0.008)	-	-	-	Rest		
CRM	C	Mn	P	S	Si	Cu	Cr	Mo	Co	Ti	Al	B	Fe	V	Ni	Ø 31x19 mm, wrought	
3 1243	0.024	0.019	0.003	0.0018	0.0018	0.007	19.20	4.25	12.46	3.03	1.23	0.005	0.79	0.12	58.78	Waspaloy	
3 349a Waspaloy Späne lieferbar; Chips available																	
RM	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Ni	Ø 40x15 mm, cast						
4 14939E	0.42	0.63	0.52	0.57	21.0	6.62	19.58	1.88	0.76	Rest	NiCrCoMo						
4 10999D	0.15	0.47	0.15	0.52	20.38	5.84	19.53	2.50	0.46	Rest	C263						
4 11005F	0.39	0.65	0.72	0.81	20.21	5.93	18.74	2.45	0.41	Rest							
RM	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Nb	B	V	W	
4 WASP1B	0.01	0.59	0.011	0.019	0.13	0.08	2.16	16.64	6.14	12.8	3.13	1.64	0.055	0.007	0.03	0.18	
4 WASP2B	0.09	0.35	0.018	0.009	0.24	0.11	1.66	18.5	4.22	14.6	3.53	1.00	0.12	0.008	0.06	0.14	
4 WASP3D	0.118	0.208	0.025	0.014	0.542	0.735	0.95	20.84	1.96	13.77	5.52	2.99	0.163	0.0087	0.123	0.064	
4 WASP4C	0.052	0.21	(0.01)	<0.005	0.53	(0.004)	1.48	19.7	7.51	11.01	2.25	2.16	0.25	0.014	0.145	0.25	
	Zr	Pb	Sn	Ni	Ø 40x15 mm, cast												
	0.12	-	-	Rest	Waspaloy												
	0.07	-	-	Rest													
	0.059	0.008	0.014	51.76	Ø 43x20 mm												
	0.08	0.004	(0.005)	54.3	Ø 43x20 mm												
RM	Cr	Mo	Co	Al	Ti	Cu	Fe	W	Si	C	Mn	P	S	Nb	V	B	W
6 199A	19.25	3.99	13.47	1.26	3.07	0.022	1.05	-	0.05	0.033	0.014	0.006	<0.001	0.040	0.020	(0.004)	-
6 263	19.84	5.66	19.96	0.47	2.25	0.029	0.47	(0.26)	0.26	0.071	0.38	0.005	<0.002	(0.04)	(0.004)	-	-
6 617	22.44	9.64	12.42	1.20	0.28	0.062	1.76	0.06	0.14	0.079	0.057	0.007	<0.001	0.123	0.022	0.0022	0.06
	Zr	Pb	N	Ni	Ø 38x12 mm, wrought												
	(0.04)	-	-	57.8	Waspaloy												
	-	-	-	Rest	Alloy 263												
	-	0.0001	0.0070	(51.6)	Alloy 617 Ø 50x12 mm												

RM	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Ni	Ø 40x15 mm, cast
4 11381D	0.30	0.43	0.008	0.70	19.76	9.47	(0.047)	2.48	0.41	Rest	NiCrMo, Type C130, ANC12
4 11383D	0.20	0.19	0.08	0.49	22.50	9.37	0.05	2.84	0.67	Rest	
4 11384E	0.15	0.13	0.12	0.98	20.5	10.2	0.30	2.6	0.50	Rest	
4 14182D	(0.01)	<0.005	0.006	0.09	21.61	10.11	0.06	2.75	0.76	Rest	

RM	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Ni	Ø 40x15 mm, cast
4 14184F	0.38	0.38	0.064	0.35	21.64	10.8	10.6	0.01	<0.01	Rest	NiCrMoCo, Type C242, ANC11
4 14188D	0.33	0.30	(0.003)	0.44	21.17	10.3	10.4	0.03	<0.03	Rest	
4 14386C	0.38	0.39	0.02	1.50	20.73	10.47	10.51	0.06	0.02	Rest	
4 14387E	0.21	0.30	(0.005)	1.00	21.0	10.7	9.9	<0.01	<0.01	Rest	

RM	Si	Mn	Cu	Fe	Cr	Mo	Co	W	Nb	Ni	Ø 40x15 mm, cast
4 10221F	0.45	0.28	0.11	0.62	20.0	6.57	0.26	2.23	7.43	Rest	NiCrNbMo, Type PE10, MC102
4 10225G	0.25	0.29	0.12	0.55	18.27	5.95	0.30	1.74	7.00	Rest	
4 10230G	0.34	0.35	0.12	0.76	21.9	6.06	0.59	3.83	7.04	Rest	
4 10231D	0.14	0.13	0.06	0.55	20.58	6.00	0.11	2.67	6.76	Rest	
4 10235E	0.56	0.53	0.26	1.26	19.87	5.85	0.53	3.14	7.25	Rest	
4 10219E	0.20	0.33	0.13	0.65	20.36	5.01	0.25	2.67	6.62	Rest	

RM	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Nb	Ta	Zr	Ni	Ø 40x15 mm, cast
4 11221F	0.08	0.27	0.09	0.22	13.83	3.80	1.27	1.22	6.26	2.76	0.08	0.08	Rest	NiCrAl, Type IN713, AMS5377
4 11222F	0.23	0.32	0.11	0.17	14.18	4.03	0.12	1.05	5.47	2.89	0.08	0.12	Rest	
4 11224F	0.24	0.09	0.34	0.46	14.03	4.02	0.32	1.27	6.07	2.92	0.32	0.12	Rest	
4 11233E	0.14	0.20	0.21	0.39	12.67	4.10	0.63	1.32	6.03	2.61	0.23	0.13	Rest	
4 11236E	0.21	0.21	0.16	0.46	15.98	4.02	0.64	1.33	6.14	2.73	0.10	0.05	Rest	

CRM	C	Mn	P	S	Si	Cu	Cr	V	Mo	Co	W	Fe	Ni	Ø 32x19 mm, cast
3 C2402	0.010	0.64	0.007	0.018	0.85	0.19	16.15	0.22	17.1	1.50	4.29	7.3	51.5	Hastelloy C

RM	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	V	W	Nb	Al	Ti				
6 H1B	0.006	0.050	0.001	0.003	0.82	0.01	1.00	<0.02	26.5	<0.01	<0.01	0.01	<0.005	0.13	0.11				
6 H3B	0.078	0.66	<0.001	0.013	0.11	0.27	19.9	22.3	8.85	2.04	0.060	0.48	0.28	0.14	0.022				
6 H6A	0.005	(0.03)	<0.002	0.010	0.31	0.070	4.34	21.37	13.37	1.11	0.16	3.09	(0.029)	0.24	0.007				
	B	Mg	Ni	Ø 35-38x12 mm, wrought															
	0.002	-	(71.4)	Hastelloy B-2															
	0.0050	-	44.9	Hastelloy X															
	0.0011	-	(55.8)	Hastelloy C-22															
RM	C	Si	S	P	Mn	Fe	Cr	Mo	Co	V	Ti	Al	Cu	N	W	Ni	Ø 43x20 mm, cast		
4 HB1M	0.068	0.246	0.049	0.005	1.25	7.46	2.04	33.9	0.12	0.63	-	-	0.035	0.031	-	Rest	BS 3146		
4 HB2F	0.045	0.48	0.039	0.011	0.925	2.43	1.63	32.1	0.51	0.52	-	-	(0.004)	0.006	-	61.2	ANC 15		
4 HB3G	0.0355	0.78	0.0195	0.0239	0.90	5.06	0.303	29.9	1.014	0.292	-	-	(0.027)	0.005	(0.023)	61.51	AMS 5396		
4 HB4F	0.079	1.02	0.013	0.036	0.666	7.02	0.414	27.59	1.71	0.115	-	-	(0.024)	0.0028	(0.028)	61.21	ASTM A494		
4 HB5K	0.170	1.06	0.0184	0.034	0.451	3.05	0.058	25.2	2.36	0.104	0.210	0.314	0.629	0.0105	-	66.28	Hastelloy B		
RM	C	Si	S	P	Mn	Fe	Cr	Mo	Co	V	W	Ti	Al	Cu	N	B	Ni	Cast, HC2J chill cast Ø 43x20mm	
4 HC1K	0.031	0.58	0.006	0.003	1.18	4.31	15.2	19.5	2.44	0.121	3.22	0.021	(0.007)	0.057	0.121	(0.0014)	53.15	S 3146	
4 HC2J	0.090	0.79	0.024	0.012	1.036	4.02	16.19	19.28	1.72	0.362	3.92	(0.078)	(0.01)	-	0.092	(0.006)	52.09	ANC 16	
4 HC3J	0.105	1.06	0.027	0.025	0.79	5.38	17.2	18.0	0.97	0.146	4.31	0.029	0.025	0.157	0.146	0.008	51.30	AMS 5388	
4 HC4H	0.248	1.84	0.032	0.040	0.548	8.17	20.8	17.3	0.493	(0.066)	5.79	0.181	(0.14)	0.026	(0.066)	0.0036	(43.6)	A 494	
4 HC5S	0.257	1.67	0.0388	0.048	0.362	7.58	20.32	15.91	0.121	0.598	5.94	0.191	0.452	-	0.097	0.0047	46.44	Hastelloy C	
CRM	C	Mn	P	S	Si	Cu	Cr	Mo	Co	Ti	Al	Nb	Fe	B	Ni	Ø 35x19 mm, wrought			
3 1244	0.062	0.29	0.010	0.003	0.12	0.26	15.7	0.20	0.058	0.25	0.26	(0.14)	9.6	<0.05	73.2	Inconel 600			
3 1246	0.082	0.91	0.018	0.001	0.18	0.49	20.1	0.36	0.076	0.38	0.30	(0.09)	46.2	<0.001	30.8	Incoloy 800			
3 1247	0.021	0.38	0.018	0.002	0.32	1.75	23.4	2.73	0.089	0.75	0.060	(0.46)	26.5	<0.002	43.5	Incoloy 825			
3 1249	0.038	0.109	0.013	(0.0007)	0.106	0.145	18.45	3.09	0.325	0.957	0.563	5.19	(17.6)	(0.002)	53.29	Inconel 718 Ø 41x19 mm			
CRM	C	Mn	P	S	Si	Cu	Cr	Mo	Co	Ti	Al	Nb	Fe	B	Ni	Ø 40x20 mm			
8 377-1	0.0202	0.0225	0.0036	0.0006	0.077	0.0110	21.72	8.96	0.0348	0.255	0.216	3.50	3.77	(0.0006)	61.45	Inconel			
8 377-2	0.0202	0.0225	0.0036	0.0006	0.077	0.0104	21.72	8.94	0.0348	0.264	0.232	3.50	3.77	(0.0006)	61.45				
CRM	Fe	Cr	Nb	Mo	Si	Ti	Al	Co	Mn	Cu	C	S	P	Ni	Ø 35x20 mm, HIP-Tech.				
R 006	9.27	15.82	(0.004)	(0.0245)	0.3430	0.2235	0.1460	(0.03)	0.6910	(0.0129)	(0.059)	(0.002)	(0.009)	(73.3)	Inconel	Späne lieferbar			
R 007	19.32	17.47	5.00	2.99	0.1700	0.9050	0.4570	(0.02)	0.0112	(0.0025)	(0.074)	(0.008)	(0.004)	(53.3)	Inconel	Chips available			

CRM	C	Si	Mn	P	S	Cr	Mo	Al	B	Co	Cu	Nb	Ti	Fe	Ni	Ø 38-41x13-19 mm		
5 350	(0.14)	(0.1)	(0.03)	-	(0.003)	(13.5)	(4.3)	(6.0)	-	(0.3)	-	(2.0)	(0.8)	(1.5)	Rest	IN 713	cast	
5 351	0.025	0.14	0.037	(0.006)	0.0006	18.12	3.06	0.55	0.0051	0.136	0.016	5.20	1.06	18.26	53.1	IN 718	wrought	
5 387/1	(0.05)	(0.05)	(0.02)	(0.005)	(0.005)	(11.5)	(6.0)	(0.2)	-	(0.02)	(0.02)	-	(3.0)	(38.0)	(41.0)	Nimonic 901	cast	
5 350C, 351C + 387/1C Späne lieferbar; Chips available																		
RM	Si	Cu	Fe	Mn	Cr	Ti	Al	Co	Mg	Ni	Ø 29x25 mm, wrought							
10 B5789	0.61	0.24	6.10	0.39	(16.5)	0.52	0.09	0.60	0.017	Rest	Inconel 600							
10 B5871	0.88	0.02	6.34	0.57	(16.05)	0.27	0.18	1.09	0.013	Rest								
10 B5967	0.45	0.41	7.18	0.23	(16.05)	0.28	0.09	0.31	0.038	Rest								
10 B5968	0.22	0.80	8.05	0.12	(16.05)	0.11	0.03	0.18	0.059	Rest								
RM	C	Mn	Si	P	S	Cr	Mo	Cu	Co	B	Ti	Fe	Al	Ni	Ø 31x16 mm, cast			
CT 691	0.040	0.30	0.23	0.011	0.008	15.11	0.10	0.10	0.13	(0.0045)	0.20	9.13	0.15	74.37	Inconel 600			
CT 699	0.040	0.29	0.19	0.011	0.009	15.02	0.10	0.10	0.13	(0.0045)	0.20	9.11	0.15	74.57				
CT 700	0.040	0.30	0.19	0.011	0.010	15.02	0.10	0.10	0.13	(0.0045)	0.20	9.16	0.16	74.53				
CT 800	0.040	0.30	0.19	0.006	0.004	14.96	0.095	0.10	0.13	(0.0045)	0.22	9.18	0.12	74.74				
RM	Si	Mn	Cu	Fe	Cr	Co	Ti	Al	Mg	Ni	Ø 40x15 mm, cast							
4 6001G	0.95	0.12	0.83	6.33	16.38	1.02	0.58	0.02	0.01	Rest	Inconel 600							
4 6002F	0.25	0.65	0.02	8.24	16.23	0.22	0.12	0.18	0.004	Rest								
4 6003E	0.74	0.47	0.42	7.1	15.56	0.62	0.22	0.025	0.01	Rest								
4 6004E	0.65	0.38	0.42	7.17	16.21	0.77	0.27	0.05	0.008	Rest								
4 6005E	0.60	0.39	0.39	6.98	16.93	0.62	0.28	0.06	0.002	Rest								
RM	C	Mn	P	S	Si	Cu	Cr	Fe	Al	Co	Ti	B	Mg	Mo	N	O	Sn	
6 600C	0.072	0.50	0.008	<0.002	0.39	0.040	15.62	9.30	0.20	0.04	0.21	0.0012	0.0020	0.027	0.0074	(0.0012)	0.002	
6 600-1	0.070	0.39	0.007	0.004	0.105	0.14	15.35	8.82	0.26	0.10	0.32	0.0089	0.023	0.009	0.015	0.002	(0.002)	
6 600-2	0.071	0.31	0.006	0.004	0.23	0.089	16.36	6.80	0.16	0.10	0.37	0.0098	0.012	0.007	0.030	(0.0013)	(0.002)	
6 600-3	0.020	0.28	0.008	0.005	0.19	0.24	14.77	8.88	0.09	0.10	0.20	0.0082	0.012	0.007	0.0081	(0.002)	(0.002)	
6 600-4	0.034	0.20	0.007	0.004	0.22	0.08	14.72	8.40	0.06	0.09	0.20	0.0060	0.020	(0.002)	0.021	(0.0023)	(0.002)	
6 600-5	0.047	0.21	0.005	<0.002	0.26	0.10	15.59	8.36	0.19	0.029	0.23	0.0018	0.004	0.049	0.011	0.002	(<0.003)	
6 600-6	0.083	0.21	0.007	0.001	0.31	0.34	14.86	7.33	0.278	0.066	0.24	0.0028	0.022	0.12	0.0078	(0.001)	(<0.003)	
V	Ni	Ø 25x50 mm, wrought																
	0.022	73.59	Inconel 600															
	0.028	74.3																
	0.028	75.34																
	0.020	75.05																
	0.023	75.88																
	0.054	74.83																
	0.030	76.0																
RM	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Nb	N	Ta	B	Ni	Ø 43x20 mm,
4 6252L	0.077	0.61	0.0039	(0.010)	0.281	0.145	4.13	21.49	8.77	0.197	(0.025)	0.21	3.39	0.322	-	0.014	59.9	Inconel 625
4 6253N	0.048	(1.09)	0.018	0.014	0.519	0.272	5.90	21.78	7.46	0.429	0.564	0.210	4.63	0.057	-	0.026	56.92	
4 6254K	0.037	0.53	0.0046	0.004	0.093	0.027	6.46	21.1	5.89	0.22	0.30	0.05	3.53	0.065	(0.012)	0.0014	(61.3)	
4 6255K	0.045	0.15	0.024	0.022	0.405	0.423	1.06	22.46	8.57	0.309	0.12	0.11	4.35	0.194	0.25	(0.009)	61.67	

CRM	C	Si	Mn	P	S	Cr	Mo	Al	Co	Cu	Nb	Ti	Fe	Ni	Ø 40x20 mm		
EC 377-1	0.0202	0.077	0.0225	0.0036	0.0006	21.72	8.94	0.216	0.0348	0.0110	3.50	0.255	3.77	61.45	Nickellegierung		
EC 377-2	0.0202	0.077	0.0225	0.0036	0.0006	21.72	8.94	0.232	0.0348	0.0104	3.50	0.264	3.77	61.45	Nickel Alloy		
RM	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Nb	V	Pb	
6 625A	0.025	(0.08)	<0.001	0.008	0.07	0.072	3.07	21.71	9.2	0.07	0.29	0.21	0.0040	3.60	0.02	-	
6 625B	0.023	0.12	<0.003	0.010	0.10	0.22	4.51	21.28	9.58	0.24	0.20	0.33	0.003	3.53	0.015	-	
6 725	0.010	0.02	0.002	0.004	0.08	0.014	8.0	20.72	7.97	0.02	1.52	0.13	(0.002)	3.52	(0.01)	-	
6 750B	0.047	0.10	0.0007	(0.005)	0.09	0.04	7.07	15.68	0.22	0.29	2.60	0.74	-	1.07	0.046	-	
6 825B	0.024	0.24	<0.001	0.014	0.49	1.64	35.0	20.1	2.69	0.13	0.72	(0.10)	(0.002)	(0.04)	(0.024)	-	
6 690	0.025	0.39	0.001	0.011	0.20	0.28	9.49	30.10	0.16	0.07	0.32	0.26	-	0.19	-	-	
6 925	0.011	0.10	0.002	0.016	0.50	1.73	26.90	(20.6)	2.99	0.33	2.18	0.17	(<0.001)	0.24	0.033	(<0.002)	
	B	N	W	Ni	Ø 38x12 mm, wrought												
	0.0022	(0.011)	0.07	61.4	Inconel 625												
	(0.0021)	0.017	0.06	(59.8)	Inconel 625												
	(0.002)	0.0051	-	58.0	Inconel 725												
	0.0033	-	-	71.9	Inconel 750												
	-	0.0072	-	38.8	Inconel 825												
	-	-	-	58.5	Inconel 690												
	0.0018	0.0042	0.48	43.52	Inconel 925												
RM	C	Mn	P	S	Si	Cu	Cr	Co	Mo	Al	Ti	B	V	Nb	W	Ni	Ø 44x12 mm, wrought
6 800	0.075	0.79	0.016	0.0006	0.55	0.32	19.92	0.056	0.19	0.28	0.475	0.0034	0.073	0.020	0.02	31.38	Incoloy
RM	C	Si	Cu	Fe	Mn	Cr	Ti	Al	Mo	Nb	Ni	Ø 29x25 mm, wrought					
10 B7047	0.035	0.17	0.49	5.51	1.29	(15.0)	2.71	0.49	0.58	1.36	Rest	Inconel X750					
10 B7048	0.075	0.23	0.30	6.09	1.00	(15.1)	2.52	0.71	0.30	1.18	Rest						
10 B7049	0.09	0.33	0.155	7.08	0.81	(15.05)	2.30	0.91	0.20	0.97	Rest						
10 B7050	0.125	0.44	0.075	8.09	0.61	(15.00)	2.27	1.01	0.10	0.77	Rest						
RM	C	Si	Mn	Cu	Fe	Cr	Mo	Ti	Al	Nb	Ni	Ø 40x15 mm, cast					
4 X7502D	0.10	0.33	1.03	0.22	6.70	14.93	0.35	2.60	0.74	0.96	Rest	Inconel X750					
4 X7504D	0.03	0.39	1.09	0.22	6.42	14.22	0.46	2.59	0.70	0.95	Rest						
4 X7505D	0.11	0.34	1.04	0.22	6.25	16.08	0.33	2.33	0.80	1.07	Rest						
RM	C	Si	Mn	Cu	Fe	Cr	Co	Ti	Al	Nb	S	Ta	Ni	Ø 25x50 mm, wrought			
HT HT8209X	0.44	0.31	0.67	0.051	7.01	15.38	0.15	2.74	0.88	0.52	0.003	0.23	Rest	Inconel 750			
HT HT8211X	0.52	0.36	0.53	0.090	6.81	15.48	0.10	2.33	0.68	0.45	0.004	0.22	Rest				

RM	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Nb	N	B	W	Ta	cast Ø 43x20mm
4 7181H	0.008	0.71	0.005	(0.003)	0.108	0.013	(19.5)	18.71	2.94	0.01	0.025	(0.007)	4.97	0.233	0.0010	-	-	Inco 718
4 7182M	0.021	0.390	0.0106	0.007	0.310	0.134	(14.7)	19.98	3.59	0.632	0.98	0.41	4.74	-	0.0047	0.030	-	
4 7183T	0.119	0.309	0.0097	0.015	0.41	0.319	17.2	18.4	3.49	(0.91)	1.23	0.90	5.57	0.019	0.0120	0.076	0.022	
4 7184J	0.149	0.36	0.023	0.012	0.192	0.11	18.2	16.65	3.41	0.211	(0.28)	0.34	5.67	-	0.0062	0.20	0.08	
4 7185J	0.050	0.13	0.0109	0.008	0.34	0.30	16.95	21.80	2.54	0.320	(0.16)	0.32	4.88	0.24	0.012	0.096	0.035	Mg=0.021
4 7186H	0.007	0.65	0.014	0.016	0.253	0.091	(16.5)	17.85	2.88	0.40	0.20	0.32	5.15	0.077	0.0047	-	-	

RM	C	Mn	Fe	S	Si	Cu	Cr	Al	Ti	Co	Mo	Nb	P	B	Ni	Ø 38x12 mm, wrought		
6 718B	0.036	0.125	19.64	0.001	0.12	0.044	17.60	0.57	0.95	0.19	2.93	5.29	(0.006)	0.0042	52.1	Inconel 718		

CRM	C	Cr	Mo	Al	B	Co	Ti	V	Zr	Pb	Bi	Ag	Se	Te	Tl	Sb	As	Cd
5 345	0.153	9.93	3.01	5.58	0.019	14.70	4.75	1.00	0.044	0.00002	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.0002	(0.0002)	<0.00001
5 346A	(0.15)	(10)	(3)	(5.5)	-	(15)	(5)	(1)	-	0.0022	0.0010	0.0042	0.0006	0.0009	(0.0002)	0.0045	0.0051	0.00004
	Ga	Sn	Zn	Mg	Ca	In	Ni	Ø 38x13 mm, wrought										
	0.0008	0.0006	<0.00005	0.0005	(<0.0005)	-	Rest	IN 100	5 345C + 346AC	Späne lieferbar								
	(0.0050)	0.0093	0.0029	0.0130	(0.0020)	(0.0020)	Rest			Chips available								

RM	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Zr	V	N	B	Ag	Mg	Pb	Sn	
4 11982D	0.15	0.30	0.19	0.07	0.84	9.54	3.09	14.50	5.7	5.07	0.04	1.20	0.027	270ppm	<1ppm	60ppm	5ppm	6ppm	
4 11999A	0.014	0.40	0.18	0.012	0.66	9.42	3.03	14.96	4.20	4.08	0.033	0.82	-	-	1.3ppm	5.5ppm	3.7ppm	6.2ppm	
	Zn	As	Sb	Ni	Ø 40x15 mm, cast														
	9ppm	76ppm	2ppm	<1ppm	Rest	IN 100													
	7.8ppm	<5ppm	1ppm	<0.1ppm	Rest														

RM	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Zr	V	Ni	Ø 40x15 mm, cast				
4 11774	0.075	0.10	0.01	0.05	0.10	10.0	3.40	14.0	5.25	5.50	0.12	0.70	Rest	IN 100				
4 11775	0.050	0.05	0.05	0.01	0.15	10.0	3.20	15.0	6.00	6.00	0.05	0.50	Rest	AMS 5397				
4 11979	0.025	0.30	0.10	0.05	0.50	8.0	3.10	14.5	5.75	3.50	0.01	0.90	Rest					
4 11981	0.10	0.30	0.20	0.08	0.75	12.0	3.70	14.5	4.50	5.00	0.10	0.60	Rest					

CRM	C	Mn	P	S	Si	Cu	Cr	Mo	Sn	Al	Pb	Fe	Zn	Ni	31x31x19 mm, chill cast			
3 C1248	0.266	0.31	0.002	0.0008	1.61	29.80	0.095	0.006	1.1 ppm	0.009	3.8ppm	2.10	3ppm	65.75	Ni66Cu30			

RM	Cu	Sn	Zn	P	Fe	Si	Mn	S	Mg	C	Ni	Ø 50x10 mm, wrought							
10 N50.02	28.23	14.0	0.39	1.9	3.9	0.02	1.1	0.30	0.006	0.22	Rest	NiCuSnFe							
10 N50.03	33.25	10.9	0.36	0.9	2.3	0.02	0.80	0.16	0.01	0.10	Rest								
10 N50.04	40.40	8.0	0.16	1.2	1.2	0.03	<0.01	0.17	0.03	0.01	Rest								
10 N50.05	42.0	10.1	<0.01	0.04	<0.01	0.02	2.0	0.19	0.05	0.01	Rest								
CRM	C	Si	S	Mn	Cu	Fe	Cr	Co	Ti	Al	Ni	Ø 38x19 mm, wrought							
5 363/1	0.140	0.028	(0.002)	1.26	31.90	1.86	(0.05)	0.032	(0.03)	0.027	64.7	Monel 400	5 363/1C	Späne lieferbar; Chips available					
RM	C	Si	Cu	Fe	Mn	Cr	Ti	Al	Co	Mg	Ni	Ø 29x25 mm, wrought							
10 B6998	0.09	0.04	(31.3)	2.30	0.29	0.02	0.11	0.008	0.02	0.08	Rest	Monel 400							
10 B7000	0.05	0.11	(31.5)	0.64	0.87	0.04	0.03	0.03	0.50	0.03	Rest								
10 B7001	0.01	0.28	(31.4)	0.32	1.66	0.05	0.02	0.04	0.25	0.01	Rest								
10 B7002	0.015	0.15	(31.7)	0.13	2.65	0.10	0.02	0.06	0.10	0.007	Rest								
RM	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Mg	Ni	Ø 38x12 mm, wrought				
6 500D	0.17	0.05	0.001	0.007	0.67	30.10	0.62	0.002	(0.001)	0.014	0.52	3.07	0.007	64.75	Monel 500				
RM	C	Mn	Fe	S	Si	Cu	P	Cr	Co	Mg	Al	As	Mo	Nb	Ti	Pb	Sn	B	
6 400C	0.160	1.05	1.61	0.001	0.18	31.68	0.012	0.48	0.053	0.009	0.056	0.0019	0.059	0.021	0.056	0.0007	0.0009	(0.0002)	
6 400-1	0.109	1.07	1.27	0.008	0.16	30.97	0.022	0.033	0.37	0.048	0.004	0.004	0.001	0.0003	0.007	0.0020	0.0010	(0.0005)	
6 400-2	0.170	1.17	1.42	0.008	0.17	30.75	0.027	0.091	0.46	0.033	0.006	0.004	0.0012	0.0004	0.011	(0.001)	0.0012	(0.0006)	
6 400-3	0.153	0.85	1.60	0.006	0.063	31.25	0.026	0.21	0.46	0.012	0.001	0.004	0.003	(0.0004)	0.004	(0.0015)	0.0014	(0.0002)	
6 405D	0.13	1.03	1.34	0.041	0.04	31.80	0.010	0.006	0.025	0.026	0.10	-	(0.002)	(0.002)	0.003	-	-	(0.001)	
	Sb	V	Zn	Ni	Ø 38x20 mm, wrought														
	(0.0002)	(0.005)	(0.001)	Rest	Monel 400		6 400C + 405 = Ø 38x12 mm												
	(0.0005)	(0.001)	(0.0006)	Rest															
	(0.001)	(0.003)	(0.001)	Rest															
	(0.001)	0.003	(0.001)	Rest															
	-	-	-	Rest	Monel R405														
RM	C	Si	S	Mn	Cu	Fe	Cr	Pb	Co	Ti	Al	Mg	Ni	Ø 40x15 mm, cast					
4 4001	0.10	1.50	0.025	3.00	27.4	0.50	0.04	0.06	0.10	0.10	0.10	0.15	(67.0)						
4 4002	0.06	0.10	0.075	2.00	31.5	1.00	0.02	0.05	0.06	0.05	0.05	0.02	(65.0)	Monel 400					
4 4003	0.02	0.25	0.025	1.00	30.5	2.00	0.06	0.04	0.02	0.02	0.02	0.05	(66.0)	Monel 500					
4 4004	0.12	0.50	0.010	0.50	30.2	3.00	0.10	0.03	0.08	0.50	1.00	0.10	(64.0)	Monel 505					
4 4005	0.08	2.50	0.050	1.50	21.5	1.25	0.08	0.02	0.12	0.75	2.00	<0.01	(70.0)	Monel 506					
4 4006	0.04	4.00	0.050	0.75	25.0	1.75	0.12	0.01	0.04	1.25	4.00	0.075	(63.0)						

RM	C	Si	S	P	Mn	Cu	Fe	Mg	Pb	Ni	Ø 40x15 mm, cast					
4 NA1	0.20	1.0	0.01	0.02	1.5	31.5	1.7	0.10	0.003	Rest	Monel H					
4 NA2	0.10	2.5	0.02	0.02	1.0	30.0	1.5	0.02	0.01	Rest						
4 NA3	0.30	4.0	0.01	0.02	0.5	29.0	1.4	0.90	0.03	Rest						
RM	C	Si	Cu	Fe	Mn	Cr	Ti	Al	Co	Mo	Ni	Ø 29x25 mm, wrought				
10 E3923	0.01	0.17	0.54	Rest	1.00	(20.65)	0.29	0.57	0.06	0.51	(32.0)	Incoloy 800				
10 E3924	0.03	0.30	0.29	Rest	0.85	(20.65)	0.30	0.28	0.13	0.26	(32.3)					
10 E3925	0.08	0.41	0.14	Rest	0.68	(20.8)	0.28	0.24	0.28	0.10	(32.2)					
10 E3926	0.06	0.60	0.085	Rest	0.50	(20.2)	0.39	0.08	0.54	0.05	(32.0)					
10 E3927	0.08	0.75	0.055	Rest	0.40	(20.35)	0.58	0.10	1.02	0.025	(32.1)					
RM	C	Mn	S	Si	Cu	Cr	Al	Ti	P	Fe	Ni	Ø 44x16 mm, wrought				
HT HH5157A	0.067	0.95	0.003	0.43	0.33	21.48	0.45	0.55	0.012	Rest	29.31	Incoloy 800				
HT HH5179A	0.042	0.87	0.003	0.38	0.26	22.20	0.30	0.46	0.012	Rest	34.13					
HT HH5196A	0.036	1.05	0.002	0.45	0.24	20.66	0.31	1.13	0.011	Rest	31.46					
HT HH5300A	0.026	0.86	0.003	0.35	0.28	18.18	0.45	0.54	0.013	Rest	33.56					
RM	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Ni	Ø 40x15 mm, cast				
4 8001	0.09	0.10	1.00	0.05	Rest	20.5	0.50	1.00	0.50	0.50	(31.0)	Incoloy 800				
4 8002	0.05	0.40	0.60	0.25	Rest	20.5	0.30	0.50	0.30	0.30	(32.0)					
4 8003	0.01	0.80	0.20	0.50	Rest	20.5	0.10	0.10	0.10	0.10	(33.0)					
4 8004	0.05	0.40	0.60	0.25	Rest	20.0	0.30	0.50	0.30	0.30	(32.0)					
4 8005	0.05	0.40	0.60	0.25	Rest	21.0	0.30	0.50	0.30	0.30	(32.0)					
RM	C	Si	Cu	Fe	Mn	Cr	Ti	Al	Co	Mo	Ni	Ø 29x25 mm, wrought				
10 E3928	0.10	1.77	0.05	Rest	1.44	(18.2)	0.24	0.115	1.01	0.025	(36.5)	Incoloy DS				
10 E3929	0.085	1.80	0.085	Rest	1.30	(17.9)	0.14	0.07	0.52	0.055	(36.3)					
10 E3930	0.08	2.09	0.135	Rest	1.18	(18.6)	0.065	0.03	0.26	0.105	(36.2)					
10 E3931	0.05	2.32	0.28	Rest	1.06	(18.5)	0.035	0.015	0.12	0.25	(36.4)					
10 E3932	0.04	2.50	0.55	Rest	0.93	(18.5)	0.025	0.01	0.07	0.49	(36.4)					
RM	C	Si	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	Ni	Ø 40x15 mm, cast				
4 DS2E	0.06	2.07	1.00	0.30	Rest	17.81	0.30	0.48	0.17	0.04	37.4	FeNiCr				
4 DS4E	0.08	1.99	1.06	0.41	Rest	16.88	0.32	0.56	0.20	0.035	37.15					
4 DS5E	0.080	1.98	1.04	0.30	Rest	18.64	0.30	0.50	0.17	0.08	36.6					
RM	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	B	Ni	Ø 40x15 mm, cast	
4 9014D	0.08	0.49	0.013	0.014	0.25	0.06	Rest	13.22	6.08	0.18	2.37	0.16	0.013	45.7	NiCr	

RM	Fe	Co	Mn	S	Cu	Cr	W	V	Al	Ti	Pb	B	C	P	Mg	Si	Mo	Nb
IA 50A	0.04	0.01	0.11	0.002	<0.01	0.01	<0.01	<0.01	0.02	<0.01	<0.001	<0.001	0.023	0.002	<0.005	<0.01	<0.01	<0.01
IA 51A	2.07	0.015	1.49	0.001	29.87	0.01	<0.01	<0.01	0.05	0.05	-	<0.001	0.13	0.008	(0.024)	0.26	<0.01	<0.01
IA 202A	1.31	0.020	1.03	0.032	32.3	0.008	<0.01	<0.01	0.080	0.005	-	<0.002	0.13	0.011	0.024	0.046	<0.01	-
IA 52A	0.04	<0.01	0.74	(0.003)	31.16	0.02	-	<0.01	2.99	0.54	-	<0.001	0.17	0.006	-	<0.01	<0.01	<0.01
IA 53A	7.62	0.11	0.32	0.001	0.02	15.14	-	(0.02)	0.12	0.25	<0.001	(0.002)	0.063	0.009	-	0.15	0.05	<0.01
IA 54A	4.39	0.19	0.22	(0.001)	0.08	21.26	0.09	(0.02)	0.16	0.28	(0.001)	0.004	0.024	0.011	(0.002)	0.18	8.83	3.34
IA 201A	9.09	0.009	0.19	(0.0004)	0.008	29.9	<0.01	0.011	0.37	0.30	-	<0.002	0.019	0.005	0.006	0.15	0.018	0.009
IA 56A	18.82	0.25	0.11	0.0012	0.04	18.51	0.04	0.03	0.56	1.01	-	(0.005)	0.047	0.012	(0.001)	0.14	3.08	5.10
IA 57B	8.34	0.080	0.20	0.0006	0.106	15.44	0.013	0.037	0.841	2.39	-	0.0015	0.047	0.009	0.006	0.153	0.07	0.896
IA 58A	(44.90)	0.10	0.65	<0.001	0.03	20.71	<0.01	0.03	0.53	0.49	-	<0.001	0.076	0.011	<0.001	0.26	0.17	(0.03)
IA 59B	31.25	0.049	0.45	0.0028	2.48	21.20	0.012	0.048	0.18	0.96	-	0.0008	0.032	0.010	(0.002)	0.23	3.05	(0.005)
IA 203A	40.6	12.88	0.023	0.0009	0.050	0.72	(0.02)	<0.01	0.066	1.58	-	(0.002)	0.005	0.006	<0.002	0.41	0.090	5.00
IA 61A	3.57	<0.01	0.17	0.001	(0.01)	16.12	<0.01	<0.01	4.42	<0.01	<0.001	0.005	0.042	0.003	<0.002	0.02	<0.01	(0.01)
IA 68A	1.36	0.40	0.50	<0.01	0.01	21.48	(14.20)	0.01	0.37	0.01	-	0.004	0.10	0.008	-	0.40	1.04	0.01
IA 55A	1.09	0.04	0.33	(0.001)	(0.03)	7.90	0.09	<0.01	0.24	0.01	-	(0.005)	0.03	0.003	-	0.11	(25.40)	(0.02)
IA 60A	17.71	3.02	1.50	0.001	0.10	25.72	2.98	0.07	(0.08)	0.03	<0.002	(0.003)	0.058	(0.017)	-	1.21	3.09	0.14
IA 62B	0.79	12.95	0.026	0.0003	0.024	19.06	0.068	0.022	1.38	3.02	-	0.005	0.028	0.0028	(0.001)	0.073	4.17	0.050
IA 63A	1.47	0.09	0.19	0.001	0.05	0.55	(0.18)	<0.01	0.28	<0.01	<0.001	-	0.005	0.004	-	0.02	27.48	<0.01
IA 65A	4.37	1.52	0.37	0.0013	0.14	21.38	2.92	0.16	0.27	0.01	-	-	0.011	0.01	(0.003)	0.05	13.31	0.08
IA 66B	5.80	0.90	0.47	0.0003	0.086	15.86	3.42	0.16	0.40	0.006	-	0.0020	0.0044	0.008	0.004	0.028	16.06	0.019
IA 67A	14.88	3.61	1.11	0.0014	1.88	(28.77)	3.13	(0.04)	0.20	0.03	<0.001	(0.005)	0.019	0.016	-	0.30	5.02	0.70
IA 69B	17.84	1.58	0.68	0.0004	0.11	21.90	0.78	0.10	0.20	0.011	-	(0.0007)	0.074	0.013	0.006	0.38	8.78	0.11
IA 98A	(52.77)	(17.50)	0.24	0.002	0.05	0.12	(0.03)	<0.01	0.04	<0.01	-	-	0.019	(0.002)	-	0.10	0.05	<0.01

Zr	Ta	Sn	O	N	Ni	Ø 31x18.75 mm	
<0.01	<0.01	<0.001	-	-	(99.78)	Nickel 200	Nickel- + Nickellegierungen
<0.01	<0.01	-	-	-	(66.02)	Monel 400	Nickel + Nickel Base Alloys
0.010	-	-	-	-	64.8	Monel R405	
0.03	-	-	-	-	(64.30)	Monel 500	IA 50A - 69B als Satz lieferbar, NIBA-22
<0.01	<0.01	<0.001	-	-	(76.12)	Inco 600	available as set, NIBA-22
-	<0.02	<0.01	-	-	(60.93)	Inco 625	
<0.01	-	-	-	-	59.9	Inco 690	IA 50A(X)-98A(X) RFA-Proben lieferbar Ø 31x5 mm
<0.01	0.02	(0.0011)	-	-	(52.23)	Inco 718	XRF Standards available
0.020	-	-	0.0032	0.0054	71.2	Inco 750	
<0.01	<0.01	<0.001	-	-	(32.01)	Inco 800	
(0.005)	-	-	0.0030	0.0079	40.01	Inco 825	IA 50A(C)-98A(C) Späne lieferbar 100 g Flaschen
<0.01	-	-	-	-	38.44	Inco 909	Chips available 100 g bottles
0.02	<0.01	<0.001	-	-	(75.62)	Haynes 214	
<0.01	(0.03)	<0.001	-	-	(60.09)	Haynes 230	
<0.02	(0.01)	<0.01	-	-	(64.71)	Haynes 242	
<0.01	(0.02)	<0.01	-	-	(44.20)	RA 333	
0.036	-	-	0.0014	0.0022	58.33	Waspaloy	
(0.02)	<0.01	<0.01	-	-	(69.67)	Hastaloy B-2	
<0.01	-	<0.01	-	-	(55.42)	Hastaloy C-22	
0.02	-	-	0.0010	0.0108	56.65	Hastaloy C-276	
<0.01	(0.024)	<0.01	-	-	(40.30)	Hastaloy G-30	
0.005	-	-	0.0011	0.0155	47.37	Hastaloy X	
<0.01	-	<0.01	-	-	(29.09)	Kovar	

B R E I T L Ä N D E R - E I C H P R O B E N

3.6.12

Sonstige Ni-Leg.
Ni-Leg., SUS

(Various Ni-Base Alloys)
(Ni-Base Alloys, SUS)

RM	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	W	Nb				
6 197A 6 197B	0.050	0.96	<0.001	0.021	1.56	0.12	18.07	25.11	2.99	3.06	0.017	0.18	2.79	0.20				
	V	B	Ni	Ø 38x12 mm, wrought														
	0.051	0.0019	Rest	RA 333														
RM	C	Mn	Si	P	S	Cr	Mo	Cu	Co	B	Cb	Ti	Fe	Al	Ni	Ø 34x13 mm, cast		
CT V96612	0.039	0.07	0.08	0.012	0.002	20.59	3.42	0.02	0.01	<0.0005	0.06	0.02	17.76	0.026	58.28	Pyromet 718		
RM	C	Mn	Si	P	S	Cr	Mo	Cu	Co	B	Ti	Al	Nb	V	Se	Ni	Ø 34x13 mm, cast	
CT D	0.072	0.07	0.22	0.008	0.008	21.50	2.14	0.06	0.01	0.0035	2.12	1.15	1.23	-	-	55.07	Pyromet 31	
CT E	0.026	0.25	0.02	0.014	0.012	23.06	1.80	0.10	0.10	0.0070	2.72	0.78	0.78	-	-	54.68	Pyromet 31	
CT 347	0.020	0.76	0.82	0.013	0.024	0.59	2.50	0.54	0.56	-	0.62	0.13	0.63	0.10	0.27	48.70	NiFe	
CRM	C	Mn	P	S	Si	Cu	Cr	Mo	Co	Fe	Ni	Ø 31x19 mm, wrought						
3 1159	0.007	0.305	0.003	0.003	0.32	0.038	0.06	0.010	0.022	51.0	48.2	NiFe						
3 1160	0.019	0.550	0.003	0.001	0.37	0.021	0.05	4.35	0.054	14.3	80.3	NiFeMo						

Kontrollprobe für Nickel 600; Check Sample for Nickel 600

RM	C	Mn	P	S	Si	Cu	Cr	Fe	Ni	Ø 40x25 mm							
8 PV202/1	0.085	0.217	(<0.01)	(<0.01)	0.472	0.253	14.48	7.48	Rest	Inconel 600							

Einstellproben für Rekalibrierung; Setting-Up-Samples for Recalibration

SUS	C	Si	S	P	Mn	Cu	Fe	Cr	Mo	Co	Ti	Al	W	Nb	V	B	Zn	Pb
SL RNi10	<8ppm	<10ppm	<2ppm	-	-	<1ppm	<5ppm	-	-	3ppm	-	<4ppm	-	-	-	-	2ppm	0.8ppm
SL RNi11	0.03	0.25	<0.01	<0.01	0.25	<0.03	<0.05	<0.03	<0.03	<0.03	<0.03	<0.01	<0.03	<0.03	<0.03	<0.0005	-	-
SL RNi12	0.1	0.1	<0.01	<0.01	0.6	30	0.8	<0.03	0.03	<0.03	0.5	2.5	<0.03	<0.03	<0.03	<0.0005	-	<0.01
SL RNi13	0.02	0.05	<0.01	<0.01	0.5	0.1	5	16	16	1.5	0.01	0.2	3.5	0.05	0.2	<0.005	-	<0.01
SL RNi14	0.05	0.2	<0.01	<0.01	0.2	0.03	0.5	20	6	20	2	0.5	0.04	<0.03	<0.03	<0.0005	-	-
SL RNi15	0.03	0.1	<0.01	<0.01	0.1	0.03	19	18	3	0.5	1	0.6	0.1	5	0.03	0.007	-	<0.01
	Ag	As	Zr	Ni	Ø 40x40 mm													
	0.3ppm	<0.5ppm	-	99.9	Nickelbasisleg, SUS													
	-	-	<0.01	99.5	Nickel Base Alloys, SUS													
	-	-	<0.3	65														
	-	-	<0.1	57														
	-	-	<0.1	50														
	-	-	<0.1	51														

Chips lieferbar/available 100 g

CRM	Co	Cr	Ni	Mo	W	Mn	Ti	Fe	Si	wrought								
R KN35C20D	33.1	20.27	35.8	9.66	-	0.0050	0.793	0.435	-	Ø 38x20 mm	CoNiCrMo							
R KC28D	64.3	28.64	-	5.60	-	0.617	-	0.090	0.619	Ø 33x15 mm	CoCrMo							
R KC20FeN	39.7	19.44	17.31	6.34	-	1.32	-	15.23	0.26	Ø 33x15 mm	CoCrFeNiMo							
R KC20WN/A	51.0	20.16	10.76	-	15.05	1.56	(0.007)	1.34	0.16	Ø 38x15 mm	CoCrNiW							
CRM	C	Mn	P	S	Si	Cu	Ni	Cr	V	Fe	W	N	Co	Ø 35x19 mm				
3 1242	0.126	1.58	0.002	0.0007	0.016	0.0010	9.78	20.0	0.005	1.80	15.1	0.026	51.5	L605	Legierung, hoch temperaturfest High Temp. Alloy			
RM	C	Ni	Cr	Mo	W	Fe	Mn	Si	P	S	Cu	Al	Nb	V	Ta	Co	wrought Ø 32-38x9 mm	
6 171B	0.087	10.68	20.5	0.65	15.1	1.82	1.90	0.29	0.008	<0.001	0.035	0.08	0.046	(0.02)	-	Rest	Stellite 25	
6 172A	0.098	23.7	21.85	0.30	14.0	1.76	0.77	0.37	(0.011)	<0.0005	0.027	0.08	0.09	0.007	0.045	Rest	Stellite 188	
6 173	0.046	0.14	27.5	5.62	-	0.19	0.76	0.61	(0.003)	0.001	(0.008)	(0.04)	(0.002)	(0.01)	N=0.190	65.0	CCM Alloy	
RM	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Nb	Ta	Al	Cu	237 40x15 mm, cast		Type W152 Sn	
4 12667M	0.008	0.749	0.0068	(0.003)	0.52	(0.70)	21.79	8.22	1.36	0.161	1.50	0.145	0.005	0.047	0.085	-	Rest	
4 12669J	-	0.71	-	-	0.57	0.62	22.04	10.65	1.41	-	2.06	-	-	-	-	-	Rest	
4 12670N	(0.007)	0.589	0.026	0.0052	0.48	1.10	19.24	10.95	1.28	(0.057)	2.53	0.105	(0.004)	(0.059)	0.006	-	0.021 Rest	
4 12671J	-	0.51	-	-	0.61	0.88	20.5	11.8	1.45	-	1.95	-	-	-	-	-	Rest	
4 12672J	0.126	0.78	0.014	-	0.72	0.71	21.8	9.3	1.87	0.29	1.87	0.09	0.27	0.14	-	0.01	0.034 Rest	
4 12673A	(0.005)	0.82	0.022	0.010	0.52	1.69	19.0	9.75	1.70	0.086	2.35	0.06	<0.005	0.104	0.031	(0.003)	0.074 Rest	
RM	C	Si	S	P	Mn	Ni	Cr	W	Fe	Al	Mo	Nb	Cu	B	N	Co	cast Ø 40x15 mm	
4 14936N	0.45	0.23	-	-	0.77	1.67	23.0	1.12	0.39	0.48	4.65	-	-	-	-	Rest		
4 14941M	0.38	0.45	-	-	0.14	1.17	26.85	0.54	0.76	0.03	4.16	-	-	-	-	Rest	Stellite 8	
4 14942M	0.090	1.02	-	-	0.46	0.29	28.47	1.67	1.09	0.18	6.22	-	-	-	-	Rest	BS3531	
4 14943F	0.200	(1.0)	0.054	0.015	1.08	0.221	30.5	0.050	0.53	(0.011)	8.12	0.117	0.29	0.011	0.088	Rest	Ø 43x20 mm	
RM	C	Si	S	P	Mn	Ni	Cr	W	Fe	Mo	Cu	Nb	Ta	Al	N	B	Co	cast Ø 43x20mm
4 8160B	0.396	0.601	0.033	0.021	1.44	19.9	18.56	4.14	(5.37)	4.08	-	4.20	0.104	-	0.056	-	Rest	Co-Leg.
4 COB1F	0.055	0.624	0.0163	0.040	0.64	21.98	23.92	10.48	19.06	0.195	0.069	0.308	-	0.054	0.124	-	Rest	Co-Alloy
4 ST3K *	2.4	0.75	0.06	-	1.08	2.55	29.8	12.1	3.1	0.35	0.08	-	-	-	0.059	0.13	Rest	

* Vorläufige Werte; Provisional values, chill cast

RM	C	Si	S	P	Mn	Ni	Cr	W	Fe	B	Co	Ø 40x15 mm, cast
4 X401G	0.56	1.22	-	-	0.20	11.74	25.24	7.09	0.73	0.008	Rest	
4 X402H	0.38	0.32	0.036	0.045	1.26	9.41	24.86	7.96	2.15	-	Rest	
4 X403G	0.52	0.85	0.022	0.021	0.69	10.40	25.03	7.82	1.06	0.006	Rest	Stellite 31
4 X404D	0.51	0.75	0.006	0.002	0.69	10.76	23.7	7.71	1.28	0.001	Rest	
4 X405E	0.48	0.76	0.005	0.002	0.68	10.79	26.7	7.65	1.30	0.001	Rest	

RM	Cr	Mo	Al	Ti	Cu	Fe	W	Si	C	Mn	P	S	Nb	V	N	B
IA 95B	28.8	0.83	0.07	0.004	0.008	1.10	3.42	0.46	0.946	0.99	0.010	0.0006	(0.002)	(0.002)	0.0027	(0.002)
IA 96B	20.54	1.17	0.035	0.007	0.047	2.27	14.25	0.16	0.132	1.39	0.0063	0.0005	0.046	0.012	0.007	0.0021
IA 97B	21.2	0.56	0.08	0.006	0.07	1.92	12.09	0.34	0.096	0.76	0.009	(0.001)	0.022	0.012	0.014	(0.002)
IA 64B	25.26	4.77	0.12	0.011	0.020	3.02	2.12	0.27	0.062	0.78	0.005	(0.0004)	(0.018)	(0.014)	0.12	(0.001)
IA 207A	19.98	9.62	0.040	0.91	0.017	0.64	0.028	0.053	0.007	0.015	0.002	0.0027	0.043	0.011	0.0031	0.011
IA 208B	30.0	6.63	0.04	0.029	0.03	1.17	0.03	0.63	0.100	0.75	0.004	0.0009	0.06	0.05	0.003	0.005
IA 256A	19.1	7.0	0.17	3.03	0.008	9.0	0.02	0.07	0.020	0.014	0.006	0.002	0.51	0.03	0.0032	0.013
IA 260A	29.4	0.015	0.006	0.01	0.012	0.49	7	0.85	0.244	0.46	0.005	0.0013	0.015	0.010	0.0323	0.008

Ta	Ni	Zr	Co	Ø 31x18.75 mm
0.03	2.25	(0.002)	60.9	Stellite 6B
0.028	10.04	0.007	49.4	Stellite 25
0.019	19.4	(0.001)	42.5	Stellite 188
(0.028)	9.06	<0.01	54.2	Ultimet 1233
0.007	35.19	0.003	33.46	MP35N
0.042	0.42	0.002	60.0	F75
<0.005	25.7	(0.005)	42.5	MP159
<0.02	10.72	<0.005	50.7	FSX414

Kobaltlegierungen IA 95A(X)-260A(X) RFA-Proben lieferbar Ø 31x5 mm
Cobalt Base Alloys XRF Standards available
IA 95A(C)-64A(C) Späne erhältlich 100 g Flaschen
Chips available 100 g bottles

Einstellproben für Rekalibrierung
Setting-Up-Samples for Recalibration

SUS	C	Si	Mn	Ni	Cr	W	Mo	Nb	Fe	Al	Cu	S	P	Ti	Zr
SL RCo11	-	0.01	<0.005	0.003	<0.005	0.01	<0.005	<0.05	<0.02	-	<0.01	-	<0.003	<0.03	<0.003
SL RCo14	0.2	1.0	0.5	10	30	7	0.05	<0.03	0.7	0.005	-	<0.005	<0.005	<0.03	-
V	Co														
0.001	Rest														
-	Rest														

Kobalt, SUS Ø 40x40 mm
Cobalt, SUS Ø 29-35x34 mm

CRM	ppm Al	ppm Cd	ppm Cu	ppm Fe	ppm In	ppm Pb	ppm Sn	ppm Tl	Zn	Ø 80x20 mm, 31x20 mm, cast
H 321	<0.7	0.25	(0.97)	(2.25)	(<0.2)	4.8	<0.5	0.78	Rest	Reinzink, Spuren; Pure Zinc, traces
H 322	18.9	5.13	3.14	8.65	2.80	13.2	3.1	2.9	Rest	
H 323	(76)	14.7	9.26	16.0	5.2	31.2	8.6	6.7	Rest	
H 324	2.2	50.0	17.4	15.6	15.5	51.4	19.4	(16)	Rest	
H 325	2.8	100.3	49.1	59.4	45.6	162	50.0	42	Rest	
H 326	(<1)	203	104.8	265	-	307	-	-	Rest	
H 327	(<1)	301	(0.56)	144	-	408	-	-	Rest	

CRM	ppm Cd	ppm Fe	ppm Cu	ppm Tl	ppm Pb	ppm Al	ppm In	Zn	45x30 mm
B M601	0.55	2.20	1.89	2.25	15.7	<0.5	<0.05	Rest	Reinzink; Pure Zinc

RM	Cu	Pb	Cd	Fe	Sn	Al	Zn	Ø 40x25 mm
IM ZE1	0.011	0.018	0.0019	0.020	0.0018	0.012	Rest	Elektrolytzink
IM ZE2	(0.00037)	0.0078	0.0031	0.00522	0.0074	0.0035	Rest	Electrolytic Zinc
IM ZE3	0.0032	0.0052	0.0050	-	0.015	0.025	Rest	
IM ZE4	0.013	0.0012	0.00023	(0.00035)	0.0017	-	Rest	nur Satz/set only
IM ZE5	0.0049	0.0004	0.0060	0.011	0.00045	0.0011	Rest	

RM	Cu	Pb	Cd	Fe	Sn	Al	Ti	Zn	Ø 40x25 mm
IM ZF1	0.013	0.0012	0.0041	0.020	0.013	0.018	0.0014	Rest	ZnCuTi-Leg.
IM ZF2	0.46	0.0082	0.0055	0.011	0.0077	0.011	0.11	Rest	ZnCuTi-Alloy
IM ZF3	0.098	-	-	0.0018	0.0022	0.0033	0.021	Rest	
IM ZF4	0.86	0.0091	0.00053	0.0045	0.0017	0.0058	0.20	Rest	nur Satz/set only
IM ZF5	0.011	0.026	0.0088	0.0081	-	-	0.013	Rest	

RM	Pb	Al	Fe	Sb	Cu	Cd	Sn	Mg	Zn	Ø 37-40x12 mm, cast
6 SP5	0.0003	0.005	0.001	<0.0005	0.0004	<0.0005	0.0010	<0.0005	Rest	Basismetall; Base Metal
6 SPA	0.003	0.051	0.011	0.099	<0.0005	-	<0.001	-	Rest	Zink Spelter; Zinc Spelter

CRM	Cu	Al	Mg	Fe	Pb	Cd	Sn	Cr	Mn	Ni	Si	In	Zn	44x44x19 mm, cast
3 631	0.0013	0.50	(<0.001)	0.005	(0.001)	0.0002	0.0001	0.0001	0.00015	(<0.0005)	(0.002)	0.0023	Rest	Spelter

RM	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	In	Tl	Bi	Sb	Ti	Zn	Ø 50x20 mm, cast			
4 Z1/41	0.0018	0.00025	-	0.00005	0.0005	<0.0002	0.0005	0.0001	0.00017	<0.0005	-	-	-	-	Rest				
4 Z1/41	0.0036	0.0064	0.017	0.0017	0.0028	0.0017	0.016	0.0014	0.0017	(0.0002)	(0.0023)	-	(0.0011)	(0.0005)	Rest	Pure Zinc, traces			
4 Z3/41	0.0052	0.0009	0.0081	0.0044	0.002	0.0039	0.0019	0.0031	0.0007	0.0007	(0.0025)	-	0.0037	0.0012	Rest				
4 Z4/41	0.0091	0.0019	0.0096	0.0066	0.003	0.0070	0.0047	0.0069	0.0012	0.0015	(0.0037)	-	0.005	<0.0005	Rest				
4 Z5/41	0.0280	0.0105	0.041	0.032	0.011	0.031	0.031	0.0005	0.014	0.0055	0.0005	-	0.009	0.0005	Rest				
4 Z6/41	0.031	<0.0005	0.0096	0.0093	(0.002)	0.0038	0.0088	0.0002	0.0002	0.0228	0.0004	0.0122	-	-	Rest				
RM	Fe	Pb	Zn	ca. 35x35x50 mm															
5 194e	0.001	0.002	99.99	Reinzink; Pure Zinc		Schmelzpunkt; Melting Point						419.5 C							
CRM	Al	Pb	Zn	Ø 50x12 mm, concast															
3 1736	0.3076	0.0029	Rest	ZnAl-Leg.															
3 1737	0.6302	0.0029	Rest	ZnAl-Alloy															
3 1738	0.1014	0.0101	Rest																
3 1739	0.2049	0.0302	Rest	3 2139=3 1739 Späne lieferbar; Chips available															
3 1740	0.4177	0.0691	Rest																
3 1741	0.5242	0.1571	Rest																
3 1742	0.7917	-	Rest																
RM	Pb	Mg	Al	Cd	Fe	Sn	Cu	Mn	Ni	Sb	Bi	In	Tl	Ag	As	Zn	Ø 50x20 mm, cast		
4 0336Zn1	0.95	0.0049	0.014	0.0056	0.0124	0.0053	0.0070	0.0035	-	-	-	-	-	-	-	Rest	Reinzink		
4 0336Zn2	0.46	0.033	0.99	0.171	0.12	0.040	0.196	0.014	0.005	-	-	-	-	-	-	Rest	Pure Zinc		
4 0336Zn3	0.019	0.134	0.43	0.341	0.27	0.111	0.36	0.0058	-	-	-	-	-	-	-	Rest			
4 0336Zn4	2.87	0.179	1.39	0.638	(0.018)	2.38	0.874	0.038	0.0074	0.048	0.027	0.0035	(0.004)	0.0023	0.0005	Rest			
4 0336Zn5	0.91	<0.0005	0.035	0.056	0.016	0.21	0.023	(0.001)	(0.0005)	0.008	(0.001)	-	-	-	-	Rest			
4 0336Zn6	1.82	0.0008	0.105	0.0140	0.08	0.0023	0.0203	0.0010	0.0018	0.234	0.123	0.0123	0.0132	0.0055	0.0020	Rest			
RM	Pb	Mg	Al	Cd	Fe	Sn	Cu	Mn	Ni	Ti	Cr	Ce	La	Sb	Bi	Si	Zn	cast Ø 50x20 mm	
4 4380Zn1	0.068	0.0011	0.055	0.376	0.01	0.049	0.175	0.0015	0.0029	(0.001)	0.002	-	-	0.002	0.0017	0.006	Rest	Zink, Spuren	
4 4380Zn2	0.26	0.015	0.030	0.29	0.23	0.0015	0.030	-	-	-	-	-	-	-	-	-	Rest	Zinc, traces	
4 4380Zn3	0.21	0.052	0.17	0.18	(0.05)	0.087	0.092	-	-	0.18	0.004	0.037	(0.023)	-	-	-	Rest		
4 4380Zn4	0.325	0.126	0.144	0.094	0.056	0.038	0.0022	0.0007	0.0040	0.005	(0.0003)	-	-	0.017	0.011	(0.002)	Rest		
4 4380Zn5	0.15	0.0018	0.022	0.064	0.012	0.009	0.072	0.036	0.0014	0.33	0.0075	-	-	0.0052	0.031	<0.0005	Rest		
4 4380Zn6	0.42	0.0045	0.0048	0.047	0.017	0.110	0.020	0.025	0.0005	0.062	0.0020	-	-	0.034	0.0010	<0.0005	Rest		
4 4380Zn7	1.25	0.0028	0.137	0.015	(0.0044)	0.0047	0.012	-	0.012	0.009	0.0045	-	-	0.090	-	-	Rest		
4 4380Zn8	0.73	0.007	0.225	0.0079	0.003	0.011	0.020	0.0015	0.024	0.012	0.0019	-	-	0.016	0.011	(0.005)	Rest		
RM	Pb	Al	Cd	Fe	Sn	Cu	Ni	Bi	Sb	As	Cr	Mn	Co	Zn	Ø 50x20 mm, cast				
4 GLV1	0.056	0.115	0.0093	0.059	0.010	0.0028	0.0141	0.0025	<0.001	<0.001	-	-	-	Rest	Galvaniklegierung				
4 GLV2	0.214	0.068	0.0025	0.048	0.003	0.0052	0.0070	0.017	0.006	<0.001	-	-	-	Rest	Galvanizing Alloy				
4 GLV3	0.0080	0.31	0.021	0.012	0.006	0.0188	0.0301	0.0011	0.048	-	-	-	-	Rest					
4 GLV4	0.0038	0.201	(0.0001)	0.017	<0.005	0.0009	0.049	0.0051	0.025	<0.002	-	-	-	Rest					
4 GLV5	0.0187	0.014	0.0138	0.076	0.020	0.0116	0.0030	0.0105	0.162	0.0041	-	-	-	Rest					
4 GLV6	0.120	0.474	0.0053	0.0047	0.0152	0.039	0.0008	0.0248	0.0112	0.0014	0.0029	0.0013	0.0047	Rest					
4 GLV7	0.082	0.399	0.00056	0.0031	-	0.023	0.0060	0.0108	0.0031	0.0016	0.0010	0.0025	(0.0001)	Rest					
RM	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Ti	Cr	50x20 mm, cast							
4 2951Zn1	0.0042	0.0029	0.029	0.0005	0.011	(0.0007)	0.79	0.0038	0.0013	0.278	0.083	ILZR016							
4 2195Zn2	0.0040	0.0123	0.032	0.0037	0.019	(0.0015)	1.37	0.0027	0.0011	0.209	0.142								
4 2951Zn3	0.0065	0.0164	0.078	0.0042	0.029	(0.006)	1.89	0.0010	0.0018	0.133	0.184								

CRM	Cu	Al	Mg	Fe	Pb	Cd	Sn	Cr	Mn	Ni	Si	Zn	44x44x19 mm, cast
3 625	0.034	3.06	0.070	0.036	0.0014	0.0007	0.0006	0.0128	0.031	0.0184	0.017	Rest	Zamak
3 626	0.056	3.56	0.020	0.103	0.0022	0.0016	0.0012	0.0395	0.048	0.047	0.042	Rest	
3 627	0.132	3.88	0.030	0.023	0.0082	0.0051	0.0042	0.0038	0.014	0.0029	0.021	Rest	
3 628	0.611	4.59	0.0094	0.066	0.0045	0.0040	0.0017	0.0087	0.0091	0.030	0.008	Rest	
3 629	1.50	5.15	0.094	0.017	0.0135	0.0155	0.012	0.0008	0.0017	0.0075	0.078	Rest	
3 630	0.976	4.30	0.030	0.023	0.0083	0.0048	0.0040	0.0031	0.0106	0.0027	0.022	Rest	

CRM	Al	Cu	Mg	Pb	Cd	Sn	Fe	Si	Zn	Ø 30-35x25 mm
MT 921	3.92	0.069	(0.024)	0.018	0.0100	0.0061	0.012	(0.0043)	Rest	Zn-Leg.
MT 922	2.72	0.011	0.0081	0.014	0.0068	0.0011	0.0046	(0.0032)	Rest	Zn-Alloy
MT 923	3.01	0.025	0.024	0.012	0.0056	0.0024	(0.003)	(0.0025)	Rest	
MT 924	4.7	0.106	0.084	0.014	0.0102	0.0099	0.043	(0.0095)	Rest	nur Satz/set only
MT 925	3.34	0.060	0.067	0.028	0.0026	0.0061	0.0040	(0.0038)	Rest	

CRM	Al	Cu	Mg	Pb	Cd	Sn	Si	Zn	Ø 30-35x25 mm
MT 1581	2.94	1.42	0.011	0.035	0.033	0.011	0.044	Rest	Zn-Leg.
MT 1582	2.90	0.64	0.11	0.015	0.0022	0.0011	0.0060	Rest	Zn-Alloy
MT 1583	3.70	0.91	0.065	0.019	0.010	0.0052	0.033	Rest	
MT 1584	4.06	1.23	0.060	0.015	0.016	0.0066	0.021	Rest	nur Satz/set only
MT 1585	4.63	0.40	0.022	0.020	0.0015	0.0018	0.0065	Rest	

CRM	Al	Cu	Mg	Cd	Sn	Si	Fe	Zn	Ø 30-35x25 mm
MT 1611	2.90	0.18	0.069	0.014	0.0097	0.015	0.11	Rest	Zn-Leg.
MT 1612	3.15	0.074	0.055	0.0090	0.0050	-	0.021	Rest	Zn-Alloy
MT 1613	3.78	0.062	0.030	0.0078	0.0030	0.012	-	Rest	
MT 1614	4.46	0.053	0.020	0.0043	0.0036	0.035	0.031	Rest	nur Satz/set only
MT 1615	5.63	0.086	0.0082	0.0048	0.0022	0.047	-	Rest	

CRM	Al	Cu	Mg	Pb	Cd	Sn	Si	Fe	Zn	Ø 30-35x25 mm
MT 1481	2.84	3.40	0.041	0.012	0.0023	0.0081	0.027	(0.04)	Rest	Zn-Leg.
MT 1482	3.45	3.47	0.026	0.018	0.0079	0.0028	0.0063	(0.006)	Rest	Zn-Alloy
MT 1483	3.69	2.62	0.024	0.024	0.0065	0.0058	0.011	(0.02)	Rest	
MT 1484	4.31	(2.3)	0.085	0.018	0.0073	0.0075	0.0069	(0.01)	Rest	nur Satz/set only
MT 1485	4.54	1.82	0.10	0.016	0.0042	0.0012	0.041	(0.04)	Rest	

CRM	Al	ppm Cd	ppm Cu	ppm In	ppm Mg	ppm Ni	ppm Pb	ppm Sn	ppm Tl	Zn	Ø 80x20mm + 31x20 mm, cast
H 351	4.35	(<0.21)	12.13	<0.2	131.0	(1.9)	4.50	<1	0.74	Rest	Zamak 3
H 352	4.15	2.88	31.26	3.02	283	6.74	(6.4)	3.0	3.2	Rest	
H 353	3.95	10.44	100.0	2.55	452.5	-	24.4	5.6	3.95	Rest	
H 354	3.72	29.7	312.3	9.8	602	83.1	30.8	14.1	11.01	Rest	
H 355	3.44	58.1	1035	24.6	786	268	56.9	29.1	23.25	Rest	

CRM	Al	ppm Cd	Cu	ppm Fe	ppm In	ppm Mg	ppm Ni	ppm Pb	ppm Sn	ppm Tl	Zn	Ø 80x20mm + 31x20 mm, cast				
H 356	4.43	0.73	0.394	31.5	<0.2	132.3	3.43	9.87	(0.32)	0.79	Rest	Zamak 5				
H 357	4.22	2.83	0.584	25.7	3.30	273	9.82	13.8	3.51	2.76	Rest					
H 358	3.94	10.22	0.793	40.5	7.04	403	26.98	22.5	7.87	6.09	Rest					
H 359	3.71	39.8	0.989	119.7	15.5	557	92.6	36.2	16.93	13.34	Rest					
H 360	3.42	59.5	1.234	-	29.8	705	267	73.9	33.0	25.9	Rest					
H 361	(4.06)	(0.80)	(0.798)	10.34	(<0.2)	-	-	5.31	46.3	37.4	Rest					
CRM	Al	Cu	Mg	Sn	Pb	Cd	Zn	30x35x45 mm								
GB 02705	4.72	0.165	0.0224	0.00058	0.0026	0.00081	Rest	Zn-Leg.	Nur für OES							
GB 02706	3.92	0.256	0.159	0.00104	0.0032	0.0014	Rest	Zn-Alloy	For OES only							
GB 02707	3.91	0.412	0.075	0.0021	0.0057	0.0031	Rest									
GB 02708	2.92	0.773	0.0368	0.0040	0.0120	0.0072	Rest	nur Satz/set only								
GB 02709	2.64	1.37	0.0085	0.0077	0.0235	0.0138	Rest									
RM	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Cr	Si	Sb	Ce	La	Zn	Ø 50x20 mm, cast
4 Z1/42	0.0022	0.0041	4.61	0.0005	0.0024	0.0006	0.0019	0.0017	0.0007	<0.0005	0.0046	(0.0009)	0.0027	0.0026	Rest	
4 Z2/42	0.0052	0.0147	4.04	0.0010	0.0040	0.0021	0.0186	0.0051	0.012	0.0018	0.0089	0.0026	0.0049	0.0044	Rest	BS 1004 Alloy A
4 Z3/42	0.0060	0.0288	3.72	0.0048	(0.047)	0.0030	0.159	0.0102	0.0252	0.002	0.015	0.003	(0.0003)	(0.0003)	Rest	ASTM Alloy 13
4 Z4/42	0.0113	0.058	3.55	0.0076	0.012	0.0060	0.063	0.0177	0.0077	-	-	(0.0029)	0.020	0.02	Rest	ASTM Alloy AG 40A
4 Z5/42	0.0048	0.073	4.22	0.0021	0.029	0.0022	0.098	0.0185	0.0068	0.0018	-	(0.0055)	0.0109	0.009	Rest	
4 Z6/42	0.0090	0.180	3.60	0.0041	0.005	0.006	0.240	0.0003	0.016	0.0036	0.010	0.0155	-	-	Rest	
4 Z7/42	0.0097	0.0095	4.39	0.030	0.027	0.012	0.0249	0.0067	0.0045	-	0.006	-	0.053	0.047	Rest	Galfan
4 Z8/42	0.0025	0.0033	7.03	0.0003	0.013	(0.0023)	0.0215	0.0019	0.0014	-	0.013	-	0.0081	0.0079	Rest	
4 Z9/42	0.0021	0.0464	5.58	0.0054	0.032	-	0.0070	(0.0003)	0.0006	-	(0.004)	-	0.0047	0.0044	Rest	
RM	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Si	Ti	Cr	Sb	Bi	Zn	Ø 50x20 mm, cast
4 Z1/43	0.0017	0.0145	4.50	0.0003	0.0058	(0.0007)	0.501	0.0010	0.0005	(0.0037)	0.0014	0.0009	0.0016	0.0031	Rest	Zamak 4, BS 1004 Alloy B
4 Z2/43	0.0066	0.0739	3.80	0.0068	0.020	0.0036	1.04	0.0124	0.0059	0.009	-	0.0021	0.008	0.0019	Rest	ASTM Alloy 11
4 Z3/43	0.0132	0.0143	3.64	0.0132	0.061	0.0125	1.58	0.0061	0.0125	0.005	-	0.0045	(0.0030)	0.018	Rest	ASTM Alloy AG 41A
4 Z4/43	(0.0024)	0.043	4.76	0.0025	(0.064)	(0.0023)	3.21	0.0286	0.088	(0.0065)	0.0017	0.0063	0.0043	0.012	Rest	ZL2
4 Z5/43	0.0045	0.041	3.05	0.0111	0.023	0.0032	6.05	0.0021	0.0030	0.003	0.0009	0.0010	-	-	Rest	ACuZinc5
4 Z6/43	0.0016	0.0256	4.02	0.0016	0.019	0.0053	2.72	0.029	0.0006	0.012	0.0013	0.0006	0.0045	0.0049	Rest	
CRM	Al	Cu	Fe	Si	Mg	Pb	Cd	Sn	Ø 30-35x25 mm							
MT 1601	7.95	2.73	0.085	0.17	0.079	0.023	0.015	0.0042	Zn-Leg.							
MT 1602	7.69	1.72	0.016	0.091	0.037	0.020	0.013	0.0041	Zn-Alloy							
MT 1603	10.38	1.39	(0.3)	0.099	0.049	0.042	0.015	0.013								
MT 1604	9.19	1.14	<0.1	0.062	0.027	0.026	0.012	0.016	nur Satz/set only							
MT 1605	10.89	0.71	0.41	0.0081	(0.0006)	0.076	0.055	0.047								
CRM	Al	Cu	Mg	Cd	Sn	Si	Pb	Zn	Ø 40x25 mm							
MT 1591	8.36	5.58	-	0.052	0.11	0.023	0.065	Rest	Zn-Leg.							
MT 1592	8.94	5.05	-	0.018	0.098	0.043	0.040	Rest	Zn-Alloy							
MT 1593	15.32	6.41	0.084	0.026	0.0074	0.091	0.031	Rest								
MT 1594	11.4	4.08	0.024	0.034	0.016	0.059	0.019	Rest	nur Satz/set only							
MT 1595	6.93	3.11	0.022	-	0.0052	-	0.028	Rest								

RM	Pb	Mg	Al	Cd	Fe	Sn	Cu	Ni	Mn	Si	Cr	Ti	Sb	Bi	Zn	Ø 50x20 mm, cast
4 Z11	0.0305	0.053	11.61	0.0224	0.0091	0.0206	0.515	0.0014	0.0089	0.020	0.0010	0.013	0.0091	0.0035	Rest	ASTM B669
4 Z12	0.0133	0.027	10.05	0.0114	0.047	0.0089	0.796	0.0035	0.0059	(0.08)	0.0023	0.0054	0.0039	(0.002)	Rest	ZA8
4 Z13	0.0125	0.0204	9.55	0.0100	0.05	0.0111	0.981	0.0109	0.0070	(0.0048)	-	-	0.009	-	Rest	ZA12
4 Z14	0.0082	0.0026	8.24	0.0067	0.015	0.0053	1.23	0.0052	0.0033	0.010	0.0046	0.0012	0.011	0.010	Rest	
4 Z15	0.0054	0.0024	7.36	0.0030	0.009	0.004	1.53	0.0019	0.0020	(0.011)	0.0025	0.0020	0.005	0.005	Rest	
4 Z21	0.012	0.047	23.5	0.027	0.12	0.0140	1.81	0.043	0.0104	0.022	0.0087	0.013	-	-	Rest	ASTM B669
4 Z22	0.0060	0.022	27.4	0.0050	(0.36)	0.0061	2.32	0.027	0.0096	0.038	0.019	0.0065	-	-	Rest	ZA27
4 Z23	0.0028	0.0133	31.4	0.024	(0.24)	(0.002)	2.74	0.0115	0.0124	0.061	0.036	0.0026	-	-	Rest	

RM	Al	Sb	Mg	Cu	Pb	Cd	Bi	Sn	Fe	Zn	Ø 40x15 mm, cast
4 Z1/44	8.0	10.6	0.001	0.028	0.019	0.027	0.024	0.024	0.007	Rest	ZnAlSb-Leg.
4 Z2/44	12.6	9.5	0.035	0.003	0.053	0.005	0.030	0.018	0.007	Rest	ZnAlSb-Alloy
4 Z3/44	17.8	8.1	0.005	0.011	0.020	0.012	0.013	0.019	0.009	Rest	
4 Z4/44	20.3	6.7	0.008	0.007	0.032	0.011	0.016	0.018	0.011	Rest	
4 Z5/44	20.4	5.2	<0.001	0.001	0.010	0.001	0.004	0.003	0.010	Rest	

CRM	Al	Cu	Mg	Fe	Sn	Pb	Cd	Zn	Ø 50x12 mm, cast
T NZA1	28.70	1.51	0.020	0.046	0.0069	0.0030	0.00098	Rest	ZnAlCu T NZA1C-NZA7C Späne lieferbar
T NZA2	23.81	3.00	0.029	0.021	0.0045	0.0076	0.0047	Rest	Chips available
T NZA3	25.99	2.00	0.0049	0.066	0.0034	0.0045	0.0064	Rest	
T NZA4	26.65	2.45	0.0106	0.027	0.0087	0.0101	0.0029	Rest	
T NZA5	10.85	1.04	0.021	0.016	0.0017	0.0012	0.0095	Rest	
T NZA6	7.54	3.17	0.00037	0.0105	0.0051	0.0809	0.0147	Rest	
T NZA7	13.17	0.212	0.052	0.016	0.0116	0.0136	0.00020	Rest	

RM	Al	Si	Fe	Cu	Sn	Pb	Mg	Ti	Zn	Ø 60x6 mm, chill cast
4 ZnAl/1	24.5	2.72	0.28	0.065	0.020	0.020	0.013	0.022	Rest	ZnAl "Galvalume"
4 ZnAl/2	36.1	2.58	0.20	0.048	0.008	0.010	0.007	0.025	Rest	
4 ZnAl/3	45.8	1.00	0.127	0.021	0.003	0.0046	0.003	0.0087	Rest	
4 ZnAl/4	54.65	0.67	0.095	0.013	0.0023	0.003	<0.0005	0.0038	Rest	
4 ZnAl/5	40.8	1.88	0.050	0.0035	(0.0024)	0.004	0.030	0.003	Rest	

RM	Al	Sb	Cu	Pb	Cd	Bi	Sn	Fe	Ni	Ag	Zn	Ø 40x15 mm, cast
4 ZnCd30	<0.001	1.03	0.046	0.090	30.9	0.052	0.051	0.002	0.001	0.046	Rest	ZnCd-Legierung; ZnCd-Alloy

CRM	ppm Ag	As	ppm Bi	ppm Cd	ppm Cu	ppm Ni	ppm Sb	Se	Sn	ppm Te	ppm Tl	ppm Zn	Pb	60x60x12 mm
H 286A	0.015	<2E-7)	21.5	0.125	1.49	0.041	0.10	<5E-6)	<5E-6)	<1E-1)	2.5	<0.1	Rest	Reinblei;
H 287A	15.2	<3E-7)	67.3	0.36	0.98	0.024	0.040	<5E-6)	<5E-6)	<2E-5)	0.73	<0.1	Rest	Pure Lead
H 288A	30.5	55.7ppm	215.8	33.3	19.3	4.57	32.5	<0.2ppm	30.6ppm	32.8ppm	2.3	8.2	Rest	

H 286B-288B Späne lieferbar; Chips available

CRM	O	Pb	Ø 30x9 mm
H 055	1ppm	Rest	Blei, raff.; Lead, refined

CRM	Al	Cd	Ca	Co	Fe	Mn	Ni	Te	Zn	S	Sn	Sb	As	Bi	Cu
3 C2415	<0.0003)	0.002	<0.001)	-	<0.001	<0.001	<0.001	0.0045	<0.001	0.0026	0.33	2.95	0.20	0.054	0.095
3 C2416	<0.0001)	(0.0002)	<0.001)	<0.0002)	<0.0005)	<0.0005)	<0.0005)	<0.0005)	<0.0005)	0.0015	0.09	0.79	0.56	0.10	0.065
3 C2417	<0.0001)	<0.0002)	<0.001)	<0.0002)	<0.0003)	<0.0003)	<0.0005)	<0.0005)	<0.0005)	<0.0005)	<0.010)	0.010	0.011	0.010	0.010
3 C2418	<0.0001)	0.0003	<0.0005)	<0.0005)	<0.0005)	<0.0005)	<0.0005)	<0.0005)	<0.0005)	-	<0.0005)	<0.0001)	<0.0001)	<0.0005)	<0.0001)

Ag	Pb	Ø 50x16mm, chill cast
0.002	Rest	Batterieblei; Battery Lead
-	Rest	Geschoßblei; Bullet Lead
0.010	Rest	Reinblei; Pure Lead
0.0007	Rest	Reinstblei; High Purity Lead

RM	Cu	Fe	Bi	Ag	Ti	Pb	ca. 30x20x105 mm = 500g
5 210e	0.0006	0.0005	0.0008	0.0001	0.001	99.996	Reinblei; Pure Lead Schmelzpunkt; Melting Point 327°C

RM	ppm Sn	ppm Sb	ppm Bi	ppm Cu	ppm As	ppm Ag	ppm Zn	ppm Cd	ppm Ni	ppm Te	Pb	55x55x10 mm, chill cast
10 L01.1	1.2	0.7	196	9.6	5.8	20.5	1.3	1.5	0.2	<2	Rest	Reinblei
10 L01.2	0.8	2.8	98	13.6	0.7	1.3	6.1	2.5	5.7	3	Rest	Pure Lead
10 L01.3	<0.5	5.2	5.3	21.5	2.7	56	1.9	6.0	3.9	13.5	Rest	
10 L01.4	4.2	9.7	297	0.7	8.8	81	7.7	14	3.0	8.4	Rest	

RM	Sn	Sb	Cu	Ag	Ca	As	Bi	Cd	In	Fe	Ni	Zn	Pb	Ø 40x13 mm	Element Ca, In + Ni: Partielle Seigerung möglich Some segregation noted
AL A	<0.003	<0.003	0.00088	0.0013	0.00037	0.00072	0.00086	0.0021	<0.001	<0.005	0.00072	0.0005	Rest	Reinblei	
AL B	0.0030	0.0054	0.0058	0.0050	-	0.0059	0.0051	0.00070	0.0014	<0.005	0.0036	-	Rest	Pure Lead	
AL C	0.059	0.018	0.016	0.015	0.0009	0.015	0.021	0.016	0.0026	<0.005	0.0013	-	Rest		
AL D	0.13	0.059	0.027	0.033	-	0.055	0.053	0.036	0.021	-	-	-	Rest		
AL E	0.56	0.60	0.042	0.19	-	0.53	0.49	0.12	-	-	-	0.0025	Rest		
AL F	1.05	0.89	0.064	0.65	-	-	0.77	0.53	0.30	-	-	0.0015	Rest		

RM	ppm Ag	ppm As	ppm Bi	ppm Cu	ppm Fe	ppm In	ppm Ni	ppm Mn	ppm Sb	ppm Se	ppm Sn	ppm Te	ppm Cd	ppm Ca	ppm Tl	ppm Zn	Pb	Ø 40x27mm
IM PL1	193	3.6	729	7.3	4.5	(64.3)	136	(0.20)	15.4	-	3.0	145	-	-	569	6.0	Rest	Reinblei
IM PL2	97.0	2.6	460	14.9	4.4	(6.4)	159	(0.17)	7.2	33.3	2.6	349	218	-	228	(1.7)	Rest	Pure Lead
IM PL3	17.0	2.5	101	105	(2.4)	5.9	39.4	(0.60)	8.0	2.7	2.1	235	15.7	(3.4)	26.4	1.8	Rest	
IM PL4	10.3	345	59.9	197	-	-	8.5	-	3.4	2.7	-	23.6	5.1	-	21.5	-	Rest	
IM PL5	27.3	159	296	9.1	-	287	6.7	-	572	-	13.7	13.6	-	-	135	-	Rest	
IM PL6	64.3	318	48.3	4.7	(2.0)	104	5.5	(0.50)	310	-	7.6	8.2	623	(81.1)	494	-	Rest	
IM PL7	151	(74.3)	61.7	6.8	-	-	-	-	77.7	-	26.3	270	53.2	-	99.2	3.5	REST	

RM	Ø 40x15 mm																	
	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	In	Ni	Al	Te	Se	Au	Tl	Na	Hg	Pb
4 PR1H	0.0062	0.0081	0.0525	0.0021	0.043	0.111	-	0.0759	0.038	0.0003	-	0.0011	(0.0002)	-	-	-	-	Rest
4 PR2E	0.095	0.053	0.0177	0.039	0.018	0.053	(0.004)	0.0021	0.0015	0.0010	-	0.0064	0.004	(0.0009)	0.0010	(0.0003)	0.0024	Rest
4 PR3E	0.048	0.09	0.193	0.057	(0.001)	0.003	0.0017	0.050	0.002	0.0024	<0.001	0.004	(0.01)	(0.005)	(0.013)	(0.003)	-	Rest
4 PR4G	0.011	0.018	0.019	0.014	0.006	0.014	<0.001	0.0085	0.004	0.001	<0.001	0.018	0.005	0.004	0.002	0.001	0.003	Rest
4 PR5C	0.00028	0.00023	0.0041	0.00038	0.0003	0.0008	0.0005	(0.0001)	0.00013	0.00046	-	0.00023	0.00018	-	-	-	-	Rest
4 PR7A	0.208	0.83	0.507	0.23	0.052	0.302	0.0021	0.496	0.076	0.006	-	0.0014	-	(0.0016)	-	0.004	0.012	Rest
4 PR8B	0.556	0.262	1.155	0.0695	0.0155	0.490	(0.0015)	0.220	0.664	0.0044	0.0008	0.0059	0.0038	0.0083	-	0.0057	0.049	Rest
4 PBTE/2B	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	0.060	-	-	-	-	-	Rest
CRM	Sn	Ca	Al	Bi	Ag	Cu	As	Sb	Se	Tl	Ni	Cd	Pb	Ø 40x30 mm				
B EB101	0.2931	0.1436	0.0257	0.0165	0.002880	0.001766	-	-	-	-	-	-	Rest	PbSnCaAl				
B EB102	0.895	0.0705	0.0257	0.0165	0.00288	0.00173	-	-	-	-	-	-	Rest	PbCaSn				
B EB103	0.183	-	-	0.0158	0.0066	0.00097	0.097	1.64	0.0180	0.00152	0.000302	0.00002	Rest	PbSb1.6				
RM	Sn	Ca	Sb	Bi	Cu	As	Ag	Zn	Cd	Te	Al	Ni	Pb	Ø 40x15 mm, cast				
4 BA1	0.85	0.106	<0.001	0.0084	0.0041	<0.001	0.0088	<0.0007	0.0016	0.006	-	0.0034	Rest	PbSnCa	Batterieblei			
4 BA2	0.51	0.062	0.002	0.024	0.003	<0.0005	0.008	0.019	0.0052	<0.002	-	(0.0002)	Rest	Battery Alloy				
4 BA3	0.233	0.017	0.0049	0.034	0.0042	(0.0007)	0.0044	0.0069	0.0032	(0.0003)	0.0051	-	Rest					
4 BA4	0.108	(0.0014)	0.061	0.074	0.031	(0.0008)	0.003	(0.0003)	0.010	0.030	-	0.0007	Rest					
4 BA6	0.73	0.095	0.001	0.008	0.0010	<0.001	0.002	<0.001	(0.0002)	<0.001	-	-	Rest	Ø 52x14 mm				
4 BA7	0.61	0.036	0.002	0.009	0.0009	<0.001	0.002	<0.0005	<0.0002	<0.001	-	-	Rest	Ø 52x14 mm				
4 BA8	0.293	0.156	0.0009	0.019	0.0007	(0.0004)	0.0043	0.0013	0.0010	<0.002	0.021	-	Rest					
4 BA9	3.15	0.105	0.001	0.018	0.0008	0.0005	0.002	0.0003	0.0001	0.0003	0.017	-	Rest					
RM	Sn	Ca	Zn	Ni	Cd	As	Sb	Bi	Ag	Cu	Pb	55x55x10 mm, chill cast						
10 L21.01	0.11	0.06	0.01	0.0001	0.001	0.0001	0.0005	0.03	0.005	0.0007	Rest	PbSnCa	Batterieblei					
10 L21.02	0.23	0.02	0.0007	0.0001	0.0002	0.0001	0.0007	0.01	0.007	0.003	Rest	Battery Alloy						
10 L21.03	0.34	0.10	0.0004	0.0001	0.001	0.0001	0.0003	0.02	0.01	0.002	Rest							
10 L21.04	0.43	0.11	0.002	0.0004	0.0007	0.0003	0.001	0.0008	0.0006	0.002	Rest							
RM	Sb	Pb	Ø 40x13 mm															
AL LA0.5	0.48	Rest	PbSb-Binärprobe															
AL LA1.0	0.99	Rest	PbSb-Binary															
AL LA2.0	2.02	Rest																
AL LA3.5	3.52	Rest																
AL LA7.0	6.96	Rest																
AL LA10.0	9.86	Rest																
AL LA13.0	12.99	Rest																
RM	Sb	Pb	Ø 40x15 mm, cast															
4 PA0.5	0.51	Rest	PbSb-Binärprobe															
4 PA1.0	1.00	Rest	PbSb-Binary															
4 PA2.0	2.00	Rest																
4 PA3.5	3.50	Rest																
4 PA7.0	7.00	Rest																
4 PA10.0	10.00	Rest																
4 PA12.5	12.5	Rest																

RM	Sb	As	Sn	Pb	Ø 40x13 mm													
AL BM1	13.96	0.94	0.97	Rest	Babbittmetal													
RM	Sn	Sb	Bi	Cu	As	Ag	Ni	Cd	Zn	Fe	Al	In	Pd	Pb	Ø 40x15 mm			
4 PSS1	4.5	12.0	0.15	0.03	0.6	0.002	0.001	0.005	0.008	0.001	0.005	0.005	<0.001	Rest	Babbittmetal			
4 PSS2	6.5	8.0	0.005	0.15	1.5	0.002	0.008	0.075	0.001	0.005	0.003	0.001	0.001	Rest				
4 PSS3	9.0	14.0	0.02	0.65	0.1	0.002	0.005	0.02	0.005	0.002	0.008	0.003	0.003	Rest	Zielwerte/target values			
4 PSS4	11.0	17.0	0.08	0.35	0.3	0.002	0.003	0.05	0.003	0.003	0.001	0.01	0.006	Rest				
RM	ppm Ag	ppm As	ppm Bi	ppm Cu	ppm Fe	ppm In	ppm Ni	ppm Mn	ppm Sb	ppm Se	ppm Sn	ppm Te	ppm Cd	ppm Ca	ppm Tl	ppm Zn	Pb	Ø 40x12 mm
IM PL1	193	3.6	729	7.3	4.5	(64.3)	136	(0.20)	15.4	-	3.0	145	-	-	569	6.0	Rest	Feinblei
IM PL2	97.0	2.6	460	14.9	4.4	(6.4)	159	(0.17)	7.2	33.3	2.06	349	218	-	228	(1.7)	Rest	Refined Lead
IM PL3	17.0	2.5	101	105	(2.4)	5.9	39.4	(0.060)	8.0	2.7	2.1	235	15.7	(3.4)	26.4	1.8	Rest	
IM PL4	10.3	345	59.9	197	-	-	8.5	-	3.4	2.7	-	23.6	5.1	-	21.5	-	Rest	
IM PL5	27.3	159	296	9.1	-	287	6.7	-	572	-	13.7	13.6	-	-	135	-	Rest	
IM PL6	64.3	318	48.3	4.7	(2.0)	104	5.5	(0.050)	310	-	7.6	8.2	623	(81.1)	494	-	Rest	
IM PL7	151	(74.3)	61.7	6.8	-	-	-	-	77.7	-	26.3	270	53.2	-	99.2	3.5	Rest	
CRM	Cd	Cu	Sb	Bi	Ag	As	Sn	Te	Pb	Ø 40x12 mm								
IM PG1	0.078	0.059	0.76	0.082	0.020	0.019	0.56	0.0093	Rest	Hartblei								
IM PG2	0.064	0.030	0.23	0.071	0.013	0.015	0.28	0.018	Rest	Hard Lead								
IM PG3	0.040	0.030	0.52	0.053	0.011	0.0096	0.10	0.026	Rest									
IM PG4	0.026	0.021	0.042	0.032	0.0076	0.0044	0.020	0.051	Rest									
IM PG5	0.011	0.0078	0.97	0.017	0.0024	0.0018	0.0042	0.093	Rest									
IM PG6	0.0074	0.0011	1.45	0.0050	0.00060	0.00050	0.00060	-	Rest									
CRM	Cu	As	Sb	Sn	Bi	Te	Ag	Pb	Ø 40x18 mm									
VS 2047-81	0.039	1.14	2.82	0.17	0.29	0.062	0.27	Rest	Hartblei									
VS 2048-81	0.004	0.51	2.10	0.091	0.11	0.0025	0.125	Rest	Hard Lead									
VS 2049-81	0.012	0.10	0.32	-	0.055	0.0143	0.059	Rest										
VS 2050-81	-	-	0.049	0.19	-	-	-	Rest										
VS 2051-81	-	-	-	0.051	0.038	-	0.0030	Rest										
VS 2052-81	-	-	-	0.0095	0.010	-	0.0010	Rest										
VS 2053-81	-	-	-	-	0.0030	-	0.00033	Rest										
CRM	Cu	As	Sb	Sn	Bi	Te	Ag	Pb	Ø 40x18 mm									
VS 2511-83	0.0061	0.13	0.52	0.016	0.04	0.021	0.041	Rest	Hartblei									
VS 2512-83	0.0025	0.019	0.26	0.0049	0.013	0.035	0.0053	Rest	Hard Lead									
VS 2513-83	0.012	0.34	0.98	0.037	0.021	0.06	0.012	Rest										
VS 2514-83	0.035	0.053	0.14	0.09	0.086	0.11	0.0014	Rest										
VS 2515-83	0.096	-	2.74	0.24	-	-	0.0027	Rest										
VS 2516-83	0.26	0.006	7.9	0.53	-	-	0.023	Rest										
VS 2517-83	-	0.0029	-	-	-	-	-	Rest										
VS 73/5-93	-	2.55	-	-	Rest													
RM	Sn	Sb	Pb	Ø 40x28 mm														
IM PE1	0.59	0.053	Rest	Hartblei														
IM PE2	0.50	0.27	Rest	Hard Lead														
IM PE3	0.38	0.49	Rest															
IM PE4	0.31	0.70	Rest															
IM PE5	0.21	0.89	Rest															
IM PE6	0.40	0.53	Rest															

RM	Sn	Sb	Bi	Cu	As	Ag	Ni	Cd	Zn	Te	Se	Fe	Pb	Ø 52x14 mm
4 PSn2	1.87	0.023	0.0093	0.035	<0.005	0.002	<0.001	<0.001	<0.001	<0.001	0.0058	<0.001	Rest	
4 PSb3	0.13	2.66	0.010	0.032	0.14	<0.002	0.0013	<0.001	(0.0002)	<0.002	0.024	<0.001	Rest	
4 PSb5	0.057	5.14	0.022	0.007	0.12	0.0017	0.0025	<0.001	<0.001	<0.001	0.0008	<0.001	Rest	
4 PSb8	0.085	8.43	0.010	0.032	0.02	0.0016	0.0014	<0.001	(0.0002)	<0.005	0.0007	<0.001	Rest	
4 PSb10	0.080	10.2	0.007	0.14	0.11	0.0015	0.0013	<0.001	0.014	<0.002	<0.001	<0.005	Rest	
4 PSb12	0.21	11.4	0.007	0.30	0.11	0.0015	0.0016	<0.001	0.087	<0.005	<0.001	<0.001	Rest	
4 ANTH	1.19	6.14	0.003	0.014	0.21	0.004	0.0025	0.005	(0.0005)	0.005	0.015	0.0036	Rest	Ø 55x12 mm
4 HRH	0.874	1.13	0.092	0.080	0.74	0.247	0.001	(0.0002)	-	0.002	0.037	-	Rest	
4 0494Pb1	0.051	0.95	0.0017	0.012	0.049	-	-	-	-	-	0.004	-	Rest	Ø 40x15 mm
4 0494Pb2	0.155	2.07	0.0018	0.054	0.128	-	-	-	-	-	0.023	-	Rest	
4 0494Pb3	0.294	3.02	0.038	0.100	0.277	-	-	-	-	-	(0.05)	-	Rest	
4 0616Pb1	0.070	1.76	0.026	0.047	0.068	0.0023	0.0010	0.0022	0.0009	(0.0016)	0.017	<0.001	Rest	
CRM	Cu	Ni	As	Sn	Sb	Bi	Ag	Fe	Pb	Ø 31x19 mm				
3 1132	0.054	0.003	0.057	5.84	10.2	0.052	-	<0.00	Rest	Lagermetall; Bearing Metal	3 53E	Späne erhältlich; Chips available		
3 1131	0.011	0.012	0.01	39.3	0.43	0.06	0.01	-	Rest	PbSn-Lot; PbSn-Solder	3 127B	Späne erhältlich; Chips available		
RM	Sb	Ag	Bi	Cu	As	Sn	Zn	Pb	Ø 40x13 mm					
AL LS1.5X	0.40	1.5	0.05	0.30	0.005	0.05	0.001	Rest	PbAg					
AL LS2.5X	0.25	2.5	0.10	0.15	0.01	0.10	0.0025	Rest						
AL LS3.5X	0.10	3.5	0.25	0.08	0.02	0.25	0.005	Rest						
RM	Sb	Ag	Bi	Cu	As	Sn	Zn	Pb	Ø 40x13 mm					
AL LS4.5X	0.40	4.5	0.05	0.30	0.005	0.05	0.001	Rest	PbAg					
AL LS5.5X	0.25	5.5	0.10	0.15	0.01	0.10	0.0025	Rest						
AL LS6.5X	0.10	6.5	0.25	0.08	0.02	0.25	0.005	Rest						
RM	Sn	Sb	Bi	Cu	As	Ag	Zn	Pb	Ø 40x15 mm					
4 PAg1.5R	0.05	0.40	0.05	0.30	0.005	1.5	0.005	Rest	PbAg					
4 PAg2.5R	0.10	0.25	0.10	0.15	0.010	2.5	0.0025	Rest						
4 PAg3.5R	0.25	0.10	0.25	0.08	0.020	3.5	0.001	Rest						
RM	Sn	Sb	Fe	Cu	Bi	Cd	As	Zn	Pb	Ø 40x28 mm				
IM L1	56.14	0.52	-	0.11	0.17	0.0020	0.051	0.00093	Rest	SnPb-Lot				
IM L2	59.09	0.35	(0.011)	0.075	0.11	0.0043	0.034	0.0019	Rest	SbPb-Solder				
IM L3	60.18	0.14	(0.023)	0.034	0.22	0.0065	0.092	0.0064	Rest					
IM L4	62.81	0.079	(0.0085)	0.013	0.055	0.0080	0.017	0.0011	Rest					
IM L5	64.95	0.011	-	0.0037	0.014	0.0097	0.0035	0.0056	Rest					

RM	Sn	Pb	Ø 40x13 mm
AL TL3	2.95	Rest	PbSn-Binärprobe
AL TL7	6.77	Rest	PbSn-Binary
AL TL10	9.78	Rest	
AL TL12	12.02	Rest	
AL TL15	15.19	Rest	
AL TL20	20.0	Rest	
AL TL25	25.0	Rest	
AL TL30	30.0	Rest	
AL TL35	35.0	Rest	
AL TL40	40.0	Rest	
AL TL50	50.0	Rest	
AL TL55	55.0	Rest	
AL TL60	60.0	Rest	
AL TL65	65.0	Rest	

RM	Sn	Sb	Cu	Au	Pb	Ø 40x13 mm
AL SSCA1	59.23	0.085	0.0091	0.0045	Rest	SnPb-Lot
AL SSCA2	60.41	0.29	0.050	0.010	Rest	SnPb-Solder
AL SSCA3	61.53	0.48	0.10	0.046	Rest	
AL SSCA4	62.54	0.11	0.25	0.10	Rest	
AL SSCA5	63.45	0.31	0.41	0.25	Rest	
AL SSCA6	64.53	0.52	0.49	0.49	Rest	

RM	Sn	Sb	As	Bi	Cu	Ag	Ni	Pb	Ø 40x13 mm
AL TL1X	40.00	0.15	0.007	0.03	0.005	0.005	0.005	Rest	PbSn-Lot
AL TL2X	39.30	0.43	0.01	0.06	0.011	0.01	0.12	Rest	PbSn-Solder
AL TL3X	39.70	0.75	0.03	0.15	0.04	0.025	0.03	Rest	

RM	Sn	Sb	Cd	Bi	Ag	Pb	Ø 40x13 mm
AL TLSB1	48	0.15	0.04	0.10	0.04	Rest	SnPb-Lot
AL TLSB2	48	0.35	0.08	0.25	0.08	Rest	SnPb-Solder
AL TLSB3	48	0.70	0.15	0.50	0.15	Rest	

RM	Sn	Sb	Zn	Fe	Cd	As	Au	Bi	Cu	Ag	Ni	Al	In	Pb	Ø 40x13 mm
AL 63A10	63.0	0.15	(0.0005)	(0.006)	0.0057	0.006	0.04	0.038	0.05	0.019	0.001	(0.001)	0.005	Rest	SnPb-Lot
AL 63A11	63.2	0.36	(0.0013)	(0.016)	0.010	0.019	0.10	0.094	0.10	0.036	0.0025	(0.0025)	0.01	Rest	SnPb-Solder
AL 63A12	63.5	0.58	(0.003)	(0.018)	0.025	0.031	0.25	0.23	0.25	0.049	0.007	(0.007)	0.022	Rest	

RM	Sn	Sb	Zn	Fe	Cd	As	Au	Bi	Cu	Ag	Ni	Al	In	Pb	Ø 40x13 mm
AL TL9X	9.10	0.018	(0.003)	(0.004)	0.0011	0.002	0.01	0.006	0.00095	0.0010	0.008	(0.001)	0.0052	Rest	PbSn-Lot
AL TL10X	10.06	0.048	(0.009)	(0.003)	0.0033	0.005	-	0.0097	0.0027	0.0031	0.003	(0.005)	0.015	Rest	PbSn-Solder
AL TL11X	11.62	0.21	(0.02)	(0.02)	0.0092	0.015	-	0.034	0.0078	0.010	0.008	(0.01)	0.037	Rest	

RM	Sn	Sb	Zn	Fe	Cd	As	Au	Bi	Cu	Ag	Ni	Al				
AL TL60X	60.0	0.034	0.006	0.0031	0.006	<0.0005	0.00096	<0.0005	0.0006	0.0006	<0.0005	<0.0005				
AL TL62X	62.3	0.021	0.0095	0.12	0.0020	0.00084	0.0056	0.0057	0.0012	0.0012	0.0006	<0.001				
AL TL63X	63.4	0.050	0.015	0.0052	0.0049	0.0065	0.0090	0.0095	0.0045	0.0050	0.0085	<0.001				
AL TL64X	64.5	0.095	0.065	0.010	0.010	0.010	0.019	0.019	0.0090	0.0085	0.0042	<0.001				
	In	Pb	Ø 40x13 mm	Element Zn, Fe, Ni + Al:												
	<0.001	Rest		Partielle Seigerung feststellbar												
	0.0010	Rest		Some segregation noted												
	0.0091	Rest	SnPb-Lot													
	0.040	Rest	SnPb Solder													
RM	Sn	Sb	Bi	Cu	Ag	Pb	Ø 40x13 mm									
AL TLS36X	59.88	0.51	0.048	0.073	2.99	Rest	Silberlot									
AL TLS37X	61.85	0.38	0.093	0.040	2.02	Rest	Silver Solder									
AL TLS38X	63.60	0.23	0.25	0.10	1.01	Rest										
RM	Sn	Sb	Bi	Cu	Ag	Pb	Ø 40x13 mm									
AL LTS33X	8.88	0.21	0.0072	0.073	2.86	Rest	Silberlot									
AL LTS34X	10.09	0.09	0.012	0.042	2.10	Rest	Silver Solder									
AL LTS35X	11.10	0.05	0.035	0.0089	1.06	Rest										
RM	Sn	Sb	Zn	As	Bi	Cu	Ag	Pb	Ø 40x13 mm							
AL LST30X	0.41	0.42	(0.0015)	(0.005)	0.055	0.23	1.86	Rest	Silberlot							
AL LST31X	0.97	0.25	(0.0025)	(0.01)	0.10	0.14	1.48	Rest	Silver Solder							
AL LST32X	1.40	0.11	(0.005)	(0.02)	0.27	0.068	0.49	Rest								
RM	Sn	Pd	Pb	Ø 40x13 mm												
AL TLP1	(60)	0.01	Rest	Palladiumlot												
AL TLP2	(60)	0.05	Rest	Paladium Solder												
AL TLP3	(60)	0.10	Rest													
AL TLP4	(60)	0.25	Rest													
RM	Sn	P	Pb	Ø 40x13 mm												
AL TLPH1	63.4	0.0049	Rest	Phosphorlot												
AL TLPH2	63.2	0.0088	Rest	Phosphor Solder												
AL TLPH3	63.4	0.024	Rest													
RM	Al	Zn	Sn	Sb	Cu	Au	Ag	As	Bi	Cd	In	Fe	Ni	B	Pb	Ø 39x19 mm
AL NF11/1	0.00088	0.00066	(60.0)	(0.25)	(0.0044)	<0.005	(0.0078)	<0.005	<0.010	(0.019)	<0.001	<0.003	<0.005	<0.003	Rest	AlZn-Lot
AL NF11/2	0.045	0.0042	(60.0)	(0.25)	(0.0044)	<0.005	(0.0078)	<0.005	<0.010	(0.019)	<0.001	<0.003	<0.005	<0.003	Rest	AlZn-Solder
AL NF11/3	0.015	0.016	(60.0)	(0.25)	(0.0044)	<0.005	(0.0078)	<0.005	<0.010	(0.019)	<0.001	<0.003	<0.005	<0.003	Rest	
AL NF11/4	0.025	0.025	(60.0)	(0.25)	(0.0044)	<0.005	(0.0078)	<0.005	<0.010	(0.019)	<0.001	<0.003	<0.005	<0.003	Rest	
RM	Al	S	Sn	Sb	Cu	Au	Ag	As	Bi	Cd	In	Fe	Ni	Zn	Pb	Ø 39x19 mm
AL NF12/1	0.0008	0.0009	(60)	(0.30)	(0.015)	<0.005	(0.009)	<0.010	(0.030)	<0.001	(0.004)	<0.005	<0.005	<0.005	Rest	AlS-Lot
AL NF12/2	0.008	0.0046	(60)	(0.30)	(0.015)	<0.005	(0.009)	<0.010	(0.030)	<0.001	(0.004)	<0.005	<0.005	<0.005	Rest	AlS-Solder
AL NF12/3	0.0037	0.011	(60)	(0.30)	(0.015)	<0.005	(0.009)	<0.010	(0.030)	<0.001	(0.004)	<0.005	<0.005	<0.005	Rest	
AL NF12/4	0.082	0.040	(60)	(0.30)	(0.015)	<0.005	(0.009)	<0.010	(0.030)	<0.001	(0.004)	<0.005	<0.005	<0.005	Rest	

RM	S	Sn	Sb	Cu	Au	Ag	Al	As	Bi	Cd	In	Fe	Ni	Zn	Pb	Ø 39x19 mm
AL NF13/1	0.0012	(60.0)	(0.25)	(0.0044)	(<0.005)	(0.0078)	(<0.005)	(<0.010)	(0.19)	(<0.001)	(<0.003)	(<0.005)	(<0.003)	(<0.005)	Rest	S-Lot
AL NF13/2	0.0052	(60.0)	(0.25)	(0.0044)	(<0.005)	(0.0078)	(<0.005)	(<0.010)	(0.19)	(<0.001)	(<0.003)	(<0.005)	(<0.003)	(<0.005)	Rest	S-Solder
AL NF13/3	0.013	(60.0)	(0.25)	(0.0044)	(<0.005)	(0.0078)	(<0.005)	(<0.010)	(0.19)	(<0.001)	(<0.003)	(<0.005)	(<0.003)	(<0.005)	Rest	
AL NF13/4	0.048	(60.0)	(0.25)	(0.0044)	(<0.005)	(0.0078)	(<0.005)	(<0.010)	(0.19)	(<0.001)	(<0.003)	(<0.005)	(<0.003)	(<0.005)	Rest	
RM	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	Ni	Au	Pb	Ø 40x15 mm			
4 S63PR1	62.5	0.05	0.05	0.20	0.005	0.005	0.015	0.002	0.005	0.005	0.04	Rest	SnPb-Lot			
4 S63PR2	63.0	0.60	0.15	0.05	0.03	0.050	0.02	0.010	0.010	0.001	0.09	Rest	SnPb Solder			
4 S63PR3	64.0	0.25	0.25	0.10	0.020	0.020	0.003	0.008	0.001	0.010	0.18	Rest				
4 S63P	63.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Rest				
4 S50PR1	49.5	0.05	0.05	0.20	0.005	0.005	0.015	0.001	0.005	0.006	-	Rest	SnPb-Lot			
4 S50PR2	50.5	0.60	0.15	0.05	0.03	0.050	0.02	0.025	0.010	0.001	-	Rest	SnPb-Solder			
4 S50PR3	51.5	0.25	0.25	0.10	0.01	0.02	0.005	0.003	0.001	0.015	-	Rest				
4 S50P	50.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	Rest				
RM	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	Ni	Au	Pb	Ø 40x15 mm			
4 S40PR1	39.0	0.05	0.05	0.20	0.005	0.005	0.015	0.002	0.001	0.001	-	Rest				
4 S40PR2	40.0	0.60	0.15	0.05	0.03	0.05	0.02	0.025	0.005	0.005	-	Rest				
4 S40PR3	41.5	0.25	0.25	0.10	0.02	0.02	0.005	0.008	0.009	0.010	-	Rest				
4 S40P	40.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	Rest				
4 S30PR1	29.0	0.05	0.05	0.20	0.005	0.005	0.015	0.002	0.001	0.001	-	Rest				
4 S30PR2	29.8	0.60	0.15	0.05	0.03	0.05	0.02	0.025	0.005	0.005	-	Rest				
4 S30PR3	30.5	0.25	0.25	0.1	0.02	0.02	0.005	0.008	0.019	0.010	-	Rest				
4 S30P	30.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	Rest				
4 S10PR1	9.0	0.02	0.02	0.02	0.005	0.003	0.001	0.002	0.002	0.010	-	Rest				
4 S10PR2	10.0	0.60	0.15	0.05	0.03	0.05	0.001	0.25	0.005	0.001	-	Rest				
4 S10PR3	11.5	0.25	0.25	0.10	0.02	0.02	0.001	0.008	0.01	0.005	-	Rest				
4 S10P	10.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	Rest				
4 S10P	10.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Rest				
4 S30P	30.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Rest				
4 S40P	40.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Rest				
4 S50P	50.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Rest				
4 S63P	63.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	Rest				
RM	Sn	Sb	Bi	Cu	As	Ag	Fe	Zn	Cd	Ni	Pb	Ø 40x15 mm				
4 S30APR1	28.5	2.5	0.05	0.2	0.005	0.005	0.015	0.002	0.001	0.001	Rest	SnPbSb-Lot				
4 S30APR2	30.5	1.8	0.15	0.05	0.03	0.05	0.02	0.025	0.005	0.005	Rest	SnPbSb-Solder				
4 S30APR3	32.5	1.0	0.25	0.01	0.02	0.02	0.005	0.01	0.01	0.01	Rest					
4 S40APR1	38.5	2.7	0.05	0.2	0.005	0.005	0.015	0.002	0.001	0.001	Rest					
4 S40APR2	40.0	2.2	0.15	0.05	0.03	0.05	0.02	0.025	0.005	0.005	Rest					
4 S40APR3	41.5	1.7	0.25	0.1	0.02	0.02	0.005	0.01	0.01	0.01	Rest					
4 S50APR1	48.5	3.3	0.05	0.2	0.005	0.005	0.015	0.002	0.001	0.001	Rest					
4 S50APR2	50.0	2.8	0.15	0.05	0.03	0.05	0.02	0.025	0.005	0.005	Rest					
4 S50APR3	51.5	2.3	0.25	0.1	0.02	0.02	0.005	0.01	0.01	0.01	Rest					

SUS	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Ni	Te	Fe	Tl	Se	S	In	Mn	Pb	Ø 40x40mm
SL RPb11	<5ppm	3ppm	30ppm	2ppm	<5ppm	6ppm	<5ppm	<5ppm	<2ppm	-	<2ppm	-	-	-	-	-	99.99	Blei, SUS
SL RPb13	0.1	0.08	0.15	0.1	0.04	0.03	0.01	0.025	0.001	0.02	-	0.02	0.005	-	-	-	Rest	Lead, SUS
SL RPb14	0.015	10	0.005	0.06	1.2	0.005	<0.0003	0.002	0.001	0.004	0.005	0.004	-	0.01	0.01	0.01	Rest	
SL RPb15	27.2	1.6	0.02	1.5	0.2	4.6	0.6	0.01	0.003	-	-	0.009	-	-	-	-	Rest	
SUS	Zn	Sn	Cd	As	Cu	Bi	In	Se	Ca	Cr	Co	K	Ge	Ba	Rh	Fe	Tl	Ni
SL RPb16	0.001	0.18	0.0001	0.0001	0.0015	0.006	0.0002	0.0001	0.34	0.00005	0.00006	0.0002	0.01	0.018	0.0001	0.00008	0.0008	0.00006
SL RPb17	0.001	3.6	0.0003	0.3	1.5	0.1	0.0001	0.0001	0.01	0.0009	0.001	0.0007	0.001	0.00004	0.0003	0.007	0.002	0.001
SL RPb18	0.0004	0.03	0.03	7.6	0.06	0.3	0.01	0.02	0.00006	0.00005	0.00005	0.0003	0.00004	<0.00001	0.0001	0.0002	0.02	0.0001
	Mn	Ag	Sb	Te	S	Al	Pt	Na	Au	Mg	Pd	Ru	Pb	Ø 40x40 mm				
	0.00001	0.0025	0.001	0.0001	0.0001	0.017	0.0003	0.01	0.0001	0.0015	0.0001	0.00006	Rest	Blei, SUS				
	0.0002	0.3	9.9	0.003	0.00001	0.00005	0.001	0.00005	0.001	0.00001	0.0003	0.00006	Rest	Lead, SUS				
	<0.00001	0.09	1.2	0.03	<0.00001	<0.00001	0.0001	0.01	0.00001	<0.00001	<0.00001	0.00005	Rest					
SUS	Sn	Sb	Bi	Cu	As	Ag	Zn	Cd	Ni	Te	Fe	Tl	Se	S	In	Pb	Ø 44x40 mm	
4 PBSUS1	1.2	6.2	0.005	0.01	0.2	0.005	0.005	0.005	0.003	0.005	0.005	-	0.002	0.005	-	Rest	Blei, SUS	
4 PBSUS6	0.15	0.1	0.15	0.1	0.02	0.04	0.005	0.025	0.001	0.002	<0.0005	0.03	0.002	<0.0005	0.02	Rest	Lead, SUS	
4 PBSUS7	0.05	10	0.01	0.025	0.8	0.005	0.0005	0.002	0.01	0.02	0.001	0.005	0.015	0.002	0.001	Rest		
4 PBSUS9	25	2.5	0.3	1.0	0.002	0.1	0.02	0.05	0.03	0.001	0.005	0.001	<0.001	<0.001	0.5	Rest		
4 PBSUS10	3ppm	3ppm	30ppm	5ppm	2ppm	4ppm	<1ppm	1ppm	<2ppm	<1ppm	<1ppm	-	<1ppm	-	-	Rest		

RM	Cu	Zn	Pb	Ni	Fe	Sb	Sn	ca. 15x25x150 mm, 300g Block							
5 192g	0.00007	0.00006	0.0007	0.00005	0.0002	0.0007	99.997	Reinstzinn; High Purity Tin				Späne lieferbar; Chips available			

RM	Sb	As	Bi	Cu	Fe	Pb	Cd	Zn	Ni	Al	Ag	S	In	Au	Te	Se
4 SR0A	0.018	0.0005	0.0135	0.0020	(0.002)	0.0185	0.0013	0.0075	0.0025	0.0138	0.0024	0.0008	0.0097	(0.0001)	(0.0006)	0.0005
4 SR1D	0.013	0.003	0.010	0.009	0.0017	0.013	0.007	0.007	-	-	0.009	-	0.014	0.003	0.003	-
4 SR2E	0.061	0.043	0.060	0.060	0.0160	0.061	0.0435	0.0072	0.0192	0.0010	0.0209	(0.0023)	0.055	0.0084	0.030	0.0097
4 SR3E	0.145	0.061	0.105	0.101	0.003	0.145	0.022	0.014	0.0009	-	0.007	-	0.028	0.003	0.008	-

Se	Ga	Hg	Ø 40x15 mm, cast			
0.0005	0.0029	-	Reinzinn, Spuren			
-	-	-	Pure Tin, traces			
0.0097	0.0166	0.144				
-	-	-				

RM	As	Sb	Pb	Cu	Bi	Cd	Fe	Ni	Co	Zn	In	Ag	Al	Sn	Ø 40x13 mm	
AL NF54/1	0.01	0.005	0.03	0.01	0.002	0.002	0.005	0.002	0.002	0.0005	0.005	0.005	0.005	Rest	ASTM B-339	Rohzinn
AL NF54/2	0.07	0.01	0.15	0.05	0.005	0.005	0.01	0.005	0.005	0.001	0.01	0.01	0.01	Rest	ASTM B-339	Pig Tin
AL NF54/3	0.15	0.02	0.40	0.15	0.01	0.001	0.015	0.01	0.01	0.003	0.02	0.03	0.03	Rest	ASTM B-339	
AL NF54/4	0.30	0.04	0.70	0.30	0.02	0.005	0.025	0.02	0.02	0.007	0.04	0.06	-	Rest	ASTM B-339	Element Fe, Al + Sn:
AL NF54/5	0.50	0.08	1.0	0.50	0.035	0.01	-	-	-	0.015	0.08	0.10	-	Rest	ASTM B-339	Seigerung feststellbar
																Segregation noted
AL NF54/6	0.005	0.001	0.007	0.001	0.000	-	-	-	-	-	0.001	0.001	0.001	Rest	ASTM B-339	

RM	Sb	As	Bi	Pb	Cu	Fe	Ni	Ag	Al	Cd	Zn	In	Co	S	P	Ø 40x15 mm	
4 SC1A	1.48	0.008	0.084	0.067	2.02	0.0025	0.0041	0.010	0.0025	0.006	0.003	0.008	<0.001	<0.001	-	Pewter Babbit	
4 SC2A	3.07	0.035	0.62	0.029	1.06	0.030	0.0048	0.006	(0.002)	0.036	0.003	(0.002)	0.021	<0.001	-		
4 SC3A	4.60	0.029	0.020	0.040	0.222	0.017	0.0136	0.013	0.001	0.024	0.0014	0.031	0.006	(0.002)	-		
4 SC4A	6.02	0.005	0.218	0.514	3.05	0.011	0.017	0.042	0.005	0.052	0.008	0.011	0.0035	(0.003)	-		
4 SC5A	7.03	0.013	0.43	0.136	0.57	0.004	0.0058	0.063	0.003	0.008	0.001	0.036	0.011	(0.001)	-		
4 SC6A	0.092	0.204	0.115	0.100	5.17	0.007	0.013	0.08	(0.003)	0.0125	0.01	0.058	0.0050	(0.004)	-		
4 SC7A	14.01	0.047	0.009	0.356	6.51	0.046	0.008	0.006	0.001	0.0018	(0.003)	0.014	0.0160	<0.001	-		
4 SC8A	9.65	0.121	0.037	0.037	3.89	0.073	0.014	(0.0015)	0.004	0.133	(0.008)	0.017	0.017	(0.011)	-		
4 SC9A	8.18	0.53	0.066	0.20	8.47	0.037	0.008	0.004	<0.001	0.078	(0.003)	0.010	0.0030	(0.008)	-		
4 SC11B	12.01	0.292	0.560	0.061	11.08	0.011	0.452	0.066	0.0025	1.75	0.063	-	-	-	0.019		
4 SC12A	8.05	0.024	0.020	0.024	7.72	0.051	0.384	0.83	<0.002	0.625	0.020	-	-	-	-		

RM	Sb	Sn	Ø 40x13 mm			
AL TA1	1.03	Rest	SnSb-Binärprobe			
AL TA2	2.01	Rest	SnSb-Binary			
AL TA3	3.05	Rest				
AL TA5	5.09	Rest				
AL TA8	8.02	Rest				
AL TA10	0.09	Rest				
AL TA12	2.42	Rest				

RM	Sb	Sn	Ø 40x15 mm			
4 SA1	1.0	Rest	SnSb-Binärprobe			

RM	Sb	As	Bi	Cu	Fe	Pb	Zn	Cd	Sn	Ø 40x13 mm
AL TA4X	4.0	0.03	0.10	0.04	0.04	0.10	0.015	0.015	Rest	Sb 5
AL TA5X	5.0	0.02	0.005	0.003	0.004	0.025	<0.0005	<0.005	Rest	Sb 5
AL TA6X	6.0	0.05	0.25	0.08	0.08	0.20	0.03	0.03	Rest	Sb 5

RM	Sb	As	Bi	Cu	Fe	Pb	Zn	Cd	Sn	Ø 40x15 mm
4 SA4RB	4.0	0.03	0.1	0.02	0.1	0.08	0.007	0.003	Rest	SnSb
4 SA5RB	5.0	0.02	0.005	0.005	0.003	0.025	0.001	0.02	Rest	
4 SA6RB	6.0	0.05	0.25	0.1	0.05	0.25	0.02	0.01	Rest	

RM	Sb	Ag	Bi	Cu	Pb	Zn	As	Sn	Ø 40x13 mm
AL TS3X	0.20	3.0	0.05	0.20	0.02	0.001	0.01	Rest	SnAg
AL TS4X	0.10	4.0	0.10	0.10	0.05	0.0025	0.02	Rest	
AL TS5X	0.05	5.0	0.25	0.03	0.10	0.005	0.05	Rest	

Bleifreie Lotleg.; Lead Free Solders

RM	Ø 40x15 mm, cast																	
	As	Bi	Sb	Pb	Cu	Fe	Cd	Zn	Ni	Al	Ag	S	P	In	Au	Se	Hg	Sn
4 EE	0.061	0.0170	0.060	0.0146	3.14	(0.004)	0.0029	(0.0002)	0.0116	(0.002)	0.656	-	0.0029	-	-	0.0031	-	Rest
4 HNE	0.010	0.122	0.037	0.0404	3.82	0.010	0.0057	(0.0009)	0.185	0.005	0.143	-	(0.002)	-	-	0.0016	-	Rest
4 TCE	0.026	0.036	0.045	0.164	4.95	(0.054)	0.0145	0.0097	0.0034	0.0010	0.0110	-	(0.029)	-	-	0.092	-	Rest
4 AME	0.045	0.175	1.06	0.119	2.97	(0.016)	0.0072	(0.002)	0.0203	(0.008)	0.562	-	0.018	-	-	0.0115	-	Rest
4 HAF	0.0020	0.061	2.06	0.084	0.612	0.009	0.0008	2.69	0.0108	0.0185	2.66	-	(0.002)	-	-	(0.0005)	-	Rest
4 HBF	0.028	(0.007)	5.40	0.036	4.56	0.014	0.0095	0.0117	1.27	0.0013	0.070	-	(0.002)	-	-	<0.001	-	Rest
4 OAA	0.080	1.065	0.0098	0.128	3.41	0.007	0.00063	(0.002)	0.0025	(0.001)	0.100	-	0.0072	0.0034	(0.0001)	-	-	Rest
4 WSA	0.0105	0.0063	1.49	0.037	4.58	(0.004)	0.00140	0.0009	0.0048	(0.001)	0.298	-	0.0122	0.0032	(0.0002)	-	-	Rest
4 CA1A	-	0.013	0.016	0.077	0.696	-	-	-	-	0.0101	0.406	-	-	-	0.0069	-	-	Rest
4 CA2A	0.0100	0.0329	0.0737	0.0331	0.782	0.0021	0.0010	0.0003	0.0308	0.002	3.50	(0.005)	0.0055	0.0062	0.0014	0.0015	0.0007	Rest
4 CA4A	0.0171	0.0641	0.041	0.0621	0.473	0.007	(0.0001)	0.0008	0.064	0.0002	2.95	(0.006)	(0.001)	0.0040	0.0021	0.0065	0.0015	Rest
4 CA5A	0.0353	0.0207	0.133	0.0116	1.098	0.0019	0.0025	0.0009	0.0147	(0.0003)	4.01	0.0006	0.0108	0.0111	0.0049	0.003	0.0006	Rest
4 CA6A	0.0086	0.008	0.0078	0.0176	0.629	0.0061	0.00033	0.0006	0.0194	0.0006	0.282	(0.0008)	0.0046	0.0218	0.0106	0.0007	0.0064	Rest
4 CA7A	0.0095	0.0081	0.0103	0.0965	0.333	0.0047	0.0045	-	0.0007	-	4.21	-	0.003	0.0026	-	-	0.053	Rest
4 CA8A	0.0100	0.0032	0.0045	0.0403	0.947	0.0037	0.0103	-	0.0007	-	2.44	-	0.0077	0.0041	-	-	0.101	Rest

Lotlegierungen mit höheren Bleigehalten siehe Seite 3.9.3 ff.; Solders containing higher Pb-concentrations see page 3.9.3 ff.

Einstellproben zur Rekalibrierung; Setting Up Samples for Recalibration

SUS	Ag	Sb	As	Bi	Pb	Cu	Zn	Cd	Fe	In	Tl	Al	Ni	Co	P	S	Sn	Ø 40x40mm
SL RSn10	<1ppm	<10ppm	<10ppm	<5ppm	<10ppm	<5ppm	<1ppm	<1ppm	<5ppm	<5ppm	<5ppm	<5ppm	<5ppm	-	<3ppm	<3ppm	99.99	Zinn, SUS
SL RSn11	-	<0.003	<0.002	<0.001	<0.002	<0.003	0.001	-	<0.001	-	-	-	-	-	-	-	99.9	Tin, SUS
SL RSn12	0.2	2	0.25	0.09	38	0.95	0.015	0.1	0.001	0.15	0.2	<0.0005	0.002	0.0001	-	-	58	
SL RSn13	0.0035	15	<0.001	0.04	1	0.2	0.016	0.015	0.2	<0.001	0.001	0.1	0.14	0.1	-	-	83	

CRM	Al	B	Co	Cr	Cu	Fe	Mn	Mo	Nb	Ni	Sn	V	W	Zr	Ti	Ø 40x20 mm
H 090A	(0.074)	0.00282	0.0501	0.0533	0.0513	0.0563	0.0314	0.0488	(0.0492)	0.0667	(0.071)	(0.057)	(0.050)	(0.0436)	Rest	Reintitan; Pure Titanium

CRM	Al	V	Ti	Ø 40x20 mm
H 089	5.97	3.976	Rest	TiAlV

CRM	ppm O	ppm N	Ti	Ø 26x9 mm
H 024A	608	117	Rest	Titan; Titanium
H 059A	1750	172	Rest	Ti6Al4V

CRM	C	Mn	Cr	Cu	Mo	Fe	Al	Sn	N	V	Ti	Ø 31x19mm
3 1128	0.011	(<0.01)	2.96	(<0.003)	(0.006)	0.134	3.06	3.04	(0.01)	15.13	Rest	V-Al-Cr-Sn Titanleg.; Titanium Alloy

CRM	Mn	Ti	Ø 31x19 mm
3 641	6.68	Rest	8 Mn (A) Titanlegierungen
3 642	9.08	Rest	8 Mn (B) Titanium Alloys
3 643	11.68	Rest	8 Mn (C)

CRM	ppm Al	ppm B	ppm C	ppm Co	ppm Cr	ppm Cu	ppm Fe	ppm H	ppm Mn	ppm Mo	ppm N	ppm Nb	ppm Ni	ppm O	ppm Pd	ppm Ru	ppm Si
6 T80	746	40	166	146	50	375	93	59	244	100	41	367	156	768	1424	469	(35)
6 T81	664	82	161	395	294	244	1144	35	404	279	37	191	90	669	398	310	474
	ppm Sn	ppm V	ppm W	ppm Y	ppm Zr	Ø 40x12 mm											
	257	446	174	10	178	Titan, niedr. leg.											
	155	186	372	17	163	Titanium, low alloy											

RM	Fe	Cu	Cr	Al	C	Si	Mo	Sn	N	Ni	Zr	O	H	V	Ti	Ø 31x18.75 mm + 31x2.25 mm
IA 174B	0.132	0.003	0.016	0.016	-	0.003	<0.002	0.004	0.013	0.015	<0.001	0.335	0.0018	<0.005	Rest	Ti CP-4 Titanlegierungen
IA 175B	0.153	0.002	0.003	6.16	0.031	0.011	0.004	0.019	0.006	0.002	-	0.165	0.008	4.00	Rest	Ti 6Al-4V
IA 176B	0.111	0.003	0.013	5.86	0.010	0.017	0.006	0.009	0.0051	0.012	(0.002)	0.109	0.0036	3.87	Rest	Ti 6Al-4V ELI
IA 177B	0.031	0.005	<0.005	6.04	0.008	0.083	1.93	1.95	0.0033	0.003	3.97	0.098	0.014	0.006	Rest	Ti 6Al-2Sn-4Zr-2Mo
IA 178B	0.56	0.51	0.016	5.57	0.030	0.026	0.008	1.99	0.008	0.015	0.004	0.16	0.003	5.57	85.5	Ti 6Al-6V-2Sn Provis. Zert.
IA 269A	0.13	0.003	0.010	7.8	0.016	0.08	1.01	0.005	0.005	0.011	0.001	0.10	0.006	1.00	(89.8)	Ti 8Al-1Mo-1V Provis. Cert.

RM	Ø 32-39x12 mm, wrought																
	Al	V	Fe	Sn	Mn	Cr	Mo	W	Ni	Si	Cu	Zr	C	S	O	N	Ti
6 T2A	0.005	<0.002	0.156	0.006	0.003	0.018	0.002	<0.002	0.021	0.002	(0.001)	<0.003	(0.007)	(0.0004)	(0.12)	(0.0044)	Rest
6 T4A	0.040	(0.001)	0.19	0.005	0.003	0.026	0.0006	<0.002	0.014	0.011	(0.001)	<0.002	0.014	(0.0004)	(0.37)	0.005	Rest
6 T5A	6.33	4.10	0.170	0.009	<0.002	0.013	0.004	<0.01	0.012	0.02	0.0025	0.003	0.011	<0.001	0.190	0.008	Rest
6 T26	0.002	0.020	0.055	0.025	0.006	0.037	0.028	0.57	0.002	(0.01)	0.037	0.005	0.005	(0.001)	(0.069)	(0.005)	Rest
6 T14	4.94	0.013	1.90	0.03	0.02	1.98	1.72	0.48	0.012	0.04	0.022	(<0.01)	(0.010)	(0.003)	(0.091)	0.006	Rest
6 T15	6.23	(0.01)	1.02	0.015	0.02	1.02	3.1	(0.52)	0.007	0.02	0.03	<0.002	0.007	(0.002)	(0.08)	(0.007)	Rest
6 T22	0.004	0.50	1.19	0.019	2.02	1.22	1.15	0.51	0.008	(0.02)	0.04	(<0.01)	0.005	(0.002)	(0.09)	(0.01)	Rest
6 T23	0.003	0.93	0.93	0.025	3.70	0.91	0.91	0.87	0.004	(<0.01)	0.012	(0.002)	0.006	(0.002)	(0.13)	(0.007)	Rest
6 T24	0.002	1.22	0.54	0.019	4.7	0.54	0.51	0.37	(0.007)	(0.01)	0.020	(0.001)	0.005	(0.002)	(0.09)	0.006	Rest
6 T7	(0.002)	(0.008)	0.05	0.03	7.00	0.003	<0.01	(0.20)	0.003	(<0.02)	0.015	(<0.01)	0.007	(0.002)	(0.104)	(0.004)	Rest

RM	Al	Sn	V	Mo	Nb	Zr	Cr	Fe	Ni	Cu	Si	Y	C	S	N	O	H
4 Ti1A	3.05	-	-	15.1	2.75	-	-	0.035	0.012	0.055	0.21	0.0025	0.035	0.003	0.005	0.15	0.007
4 Ti2A	6.05	2.05	-	2.10	-	3.95	0.005	0.055	0.007	0.002	0.12	0.0004	0.015	0.001	0.005	0.14	0.008
4 Ti3A	6.15	0.021	4.05	0.022	-	0.015	0.019	0.105	0.032	0.005	0.011	0.011	0.06	(0.005)	0.011	0.19	0.003
4 Ti4A	4.00	0.072	0.045	0.305	0.070	0.068	0.00	0.125	0.79	0.068	0.075	0.008	0.11	0.008	0.020	0.19	0.005
4 Ti5A	5.30	2.05	0.077	4.00	-	2.05	3.00	0.165	0.046	0.27	0.10	0.012	0.08	0.012	0.015	0.16	0.004
4 Ti6A	6.00	0.065	3.95	0.066	0.065	0.065	0.064	0.225	0.043	0.065	0.06	0.009	0.03	0.006	0.014	0.16	0.004
	B	Co	Mn	P	Pd	Ru	Ta	W	40x15 mm, HIP								
	-	-	-	-	-	-	-	-	Werte sind vorläufig								
	-	-	-	-	-	-	-	-	Values are provisional								
	-	-	-	-	-	-	-	-									
	0.010	0.068	0.065	0.007	0.14	0.055	0.10	0.072									
	0.010	-	0.072	0.009	-	-	-	0.085									
	0.009	0.063	0.064	0.007	0.15	0.063	0.09	0.062									

Einstellproben für Rekalibrierung
Setting Up Samples for Recalibration

SUS	Al	V	Fe	Pd	C	Mo	Zr	Sn	Ti	Ø 40x40 mm
SL RTi11	-	-	0.05	-	0.06	-	-	-	99.6	Titan, SUS
SL RTi12	-	-	0.2	0.2	0.06	-	-	-	99.4	Titanium, SUS
SL RTi13	6	4	0.1	-	0.2	-	-	-	90	
SL RTi14	6	-	0.05	-	0.01	2	4	2	Rest	

RM	Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Ce	La	Mg	Ø 45x20 mm Ø 40x15 mm Mg Spuren/ traces
4 MgP1A	0.014	(0.002)	0.0035	<0.0005)	0.0008	0.005	0.027	(0.001)	<0.001	<0.002	<0.002	<0.0002	<0.005	<0.0002	<0.001	<0.001	Rest	
4 MgP2A	0.065	0.0122	0.0118	(0.0007)	0.0109	0.031	0.0061	0.0029	0.0138	0.0073	0.0061	0.003	<0.0001	0.0063	0.0019	0.0014	Rest	
4 MgP3A	0.096	0.0196	0.0137	(0.0014)	0.0292	0.044	0.014	0.0048	0.054	0.0155	0.0148	0.0125	<0.0001	0.0154	0.0055	0.0038	Rest	
4 MgP4A	0.0247	0.0158	0.0100	0.030	0.0108	0.037	(0.0044)	0.0028	0.028	0.0067	0.0066	0.0203	<0.0001	0.0071	0.0041	0.0030	Rest	
4 MgE1D	0.056	0.0514	0.492	<0.001	0.0486	0.040	0.0045	0.0091	(0.014)	0.0033	0.0113	0.0197	<0.0036	-	0.0010	0.0006	Rest	MgMn
4 MgE3B	0.015	0.022	2.36	<0.001	0.012	(0.009)	0.004	0.0023	0.13	0.0055	0.005	0.0048	-	0.0009	-	-	Rest	
4 MgA1H	3.83	1.40	0.20	-	0.148	0.17	(0.01)	0.008	0.008	0.090	0.016	-	0.0005	-	-	-	Rest	MgAlZn
4 MgA2G	7.31	0.97	0.139	-	0.112	0.15	0.011	(0.002)	(0.01)	0.049	0.007	-	0.0007	-	-	-	Rest	
4 MgA5A	8.00	0.411	0.401	-	0.0195	0.110	0.006	0.0201	(0.014)	0.0124	0.042	0.0050	0.0013	0.0035	-	-	Rest	
4 MgA7A	9.38	0.66	0.285	(0.0008)	0.0010	0.006	0.0103	0.0009	-	<0.002	<0.002	<0.0005	-	-	-	-	Rest	
RM	Al	Zn	Mn	Hg	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Ce	La	Mg	Ø 40x15 mm Ø 50x20 mm
4 MgA11A	3.65	1.63	0.045	0.006	0.048	0.025	0.005	0.013	0.10	0.093	0.019	0.0002	0.0022	0.0014	<0.001	<0.001	Rest	
4 MgA12A	5.75	3.20	0.195	(0.01)	0.27	0.014	0.005	0.015	0.037	0.002	0.010	0.013	0.0035	0.012	0.0010	0.0007	Rest	
4 MgA13A	7.45	0.93	0.095	0.028	0.127	0.022	0.006	0.004	0.0065	0.045	0.008	0.008	0.009	0.0055	0.0023	0.0023	Rest	
4 MgA14A	9.15	0.68	0.275	(0.06)	0.010	0.78	0.008	0.0085	0.015	0.009	0.006	0.0016	0.0028	0.0013	0.012	0.010	Rest	
4 MgA15A	10.7	0.355	0.068	0.010	0.028	0.035	0.012	0.0025	0.001	0.002	0.005	0.028	0.0062	0.0034	0.0075	0.005	Rest	
4 MgA16A	6.75	4.05	0.28	0.004	0.103	0.022	0.008	0.0055	0.0023	0.029	0.052	0.0034	0.0012	0.0067	0.002	0.0015	Rest	
4 MgA17A	4.25	0.128	0.20	-	0.023	0.31	0.008	0.0145	0.022	0.0055	0.009	0.0062	-	0.0052	-	-	Rest	
RM	Al	Zn	Mn	Ti	Cu	Si	Fe	Ni	Ca	Sn	Pb	Ag	Be	Cd	Ce	La	Mg	Ø 45x20 mm
4 MgB1C	2.34	1.71	0.61	-	0.195	0.14	0.006	0.012	0.001	0.012	0.01	0.03	0.0006	0.07	0.010	0.10	Rest	MgAlZn
4 MgB1D	2.39	1.71	0.68	0.009	0.20	0.17	0.016	0.013	0.41	0.011	0.015	0.029	0.0007	0.070	0.015	0.013	Rest	
4 MgB2C	2.67	0.95	0.333	0.0003	0.113	0.069	0.010	0.0028	0.011	0.0047	0.0036	0.0099	0.0008	0.0115	0.0009	0.0007	Rest	
4 MgB3B	3.19	0.608	0.0122	-	0.0214	0.012	(0.004)	0.0020	0.030	0.0050	0.0037	(0.0024)	0.0029	0.012	-	-	Rest	
4 MgB4C	3.86	0.333	0.031	0.0183	0.0183	0.037	(0.009)	0.0003	0.0010	0.0050	0.0037	0.0046	0.0033	0.00016	0.0003	(0.0001)	Rest	
4 MgD2A	0.30	1.13	0.74	<0.01	0.08	0.07	0.014	0.008	<0.005	0.011	0.012	-	-	-	-	-	Rest	
4 MgD3B	0.041	1.97	0.28	0.029	0.058	0.020	0.023	0.002	(0.07)	0.007	0.009	0.005	0.0003	-	0.004	0.004	Rest	
4 MgD4B	0.0012	2.77	0.0053	0.69	0.0041	<0.001	0.0010	-	-	-	-	-	<0.0002	-	0.015	0.015	Rest	
4 MgD5A	0.039	6.25	0.31	-	2.88	0.135	0.008	0.012	(0.035)	0.103	0.098	0.043	(0.0001)	-	-	-	Rest	
4 MgC1B	<0.001	2.5	0.01	0.8	0.05	<0.005	0.002	<0.001	<0.001	<0.005	0.01	-	-	-	-	-	Rest	MgZn
4 MgC2E	0.001	4.0	0.01	0.6	0.03	<0.005	0.002	<0.001	-	<0.005	0.005	-	-	-	-	-	Rest	
4 MgC3B	0.005	5.0	0.01	0.2	0.01	<0.005	0.004	<0.001	0.007	<0.005	0.003	-	-	-	-	-	Rest	
4 MgC4C	0.10	6.7	0.16	<0.01	0.001	0.02	0.03	0.01	-	0.03	<0.002	-	-	-	-	-	Rest	
RM	Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Sn	Pb	La	Ag	Ce	Nd	Pr	Mg	Ø 40x15 mm, cast	
4 MgF1B	0.0176	0.501	0.0039	0.022	0.0048	<0.005	0.0024	(0.0003)	<0.002	<0.001	1.12	<0.001	1.88	(0.05)	0.48	Rest	Mg/Seltene Erden	
4 MgF2B	0.0038	1.71	0.0047	0.30	0.0033	<0.002	(0.001)	0.0008	<0.002	0.019	0.98	0.001	1.42	0.29	0.112	Rest	Mg/Rare Earth	
4 MgF3B	<0.001	3.34	0.0040	0.53	0.0010	(0.001)	<0.002	-	<0.002	0.0140	0.84	<0.001	1.17	0.212	0.106	Rest		
4 MgF4B	0.079	5.04	0.0023	0.024	0.0302	(0.0014)	<0.002	-	<0.001	<0.001	0.47	<0.0005	0.81	0.011	0.100	Rest		
4 MgF5B	0.094	6.29	0.171	<0.001	0.0735	0.0026	0.0290	0.0004	<0.001	<0.005	0.239	<0.0005	0.412	0.011	0.100	Rest		

RM	Al	Zn	Mn	Zr	Cu	Fe	Ni	Pb	Y	Li	Ce	La	Nd	Pr	Gd	Dy	Er	Ho
4 MgY1A	(0.0019)	0.121	0.0109	0.38	(0.0015)	0.0021	(0.0005)	0.014	4.46	0.119	0.029	0.166	2.26	0.059	0.284	0.313	0.13	0.065
4 MgY2A	(0.0014)	0.354	0.0026	0.41	0.0013	0.0014	0.0011	(0.002)	1.98	0.012	0.047	0.0352	2.96	0.016	0.082	0.085	0.0174	0.0037
4 MgY3A	(0.0010)	0.315	0.0028	0.43	0.0010	0.0015	0.0012	(0.006)	3.46	0.014	0.020	0.023	2.82	0.015	0.221	0.225	0.041	0.0049
4 MgY4A	(0.0023)	0.495	0.0104	0.29	0.0011	0.0012	0.0009	(0.001)	-	-	0.011	0.0078	2.36	0.0056	1.54	-	-	-

Lu	Sm	Tb	Yb	Ø 40x16 mm, cast
0.007	0.09	0.045	0.078	
0.0005	0.013	0.0046	0.0094	
0.0005	0.020	0.0057	0.0168	
-	0.0083	-	-	Ø 60x6 mm, 2x chill cast

RM	Al	Zn	Mn	Zr	Cu	Si	Fe	Ni	Sn	Pb	La	Ag	Ce	Nd	Pr	Ø 40x15-17 mm, cast		
																R.E.	Th	
4 MgH1B	<0.002	0.053	0.0027	0.47	0.0046	<0.005	<0.002	(0.0006)	<0.002	<0.002	0.034	3.21	0.040	3.05	(0.014)	-	-	MgAg
4 MgH2B	0.002	0.123	0.0038	0.46	0.0050	<0.002	(0.0006)	(0.0006)	<0.005	(0.0021)	0.044	2.94	0.055	2.70	(0.013)	-	-	R.E.
4 MgH6A	0.23	0.21	0.17	<0.01	0.11	0.015	0.03	0.01	<0.002	<0.005	-	1.13	-	-	-	(1.0)	-	
4 MgL4	0.023	0.19	0.17	<0.005	1.33	1.32	0.049	0.01	0.017	0.012	0.009	<0.001	0.006	<0.005	Rest			

R.E. = Seltene Erden zugefügt als Neodymium mit Seltenen Erden
R.E. added as Neodymium rich R.E.

RM	Al	Zn	Mn	Si	Fe	Cu	Ni	Pb	Sn	P	Ca	Na	Cd	Mg	Ø 60x15 mm, cast
NH R0-90	0.0020	0.0037	0.0014	0.0015	0.0098	0.0006	0.0013	0.0004	-	<0.0001	<0.00005	0.0000	<0.00005	Rest	Reinmagnesium
NH R1-88	0.0059	0.0003	0.0542	0.0044	0.0251	0.0013	0.0006	-	-	-	-	-	-	Rest	Pure Magnesium
NH R2-88	0.0118	0.0011	0.0272	0.0091	0.0294	0.0028	0.0027	-	-	-	-	-	-	Rest	nur für/only for OES
NH R3-88	0.0194	0.0153	0.0197	0.0139	0.0298	0.0067	0.0013	-	-	-	-	-	-	Rest	
NH R4-88	0.0259	0.0271	0.0111	0.0227	0.0359	0.0098	0.0016	-	-	-	-	-	-	Rest	
NH R5-88	0.0473	0.0520	0.0061	0.0362	0.0274	0.0150	0.0012	-	-	-	-	-	-	Rest	
NH RMGH-88	0.0535	0.0112	0.0012	0.0209	0.0222	0.0055	0.0041	-	-	-	-	-	-	Rest	
NH RMGL-88	0.0055	0.0073	0.0298	0.0004	0.0031	0.0008	0.0003	-	-	-	-	-	-	Rest	
NH RMGL-93	<0.0005	0.0013	0.0005	0.0002	0.0032	0.0012	0.0005	-	-	-	-	-	-	Rest	
NH RTC-90	0.0055	0.0027	0.0702	0.0013	0.0309	0.0011	0.0012	0.0020	0.0000	0.0027	0.0004	0.0001	<0.0001	Rest	
NH RT400-01	0.0161	0.0012	0.0191	0.0084	0.0329	0.0034	0.0012	0.0025	0.0018	0.0043	0.0009	0.0028	0.0007	Rest	

RM	Al	Zn	Mn	Si	Fe	Cu	Ni	Be	Pb	Sn	P	K	Ca	Na	Cd	Mg	Ø 60x15 mm, cast
NH A31-L91	1.19	0.202	0.408	0.020	0.0041	0.0037	0.0007	0.0003	-	-	-	-	-	-	-	Rest	Magnesiumleg. Magnesium Alloys nur für/only for OES
NH A31-T91	3.06	1.098	0.256	0.151	0.0103	0.0355	0.0052	0.0017	-	-	-	-	-	-	-	Rest	
NH A31-X91	3.51	1.455	0.116	0.263	0.0138	0.0475	0.0071	0.0029	-	-	-	-	-	-	-	Rest	
NH A31-Y91	2.73	0.616	0.327	0.0258	0.0073	0.0124	0.0040	0.0007	-	-	-	-	-	-	-	Rest	
NH A41-X91	5.16	0.210	0.410	0.924	0.0061	0.0173	0.0029	0.0015	-	-	-	-	-	-	-	Rest	
NH A8-H98	9.89	2.04	0.074	0.31	0.0179	0.0229	0.0115	0.0020	0.0100	0.0100	-	-	-	-	-	Rest	
NH A8-H99	9.95	1.21	0.067	0.091	0.0276	0.0118	0.0109	0.0015	-	-	-	-	-	-	-	Rest	
NH A8-L98	2.62	0.10	0.50	0.0070	0.0019	0.0009	0.0012	0.0005	0.0016	0.0009	-	-	-	-	-	Rest	
NH A8-L02	4.73	0.205	0.43	0.0040	0.0032	0.0010	0.0003	0.0004	0.0009	0.0002	-	-	-	-	<0.0001	Rest	
NH A91-T00	9.06	0.76	0.203	0.0095	0.0010	0.0012	0.0008	0.0006	0.0013	0.0017	-	-	-	-	-	Rest	
NH A91-L00	6.98	0.19	0.53	0.0021	0.0004	0.0004	0.0002	0.0001	0.0005	0.0009	-	-	-	-	-	Rest	
NH STD1-85	9.54	0.0009	0.0169	1.14	0.0278	0.0130	0.0127	0.0015	-	-	-	-	-	-	-	Rest	
NH AM2002-91	4.92	0.054	0.189	0.072	0.0068	0.0121	0.0022	0.0004	-	-	-	-	-	-	-	Rest	
NH AM5002-91	4.92	0.054	0.189	0.072	0.0068	0.0121	0.0022	0.0004	-	-	-	-	-	-	-	Rest	
NH AM60-T89	5.86	0.017	0.294	-	0.0041	0.0013	0.0007	-	0.0010	0.0004	0.0012	<0.0001	<0.0001	0.0004	<0.00005	Rest	
NH AM60-Y91	5.45	0.070	0.193	0.0167	0.0082	0.0013	0.0005	0.0011	-	-	-	-	-	-	-	Rest	
NH A60-T00	5.98	0.084	0.37	0.0148	0.0021	0.0011	0.0008	0.0016	0.0015	-	-	-	-	-	-	Rest	
NH AZ111-90	-	-	-	0.0087	0.0112	0.0027	0.0009	0.0014	-	-	-	-	-	-	-	Rest	
NH AZ61-H91	7.45	1.466	0.040	0.318	0.0140	0.0301	0.0413	0.0048	-	-	-	-	-	-	-	Rest	
NH AZ61-L91	4.92	0.112	0.502	0.027	0.0044	0.0020	0.0038	0.0004	-	-	-	-	-	-	-	Rest	
NH AZ61-T91	6.23	0.82	0.24	0.17	0.0088	0.0184	0.0188	0.0013	-	-	-	-	-	-	-	Rest	
NH AZ61-X91	6.65	1.223	0.127	0.243	0.0154	0.0245	0.0331	0.0021	-	-	-	-	-	-	-	Rest	
NH AZ61-Y91	5.56	0.476	0.355	0.087	0.0053	0.0116	0.0107	0.0006	-	-	-	-	-	-	-	Rest	
NH AZ63-89	6.05	3.705	0.164	-	0.0082	0.0234	0.0032	0.0012	0.0052	0.0055	0.0069	<0.0001	0.0002	0.0005	0.0054	Rest	
NH AZ63-X90	6.33	3.210	0.160	0.062	0.0103	0.0130	0.0016	0.0014	0.0182	0.0169	-	-	-	0.0002	0.0192	Rest	
NH K0-87	1.03	0.050	0.489	0.0076	0.0043	0.0022	0.0005	0.0005	-	-	-	-	-	-	-	Rest	
NH K2-87	6.14	0.32	0.165	0.018	0.0129	0.0040	0.0016	0.0012	-	-	-	-	-	-	-	Rest	
NH K3-87	7.36	0.51	0.280	0.030	0.0097	0.0084	0.0028	0.0010	-	-	-	-	-	-	-	Rest	
NH K5-87	8.11	1.07	0.351	0.083	0.0009	0.0462	0.0116	0.0001	-	-	-	-	-	-	-	Rest	
NH K7-87	9.40	0.62	0.027	0.046	0.0104	0.0047	0.0017	0.0008	-	-	-	-	-	-	-	Rest	
NH K8-87	10.32	0.73	0.190	0.018	0.0127	0.0041	0.0015	0.0007	-	-	-	-	-	-	-	Rest	
NH M12-X91	0.094	0.251	2.181	0.012	0.0015	0.0271	0.0050	0.0003	0.0169	0.0457	-	-	-	-	-	Rest	
NH APE-89	10.24	1.44	0.06	0.086	0.0149	0.0298	0.0055	0.0018	0.0057	0.0062	0.0063	<0.0001	0.0005	0.0011	0.0060	Rest	
NH LT500-01	9.16	0.89	0.31	0.0185	0.0058	0.0056	0.0022	0.0013	0.0024	0.0027	-	-	-	-	-	Rest	
NH LT60-01	5.99	0.15	0.37	0.0161	0.0059	0.0034	0.0016	0.0014	0.0027	0.0020	-	-	-	-	-	Rest	
RM	Al	Zn	Mn	Si	Fe	Cu	Ni	Be	Pb	Sn	Cd	La	Nd	Pr	Ce	Mg	Ø 60x15 mm, cast
NH AEL-93	1.45	0.053	0.161	0.0172	0.0058	0.0121	0.0025	0.0005	-	-	-	0.37	0.25	0.09	0.79	Rest	Mg, Seltene Erden Mg-Rare Earth-Alloy nur für/only for OES
NH AEH-93	4.96	0.40	0.30	0.0376	0.0018	0.0575	0.0084	0.0013	-	-	-	0.90	0.61	0.28	2.29	Rest	
NH AEL-02	0.96	0.006	0.012	0.004	0.0145	0.0005	0.0005	0.0001	0.0007	-0.0001	<0.0001	0.14	0.098	0.042	0.35	Rest	
NH AEAH-02	5.06	0.51	0.19	1.47	0.0014	0.0189	0.0108	0.0029	0.0130	0.0106	0.0080	0.013	0.002	0.001	0.011	Rest	
NH ARBH-02	5.07	0.50	0.19	1.49	0.0013	0.0188	0.0108	0.0026	0.0129	0.0102	0.0079	0.013	0.002	0.001	0.011	Rest	
NH AET-02	4.04	0.28	0.11	1.13	0.0058	0.0045	0.0021	0.0015	0.0051	0.0047	0.0001	0.08	0.03	0.015	0.15	Rest	
NH AEQ-02	1.98	0.185	0.09	1.04	0.0017	0.0011	0.0008	0.0013	0.0012	0.0006	0.0004	0.047	0.029	0.009	0.087	Rest	

RM	Al	Zn	Mn	Si	Cu	Ni	Fe	Zr	R.E.	Ce	Be	Mg	Ø 64x6 mm	R.E. = Seltene Erden, Rare Earths
O D3738	10.38	0.32	0.21	0.085	0.031	0.004	-	-	-	-	-	Rest	AM100	
O C7639	2.39	(1.0)	(0.4)	-	-	-	-	-	-	-	-	Rest		
O C7641	(3.0)	1.36	-	-	-	-	-	-	-	-	-	Rest	AZ31	
O C3681D	5.99	3.32	0.16	0.47	0.19	-	-	-	-	-	-	Rest	AZ63	
O C3732G	7.69	2.75	0.23	0.16	0.084	0.023	-	-	-	-	-	Rest		
O D3739	9.36	2.22	0.27	0.095	0.021	0.004	-	-	-	-	-	Rest	AZ92	
O C7489	0.001	-	0.012	0.002	0.004	0.015	-	0.46	(5.0)	2.57	-	Rest	EK41	
O C7514	0.002	-	0.012	0.002	0.12	0.002	-	0.42	(4.7)	2.47	-	Rest		
O C7546	0.003	-	0.039	0.001	0.058	0.004	-	0.34	(3.0)	1.63	-	Rest		
O C7548	0.004	-	0.035	0.002	0.022	0.001	-	0.16	(4.8)	2.66	-	Rest		
O C7594	0.003	-	0.033	0.002	0.080	0.001	-	0.31	(6.0)	3.22	-	Rest		
O D1072	-	2.02	-	-	-	-	-	(0.5)	(3.4)	-	-	Rest	EZ33	
O D1073	-	3.23	-	-	-	-	-	(0.6)	(3.7)	-	-	Rest		
O D1074	-	(2.7)	-	-	-	-	-	0.42	(3.4)	-	-	Rest		
O D1075	-	(2.7)	-	-	-	-	-	0.64	(3.7)	-	-	Rest		
O E1273	0.00	2.87	0.41	0.00	0.022	0.002	-	0.54	(3.6)	1.86	-	Rest		
O SMD3-A	0.08	0.058	1.69	0.034	0.032	0.002	-	-	-	-	-	Rest	M1A	
O C7857	(0.1)	(0.1)	1.07	(0.05)	(0.03)	(0.001)	-	-	-	-	-	Rest		
O C8016	0.03	0.11	(1.3)	0.064	0.070	0.011	-	-	-	-	-	Rest		
O C8095	0.17	0.029	(1.6)	0.052	0.012	0.005	-	-	-	-	-	Rest		
O C8096	(0.1)	(0.1)	1.88	(0.05)	(0.04)	(0.003)	-	-	-	-	-	Rest		
O C8209	2.55	0.18	0.15	0.058	0.012	0.001	(0.02)	-	-	-	-	Rest		
O C8211	2.07	0.23	0.20	0.90	0.33	0.007	(0.02)	-	-	-	-	Rest		
O SM145	(6.7)	(2.4)	-	-	-	-	-	-	-	-	0.0003	Rest	Be in Mg	

Einstellproben zur Rekalibrierung
Setting Up Samples for Recalibration

SUS	Al	Zn	Mn	Cu	Si	Fe	Ni	Pb	Sn	Zr	Cd	Na	Mg	Ø 50x40 mm
SL RMg11	0.014	-	<0.01	<0.002	<0.01	<0.003	<0.001	-	-	-	-	-	99.9	Magnesium, SUS
SL RMg13	5.7	0.8	0.2	0.006	0.01	0.001	0.001	0.001	0.001	0.004	0.0001	0.001	93	
SL RMg14	7.9	1	0.4	0.3	0.08	0.003	0.04	0.08	0.08	<0.01	-	-	Rest	

RM	Ag	Al	Be	Bi	C	Cd	Co	Cr	Cu	Fe	Mg	Mn	Ni	Pb	S	Se
VC Mo	<0.0002	<0.003	<0.0001	<0.0001	<0.002	<0.0001	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0005	<0.0002	<0.001	<0.0004
	Te	Ti	V	Zn	Mo	Ø 40x20 mm										
	<0.0001	<0.0005	<0.001	<0.0002	Rest	Reinstmolybdän; High Purity Molybdenum										

RM	Ni	As	Sb	Sn	Cd	Ø 40x25 mm, cast										
IM K1	0.0086	(0.00030)	0.0064	0.0061	Rest	Cadmium										
IM K2	0.018	0.0012	0.0038	0.0032	Rest											
IM K3	0.063	0.0010	0.0010	0.00065	Rest											
IM K4	0.11	0.0056	0.0011	0.00091	Rest											
IM K5	0.0054	0.0014	0.00017	-	Rest											

RM	Cu	Pb	Tl	Ni	Cd	Ø 40x18 mm										
VS 1822-1	0.0023	0.0060	0.0011	0.0010	Rest	Cadmium										
VS 1822-2	0.0039	0.011	0.0021	0.0018	Rest											
VS 1822-3	0.0068	0.022	0.0047	0.00044	Rest											
VS 1822-4	0.013	0.047	0.0091	0.0043	Rest											
VS 1822-5	0.024	0.12	0.023	0.011	Rest											

RM	Sn	Ni	Cr	Cu	Fe	Mo	Zr	Ø 32x8 mm								
4 Zr20	1.5	0.05	0.1	-	0.15	-	Rest	Zirkon; Zirconium								
4 Zr30	-	-	-	0.5	0.05	0.5	Rest	nur für RFA								
4 Zr40	1.5	-	0.1	-	0.15	-	Rest	(only for XRF)								

RM	Au	ppm Ag	ppm Cu	ppm Zn	ppm Pb	ppm Sb	ppm Bi	ppm Se	ppm Pt	ppm Pd	ppm Rh	ppm Fe	ppm Mn	ppm Co	ppm Cr	ppm As	Ø 25x4 mm
RA AUDHP1	99.995	6	3	3	2	1	<1	<2	<2	<2	<1	2	2	<1	<2	<2	Gold, hochrein
RA AUDHP2	99.99	20	10	10	6	3	2	6	6	6	2	6	6	2	5	6	High Purity Gold
RA AUDHP3	99.97	60	30	30	20	10	5	20	20	20	5	20	20	5	15	20	

O.g. Werte sind Beispielwerte für typische Verunreinigungen

Above values are examples for typical impurity levely.

RM	ppm Ag	ppm Cu	ppm Zn	ppm Pb	ppm Sb	ppm Bi	ppm Se	ppm Pt	ppm Pd	ppm Rh	ppm Fe	ppm Mn	ppm Co	ppm Cr	ppm Ti	Ø 25x4 mm
RA AUD1	98.0	2.0	-	x	x	x	x	x	x	x	x	x	x	x		Goldlegierungen; Gold Alloys
RA AUD2	96.0	2.0	2	x	x	x	x	x	x	x	x	x	x	x		
RA AUD3	91.5	-	8.5	x	x	x	x	x	x	x	x	x	x	x		eingebettet in Ø 31 mm Kunstharzring
RA AUD4	88.5	8.0	4	x	x	x	x	x	x	x	x	x	x	x		moulded in Ø 31 mm resin mount
RA AUD5	75.0	18.0	7	x	x	x	x	x	x	x	x	x	x	x		
RA AUD6	58.3	41.7	-	x	x	x	x	x	x	x	x	x	x	x		
RA AUD7	50.0	20.0	30	x	x	x	x	x	x	x	x	x	x	x		
RA AUD8	37.0	10.0	53	x	x	x	x	x	x	x	x	x	x	x		

x = Spuren mit Angabe des Vertrauensintervalls von 1 - 150 ppm im Zertifikat, können nach Kundenwunsch geliefert werden.

x = Traces with confidence level in the range of 1 - 150 ppm in certificate, can be prepared to customers specification.

CRM	Au	Ag	Cu	Pd	Zn	Ni	Ø 30x5 mm Al-Halter/holder; Goldfolie/gold foil 100-200um
IM AU1	33.32	66.59	-	-	-	-	Gold-Schmucklegierung
IM AU2	33.35	44.65	21.98	-	-	-	Gold Jewelry Series
IM AU3	37.07	10.57	20.10	32.44	-	-	
IM AU4	37.06	20.00	10.53	-	-	32.43	
IM AU5	37.14	25.09	23.83	-	4.92	8.96	
IM AU6	49.99	12.54	12.53	24.96	-	-	
IM AU7	57.88	27.68	-	14.43	-	-	
IM AU8	59.01	7.64	11.98	-	6.74	14.57	
IM AU9	57.81	-	15.31	-	9.74	16.87	
IM AU10	74.83	-	9.64	-	2.60	12.89	
IM AU11	74.95	-	-	10.00	-	15.05	
IM AU12	74.98	-	-	-	-	24.94	
IM AU13	91.67	2.76	5.28	-	-	-	
IM AU14	96.00	-	4.02	-	-	-	
IM AU15	98.60	-	1.40	-	-	-	
IM AU16	99.99	-	-	-	-	-	

3.14.4

CRM	ppm Cu	ppm Bi	ppm Fe	ppm Te	ppm Zn	ppm Se	ppm Pb	ppm Pd	ppm Au	ppm Pt	ppm As	ppm Ni	ppm Sb	Ag	Ø 40x10 mm
IM SF1A	857	53.7	42.5	43.9	79.1	45.0	83.8	21.0	21.0	20.9	41.6	58.1	58.1	Rest	Reinsilber
IM SF2A	20.2	2.9	1.9	19	5.0	2.5	3.5	2.2	2.9	3.1	5.5	2.9	3.3	Rest	Pure Silver

CRM	Ag	Cu	Ø 40x10-15 mm
IM Ag1	74.93	25.03	AgCu-Legierung
IM Ag2	79.75	20.18	AgCu Alloy
IM Ag3	84.75	15.20	
IM Ag4	89.91	10.13	nur RFA, Satz 6 Proben (ohne Ag3 oder Ag4)
IM Ag5	92.46	7.59	only XRF, set of six samples (without Ag3 or Ag4)
IM Ag6	95.05	4.96	
IM Ag7	100.00	0.01	

CRM	O	Cu	Ag
IM AG150N	0.01554	-	99.9
IM AG2N	0.00023	-	99.9
IM AG10/1	0.00115	-	99.9
IM AGCU100	0.0109	20	80

Ø 5.7x4 mm, 100 g Ag99,9
 Ø 4x100 mm, 200 g Ag99,9
 Ø 6x100 mm, 60 g Ag99,9
 Ø 6x100 mm, 60 g AgCu20

RM	Ag	ppm Cu	ppm Au	ppm Pt	ppm Pd	ppm As	ppm Bi	ppm Cd	ppm Sb	ppm Ni	ppm Fe	ppm Rh	ppm Se	ppm Ir	Ø 18x2 mm
RA AGD1	97.0	3	x	x	x	x	x	x	x	x	x	x	x	x	Silberlegierung
RA AGD2	94.0	6	x	x	x	x	x	x	x	x	x	x	x	x	Silver Alloy
RA AGD3	91.5	8.5	x	x	x	x	x	x	x	x	x	x	x	x	
RA AGD4	80.0	20	x	x	x	x	x	x	x	x	x	x	x	x	
RA AGD5	60.0	40	x	x	x	x	x	x	x	x	x	x	x	x	

Diese Proben sind eingebettet in Ø 31 mm Kunstharzringe; These samples are mounted in Ø 31 mm resin mounts.

Reinstsilber mit Spurenanalyse als Granulat (200 mg Kugeln) auf Anfrage.
 Refined silver with impurities in globule form (200 mg globules) available on request.

RM	ppm Cu	ppm Pb	ppm Bi	ppm Zn	ppm As	ppm Sb	ppm Se	ppm Hg	ppm Au	ppm Sn	ppm Ir	ppm Pt	ppm Pd	ppm Fe	ppm Te	ppm Mn	ppm Ni
4 AGP1A	522	465	485	312	308	465	287	<1	529	489	<1	514	517	150	483	242	-
4 AGP2A	137	112	113	77	48	93	68	<1	138	129	<1	127	130	73	121	20	-
4 AGP3A	44	31	29	20	19	24	17	<1	36	26	<1	32	32	46	30	12	-
4 AGP4A	20	5	6	7	5	6	<1	<1	10	<1	<1	10	8	24	7	2	-
4 PAg1A	75	40	40	50	12	50	35	-	120	40	<1	35	180	5	120	35	25
4 PAg2A	400	12	12	550	8	12	10	-	20	14	<1	10	180	7	15	10	9

ppm Cd	ppm Ga	ppm Si	Ag	Ø 25x3 mm, cast
-	-	-	Rest	Eingebettet in 30mm Bakelitringe
-	-	-	Rest	Mounted in 30mm Bakelite Rings
-	-	-	Rest	
-	-	-	Rest	
35	60	30	Rest	
5	15	4	Rest	