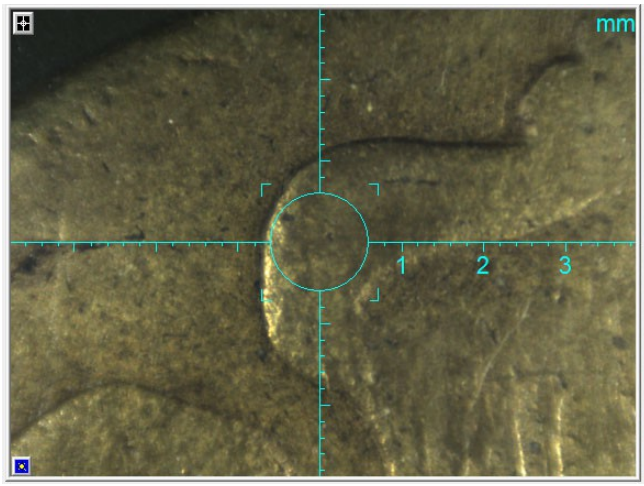
DOA 1916 T, 20 heller part H-x. X-ray fluorescence test results (2017)

This part of the DOA 1916 T catalogue contains the results of X-ray fluorescence analysis done in August 2015, 2016 and 2017 in Eindhoven on machines we were allowed to use on their premises by the Dutch branch of Helmut Fischer AG www.helmut-fischer.nl
Previously made analysis, in August 2012 and 2014, are not presented because, due to lack of knowledge of the standard programs installed on the machines and the way the results were registered, no information was obtained on small amounts of certain components of the alloys. Neither are the results from 2015 and 2016 presented for coins from the Kees Uitenbroek collection as most of them were retested in 2017.
All results from the afore mentioned test sessions plus those available from other sources will be presented on a spreadsheet titled *DOA 1916 T, 20 heller part H-y, test results (2017)*, which will also contain data on electrical conductivity, weight, specific gravity and diameter of most of the coins. Future additions to this file will be indicated by changing the date in the files name.





A camera inside the machine shows an test area with a diameter of 1 mm as focus of measurement. For some reason it shows a mirror image of the object. As a rule in 2017 the right side of the upper part of the crown and/or the knob of the 2 were tested. In 2017 the knob and the top of the band on the left side of the crown.
Where more than one part of a coin was measured it shows that the alloy is not everywhere exactly the same. Especially large variations are found on the so called zebra coins, where 76% copper may be found on one spot and 66% on another.
Also electrical conductivity is no fixed property and inexplicably large diffferences may occur between both sides of a coin.
It should be mentioned too that each year it was a different machine that could be used.

For the test presented below the machine was instructed to present results for copper, zinc, tin, nickel, iron, lead, silver, arsenic, cobalt, antimony, bismuth and cadmium. As no object was available with fixed amounts of all these elements the results could not be calibrated. The results could be compared though with those of an element used for calibration of the electrical conductivity measurement device, with will be very pure copper, with an electrical conductivity of 58.36 MS/m, and with the results of tests of some of the coins made by third parties. These show that amounts of zinc, lead and bismuth in the order 0.02% in copper coins are no part of the alloy and that an amount of around 0.3% tin, which is confirmed by the other tests, triggers in an amount of around 0,2% zinc, which is not there in the other tests.

Lets also not forget the statistical uncertainty which applies to all data, which might be relatively large at the small amounts we are interested in and external pollution.

DOA 1916 T, 20 heller part H-x-a. X-ray fluorescence test results a

Eindhoven August 2017, Fischerscope XAN www.helmut-fischer.nl. Uncalibrated program testing for copper, zinc, tin, nickel, iron, lead, silver, arsenic, cobalt, antimony, bismuth and cadmium.

Kees Uitenbroek collection.

Minor amounts of zinc, lead and bismuth may not be part of the alloy, see calibration element below.

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
calibration element of electrical conductivity measurement device, copper, EC 58,36 MS/m												
	100.0	0.019	-	-	-	0.010	-	-	-	-	0.016	-
	100.0	0.023	-	-	-	0.012	-	-	-	-	0.019	-
miscellaneous												
NL 5 cent 1955	95.0	0.820	3.87	0.041	0.041	0.097	-	0.105	-	-	0.017	-
China KM 301.a	90.5	9.03	0.072	0.054	0.102	0.201	0.031	-	-	-	0.015	-
5-Heller coins												
5H H1-D1-1	66.7	32.2	-	0.070	0.966	0.033	0.016	0.020	-	-	0.020	-
5H H2-D2-2	73.2	26.5	-	0.073	0.193	0.044	-	-	-	-	0.023	0.015
5H H2-D2-4 H-side	79.1	20.7	-	0.049	0.038	0.009	-	0.008	-	-	0.014	-
D-side	78.2	21.7	-	0.046	0.050	-	0.012	0.010	-	-	0.018	0.018
5H H5-D5-2	80.5	19.4	-	0.043	0.050	0.017	-	0.009	-	-	0.015	-
5H H15-D16-6	66.1	31.0	0.891	0.068	0.349	1.26	0.026	0.215	-	0.023	0.031	-
5H H21-D21-n1	62.2	36.3	0.677	0.080	0.253	0.328	0.012	0.109	-	-	0.019	0.015
5H H22-D22-1	62.5	36.1	0.573	0.090	0.340	0.265	0.015	0.126	-	-	0.019	-
5H H24-D24-1	61.9	36.8	0.497	0.087	0.198	0.467	0.015	0.047	-	-	0.023	-
5H H28-D28-1	63.3	35.4	0.409	0.048	0.218	0.439	0.013	0.106	-	-	0.027	-
20-Heller coins spoilt in citric acid												
B5o-B3o-8	87.0	12.9	-	-	0.011	0.088	-	-	-	-	0.014	-
B5o-B3o-9	80.7	19.2	-	-	-	0.082	-	-	-	-	0.021	0.020
B5p-B3o-8	75.9	24.0	-	0.021	0.016	0.069	0.017	-	-	-	0.020	-
HA33j-DA9e-XF45, slabbed NGC copper XF 45 BN # 2779555-023												
	74.4	25.5	-	-	0.033	0.029	-	-	-	-	0.029	-
	77.5	22.5	-	-	0.050	0.027	-	-	-	-	0.025	-
	74.4	25.5	-	0.012	0.044	0.021	-	0.015	-	-	0.030	-

B1-2-B2

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
B0a-B0a-1	76.6	21.9	0.079	0.098	0.825	0.434	-	-	-	0.024	0.018	-
B0b-B0b-1	76.2	22.3	0.084	0.109	0.814	0.399	0.022	-	-	-	0.021	-
B1a-B1a-1	75.3	24.1	-	0.075	0.050	0.446	0.017	-	-	-	0.016	-
B1a-B1a-M1	74.9	24.0	0.037	0.092	0.588	0.354	0.016	-	-	0.023	0.016	-
B1a-B1a-M2	74.9	24.3	-	0.085	0.122	0.495	0.037	-	-	-	0.024	-
B1a-B1a-M3	74.9	24.3	-	0.082	0.085	0.508	0.021	-	-	-	0.027	-
B1b-B1b-1	74.9	24.5	-	0.160	0.054	0.370	0.018	-	-	-	0.026	-
B1b-B1b-a1	75.1	24.3	0.033	0.142	0.078	0.281	0.031	-	-	-	0.022	-
B1b-B1b-a2	75.2	23.9	0.029	0.110	0.347	0.431	0.018	-	-	-	0.022	-
B1b-B1b-a3	75.5	23.6	0.025	0.131	0.114	0.535	0.023	-	-	-	0.026	-
B1b-B1b-a4	74.7	24.6	0.032	0.087	0.109	0.402	0.020	-	-	-	0.020	-
B1b-B1b-M1	70.3	29.1	-	0.075	0.079	0.369	0.019	-	-	-	0.025	-
B1w-B1b-1	75.3	23.9	0.036	0.078	0.067	0.587	0.016	-	-	0.022	0.020	-
B1w-B1b-2	73.5	25.6	0.022	0.082	0.075	0.632	-	-	-	-	0.023	-
B1w-B1b-3	75.7	23.5	0.099	0.063	0.068	0.437	0.027	0.077	-	-	0.031	-
B1w-B1b-4	76.6	22.5	0.067	0.072	0.037	0.660	0.019	0.028	-	-	0.022	-
B1w-B1b-5	73.8	24.3	0.048	0.081	1.15	0.556	0.021	-	-	-	0.039	-
B1w-B1b-a1	74.7	24.3	0.062	0.077	0.070	0.730	0.024	-	-	-	0.021	-
B1w-B1b-m	74.0	25.4	-	0.081	0.047	0.411	0.017	-	-	-	0.018	-
B1?	74.0	25.0	0.046	0.082	0.032	0.766	0.027	-	-	-	0.028	-
B1c-B1c-1	75.2	22.1	0.054	0.074	2.13	0.456	0.020	-	-	-	0.024	-
B1c-B1c-a1	74.5	24.7	0.051	0.093	0.058	0.542	0.019	-	-	-	0.027	-
B1c-B1v-a1	75.0	24.1	0.036	0.074	0.096	0.554	0.028	0.103	-	-	0.023	-
B1c-B1y-1	72.8	26.5	0.028	0.115	0.057	0.488	0.014	-	-	0.025	0.026	-
B1c-B1y-2	73.2	26.0	0.020	0.103	0.083	0.507	0.019	-	-	-	0.025	-
B1c-B1y-3	72.7	26.5	0.037	0.097	0.061	0.495	0.021	-	-	0.022	0.026	-
B1c-B1y-4	76.4	22.3	0.047	0.112	0.256	0.740	0.022	0.047	-	0.038	0.028	-
B1c-B1y-a1	75.3	23.9	0.028	0.103	0.091	0.500	0.021	-	-	-	0.027	-
B1c-B1y-M1	77.4	21.8	0.040	0.088	0.102	0.558	0.030	-	-	-	0.020	-

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
B1z-B1z-M1	75.5	23.4	0.044	0.091	0.194	0.705	0.013	-	-	-	0.024	-
B1z-B1z-mpo	75.9	23.1	0.048	0.111	0.265	0.483	0.040	-	-	-	0.022	-
B1z-B1z-n1	76.7	22.4	0.031	0.089	0.236	0.449	0.016	0.067	-	-	0.023	-
B1d-B1d-2	76.0	22.8	-	0.078	0.122	0.908	0.020	0.034	-	-	0.025	-
B1d-B1d-n	76.1	23.0	0.028	0.084	0.329	0.376	0.031	0.027	-	-	0.025	-
B1s-B2t-n1	73.6	25.7	0.062	0.118	0.090	0.433	-	-	-	-	0.024	-
B1t-B2t-n1	72.3	26.9	0.079	0.111	0.039	0.428	0.016	-	-	0.040	0.017	-
B1t-B2t-n2	70.8	28.2	0.077	0.107	0.060	0.596	0.027	-	-	0.088	0.025	-
B1e-B1x-a2	74.0	25.2	0.025	0.083	0.068	0.497	0.031	-	-	-	0.020	-
B1e-B1x-a3	75.0	24.2	0.030	0.078	0.069	0.521	0.022	-	-	-	0.027	-
B1e-B1x-a4	75.0	24.4	0.050	0.086	0.118	0.310	0.022	-	-	-	0.014	-
B1e-B1x-a5	75.3	23.7	0.022	0.112	0.110	0.651	0.065	0.032	-	-	0.023	-
B1e-B2a-1	75.3	23.6	-	0.101	0.277	0.563	-	-	-	-	0.018	-
B1e-B2a-2	75.5	23.7	0.047	0.088	0.100	0.480	0.019	-	-	-	0.027	-
B1e-B2a-3	76.3	22.9	-	0.112	0.256	0.421	0.025	-	-	-	0.027	-
B1e-B2a-4	74.5	24.5	0.022	0.113	0.085	0.735	0.020	-	-	-	0.020	-
B1e-B2a-5	75.1	24.0	0.023	0.158	0.067	0.623	0.017	-	-	-	0.028	-
B1e-B2a-6	75.4	23.7	-	0.114	0.155	0.584	0.019	-	-	-	0.017	-
B1e-B2a-8	75.0	24.1	-	0.097	0.057	0.667	0.015	-	-	-	0.020	-
B1e-B2a-9	69.3	29.7	-	0.087	0.129	0.741	0.018	0.026	-	-	0.023	-
B1e-B2a-10	76.1	23.1	0.021	0.125	0.064	0.545	0.016	-	-	-	0.028	-
B1e-B2a-11	75.7	23.6	-	0.123	0.072	0.463	0.028	-	-	-	0.026	-
B1e-B2a-a1	74.9	24.5	0.050	0.079	0.091	0.333	0.040	-	-	-	0.017	-
B1e-B2a-a2	74.7	24.1	0.035	0.100	0.109	0.836	0.019	0.076	-	0.025	0.024	-
B1e-B2a-a3	76.1	22.9	-	0.138	0.036	0.787	0.028	-	-	-	0.024	-
B1e-B2a-m H-side	79.1	20.3	-	0.079	0.129	0.297	0.016	-	-	-	0.023	-
D-side	78.7	20.7	0.027	0.076	0.124	0.328	0.015	-	-	-	0.024	-
B1e-B2a-M1	75.3	24.0	0.034	0.093	0.075	0.487	0.031	-	-	-	0.024	-
B1e-B2a-M2	76.5	22.7	-	0.123	0.097	0.446	0.015	0.024	-	-	0.016	-
B1e-B2a-M4	74.0	25.0	0.041	0.097	0.153	0.633	0.019	0.031	-	-	0.018	-
B1f-B2b-a1	75.1	24.0	0.030	0.110	0.030	0.634	0.021	-	-	-	0.024	-
B1f-B2b-a2	73.0	26.4	-	0.086	0.064	0.382	-	-	-	-	0.026	-
B1f-B2c-a1	76.3	23.1	0.021	0.108	0.045	0.315	0.088	-	-	-	0.020	-
B1g-B2c-2	75.9	23.3	0.028	0.123	0.126	0.420	0.023	-	-	-	0.020	-
B1g-B2c-3	76.6	22.4	0.029	0.112	0.109	0.589	0.015	0.035	-	-	0.028	-
B1g-B2c-4	74.8	24.7	-	0.090	0.043	0.238	0.019	-	-	-	0.021	-
B1g-B2c-5	73.7	25.5	0.044	0.112	0.040	0.605	-	-	-	-	0.025	-
B1g-B2c-6	74.1	25.1	0.028	0.129	0.096	0.496	0.021	-	-	-	0.024	-
B1g-B2c-8	73.3	24.1	-	0.130	1.37	0.942	0.012	-	-	-	0.029	-
B1g-B2c-9	75.1	23.5	-	0.093	0.042	1.12	0.023	-	-	-	0.033	-
B1g-B2c-10 H-side	75.0	24.2	-	0.107	0.042	0.587	0.020	0.052	-	-	0.012	-
D-side	76.2	23.1	-	0.096	0.056	0.422	0.025	0.042	-	-	0.026	-
B1g-B2c-11	75.4	23.6	-	0.122	0.129	0.641	0.021	-	-	-	0.025	-
B1g-B2c-a1	76.1	23.0	-	0.115	0.115	0.532	0.025	0.042	-	-	0.028	-
B1g-B2c-M1	80.1	19.0	0.029	0.084	0.166	0.489	0.023	0.047	-	-	0.027	-
B2a-B2c-1	77.0	21.9	-	0.116	0.109	0.792	0.014	-	-	-	0.020	-
B2a-B2c-2	71.8	27.4	0.052	0.107	0.078	0.517	0.025	-	-	0.045	-	-
B2a-B2c-3	73.2	25.8	0.047	0.118	0.104	0.658	0.028	-	-	-	0.023	-
B2a-B2c-4	72.0	27.1	0.063	0.124	0.081	0.553	0.018	-	-	0.026	0.025	-
B2a-B2c-5	77.6	21.3	0.057	0.105	0.231	0.601	0.024	0.065	-	0.034	0.033	-
B2a-B2c-a1	70.7	28.8	-	0.102	0.132	0.302	0.017	-	-	-	0.019	-
B2a-B2c-n-MPO	76.8	22.5	0.022	0.114	0.052	0.409	0.021	-	-	-	0.022	-
B2b-B2d-1	71.7	27.9	-	0.113	0.046	0.250	0.019	-	-	-	0.022	-
B2b-B2d-2	70.6	28.9	0.036	0.099	0.058	0.279	0.021	-	-	-	0.027	-
B2b-B2d-3	73.2	26.3	-	0.128	0.105	0.213	-	-	-	-	0.020	-
B2b-B2d-4	71.0	28.7	-	0.083	0.041	0.180	0.020	-	-	-	0.025	-
B2b-B2d-5	73.4	25.7	0.027	0.110	0.249	0.429	0.012	-	-	0.027	0.023	-
B2b-B2d-M1	68.1	31.3	0.020	0.084	0.076	0.256	0.019	0.018	-	-	0.021	-
B2b-B2d-M2	68.8	30.6	-	0.104	0.089	0.282	0.026	-	-	-	0.029	-
B2b-B2d-M3	76.1	23.2	-	0.160	0.067	0.449	0.026	-	-	-	0.024	-
B2b-B2d-n	73.5	25.5	0.028	0.103	0.180	0.582	0.037	-	0.007	0.055	0.025	-
B2b-B2d-m2	62.4	37.2	-	0.093	0.055	0.121	0.015	0.015	-	-	0.023	-

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
B2c-B2e-1	72.6	26.9	0.020	0.100	0.069	0.324	0.020	-	-	-	0.019	-
B2c-B2e-2	71.9	27.3	0.041	0.096	0.090	0.444	0.023	-	-	0.025	0.020	-
B2c-B2e-3	72.2	27.0	0.044	0.092	0.100	0.408	0.030	-	0.008	0.024	0.024	0.013
B2c-B2e-4	72.4	26.9	0.025	0.096	0.111	0.393	0.015	-	-	-	0.023	-
B2c-B2e-5	71.4	27.8	0.038	0.112	0.131	0.419	0.030	0.036	-	-	0.027	-
B2c-B2e-6	70.9	28.6	-	0.095	0.081	0.322	0.018	-	-	-	0.028	-
B2c-B2e-7	68.9	30.0	0.031	0.090	0.184	0.557	0.024	0.081	-	-	0.021	-
B2c-B2e-8	70.6	28.7	0.037	0.107	0.144	0.399	0.013	-	-	-	0.026	-
B2c-B2e-9	71.7	27.7	0.032	0.089	0.070	0.303	0.022	-	-	-	0.024	-
B2c-B2e-10	75.5	23.8	0.037	0.074	0.132	0.379	0.021	0.028	-	-	0.020	-
B2c-B2e-11	72.0	27.4	0.029	0.099	0.075	0.390	0.027	-	-	-	0.029	-
B2c-B2e-a	71.0	28.4	0.025	0.096	0.097	0.374	-	0.022	-	-	0.023	-
B2c-B2e-mextra	69.3	30.1	0.027	0.100	0.039	0.343	0.021	-	-	-	0.022	-
B2d-B2f-1	69.9	29.5	0.022	0.106	0.126	0.270	0.015	-	-	-	0.030	-
B2d-B2f-M1	70.7	28.6	0.022	0.104	0.099	0.435	-	0.032	-	-	0.026	-
B2d-B2f-M2	68.8	30.3	0.021	0.097	0.237	0.435	0.022	0.040	-	-	0.026	-
B2d-B2f-n1	68.8	30.7	0.031	0.100	0.049	0.308	0.019	-	-	-	0.030	-
B2d-B2f-n2	69.0	30.0	-	0.108	0.072	0.698	0.025	-	-	-	0.033	-
B2d-B2g-1	73.0	25.7	0.058	0.117	0.415	0.614	0.014	-	-	0.062	0.022	-
B2d-B2g-2	67.9	31.6	0.031	0.101	0.096	0.156	0.015	-	-	-	0.021	-
B2d-B2g-3	75.7	23.7	0.036	0.100	0.044	0.340	0.018	-	-	-	0.021	-
B2d-B2g-4	67.4	23.9	0.037	0.108	8.05	0.412	0.016	-	-	-	0.023	-
B2d-B2g-6	70.6	28.7	-	0.114	0.089	0.450	0.021	-	-	-	0.018	-
B2d-B2g-7	78.7	20.4	0.057	0.069	0.162	0.523	0.021	0.031	-	-	0.026	-
B2d-B2g-8	77.7	21.0	0.063	0.083	0.230	0.739	0.029	0.054	-	-	0.027	-
B2d-B2g-9	72.4	26.8	0.020	0.099	0.052	0.490	0.024	-	-	-	0.029	-
B2d-B2g-M2	70.4	29.0	-	0.106	0.098	0.281	0.016	-	-	-	0.021	-
B2d-B2g-M3	70.9	28.4	0.029	0.097	0.152	0.359	0.017	-	-	-	0.019	-
B2d-B2g-M4	68.1	31.5	-	0.089	0.097	0.180	-	0.016	-	-	0.020	-
B2d-B2g-M5	66.2	33.2	0.027	0.094	0.083	0.314	0.014	-	-	-	0.021	-
B2d-B2g-M6	70.2	29.0	-	0.090	0.311	0.340	-	0.026	-	-	0.019	-
B2d-B2g-M7	69.9	29.6	-	0.101	0.114	0.223	0.018	-	-	-	0.021	-
B2d-B2g-n	67.6	32.0	0.028	0.097	0.071	0.176	0.017	-	-	-	0.026	-
B2e-B2h-1	70.2	29.2	0.039	0.088	0.059	0.333	0.013	-	-	-	0.020	-
B2e-B2h-2	68.5	30.7	-	0.096	0.209	0.402	-	-	-	-	0.023	-
B2e-B2h-3	68.4	30.8	0.030	0.087	0.248	0.342	0.020	-	-	-	0.026	-
B2e-B2h-4	76.1	23.6	-	0.057	0.158	0.078	0.021	-	-	-	0.021	-
B2e-B2h-5	69.4	30.0	0.110	0.094	0.122	0.214	-	-	-	-	0.027	-
B2e-B2h-7	69.4	30.1	0.022	0.094	0.068	0.280	0.014	-	-	-	0.021	-
B2e-B2h-a1	71.8	27.4	0.034	0.101	0.055	0.562	0.017	-	-	-	0.021	-
B2e-B2h-M	70.3	29.1	0.038	0.091	0.049	0.331	-	-	-	-	0.019	-
B2e-B2h-M2	71.0	28.4	0.026	0.096	0.077	0.301	0.018	-	-	-	0.016	-
B2e-B2h-M3	70.4	29.1	0.031	0.098	0.090	0.243	0.013	-	-	-	0.025	-
B2f-B2i-1	72.1	26.9	0.025	0.097	0.199	0.579	0.031	-	-	-	0.025	-
B2f-B2i-2	72.3	27.3	-	0.096	0.121	0.167	-	0.021	-	-	0.017	-
B2f-B2i-4	70.7	28.7	0.027	0.094	0.073	0.303	0.023	-	-	0.029	0.020	-
B2g-B2i-1	70.1	29.2	0.026	0.090	0.060	0.444	0.021	-	-	-	0.027	-
B2g-B2i-2	71.9	27.4	0.040	0.098	0.109	0.377	0.023	-	-	-	0.031	-
B2g-B2i-2-8 zebra	70.0	29.4	0.026	0.096	0.044	0.309	0.025	-	-	-	0.020	-
yellow	70.0	29.5	0.029	0.098	0.036	0.303	0.014	-	-	-	0.022	-
yellow	69.6	29.9	0.024	0.094	0.036	0.249	0.030	-	-	-	0.028	-
red	85.0	14.8	-	0.028	0.020	0.047	0.037	-	-	-	0.020	-
red	72.6	27.0	-	0.078	0.036	0.210	0.020	-	0.008	-	0.011	-
first test of series on right side of upper part of the crown (D-side)												
B2g-B2i-3	70.9	28.5	0.022	0.098	0.054	0.397	0.013	-	-	-	0.027	-
B2g-B2i-mextra	70.7	28.5	-	0.095	0.266	0.425	-	0.034	-	-	0.028	-
B2g-B2i-n	70.6	28.9	-	0.105	0.173	0.236	0.022	-	-	-	0.026	-
B2g-B2j-M1	71.2	28.3	-	0.099	0.051	0.300	0.020	-	-	-	0.022	-
B2g-B2j-M2	68.8	30.6	0.027	0.089	0.065	0.336	0.023	-	-	-	0.027	-
B2g-B2j-n	68.7	30.6	0.034	0.094	0.047	0.400	0.020	-	-	-	0.022	-
B2h-B2j-1	71.2	28.3	0.040	0.103	0.087	0.205	0.020	-	-	-	0.019	-
B2h-B2j-2	74.6	24.8	0.021	0.075	0.244	0.251	0.021	-	-	-	0.013	-
B2h-B2j-m	67.9	31.4	-	0.090	0.073	0.417	0.023	-	-	-	0.025	-
B2h-B2j-n2	71.0	28.5	0.021	0.104	0.078	0.242	0.013	0.021	-	-	0.028	-

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
B2h-B2k-M1	68.8	30.5	0.035	0.092	0.122	0.355	0.019	-	-	-	0.021	-
B2h-B2k-M2	71.6	27.8	0.026	0.095	0.128	0.250	0.014	-	-	-	0.024	-
B2h-B2k-n	71.4	28.1	-	0.095	0.047	0.207	0.020	-	-	-	0.021	-
B2h-B2k-V0-10	70.9	28.5	0.023	0.093	0.092	0.372	0.033	-	-	-	0.024	-
B2h-B2p-n	70.8	28.8	-	0.096	0.107	0.205	0.029	-	-	-	0.023	-
B2j-B2p-n	70.0	29.4	0.021	0.090	0.095	0.375	0.013	0.020	-	-	0.021	-
B2j-B2p-n2	70.2	29.3	-	0.100	0.102	0.279	0.021	-	-	-	0.015	-
B2i-B2o-n	68.7	30.8	0.026	0.096	0.103	0.271	0.023	-	-	-	0.018	-
B2i?-B2o-M1	69.3	30.0	-	0.096	0.226	0.293	0.018	-	-	-	0.032	-
B2i?-B2o-n	70.2	29.4	0.035	0.094	0.059	0.206	0.015	-	-	-	0.024	-
B2i?-B2o-V0-09	69.2	30.2	-	0.101	0.063	0.344	0.020	-	-	-	0.025	-

HB3-4-5-DB2-3 die-combinations not related to HA-DB or HB-DA die-combinations

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
B3a-B2l-1	68.1	31.3	-	0.100	0.107	0.332	0.024	-	-	-	0.023	-
B3a-B2l-2	69.0	30.0	0.021	0.106	0.407	0.386	0.017	0.028	-	-	0.028	-
B3a-B2l-3	69.9	29.5	0.032	0.097	0.086	0.240	0.019	-	-	-	0.028	-
B3a-B2l-4	70.7	28.9	-	0.092	0.111	0.168	0.015	-	-	-	0.015	-
B3a-B2l-5	68.0	31.5	0.023	0.102	0.145	0.158	0.019	-	-	-	0.020	-
B3a-B2l-M1	69.7	29.8	-	0.093	0.095	0.215	0.018	-	-	-	0.020	-
B3a-B2l-M2	69.7	29.7	-	0.087	0.125	0.262	0.018	-	-	-	0.016	-
B3a-B2l-n1	69.9	29.7	0.020	0.093	0.048	0.205	-	-	-	-	0.031	-
B3a-B2l-n2	68.6	30.8	0.030	0.105	0.044	0.326	0.026	0.031	-	-	0.027	0.016
B3a-B2l-n3	69.5	30.0	-	0.097	0.045	0.278	0.014	-	-	-	0.018	-
B3a-B2n-n	71.3	28.1	0.021	0.102	0.132	0.226	0.016	-	-	-	0.020	-
B3b-B2m-1	70.5	29.0	-	0.096	0.107	0.279	0.012	-	0.009	-	0.019	-
B3b-B2m-2	69.8	29.7	0.024	0.096	0.140	0.228	0.024	0.019	-	-	0.021	-
B3b-B2m-3	69.0	30.4	0.024	0.081	0.126	0.281	0.020	0.023	0.007	-	0.024	-
B3b-B2m-5	68.5	30.9	0.025	0.100	0.061	0.311	0.021	0.020	-	-	0.025	-
B3b-B2m-n	69.0	30.4	0.033	0.096	0.042	0.332	0.020	0.020	-	-	0.026	-
B3b-B2m-V0-11	67.9	31.6	-	0.101	0.047	0.252	0.020	-	-	-	0.016	-
B3y-B2x-1	67.9	31.5	-	0.091	0.073	0.349	0.021	-	-	-	0.029	-
B3y-B2x-M1	68.3	31.1	-	0.096	0.066	0.337	0.020	-	-	-	0.017	-
B3y-B2x-M2	70.0	29.5	-	0.094	0.047	0.304	-	-	-	-	0.022	-
B3y-B2x-n1	68.7	30.7	0.025	0.107	0.111	0.283	-	-	-	-	0.023	-
B3y-B2x-n2	68.6	30.9	-	0.095	0.046	0.267	-	-	-	-	0.034	-
B3z-B2z-n	70.7	28.7	0.041	0.106	0.084	0.277	0.043	-	-	-	0.025	-
B4a-B3a-1	69.8	29.5	-	0.098	0.238	0.266	0.013	-	-	-	0.022	-
B4a-B3a-M1	70.5	29.0	0.020	0.099	0.065	0.250	0.018	-	-	-	0.012	-
B4a-B3a-M2	69.6	30.0	0.020	0.096	0.064	0.214	0.019	-	-	-	0.020	-
B4a-B3a-M3	70.6	29.0	-	0.096	0.092	0.223	0.012	-	-	-	0.032	-
? B4a-B3a-n2	69.1	30.4	-	0.094	0.116	0.218	0.014	-	-	-	0.018	-
B5a-B3c-1	67.2	32.2	-	0.028	0.035	0.284	0.021	0.138	-	-	0.026	-
B5a-B3c-2	65.6	34.0	-	0.021	0.080	0.184	0.016	0.151	-	-	0.027	-
B5a-B3c-3	68.9	30.8	-	0.018	0.010	0.131	0.022	0.104	-	-	0.024	-
B5a-B3c-4 zebra	65.6	33.7	-	0.033	0.053	0.333	0.020	0.226	-	-	0.025	0.015
yellow	66.1	33.2	-	0.031	0.087	0.294	-	0.250	-	-	0.027	-
yellow	64.8	34.5	-	0.024	0.083	0.384	0.014	0.196	-	-	0.023	-
red	72.7	26.9	-	0.027	0.125	0.094	-	0.144	-	-	0.015	-
red	74.0	25.7	-	0.029	0.057	0.049	0.016	0.125	-	-	0.017	-

first test of series on right side of upper part of the crown (D-side)

B5a-B3c-6	67.4	32.2	-	0.024	-	0.262	0.013	0.163	0.008	-	0.023	-
B5a-B3c-n	68.2	30.7	-	0.047	0.815	0.243	0.013	0.019	-	-	0.027	-
B5a-B3c-n-E	69.1	30.3	-	0.026	0.041	0.309	0.016	0.198	-	-	0.021	-
B5a-B3d-1	69.4	30.3	-	0.033	0.055	0.139	0.019	0.067	-	-	0.010	-
B5a-B3d-5	64.4	35.1	-	0.035	0.035	0.291	0.025	0.024	-	-	0.030	0.031
B5a-B3d-6	67.4	32.0	-	0.044	0.108	0.361	0.020	0.064	-	-	0.021	-
B5a-B3d-7	65.1	34.3	-	0.031	0.061	0.504	0.023	0.032	-	-	0.025	-
B5a-B3d-n-E	99.7	0.074	-	0.128	0.051	0.034	0.033	0.009	-	-	0.013	-
B5b-B3d-1	66.1	33.4	-	0.044	0.130	0.191	0.019	0.055	-	-	0.026	0.017
B5b-B3d-a	99.3	0.136	-	0.010	0.147	0.067	0.017	0.323	-	-	0.012	-
B5b-B3d-a2	99.3	0.123	-	0.011	0.152	0.067	0.025	0.308	-	-	0.017	-
B5b-B3e 1	67.3	31.9	0.047	0.046	0.094	0.297	0.011	0.274	-	-	0.033	-
B5b-B3e 3	72.2	27.4	-	0.020	0.045	0.252	0.029	0.064	-	-	0.024	0.025
B5b-B3e-4	70.9	28.9	-	0.021	0.095	0.042	0.021	0.034	-	-	0.021	0.027
B5b-B3e 5	70.9	28.9	-	0.017	0.051	0.060	0.025	0.025	-	-	0.018	0.019

B5b-B3e-6	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
red	76.2	23.7	-	0.011	0.031	0.011	0.017	0.044	-	-	0.014	0.022
yellow	66.0	33.7	-	0.016	0.017	0.141	0.030	0.032	-	-	0.013	0.041
red	77.5	22.4	-	0.018	0.027	0.023	0.027	0.030	-	-	0.020	-
yellow	64.6	35.1	-	0.014	0.020	0.173	0.014	0.030	-	-	0.021	0.031
B5b-B3e-7	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
yellow	73.1	26.7	-	0.018	0.040	0.030	0.025	0.028	0.009	-	0.017	0.023
yellow	72.9	27.0	-	0.018	0.040	0.016	0.015	0.022	-	-	0.020	0.021
brown	64.3	35.4	-	0.018	0.044	0.118	0.025	0.037	-	-	0.023	0.042
brown	63.6	36.0	-	0.015	0.045	0.154	0.025	0.049	-	-	0.021	0.060
B5b-B3e-9	68.4	31.0	0.022	0.044	0.083	0.352	0.017	0.128	-	-	0.026	-
B5b-B3e-10	66.2	33.5	-	0.018	0.044	0.161	0.012	0.038	-	-	0.018	0.024
B5b-B3e-11	63.3	35.6	0.032	0.061	0.105	0.668	0.028	0.120	-	-	0.042	-
B5b-B3e-14	73.9	23.8	0.041	0.050	1.65	0.380	0.023	0.151	-	-	0.043	-
B5b-B3e-16	99.7	0.084	-	0.089	0.062	0.076	-	0.029	-	-	0.014	-
B5b-B3e-18	72.2	27.5	-	0.037	0.044	0.158	-	-	-	-	0.020	0.021
B5b-B3e-a	99.7	0.081	-	0.093	0.028	0.029	-	0.049	-	-	0.022	-
B5b-B3e-m1	99.6	0.194	-	0.088	0.023	0.055	-	0.067	-	-	0.015	-
B5b-B3e-n	63.4	36.3	-	0.017	0.023	0.191	0.016	0.034	-	-	0.021	0.039
B5c-B3f-1	99.5	0.041	-	0.038	0.025	0.066	0.054	0.241	-	-	0.039	-
B5c-B3f-2	99.7	0.063	-	0.020	0.012	0.053	0.015	0.098	-	-	0.020	-
B5c-B3f-3	67.7	32.0	-	0.031	0.016	0.231	-	-	-	-	0.024	0.028
B5c-B3f-10	67.4	32.0	-	0.038	0.287	0.290	-	0.022	-	-	0.026	0.022
B5c-B3f-11	66.5	33.2	-	0.013	0.043	0.154	-	-	-	-	0.023	0.027
B5c-B3f-13	66.0	33.7	-	0.047	0.046	0.195	-	-	-	-	0.026	0.020
B5c-B3f-15	66.5	33.2	-	0.041	0.098	0.174	-	-	-	-	0.022	0.028
B5c-B3f-m2	71.2	28.6	-	0.011	0.026	0.190	-	-	-	-	0.015	0.016
B5c-B3f-m3	99.5	0.082	-	0.035	0.030	0.044	0.052	0.243	-	-	0.037	-
B5c-B3f-mextra	77.4	22.3	-	0.012	0.031	0.196	0.015	-	-	-	0.018	0.022
B5c-B3f-n	69.8	29.9	-	0.013	0.032	0.255	-	-	-	-	0.020	0.026
B5c-B3f-n2	69.6	29.9	-	0.022	0.087	0.203	0.020	0.190	-	-	0.027	-
B5c-B3f-W zebra	65.8	33.9	-	0.033	0.023	0.167	0.043	0.104	-	-	0.023	-
yellow	65.7	33.7	-	0.029	0.020	0.364	0.035	0.182	-	-	0.021	-
yellow	66.4	33.1	-	0.019	0.020	0.249	0.018	0.214	-	-	0.022	-
brown	70.7	29.1	-	0.030	0.014	0.033	0.015	0.093	-	-	0.025	-
brown	72.9	26.9	-	0.024	0.014	0.047	0.023	0.098	-	-	0.013	-
first test of series on right side of upper part of the crown (D-side)												
B5d-B3g-1	99.6	0.071	-	0.159	0.013	0.104	0.033	0.021	0.006	-	0.012	-
B5d-B3g-2	99.7	0.075	-	0.016	0.078	0.084	-	0.012	-	-	0.020	-
B5d-B3g-M1	99.2	0.020	-	0.532	0.050	0.105	-	0.090	-	-	0.020	-
B5d-B3g-n	99.9	0.017	-	0.029	-	0.074	-	-	-	-	0.022	-
B5d-B3g-n2	99.4	0.040	-	0.393	-	0.128	-	0.069	-	-	0.020	-
B5e-B3g-1	99.6	0.095	-	0.083	-	0.059	0.011	0.186	-	-	0.020	-
B5e-B3g-n-MPO	99.8	0.043	-	-	0.082	0.011	0.051	-	-	-	0.013	-
B5e-B3g-n2	99.7	-	-	-	0.179	0.013	0.011	0.104	-	-	0.013	-
B5f-B3h-1	99.5	0.101	-	0.052	0.042	0.032	0.012	0.230	-	-	0.018	-
B5f-B3h-2	99.2	0.129	-	0.403	0.089	0.125	-	0.079	-	-	0.020	-
B5f-B3h-3	99.6	0.055	-	0.156	0.011	0.109	0.032	0.016	-	-	0.018	-
B5f-B3h-n	99.7	0.033	-	0.045	0.012	0.030	0.024	0.157	-	-	0.016	-
B5g-B3i-1	99.2	0.051	-	0.361	0.021	0.059	0.013	0.318	-	-	0.010	-
B5g-B3i-2	99.4	0.273	-	0.184	0.048	0.088	0.021	0.024	-	-	0.014	-
B5g-B3i-3	99.2	0.067	-	0.361	0.057	0.065	-	0.296	-	-	0.010	-
B5g-B3i-4	99.1	0.072	-	0.350	0.091	0.054	0.012	0.333	-	-	0.021	-
B5g-B3i-5	96.1	0.426	-	0.179	3.19	0.116	0.035	0.024	-	-	0.011	-
B5g-B3i-7	82.5	16.8	-	0.010	0.051	0.572	-	0.031	-	-	0.017	-
B5g-B3i-11	99.8	0.119	-	-	0.024	0.036	0.012	0.058	-	-	0.023	-
B5g-B3i-14	99.7	0.050	-	0.134	0.020	0.025	0.032	0.021	-	-	0.022	-
B5g-B3i-19	99.7	0.070	-	0.150	0.053	0.026	0.017	0.017	-	-	0.014	-
B5g-B3i-m	99.5	0.212	-	0.190	0.055	0.069	0.029	0.013	0.006	-	0.019	-
B5g-B3i-n1	99.7	0.074	-	0.012	0.037	0.025	0.018	0.076	-	-	0.034	-
B5g-B3i-n2	68.9	31.0	-	-	0.043	0.064	0.036	-	-	-	0.015	-
B5g-B3i-n3	67.1	32.5	-	0.023	0.025	0.266	0.014	-	-	-	0.017	0.033
B5h-B3i-1	99.8	0.030	-	0.018	0.019	0.030	0.018	0.079	-	-	0.030	-
B5h-B3i-2	99.2	0.055	-	0.070	-	0.184	0.028	0.392	-	0.038	0.015	-
B5h-B3i-4	99.6	0.068	-	0.083	0.128	0.037	0.015	0.106	-	-	0.036	-
B5h-B3i-5	99.3	0.076	-	0.023	0.083	0.093	0.019	0.382	-	-	0.032	-
B5h-B3i-6	99.2	0.170	-	0.120	0.341	0.050	0.018	0.055	-	-	0.024	-
B5h-B3i-n1	99.3	0.045	-	0.386	0.047	0.134	0.020	0.054	-	-	0.014	-
B5h-B3i-n2	99.4	0.096	-	0.368	-	0.138	-	0.049	-	-	0.010	-
B5h-B3i-n3	99.6	0.052	-	0.117	0.139	0.060	-	0.033	-	-	0.014	-

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
B5i-B3j-1	68.5	31.3	-	0.033	0.028	0.147	-	-	-	-	0.022	0.024
B5i-B3j-2	66.4	33.1	-	0.042	0.162	0.251	0.015	0.021	-	-	0.019	0.016
B5i-B3j-3	68.1	31.6	-	0.032	0.031	0.226	0.013	-	-	-	0.019	0.024
B5i-B3j-a	99.8	0.048	-	0.019	0.032	0.104	-	-	-	-	0.020	-
B5i-B3j-n1	99.7	0.029	-	0.186	-	0.078	0.027	-	-	-	0.012	-
B5j-B3j-1	69.4	30.3	-	0.036	0.059	0.151	-	-	-	-	0.019	-
B5j-B3j-2	66.0	33.6	-	0.030	0.043	0.312	0.012	-	-	-	0.016	0.024
B5j-B3j-3	69.5	29.3	-	0.030	0.701	0.231	0.015	0.138	-	-	0.020	0.018
B5j-B3j-4	99.5	0.106	-	0.106	0.064	0.080	0.017	0.184	-	-	0.016	-
B5j-B3j-5	99.8	0.076	-	-	0.091	0.025	-	-	-	-	0.015	-
B5j-B3j-7	99.7	0.038	-	0.094	0.053	0.038	-	0.058	-	-	0.013	-
B5j-B3j-8	99.9	0.050	-	-	0.012	0.021	-	-	-	-	0.021	-
B5j-B3j-9 D-side	99.5	0.198	-	0.095	0.083	0.072	-	0.057	-	-	0.024	-
H-side	99.5	0.265	-	0.101	0.064	0.041	-	0.056	-	-	0.016	-
B5j-B3j-10	99.6	0.110	-	0.085	0.091	0.044	-	0.067	-	-	0.016	-
B5j-B3j-11	99.5	0.052	-	0.080	0.050	0.082	0.021	0.187	-	-	0.017	-
B5j-B3j-16	99.6	0.073	-	0.096	0.053	0.062	0.047	0.046	-	-	0.015	-
B5j-B3j-n	99.7	0.080	-	0.095	0.061	0.043	-	0.049	-	-	0.019	-
B5j-B3j-n2	99.7	0.033	-	0.100	0.029	0.052	-	0.069	-	-	0.018	-
B5j-B3j-n3	99.6	0.088	-	0.076	0.052	0.063	0.017	0.153	-	-	0.016	-
B5k-B3k-1	99.7	0.018	-	0.092	0.024	0.048	-	0.064	-	-	0.016	-
B5k-B3k-5	99.8	0.111	-	-	0.061	0.013	-	-	-	-	0.015	-
B5k-B3k-7	99.5	0.206	0.306	-	0.022	0.030	-	-	-	-	0.018	-
B5k-B3k-11	72.0	27.5	-	-	0.040	0.349	-	-	-	-	0.021	0.048
B5k-B3k-m crown	65.5	33.0	-	0.013	1.13	0.311	0.013	-	-	-	0.019	0.043
filed	64.2	35.3	-	0.010	0.025	0.457	-	-	-	-	0.019	0.038
B5l-B3l-1	99.6	0.087	-	0.017	0.022	0.059	0.023	0.135	-	-	0.012	-
B5l-B3l-3	99.3	0.232	0.370	-	0.048	0.022	-	-	-	-	0.022	-
B5l-B3l-a1	99.7	0.053	-	0.017	0.143	0.033	0.026	0.014	-	-	0.010	-
B5l-B3l-a2	99.4	0.208	0.326	0.016	0.020	0.020	-	-	-	-	0.016	-
B5m-B3m-1	99.8	0.070	-	0.030	0.011	0.027	0.014	0.076	-	-	0.015	-
B5m-B3m-2	99.8	0.030	-	-	0.215	0.018	-	-	-	-	0.016	-
B5m-B3m-M1	99.3	-	-	0.415	0.078	0.131	-	0.053	-	-	0.018	-
B5m-B3m-M2	99.4	0.020	-	0.022	0.042	-	-	0.457	-	-	0.016	-
B5m-B3m-M4	99.4	-	-	0.396	0.015	0.093	-	0.070	-	-	0.014	-
B5m-B3m-n1	99.0	0.164	-	0.025	0.163	0.096	0.025	0.553	-	-	0.047	-
B5n-B3n-1	99.5	0.027	-	0.031	0.014	0.071	0.035	0.274	-	-	0.017	-
B5n-B3n-n	99.6	0.016	-	0.039	0.021	0.085	0.051	0.207	-	-	0.034	-
B5o-B3o-1	68.9	30.8	-	0.029	0.071	0.186	-	-	-	-	0.024	0.023
B5o-B3o-6	99.3	0.150	0.381	0.012	0.179	0.038	-	-	-	-	0.014	-
B5p-B3o-1	66.6	32.9	-	0.010	0.073	0.389	0.011	-	-	-	0.021	0.037
B5p-B3o-6	66.2	33.4	-	0.031	0.054	0.253	-	-	-	-	0.021	0.025
B5p-B3o-7	99.7	0.034	-	0.181	0.027	0.058	0.025	0.014	-	-	0.025	-
B5p-B3o-13	66.9	32.4	-	0.010	0.182	0.447	0.016	0.027	-	-	0.029	0.049
B5p-B3o-14	71.0	26.5	-	-	1.94	0.478	-	0.049	-	-	0.015	0.022
B5p-B3o-16	68.9	30.7	-	0.011	0.079	0.293	0.015	-	-	-	0.022	0.038
B5p-B3o-1a	64.8	34.7	-	0.048	0.064	0.385	0.012	-	-	-	0.024	0.018
B5p-B3o-M1	72.8	27.0	-	0.019	0.016	0.133	0.021	-	-	-	0.019	0.015
B5q-B3p-1	99.7	0.110	-	0.094	0.040	0.060	-	0.045	-	-	0.015	-
B5q-B3p-3	64.8	34.8	-	0.031	0.039	0.274	-	-	-	-	0.020	0.027
B5q-B3p-4	99.3	0.052	-	0.011	0.352	0.088	0.034	0.153	-	-	0.019	-
B5q-B3p-9	70.3	29.4	-	0.035	0.028	0.144	-	-	-	-	0.026	0.031
B5q-B3p-10	68.9	30.7	-	0.031	0.074	0.188	-	-	-	-	0.027	0.022
B5q-B3p-14	70.0	29.7	-	0.024	0.056	0.209	0.017	-	-	-	0.016	0.020
B5q-B3p-19	99.6	0.190	0.119	-	0.039	0.029	-	-	-	-	0.010	-
B5q-B3p-n	67.7	32.0	-	0.037	0.099	0.207	-	-	-	-	0.021	0.029
B5r-B3q-1	67.3	31.5	0.035	0.054	0.192	0.608	0.028	0.225	-	-	0.046	-
B5r-B3q-2	99.8	0.026	-	0.085	0.024	0.046	-	0.070	-	-	0.013	-
B5r-B3q-a	68.2	31.5	-	0.025	0.048	0.188	-	-	-	-	0.018	0.033
B5s-B3q-1	67.0	32.5	-	0.037	0.076	0.346	-	-	-	-	0.019	0.019
B5s-B3q-2	99.7	0.035	-	0.092	0.041	0.062	0.013	0.076	-	-	0.015	-
B5s-B3q-a	67.6	32.1	-	0.033	0.031	0.196	-	-	-	-	0.025	0.021

HA-DA, HA-DB, HB-DA and die-related HB-DB die-combinations

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
A1(C)1a-A1a-a	68.5	31.0	0.024	0.087	0.103	0.196	0.019	-	-	-	0.023	-
A1(C)1a-A1a-mex	70.9	28.3	0.028	0.103	0.182	0.480	0.017	-	-	-	0.026	-
A1(C)1a-A1a-mm	70.4	29.1	-	0.101	0.088	0.305	0.013	-	-	-	0.013	-
A1(C)1b-A3a-1	69.6	30.0	-	0.101	0.047	0.142	0.020	-	-	-	0.023	-
A1(C)1b-A3a-a	67.9	31.5	0.025	0.100	0.091	0.325	0.021	0.036	-	-	0.021	-
A1(C)1b-A3a-a2	70.1	29.3	0.026	0.085	0.115	0.290	0.026	0.029	-	-	0.029	-
B3c-A3a-1 1st	81.5	17.6	0.029	0.054	0.575	0.241	0.021	-	-	-	0.026	-
2nd	80.4	19.1	0.025	0.067	0.183	0.204	0.016	-	-	-	0.018	-
B3c-A3a-M1	68.5	31.0	-	0.090	0.105	0.252	0.012	-	-	-	0.020	-
B3c-A3a-n	68.4	31.0	-	0.095	0.102	0.277	0.018	-	-	-	0.021	-
A(C)1c-B3u-a	69.7	29.9	0.021	0.096	0.056	0.219	-	-	-	-	0.023	-
A3h-A6a-a	69.8	29.8	-	0.087	0.112	0.152	-	-	-	-	0.023	-
B4d-A6a-a	68.5	31.1	0.030	0.089	0.046	0.222	0.014	-	-	-	0.016	-
B4d-A6a-a2	71.3	28.2	-	0.094	0.122	0.188	0.019	-	-	-	0.022	-
B3d-A6a-a	64.2	35.4	-	0.085	0.073	0.224	-	-	-	-	0.020	-
A(C)1c-A6a-a	75.1	24.7	-	0.081	0.082	0.038	-	0.014	-	-	0.025	-
A(C)1c-B3v-a	70.0	29.6	-	0.105	0.084	0.139	0.025	-	-	-	0.017	-
A3w-B3v-2	74.7	25.2	-	0.010	0.099	0.043	-	-	-	-	0.024	-
A3w-B3v-a	71.5	28.2	-	0.069	0.069	0.141	0.016	-	0.008	-	0.018	-
A3w-B3v-n	71.7	28.1	-	0.055	0.099	0.103	-	-	-	-	0.018	-
A3w-B3v-n2	73.2	26.7	-	0.008	0.013	0.025	-	-	-	-	0.021	-
A1(C)1d-DA2a-a	68.7	30.8	-	0.105	0.135	0.222	0.029	0.028	-	-	0.022	-
A2b-A2a-1	69.7	29.7	0.020	0.098	0.063	0.265	0.015	-	-	-	0.024	-
A2b-A2a-2 H-side	69.2	30.1	0.025	0.091	0.257	0.296	0.024	-	-	-	0.022	-
D-side	70.0	29.3	0.035	0.089	0.202	0.360	0.015	-	-	-	0.023	-
A2a-A1b-1	69.4	29.9	0.041	0.090	0.210	0.319	0.030	-	-	-	0.018	-
A2a-A1b-n1	73.0	26.6	0.020	0.094	0.051	0.209	-	-	-	-	0.021	-
A2d-B3w-1	65.7	33.0	0.349	0.146	0.146	0.490	0.022	0.100	-	0.026	0.022	-
A2d-B3w-n	69.3	30.2	-	0.119	0.101	0.217	0.048	-	-	-	0.020	-
A2d-A4c-1	68.5	31.0	0.040	0.091	0.107	0.240	0.025	-	-	-	0.018	-
A2d-A4c-a1	69.8	29.8	-	0.103	0.032	0.178	0.041	-	-	-	0.017	-
A2d-A4c-a2	69.2	30.3	0.023	0.100	0.097	0.217	0.013	0.018	-	-	0.021	-
A3a-A4c-a1	69.2	30.3	0.029	0.094	0.072	0.193	0.017	-	-	-	0.018	-
A3a-A4c-a2	67.6	31.9	0.039	0.094	0.082	0.216	0.023	0.017	-	-	0.017	-
A3b-A5a-1	69.5	29.8	0.059	0.103	0.128	0.300	0.025	-	-	0.024	0.024	-
A3b-A5a-a1	70.2	29.3	0.024	0.107	0.047	0.251	-	-	-	-	0.024	-
A3b-A5a-a2	69.2	30.3	0.024	0.100	0.157	0.197	0.015	0.019	-	-	0.025	-
A3b-A5a-mextra	69.1	30.4	0.022	0.093	0.172	0.154	0.042	0.028	-	-	0.014	-
A3c-A6b-1	72.2	27.2	0.034	0.082	0.073	0.268	0.015	0.017	-	-	0.019	-
A3c-A6b-a	68.2	31.3	0.024	0.100	0.089	0.234	0.023	-	-	-	0.021	-
A3d-A6c-1	70.0	29.5	0.026	0.100	0.096	0.193	0.019	-	-	-	0.018	-
A3e-A7a-1	70.0	29.6	-	0.086	0.053	0.228	0.014	-	-	-	0.023	-
A3e-A5b-a	71.6	28.0	-	0.082	0.075	0.166	0.014	-	-	-	0.026	-
A3k-A5b-a	74.9	25.0	-	-	0.088	0.027	-	-	-	-	0.020	-
A3m-A6e-3	74.9	25.1	-	-	0.021	0.011	-	-	-	-	0.017	-
A3m-A6e-4	76.0	23.6	-	0.072	0.144	0.179	0.016	-	-	-	0.017	-
A3m-A6e-a	66.6	32.8	-	0.088	0.190	0.267	0.016	-	-	-	0.021	-
A3f-A8d-Höhn	71.0	28.5	0.021	0.077	0.110	0.269	0.018	-	-	-	0.023	-
A3f-A8c-2	72.3	27.4	-	0.061	0.053	0.135	-	-	-	-	0.019	-
A3f-A8c-3	69.2	30.3	-	0.103	0.071	0.252	-	-	-	-	0.027	-
A3f-A8c-a	66.8	32.7	0.031	0.086	0.090	0.294	0.014	-	-	-	0.019	-
A3f-A8c-M1	74.8	25.2	-	-	0.038	0.011	-	-	-	-	0.019	-
A3n-A8c-a	70.4	29.4	-	0.077	0.132	0.026	-	-	-	-	0.025	-
A3g-A9b-6	66.4	32.8	-	0.037	0.218	0.396	0.023	0.090	-	-	0.034	-
A3g-A9b-7	68.9	30.7	-	0.034	0.033	0.290	-	-	-	-	0.018	0.035
A3g-A9b-a	67.9	31.8	-	0.041	0.035	0.192	-	-	-	-	0.018	0.021
A3g-A9b-V0-04	66.2	33.3	-	0.024	0.138	0.310	0.042	0.018	-	-	0.024	-
A3i-A9f-1	73.8	26.2	-	0.010	0.045	0.019	-	0.011	-	-	0.019	-
A3i-A9f-a	66.6	33.0	-	0.110	0.081	0.194	-	-	-	-	0.026	-
A3j-A9e-a	68.9	30.6	0.025	0.087	0.059	0.290	0.018	-	-	-	0.022	-
A3j-A9e-a2	85.6	14.3	-	-	0.013	-	-	0.007	0.006	-	0.010	-
A3j-A9e-M	76.9	23.0	-	-	0.038	0.012	-	-	-	-	0.022	-
A4a-A8a-a1	76.3	23.6	-	-	0.065	-	-	-	-	-	0.018	-
A4a-A8a-a2	70.1	29.6	0.046	0.075	0.046	0.127	0.017	-	0.007	-	0.026	-
A4a-A8a-a3	71.0	28.7	-	0.061	0.065	0.176	-	-	-	-	0.019	-
A4a-A8a-m	67.2	32.0	-	0.094	0.122	0.504	-	0.031	-	-	0.024	-
A4a-A8a-T	72.0	27.8	-	0.058	0.056	0.068	0.012	-	-	-	0.024	-

	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
A4b-A10a-1 H-side	99.8	0.059	-	-	0.071	0.048	-	0.010	-	-	0.023	-
D-side	99.8	0.103	-	-	0.118	0.039	-	-	-	-	0.009	-
A4b-A10a-1-11	99.6	-	-	0.165	0.060	0.130	0.044	0.026	-	-	0.023	-
A4b-A10a-2	99.4	0.038	-	0.014	0.120	0.112	-	0.272	-	-	0.030	-
A4b-A10a-3	98.8	0.196	-	0.025	0.593	0.095	0.029	0.270	-	-	0.025	-
A4b-A10a-a1	99.5	0.089	-	0.028	0.056	0.071	-	0.216	-	-	0.038	-
A4b-A10a-a2	99.3	0.022	-	0.016	0.010	0.086	0.034	0.549	-	-	0.050	-
A4b-A10a-a3	99.1	-	-	0.032	-	0.252	0.058	0.465	-	-	0.069	-
A4b-A10a-a4	99.3	0.070	-	0.041	0.087	0.126	0.024	0.381	-	-	0.042	-
A4b-A10a-a5	99.9	0.035	-	0.016	0.046	0.011	-	-	-	-	0.013	-
A4b-A10a-a7 D-side	99.6	0.054	-	0.203	0.064	0.062	0.032	0.020	-	-	0.022	-
H-side	99.5	0.042	-	0.205	0.055	0.106	0.027	0.048	-	-	0.019	-
D-side	99.6	0.058	-	0.184	0.060	0.043	0.030	0.023	-	-	0.017	-
A4b-A10a- mextr	99.4	0.029	-	0.064	0.048	0.085	0.057	0.250	-	-	0.024	-
A4b-A10a-PN1	99.9	0.088	-	-	0.013	0.016	-	-	-	-	0.009	-
A4b-A10a-V0-01	99.5	0.047	-	0.055	0.089	0.079	0.016	0.186	-	-	0.027	-
A4b-A10a-V0-02	99.4	0.035	-	0.027	0.066	0.206	0.055	0.248	-	-	0.022	-
A4b-A10a-V1-15	99.6	0.033	-	0.054	0.017	0.066	0.019	0.224	-	-	0.022	-
A4c-A11a-1	65.5	34.2	-	0.031	0.091	0.207	-	-	-	-	0.018	0.019
A4c-A11a-3	67.0	32.6	-	0.041	0.081	0.257	-	-	-	-	0.026	0.034
A4c-A11a-a	80.9	18.7	-	0.020	0.018	0.383	0.025	-	-	-	0.022	-
A4c-A11a-M2	67.8	31.8	0.022	0.040	0.095	0.196	-	-	-	-	0.028	-
B4c-A11b-a	69.8	29.8	0.031	0.067	0.047	0.224	0.014	-	0.007	-	0.020	-
B4c-A11c-n	65.9	33.7	-	0.040	0.069	0.182	0.013	0.019	-	-	0.026	0.016
B4c-A11c-M1	68.4	31.3	-	0.027	0.048	0.180	-	-	-	-	0.020	0.036
B4c-B3b-1	66.0	33.6	0.021	0.045	0.074	0.243	-	0.034	-	-	0.016	0.014
B4c-B3b-2 H-side	79.7	19.7	0.025	0.035	0.131	0.323	-	0.057	-	-	0.017	-
D-side	81.8	17.2	0.031	0.029	0.239	0.612	0.014	0.087	-	-	0.015	-
B4c-B3b-3 H-side	65.2	34.5	-	0.027	0.049	0.156	-	0.014	-	-	0.024	0.036
D-side	65.4	34.1	-	0.032	0.132	0.287	-	0.019	-	-	0.024	0.019
B4c-B3b-4 H-side	69.8	29.9	-	0.033	0.055	0.199	-	-	-	-	0.022	0.030
D-side	70.0	29.7	-	0.037	0.048	0.178	0.015	-	-	-	0.023	0.021
B4c-B3b-5 H-side	70.9	28.6	-	0.060	0.110	0.300	-	-	-	-	0.018	-
D-side	70.3	29.2	0.021	0.046	0.108	0.285	0.013	-	-	-	0.017	-
B4c-B3b-6 H-side	63.7	35.6	-	0.044	0.074	0.452	0.022	0.034	-	-	0.027	0.021
D-side	62.9	35.9	-	0.041	0.590	0.470	0.014	0.043	-	-	0.031	-
B4c-B3b-7 H-side	77.3	22.2	-	0.025	0.029	0.372	-	-	-	-	0.010	0.028
D-side	81.2	18.4	-	0.024	0.057	0.245	-	0.033	-	-	0.019	0.018
B4c-B3b-a1	66.6	32.9	-	0.051	0.147	0.220	0.013	-	-	-	0.028	-
B4c-B3b-a2	68.4	31.2	-	0.061	0.076	0.169	0.023	-	-	-	0.022	-
B4c-B3b-a3	66.0	33.5	0.029	0.062	0.053	0.224	0.032	-	-	-	0.027	-
A3x-B3b-a	66.5	33.2	-	0.028	0.031	0.163	-	-	-	-	0.024	0.024
A4d-B3b-1	98.4	0.100	0.576	-	0.027	0.336	0.057	0.507	-	-	0.018	-
A4d-B3b-a1	99.4	0.183	0.286	-	0.100	0.014	-	0.009	-	-	0.008	-
A4d-B3b-a2	65.7	34.0	-	0.030	0.020	0.265	0.015	-	-	-	0.023	-
A4d-B3b-V0-12	99.6	0.028	-	0.016	0.029	0.019	0.033	0.301	-	-	0.015	-
B5y-A8b-1	68.2	31.5	-	0.036	0.036	0.223	0.014	-	-	-	0.019	0.024
B5y-A8b-2 H-side	58.6	40.0	-	0.032	0.301	0.754	0.021	0.265	-	-	0.040	-
D-side	57.5	41.7	0.025	0.030	0.155	0.381	-	0.129	-	-	0.025	-
B5y-A8b-V0-07	81.5	18.4	-	0.028	-	0.094	-	-	-	-	0.021	0.014
B5y-A8b-n zebra	65.0	34.4	-	0.022	0.056	0.217	-	0.259	-	-	0.023	-
yellow D-side	65.3	34.0	-	0.021	0.056	0.337	0.016	0.241	-	-	0.029	-
yellow	64.9	34.3	-	0.023	0.054	0.493	-	0.218	-	-	0.030	-
brown	76.0	23.8	-	0.030	0.069	0.052	-	0.093	-	-	0.020	-
brown	74.9	24.8	-	0.023	0.083	0.051	0.016	0.132	-	-	0.022	-
yellow H-side	64.5	34.7	-	0.019	0.042	0.506	0.015	0.242	-	-	0.031	-
yellow	63.5	35.3	-	0.016	0.046	0.865	0.013	0.223	-	-	0.033	-
brown	76.3	23.5	-	0.026	0.047	0.028	0.012	0.074	-	-	0.018	-
brown	73.7	26.1	-	0.027	0.053	0.046	0.017	0.108	-	-	0.015	-
first test of series on right side of upper part of the crown (D-side)												
B5y-A8b-M5	65.8	33.4	-	0.049	0.129	0.503	-	-	-	-	0.029	0.018
B5y-A8b-M6	66.3	33.2	-	0.044	0.085	0.343	-	-	-	-	0.018	0.017
B5y-A8b-M7	70.5	29.2	0.039	0.049	0.094	0.095	0.017	-	-	-	0.017	-
B5y-A8b-M8	68.1	31.5	-	0.018	0.029	0.169	0.018	0.282	-	-	0.014	-
B5z-A9c-1	70.7	29.0	-	0.034	0.068	0.134	-	0.022	-	-	0.025	0.021
B5z-A9c-2 H-side	68.0	31.4	-	0.051	0.136	0.365	0.015	-	-	-	0.011	-
D-side	64.6	34.5	-	0.045	0.161	0.732	0.016	-	-	-	0.036	-
B5z-A9c-3	94.6	0.429	3.37	pollution -	0.154	0.658	0.053	0.754	-	-	0.033	-
B5z-A9c-18-19exV	67.2	32.4	-	0.029	0.095	0.274	-	-	-	-	0.031	0.026
B5z-A9c-a	67.8	31.8	-	0.041	0.112	0.174	0.015	-	-	-	0.023	0.018

DOA 1016 T, 20 heller part H-x-b, X-ray fluorescence test results b

EM collection.

Part b-1

Eindhoven August 2017, Fischerscope XAN www.helmut-fischer.nl. Uncalibrated program testing for copper, zinc, tin, nickel, iron, lead, silver, arsenic, cobalt, antimony, bismuth and cadmium.

Minor amounts of zinc, lead and bismuth may not be part of the alloy, see calibration element in *DOA 1916 T, 20 heller part H-x-a. X-ray fluorescence test results a.*

HA2b-DA2a n-17	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	69.1	30.6	-	0.105	0.073	0.103	0.018	-	-	-	0.019	-
D Seite	67.9	31.7	-	0.090	0.079	0.132	0.018	-	-	-	0.026	-
HA2d-DA4c n-22	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	69.7	29.8	-	0.095	0.036	0.312	0.022	-	-	-	0.022	-
D Seite	71.0	28.5	0.025	0.104	0.049	0.240	0.013	-	-	-	0.027	-
HA3d-DA6c n-18	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	69.5	30.0	-	0.091	0.057	0.226	0.016	-	-	-	0.018	-
D Seite	68.1	31.5	-	0.088	0.054	0.203	0.013	-	-	-	0.023	-
HA3i-DA9f n-19	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	73.7	26.2	-	0.086	0.017	0.026	-	-	-	-	0.018	-
D Seite	72.8	27.1	-	0.079	0.015	0.024	-	0.008	-	-	0.014	-
HA4c-DA11a n-20	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	72.6	27.2	-	0.032	0.061	0.139	-	-	-	-	0.021	0.023
D Seite	71.5	28.2	-	0.031	0.068	0.121	-	-	-	-	0.018	0.027
HA4c-DA11a n-21	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	65.7	33.9	-	0.041	0.102	0.200	-	0.022	-	-	0.016	0.023
D Seite	66.5	33.1	-	0.040	0.107	0.188	0.012	0.014	-	-	0.028	0.017
HB1e-DB1x n-45	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	74.7	24.6	0.031	0.083	0.042	0.472	0.022	0.031	-	-	0.024	-
D Seite	75.1	24.2	0.030	0.080	0.028	0.473	0.025	0.041	-	-	0.022	-
HB1g-DB2c n-46	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	76.0	23.1	0.028	0.106	0.089	0.585	0.023	-	-	-	0.021	-
D Seite	76.0	23.1	0.030	0.105	0.088	0.553	0.026	-	-	0.026	0.027	-
HB1g-DB2c n-47	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	71.1	28.0	0.033	0.115	0.054	0.634	0.018	-	-	-	0.019	-
D Seite	71.6	27.6	0.026	0.126	0.048	0.605	0.016	-	-	-	0.026	-
HB1w-DB1b n-48	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	74.8	24.7	0.032	0.072	0.049	0.358	0.015	-	-	-	0.020	-
D Seite	74.7	24.7	0.054	0.076	0.057	0.367	0.018	-	-	-	0.014	-
HB2a-DB2c n-49	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	73.9	25.1	0.053	0.118	0.053	0.625	0.017	-	-	0.064	0.020	-
D Seite	72.1	26.9	0.046	0.103	0.095	0.597	0.028	-	-	0.071	0.034	-
HB2b-DB2d n-50	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	72.2	26.8	0.037	0.109	0.035	0.697	0.011	-	-	0.034	0.029	-
D Seite	71.7	27.3	-	0.106	0.168	0.588	0.020	0.024	-	0.024	0.029	-
HB2d-DB2f n-51	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	71.2	28.2	0.022	0.104	0.107	0.336	0.021	-	-	-	0.016	-
D Seite	69.2	30.3	0.021	0.098	0.109	0.283	0.016	-	-	-	0.025	-
HBd-DB2g n-52	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	69.2	30.2	0.028	0.099	0.033	0.309	0.015	-	-	-	0.023	-
D Seite	69.4	30.1	-	0.101	0.032	0.296	0.016	-	-	-	0.025	-
HB2e-DB2h n-53	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	69.9	29.5	0.027	0.101	0.048	0.336	0.020	-	-	-	0.031	-
D Seite	71.0	28.4	0.022	0.101	0.054	0.333	0.020	0.019	-	-	0.034	-
HB2f-DB2i n-54	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite	70.1	29.1	0.023	0.110	0.085	0.507	0.034	-	-	-	0.020	-
D Seite	70.8	28.3	0.029	0.102	0.100	0.526	0.022	0.043	-	-	0.022	-

HB2h-DBk	n-55	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		69.8	29.7	-	0.094	0.034	0.283	0.021	0.019	-	-	0.025	-
D Seite		69.4	30.0	0.034	0.087	0.023	0.353	0.023	0.021	-	-	0.026	-
HB2h-DB2p	n-56	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		69.3	30.1	0.034	0.103	0.052	0.380	0.016	-	-	-	0.029	-
D Seite		69.3	30.2	0.028	0.093	0.063	0.246	0.023	-	-	-	0.027	-
HB3b-DB2m	n-57	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		69.9	29.6	0.038	0.091	0.060	0.283	0.016	-	-	-	0.017	-
D Seite		70.6	28.9	0.024	0.108	0.057	0.229	0.019	-	-	-	0.019	-
HB3b-DB2m	n-58	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		69.6	30.1	0.020	0.086	0.041	0.176	-	-	-	-	0.014	-
D Seite		68.1	31.4	-	0.092	0.032	0.278	0.015	-	-	-	0.012	0.015
HB3y-DB2x	n-59	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		69.0	30.4	-	0.089	0.046	0.333	0.021	-	-	-	0.018	-
D Seite		69.5	30.0	-	0.095	0.045	0.309	0.015	-	-	-	0.021	-
HB3z-DB3z	n-60	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		71.4	28.0	-	0.103	0.095	0.298	0.018	-	-	-	0.020	-
D Seite		70.5	28.9	-	0.097	0.100	0.310	0.020	-	-	-	0.026	-
HB5a-DB3d	n-61	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		69.6	30.2	-	0.027	0.014	0.110	0.019	0.036	-	-	0.022	0.025
D Seite		64.2	35.5	-	0.030	0.021	0.172	0.023	0.042	-	-	0.024	0.026
HB5b-DB3e	n-62	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		99.9	0.056	-	-	0.047	0.016	-	0.045	-	-	0.026	-
D Seite		99.8	0.088	-	-	0.098	0.023	-	-	-	-	0.010	-
HB5b-DB3e	n-63	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		99.6	-	-	0.051	-	0.028	-	0.287	-	-	0.020	-
D Seite		99.7	0.028	-	0.050	-	0.041	-	0.220	-	-	0.024	-
HB5i-DB3j	n-64	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		99.8	0.028	-	0.011	-	0.057	0.019	0.134	-	-	0.017	-
D Seite		99.7	0.036	-	0.012	0.012	0.069	0.018	0.119	-	-	0.022	-
HB5l-DB3l	n-73	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		99.9	0.046	-	-	0.024	-	-	-	-	-	0.015	-
D Seite		99.9	0.098	-	-	0.023	-	-	0.008	-	-	0.022	-
HB5o-DB3o	n-65	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		70.4	29.4	-	0.015	0.016	0.197	-	-	-	-	0.021	0.028
D Seite		72.6	27.2	-	0.019	0.013	0.121	-	-	-	-	0.020	0.018
HB5q-DB3p	n-67	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		99.7	0.121	-	0.093	-	0.050	-	0.069	-	-	0.021	-
D Seite		99.7	0.092	-	0.083	0.021	0.041	-	0.047	-	-	0.019	-
HB5p-DB3o	n-68	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		65.4	34.1	-	0.045	0.024	0.393	-	-	-	-	0.027	0.038
D Seite		66.6	32.9	-	0.051	0.025	0.384	-	-	-	-	0.026	0.039
HB5r-DB3q	n-69	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		68.1	31.6	-	0.031	0.080	0.198	-	-	-	-	0.017	0.021
D Seite		68.9	30.8	-	0.031	0.044	0.266	-	-	-	-	0.018	0.020
HB5r-Db3q	n-70	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
?		91.0	8.80	-	0.014	0.111	0.046	0.012	-	-	-	0.020	0.014
H Seite		75.0	24.8	-	0.015	0.010	0.094	-	-	-	-	0.019	0.018
D Seite		72.0	27.6	-	0.025	0.024	0.254	-	-	-	-	0.016	0.022
HB5s-DB3q	n-71	Cu [%]	Zn [%]	Sn [%]	Ni [%]	Fe [%]	Pb [%]	Ag [%]	As [%]	Co [%]	Sb [%]	Bi [%]	Cd [%]
H Seite		69.5	29.8	-	0.063	0.087	0.293	0.029	0.175	-	-	0.033	-
D Seite		68.0	31.3	0.046	0.058	0.071	0.287	0.025	0.153	-	-	0.032	-

Part b-2, Eindhoven August 2016

HELMUT FISCHER GmbH
Industriestrasse 21
71069 Sindelfingen

Fischerscope® XRAY XDV-SDD
SPB[80]

Product: 4 / FeCoNiCuZnAsAgCdSnSbPbBi **Dir.: CPC**
Application: 25 / FeCoNiCuZnAsAgCdSnSbPbBi

01 - HA3b-DA5a F n-1

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	69.64	29.79	0.060	0.096	0.100	0.281	0.019	-0.011	0.002	0.010	0.012	0.001
D-side	69.63	29.74	0.066	0.102	0.111	0.265	0.013	0.021	0.002	0.025	0.009	0.013

02 - HA3b-DA5a F n-6

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	68.95	30.54	0.062	0.097	0.071	0.225	0.016	-0.014	0.000	0.031	0.008	0.009
D-side	66.08	33.45	0.055	0.091	0.071	0.174	0.016	0.012	0.005	0.016	0.011	0.013

03 - HA3b-DA5a F n-9

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	69.69	29.76	0.043	0.087	0.076	0.259	0.036	0.013	0.008	-0.001	0.017	0.014
D-side	69.82	29.67	0.040	0.088	0.054	0.250	0.025	0.005	0.006	0.025	0.012	0.010

04 - HA3c-DA6b F n-10

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	68.54	30.81	0.056	0.092	0.154	0.260	0.024	0.009	0.008	0.035	0.013	-0.001
D-side	67.91	31.71	0.050	0.083	0.113	0.081	0.014	0.007	0.008	0.011	0.018	0.000

05 - HA3f-DA8c F n-7

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.34	29.18	0.059	0.081	0.051	0.257	0.010	-0.001	0.007	0.009	0.008	0.007
D-side	70.66	28.89	0.060	0.085	0.081	0.211	0.012	-0.009	0.004	0.003	0.010	-0.003

06 - HA3g-DA9b F n-8

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	69.96	29.76	0.009	0.006	0.016	0.219	-0.001	-0.021	0.006	0.002	0.012	0.032
D-side	69.76	29.91	0.012	0.003	0.036	0.224	0.003	-0.004	0.000	0.006	0.011	0.039

07 - HA3h-DA6a F n-11

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.59	28.99	0.041	0.093	0.063	0.190	0.022	-0.017	0.005	0.013	0.009	0.002
D-side	69.49	30.03	0.043	0.078	0.074	0.210	0.024	0.011	0.006	0.022	0.007	0.012

08 - HA3i-DA9f F n-12

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	78.62	21.25	0.006	0.005	0.014	0.035	0.017	0.009	0.010	-0.000	0.009	0.023
D-side	78.61	21.32	0.006	0.006	0.015	0.020	-0.001	0.016	0.004	-0.011	0.008	0.009

09 - HA3j-DA9e F n-2

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	76.75	23.21	0.001	0.003	0.012	0.016	-0.004	0.002	0.004	-0.009	0.007	0.009
D-side	75.65	24.31	0.016	-0.006	0.016	0.013	-0.005	0.002	-0.002	-0.011	0.009	0.007

10 - HA3k-DA5b F n-4

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.01	29.63	0.037	0.067	0.060	0.170	0.008	0.003	0.006	0.012	0.006	-0.005
D-side	71.11	28.52	0.031	0.076	0.067	0.161	0.012	-0.002	-0.001	0.012	0.009	-0.002

11 - HA3k-DA5b F n-5

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.76	28.87	0.038	0.074	0.033	0.174	0.022	0.010	0.002	0.005	0.009	0.003
D-side	72.18	27.37	0.034	0.071	0.118	0.186	0.009	-0.002	0.004	0.011	0.010	0.008

12 - HA3k-DA5b F n-13

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	75.08	24.85	0.009	0.008	0.027	0.017	0.001	0.000	0.010	-0.009	0.011	-0.000
D-side	74.48	25.46	0.001	-0.003	0.015	0.016	-0.003	0.004	-0.002	0.010	0.008	0.009

13 - HA4a-DA8a F n-14

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	64.77	34.64	0.020	0.010	0.026	0.489	0.009	0.002	-0.002	-0.000	0.014	0.021
D-side	65.09	34.45	0.015	0.009	0.021	0.355	0.012	-0.005	0.007	-0.005	0.011	0.040

14 - HA4b-DA10a F n-15 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.66	0.024	0.028	0.017	0.063	0.064	0.027	0.095	-0.001	0.010	0.007	0.006
D-side	99.43	0.044	0.001	0.022	0.091	0.120	0.111	0.171	-0.001	-0.000	0.011	0.004

15 - HA4b-DA10a F n-16 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.30	0.201	0.333	-0.001	0.099	0.037	0.028	0.013	0.000	-0.025	0.008	0.008
D-side	99.36	0.200	0.291	0.005	0.078	0.028	0.027	0.010	0.003	-0.006	0.014	-0.007

16 - HA4c-DA11a F n-3

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	65.17	34.42	0.009	0.023	0.045	0.250	0.022	0.011	0.011	0.001	0.011	0.022
D-side	64.95	34.55	0.022	0.024	0.038	0.351	0.002	0.009	-0.000	-0.006	0.011	0.050

17 - HB4d-DA6a F n-1

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	68.87	30.60	0.025	0.081	0.081	0.280	0.028	-0.009	0.009	0.012	0.011	0.011
D-side	70.21	29.24	0.034	0.094	0.065	0.270	0.026	0.008	0.007	0.034	0.010	0.004

18 - HA(C)1c-DB3u LL F n-1

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.87	28.48	0.044	0.102	0.064	0.411	0.018	-0.017	0.005	0.007	0.006	0.009
D-side	69.94	29.49	0.041	0.086	0.102	0.310	0.008	-0.027	0.005	0.025	0.010	0.005

19 - HB1a-DB1a F n-14

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	77.14	22.18	0.050	0.074	0.093	0.398	0.021	-0.008	0.008	0.023	0.009	0.006
D-side	76.67	22.63	0.049	0.071	0.075	0.465	0.016	-0.019	-0.000	0.024	0.012	0.008

20 - HB1b-DB1b F n-5

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	68.10	31.50	-0.001	0.004	0.046	0.272	0.039	-0.007	0.013	-0.015	0.013	0.031
D-side	69.48	30.25	0.002	0.003	0.046	0.116	0.034	0.023	0.010	0.003	0.015	0.020

21 - HB1c-DB1y F n-15

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	79.05	20.25	0.054	0.116	0.046	0.389	0.020	0.013	0.002	0.038	0.009	0.012
D-side	79.44	19.94	0.043	0.116	0.039	0.358	0.017	-0.005	0.002	0.031	0.004	0.010

22 - HB1d-DB1d F n-6

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	73.08	26.10	0.062	0.071	0.186	0.460	0.018	-0.014	0.005	0.011	0.011	0.002
D-side	75.96	23.24	0.046	0.075	0.197	0.412	0.024	-0.005	0.004	0.021	0.011	0.011

23 - HB1e-DB1x F n-13

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	74.57	24.54	0.087	0.063	0.102	0.545	0.025	0.006	0.000	0.037	0.015	0.007
D-side	75.56	23.79	0.060	0.079	0.063	0.432	0.029	-0.035	0.007	-0.003	0.012	0.004

24 - HB1e-DB2a F n-7

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	75.49	23.85	0.046	0.105	0.073	0.384	0.011	-0.006	-0.002	0.032	0.016	0.005
D-side	75.50	23.82	0.039	0.092	0.053	0.441	0.026	-0.006	0.005	0.017	0.012	0.002

25 - HB1f-DB2c F n-16

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	75.67	23.36	0.044	0.100	0.048	0.689	0.024	0.006	0.004	0.027	0.012	0.014
D-side	75.06	24.15	0.022	0.105	0.113	0.508	0.022	-0.020	0.003	0.016	0.013	0.002

26 - HB2a-DB2c F n-8

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	75.66	23.74	0.045	0.115	0.043	0.321	0.014	-0.023	0.013	0.061	0.008	0.002
D-side	77.12	22.40	0.057	0.117	0.045	0.149	0.007	0.008	0.006	0.066	0.014	0.003

27 - HB2b-DB2d F n-19

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	77.17	22.02	0.058	0.150	0.035	0.471	0.016	0.022	0.003	0.043	0.007	0.011
D-side	78.21	21.09	0.046	0.136	0.062	0.386	0.029	0.002	0.006	0.012	0.008	0.009

28 - HB2c-DB2e F n-9

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	71.88	27.50	0.057	0.096	0.055	0.337	0.022	0.004	0.010	0.028	0.013	-0.002
D-side	70.83	28.69	0.051	0.092	0.048	0.251	0.015	-0.016	0.003	0.020	0.008	0.009

29 - HB2d-DB2g F n-17

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	76.05	23.27	0.058	0.077	0.072	0.417	0.013	0.011	0.006	0.007	0.007	0.007
D-side	75.97	23.30	0.074	0.065	0.058	0.448	0.017	0.022	0.008	0.023	0.005	0.011

30 - HB2e-DB2h F n-21 - 30.1 - HB2e-DB2h F n-21 (3. Messung im Stempelausbruch)

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.19	29.27	0.044	0.100	0.041	0.288	0.018	-0.002	0.005	0.036	0.005	0.003
D-side	71.57	27.95	0.054	0.125	0.045	0.195	0.029	0.008	0.002	0.021	0.010	0.001
H-side*	70.29	29.16	0.044	0.100	0.038	0.317	0.015	0.003	0.006	0.017	0.010	0.002

* measured in missing part of flan in left twig

31 - HB2e-DB2h F n-18

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	71.45	28.05	0.049	0.099	0.065	0.245	0.019	-0.018	0.006	0.018	0.008	0.002
D-side	71.45	28.04	0.056	0.103	0.061	0.233	0.011	0.002	0.003	0.026	0.011	0.002

32 - HB2g-DB2j F n-22

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	69.51	29.95	0.042	0.084	0.057	0.309	0.016	0.002	0.001	0.012	0.010	0.006
D-side	69.24	30.20	0.059	0.091	0.050	0.286	0.023	-0.004	0.005	0.026	0.014	0.006

33 - HB2h-DB2j F n-23

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	71.83	27.59	0.057	0.092	0.078	0.289	0.019	-0.007	0.011	0.029	0.009	0.002
D-side	72.09	27.32	0.058	0.097	0.070	0.307	0.021	-0.001	0.004	0.012	0.009	0.007

34 - HB2h-DB2j F n-10 NGC slabbed

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	67.07	33.42	-0.831	-0.008	0.028	1.630	-0.060	-0.485	-0.009	-1.080	0.704	-0.376
D-side	64.91	35.40	-0.994	0.043	0.039	1.533	0.023	-0.457	-0.005	-0.964	0.609	-0.133

35 - HB2i-DB2o F 23-24

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.56	28.88	0.049	0.097	0.046	0.322	0.015	-0.000	0.006	0.022	0.004	-0.005
D-side	70.79	28.64	0.048	0.090	0.096	0.273	0.024	0.005	0.011	0.025	0.003	-0.000

36 - HB2j-DB2p F n-24

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	71.27	28.03	0.053	0.103	0.057	0.404	0.029	0.004	0.011	0.020	0.013	0.010
D-side	71.78	27.73	0.049	0.131	0.083	0.173	0.023	-0.016	0.003	0.022	0.008	0.008

37 - HB3a-DB2n F n-12

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	68.83	30.54	0.048	0.088	0.046	0.398	0.024	-0.009	0.008	0.010	0.009	0.006
D-side	68.63	30.76	0.043	0.086	0.060	0.343	0.024	-0.004	0.004	0.020	0.016	0.017

38 - HB3a-DB2l F n-11 NGC slabbed

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	62.25	37.66	-0.795	0.019	0.019	2.114	0.043	-0.542	-0.019	-1.157	0.684	-0.275
D-side	63.93	36.77	-1.260	0.037	0.038	1.714	-0.082	-0.453	-0.004	-0.980	0.722	-0.432

39 - HB4a-DB3a F n-4

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	68.74	30.79	0.051	0.090	0.069	0.223	0.014	-0.005	0.005	0.009	0.012	-0.000
D-side	68.49	31.01	0.064	0.075	0.054	0.262	0.014	-0.008	-0.001	0.026	0.012	0.006

40 - HB5a-DB3c F n-3

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.00	29.52	0.026	0.048	0.083	0.249	0.024	0.032	0.001	-0.009	0.010	0.014
D-side	69.04	30.44	0.029	0.050	0.089	0.241	0.037	0.053	0.008	0.001	0.016	0.004

41 - HB5a-DB3c F n-25

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	70.71	28.93	0.014	0.050	0.037	0.163	0.021	0.056	0.013	-0.017	0.006	0.018
D-side	73.17	26.57	0.020	0.045	0.043	0.098	0.029	0.027	0.004	-0.014	0.006	0.003

42 - HB5b-DB3d F n-26 Cu slabbed

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.66	0.240	-0.512	0.035	0.033	0.930	0.116	0.033	-0.011	-0.971	0.563	-0.114
D-side	99.46	0.163	-0.488	0.045	0.041	0.844	0.186	0.095	-0.015	-0.770	0.483	-0.042

43 - HB5b-DB3e F n-27

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	68.17	31.53	0.007	0.029	0.031	0.201	0.011	-0.017	0.004	-0.013	0.012	0.039
D-side	69.05	30.64	0.023	0.023	0.025	0.203	0.003	-0.012	0.010	-0.010	0.016	0.028

44 - HB5c-DB3f F n-28 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.54	0.035	0.004	0.037	0.061	0.068	0.091	0.164	0.001	-0.002	0.007	-0.001
D-side	99.51	0.007	0.046	0.004	0.055	0.184	0.032	0.151	0.000	0.003	0.011	-0.002

45 - HB5c-DB3f F n-29

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	67.83	31.88	0.008	0.024	0.019	0.208	0.013	-0.014	-0.001	-0.008	0.004	0.031
D-side	70.66	29.04	0.006	0.026	0.017	0.185	0.012	-0.017	0.011	0.010	0.009	0.036

46 - HB5d-DB3g F n-30 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.97	0.012	0.005	-0.019	0.015	0.006	-0.006	0.004	0.000	-0.004	0.011	0.006
D-side	99.97	0.009	0.005	-0.005	0.019	0.004	-0.002	0.012	-0.003	-0.014	0.009	-0.000

47 - HB5e-DB3g F n-31 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.80	0.010	0.003	0.040	0.011	0.044	0.003	0.086	0.008	-0.016	0.008	0.002
D-side	99.74	0.005	0.008	0.030	0.003	0.064	0.017	0.120	0.002	0.004	0.013	-0.002

48 - HB5e-DB3g F n-20 Cu PCGS slabbed

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.93	0.141	-0.511	-0.002	0.003	0.905	0.074	-0.008	-0.016	-0.894	0.498	-0.120
D-side	100.2	0.145	-0.652	-0.020	0.004	0.847	0.016	-0.035	-0.009	-1.016	0.635	-0.163

49 - HB5f-DB3h F n-32 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.69	0.002	0.012	0.036	0.028	0.024	0.011	0.166	-0.003	0.010	0.017	0.004
D-side	99.66	0.030	0.012	0.034	0.016	0.020	0.006	0.196	0.001	0.002	0.011	0.006

50 - HB5g-DB3i F n-33 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.22	0.015	0.014	0.328	0.016	0.055	0.003	0.335	0.003	0.006	0.009	-0.001
D-side	99.26	0.018	0.019	0.336	0.008	0.040	0.004	0.308	-0.001	0.003	0.011	-0.002

51 - HB5g-DB3i F n-34

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	66.71	33.11	-0.006	-0.003	0.023	0.087	0.041	-0.003	0.004	0.004	0.005	0.030
D-side	67.10	32.77	-0.003	-0.005	0.021	0.071	0.028	0.009	0.004	-0.019	0.008	0.017

52 - HB5g-DB3i F n-35

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	69.70	30.07	0.002	0.002	0.034	0.092	0.040	0.004	0.008	0.012	0.014	0.017
D-side	68.95	30.87	0.000	-0.002	0.045	0.083	0.033	-0.000	-0.001	0.007	0.006	0.012

53 - HB5h-DB3i F n-42 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.73	0.022	0.000	0.014	0.028	0.021	0.036	0.112	-0.004	0.000	0.034	0.002
D-side	99.75	0.017	0.007	0.009	0.051	0.015	0.037	0.090	0.001	-0.002	0.028	-0.003

54 - HB5j-DB3j F n-36 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.94	0.004	0.012	-0.008	0.034	0.002	0.006	0.002	-0.003	-0.010	0.011	0.004
D-side	99.94	0.018	-0.000	-0.011	0.036	0.003	0.021	0.006	-0.002	-0.022	0.010	0.004

55 - HB5j-DB3j F n-37 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.70	-0.000	0.010	0.018	-0.000	0.059	0.013	0.159	-0.003	0.010	0.023	0.006
D-side	99.73	0.023	0.007	0.014	0.022	0.057	0.016	0.129	-0.002	-0.011	0.017	-0.004

56 - HB5m-DB3m F n-39 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.56	0.016	0.016	0.007	0.044	0.054	0.020	0.256	0.003	0.005	0.022	-0.004
D-side	99.51	0.012	0.012	0.017	0.028	0.067	0.024	0.298	0.004	-0.004	0.025	0.006

57 - HB5n-DB3n F n-40 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.58	0.004	0.005	0.012	0.010	0.075	0.025	0.278	0.000	-0.003	0.019	-0.007
D-side	99.50	0.013	0.012	0.020	0.018	0.068	0.033	0.310	0.004	0.006	0.017	-0.001

58 - HB5p-DB3o F n-41 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.86	0.068	0.019	-0.006	0.043	0.007	-0.001	0.001	0.002	-0.005	0.011	-0.003
D-side	99.96	0.032	0.001	-0.017	0.028	0.011	-0.002	0.003	0.000	-0.012	0.007	-0.009

59 - HB5q-DB3p F n-43 Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.24	0.005	0.011	0.452	0.023	0.167	0.005	0.080	-0.006	0.011	0.012	-0.001
D-side	99.26	0.007	-0.008	0.408	0.027	0.183	0.009	0.098	-0.001	0.009	0.006	-0.002

60 - HB5s-DB3q F n-38

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	68.33	31.33	0.014	0.030	0.039	0.217	0.002	-0.002	0.010	-0.017	0.014	0.027
D-side	68.76	30.95	0.018	0.032	0.026	0.158	0.012	-0.005	0.008	-0.004	0.005	0.043

61 - HB1g-DB2c F n-44

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	76.41	22.93	0.050	0.108	0.050	0.432	0.010	-0.028	0.003	0.020	0.009	0.001
D-side	76.18	23.04	0.045	0.102	0.093	0.529	0.011	-0.013	0.010	-0.004	0.012	0.002

Nachmessung 1 aus 2015

HA(C)4b-DB10a LL F 1-2 EM GL Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.36	0.174	0.379	0.004	0.053	0.006	0.008	0.003	-0.000	0.000	0.007	0.001
D-side	99.40	0.191	0.357	-0.005	0.051	0.011	0.006	0.000	0.001	-0.021	0.015	-0.005

Nachmessung 2 aus 2015

HA4b-DB10a F 3-4 EM GL Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.92	0.048	0.000	-0.008	0.023	0.014	0.004	0.007	0.003	-0.019	0.014	-0.002
D-side	99.94	0.015	0.013	-0.013	0.025	0.012	0.002	0.010	-0.004	-0.014	0.011	0.002

Nachmessung 3 aus 2015

HB5z-DA9c F 1-2 EM GL Cu

	Cu[%]	Zn[%]	Sn[%]	Ni[%]	Fe[%]	Pb[%]	Ag[%]	As[%]	Co[%]	Sb[%]	Bi[%]	Cd[%]
H-side	99.39	0.171	0.315	0.009	0.068	0.022	0.007	0.017	0.004	0.007	0.009	-0.013
D-side	99.39	0.179	0.310	-0.007	0.078	0.013	0.006	0.012	0.001	0.004	0.012	-0.002

Part b-3, Eindhoven August 2015

Nummer	Stempel+nummer	Gewicht	Dichte	Leitfähigkeit	Kupfer %	Zink %	Zinn %	Blei %	Sonst %	
724a										
E 724a 1-2 LL GL					97,47	0.007	0,309		Total 97,786	
	A4b-A10a-LL GL	12,09	8,943	42,2-45,4	99,4-99,4	0,18-0,21	0,32-0,32	0,02-0,02	As 0-0, Fe 0,08-0,04	
E 724a 3-4 GL					89,54	0,007	0,001		Total 89,548	
	A4b-A10a GL	13,24	8,891	38,1-36,3	99,8-99,9	0,07-0,04	0-0	0,02-0,01	As 0,00-0,01, Fe 0,06-0,05	
E 724a 5-6	A4b-A10a	11,85	8,908	27,2-26,9	99,4-99,5	0,02-00,3	0,01-0,02	0,10-0,07	As 0,34-0,29,	
E 724a 7-8	A4b-A10a GL	11,60	8,906	32,2-32,3	99,7-99,7	0,02-0,02	0-0	0,05-0,03	As 0,19-0,22	
E 724a 9-10	A4b-A10a	11,69	8,8994	30,1-33,8	99,6-99,6	0,03-0,09	0-0	0,06-0,05	As 0,23-0,18, Fe 0,08-0,08	
E 724a 11-12	A4b-A10a	10,09	8,8504	55,4-56	99,7-99,8	0,03-0,09	0-0	0,02-0,01	As 0,01-0,01, Fe 0,18-0,11	
E 724a 13-14	A4b-A10a	11,59	8,8829	28,1-27,1	99,4-99,5	0,16-0,08	0-0	0,03-0,02	As 0,32-0,34,	
E 724a 15-16 PM	A4b-A10a-PM	11,47	8,8813	19,5-19,6	99,3-99,4	0,02-0,02	0-0	0,05-0,05	As 0,61-0,44, Bi 0,05-0,04	
E 724a 17-18	A4b-A10a	10,13	8,911	38,4-37,8	99,6-99,4	0,34-0,14	0-0,001	0,07-0,32	As 0-0,03, Fe 0,02-0,12	
E 724a 19-20	A4b-A10a	11,59	8,889	24,7-25,1	99,5-99,4	0,02-0,01	0-0	0,06-0,10	As 0,33-0,41, Bi 0,04-0,05	
E 724a 21-22	A4b-A10a	11,82	8,873	25,3-23,4	88,2-99,0	0,02-0,02	0-0	0,16-0,21	As 0,48-0,54	
724b LL										
E 724b LL 1-2 GL	A1a-A1a GL	11,88	8,455	13,5-13,8	68,8-69,7	30,8-29,9	0,02-0,03	0,22-0,20	Ni 0,09-0,09, Fe 0,05-0,04	
E 724b LL 3-4	A1a-A1a	11,79	8,3825	13,6-13,0	69,9-73,5	29,6-26,0	0,02-0,01	0,25-0,19	Ni 0,09-0,10, Fe 0,11-0,11	
E 724b LL 5-6	A1a-A1a	11,35	8,4418	12,6-13,5	70,2-70,1	29,4-29,3	0,02-0,03	0,25-0,30	Ni 0,10-0,10, Fe 0,06-0,05	
E 724b LL 7-8	A1b-A3a	11,71	8,452	13,6-13,6	68,8-68,3	30,7-31,2	0,05-0,04	0,25-0,25	Ni 0,09-0,09, Fe 0,06-0,06	
E 724b LL 9-10	A1d-A2a	11,31	8,438	13,5-13,9	67,2-68,7	32,3-30,8	0,03-0,03	0,46-0,25	Ni 0,08-0,10, Fe 0,08-0,05	
E 724b LL 11-12	A1c-A6a	11,16	8,556	15,6-16,6	74,6-75,3	25,3-24,7	0-0	0,04-0,02	Ni 0-0,01, Fe 0,05-0,05	
E 724b LL 13-14	A1c-A6a	10,08	8,3659	12,7-13,1	70,8-70,9	28,7-28,7	0,00-0,01	0,27-0,18	NI 0,09-0,08. Fe 0,14-0,08	
E 724b LL 15-16	A1c-A6a	11,41	8,5489	15,7-16,3	75,5-75,8	24,4-24,0	0-0	0,02-0,02	NI 0,09-0,08. Fe 0,04-0,03	
724b L gebrochen										
E 724b 1-2	A3n-A8c	10,71	8,456	15,1-15,2	66,0-65,5	33,6-34,3	0,01-0,01	0,08-0,09	Fe 0,14-0,10	
E 724b 3-4	A3c-A6b	12,07	8,424	14,2-14,1	66,4-65,8	33,1-33,8	0-0	0,24-0,26	Fe 0,15-0,08, Ni 0,09-0,09	
E 724b 5-6 GL	A3i-A9fGL	9,76	8,570	16,1-16,3	74,5-75,7	25,4-24,2	0-0	0,03-0,01	Fe 0,13-0,10	
E 724b 7-8-9-10					75,7-72,3	24,1-27,5		0,04-0,06	Fe 0,11-0,12	
	A4a-A8a	8,83	8,4968	15,9-15,7	69,2-72,6	30,7-27,2	0-0	0,05-0,05	Fe 0,04-0,07	D-Seite färbig
E 724b 11-12	A4a-A8a	7,69	8,5501	16,7-16,3	74,0-74,4	26,0-25,6	0-0	0,02-0,01		
E 724b 13-14 GL	A2b-A2a GL	11,71	8,407	12,6-13,4	69,3-69,6	30,4-30,1	0,01-0	0,17-0,16	Fe 0,07-0,07, Ni 0,09-0,10	
E 724b 15-16	A3a-A4c	11,19	8,3852	12,8-13,4	70,8-69,5	28,5-29,7	0,02-0,03	0,40-0,30	Fe 0,10-0,21, Ni 0,10-0,19	
E 724b 17-18	A2b-A2a	11,15	8,4421	12,8-13,3	68,8-68,0	30,6-31,4	0,03-0,03	0,21-0,29	Fe 0,18-0,12, Ni 0,09-0,10	
E 724b 19-20 GL	A3e-A7a GL	11,53	8,414	12,8-13,3	69,4-68,2	30,2-31,3	0,01-0,03	0,16-0,24	Fe 0,06-0,06, Ni 0,08-0,09	
E 724b 21-22 GL	A3m-A6e GL	11,74	8,449	14,7-14,8	76,3-75,1	23,5-24,7	0-0	0,12-0,14	Ni 0,08-0,09	
E 724b 23-24 GL	A4c-A11a GL	11,27	8,453	15,1-15,2	69,4-69,0	30,2-30,8	0-0	0,25-0,16	Fe 0,05-0,05	
E 724b 25-26	A4c-A11a	11,23	8,430	14,7-14,8	68,7-69,7	31,0-30,0	0-0	0,16-0,23		
E 724b 27-28 M	A2a-A1b M	11,15	8,4188	13,6-13,6	68,2-68,0	31,1-31,4	0,03-0,04	0,38-0,39	NI 0,08-0,09, Fe 0,09-0,07	

Nummer	Stempel+nummer	Gewicht	Dichte	Leitfähigkeit	Kupfer %	Zink %	Zinn %	Blei %	Sonst %	
725a										
E 725a 1-2 GL					93,58	0,008	0,27		Si 3,48	
	B5z-A9c GL	12,71	8,939	42,6-43,4	99,4-99,3	0,20-0,24	0,28-0,28	0.03-0.04	Fe 0,08-0,09	
E 725a 3-4	B5z-A9c	12,96	8,9106	44,1-44,1	99,5-99,4	0,14-0,15	0,28-0,30	0,03-0,02	Fe 0,08-0,08	
E 725a 6-7	B5z-A9c	11,61	8,9153	42,8-43,9	99,5-99,5	0,14-0,17	0,29-0,28	0,02-0,01	Fe 0,06-0,04	
725b rot										
E 725(b) 1-2	B5z-A9c	10,95	8,1350	14,4-14,5	84,7-89,0	15,0-10,6	0-0	0,33-0,35		
725b										
E 725b 1-2 GL					62,52	34,81	0,003			
	B5z-A9c GL	11,67	8,436	14,7-14,8	67,4-66,6	31,8-32,7	0-0	0,59-0,47	Fe 0,12-0,13, Ni 0,05-0,04	
E 725b 3-4	B5z-A9c	11,23	8,441	15,0-15,1	68,9-68,6	30,8-31,1	0-0	0,16-0,21		
E 725b 5-6-7-8					70	29,7	0	0,073	Fe 0,07, Ni 0,02, As 0,10	H-Seite rot
					63,4	36,1	0	0,28	Fe 0,08, Ni 0,03, As 0,13	gelb
					62,7	36,8	0	0,22	Fe 0,07, Ni 0,02, As 0,16	D-Seite rot
	B5y-A8b Zebra	11,30	8,381	15,9-15,9	73,6	26,2	0	0,09	Fe 0,04, Ni 0,02, As 0,07	gelb
E 725b 9-10 GL	B3c-A3a GL	11,66	8,438	13,0-13,4	70,0-69,0	29,5-30,5	0,03-0,03	0,26-0,25	Fe 0,07-0,06, Ni 0,10-0,09	
E 725b 11-12	B3c-A3a	11,07	8,4564	13,4-14,2	68,8-69,1	30,6-30,4	0,03-0,005	0,29-0,30	Fe 0,14-0,07, Ni 0,10-0,09	
E 725b 13-14 GL	B3d-A6a GL	11,26	8,458	14,3-14,4	64,8-63,7	34,7-35,9	0-0	0,22-0,23	Fe 0,07-0,11, Ni 0,08-0,08	
E 725b 15-16	B5y-A8b	11,38	8,448	15,3-15,4	68,2-70,6	31,5-29,1	0-0	0,21-0,20		
E 725b 17-18	B5y-A8b	11,53	8,4323	14,8-14,9	68,9-68,2	30,9-31,6	0-0	0,16-0,16		
E 725b 19-20 GL	B4c-A11c GL	11,31	8,419	15,1-15,0	71,2-68,3	28,6-31,3	0-0	0,11-0,24		
E 725b 21-22 M	B3c-A3a M	11,68	8,4185	13,3-13,7	68,6-69,5	30,9-30,0	0,02-0,03	0,24-0,23	Fe 0,08-0,09, Ni 0,09-0,09	
E 725b 23-24	B3d-A6a	11,58	8,4391	14,2-14,2	64,6-84,2	35,0-35,3	0-0	0,23-0,25	Fe 0,06-0,09, Ni 0,09-0,09	
726a										
E 726a 1-2	A4d-B3b	11,19	8,9154	42,5-41,7	99,4-99,4	0,16-0,13	0,29-0,28	0,02-0,01	Fe 0,12-0,12	
E 726a 3-4	A4d-B3b	12,65	8,9086	42,7-42,6	99,1-99,1	0,22-0,22	0,29-0,29	0,03-0,18	Fe 0,37-0,26	
E 726a 5-6 GL					95,7-97,95	0,007-0,00	0,351-0,276		Si 0,23-2,25, Ni 0,01	
	A4d-B3b-Gl	11,49	8,930	43,3-42,3	99,4-99,5	0,16-0,16	0,30-0,28	0,02-0,03	Fe 0,07-0,07	
E 726a 7-8	A4d-B3b	11,83	8,926	42,3-42,6	99.4-99,5	0,14-0,16	0,27-0,29	0,03-0,02	Fe 0,12-0,07	
E 726a 9-10	A4d-B3b	12,25	8,895	23,9-24,5	99.2-99,2	0,01-0,02	0-0	0,12-0,17	**As 0,47-0,50**, Fe 0,01-0,00	
726a Teil 2										
E 726a2 1-2	A4d-B3b	11,77	8,906	43,6-41,7	99,4-99,5	0,16-0,15	0,31-0,29	0,02-0,02	Fe 0,06-0,06	
E 726a2 3-4	A4d-B3b	10,79	8,925	44,7-42,7	99,5-99,5	0,15-0,13	0,22-0,28	0,03-0,03	Fe 0,13-0,10	
726b LL										
E 726b LL 1-2	A2d-B3w	11,32	8,384	12,9-13,1	69,2-69,6	30,2-29,9	0,02-0,02	0,30-0,25	Fe 0,07-0,09, Ni 0,10-0,10	
E 726b LL 3-4 GL	A1c-B3v GL	11,41	8,573	16,1-16,4	77,2-76,7	22,8-23,3	0-0	0,01-0,01		
E 726b LL 5-6	A1c-B3v	11,59	8,5341	16,3-16,3	74,5-73,6	25,4-26,3	0-0	0,04-0,02	Ni 0,08-0,08	
E 726b LL 7-8	A1c-B3v	11,65	8,5132	16,2-16,6	84,2-75,9	15,8-24,1	0-0	0,01-0,01		
E 726b LL 9-10	A1c-B3v	11,25	8,436	13,4-13,5	70,1-70,7	29,4-28,9	0,02-0,03	0,22-0,18	Fe 0,06-0,06, Ni 0,10-0,11	
E 726b LL 11-12	A1c-B3v	10,79	8,467	14,0-14,0	67.9-72,1	31,6-27,4	0,02-0,02	0,22-0,29	Fe 0,08-0,06, Ni 0,08-0,07	
726b										
E 726b 1-2	A4d-B3b	11,08	8,451	14,4-14,2	67,9-67,9	31,7-31,7	0-0	0,25-0,31	Fe 0,09-0,06	
E 726b 3-4 GL	A4d-B3b GL	11,07	8,441	14,7-15,1	67,0-68,5	32,6-31,2	0,00-0	0,19-0,18	Fe 0,15-0,06	
E 726b 5-6 GL	A3w-B3v GL	11,20	8,573	15,7-15,1	75,6-75,7	24,3-24,1	0-0	0,02-0,04	Fe 0,06-0,03, Ni 0,06-0,06	
E 726b 7-8	A4d-B3b	11,22	8,4205	14,7-15,2	67,7-64,7	32,0-34,9	0,00-0	0,18-0,28		
E 726b 9-10+13					74,7-74,9	25,2-25,0	0-0	0,02-0,01		
	A3w-B3v	11,60	8,5429	15,9-16,6	95,6	4,3	0	0,01		red spot
E 726b 11-12	A4d-B3b	10,44	8,443	14,4-14,7	68,4-67,9	31,2-31,7	0,00-0	0,26-0,32		

Nummer	Stempel+nummer	Gewicht	Dichte	Leitfähigkeit	Kupfer %	Zink %	Zinn %	Blei %	Sonst %
727a									
E 727a 1-2	B5a-B3d	12,45	8,914	34,6-34,1	100-99,9	0,03-0,03	0-0	0,01-0,01	
E 727a 3-4	B5a-B3c	11,45	8,930	33,4-34,4	99,8-99,8	0,03-0,02	0-0	0,05-0,02	Fe 0,11-0,10
E 727a 5-6	B5f-B3h	12,63	8,9677	33,4-35,5	99,8-99,8	0,15-0,16	0-0	0,02-0,02	
E 727a 7-8	B5d-B3g	11,70	8,8753	50,2-50,4	99,6-99,6	0,02-0,03	0-0	0,18-0,11	Ni 0,18-0,19
E 727a 9-10	B5k-B3k	12,49	8,919	43,8-44,8	99,3-99,3	0,39-0,33	0,23-0,28	0,02-0,03	
E 727a 11-12 GL	B5n-B3n-GL	12,43	8,869	29,6-30,0	99,6-99,7	0,02-0,03	0-0	0,02-0,01	**As 0,27-0,20**
E 727a 13-14	B5e-B3g	11,75	8,876	40,2-36,3	99,1-99,6	0,20-0,05	0-0	0,12-0,07	**As 0,35-0,17**, Fe 0,12-0,03, Ni 0,07-0,01
E 727a 15-16	B5d-B3g	12,77	8,8468	50,7-50,5	99,6-99,7	0,02-0,01	0-0	0,13-0,11	Ni 0,19-0,16
727b									
E 727b 1-2	B1z-B1z	12,60	8,416	10,5-9,9	76,7-76,2	22,4-22,7	0,04-0,04	0,36-0,55	Fe 0,27-0,32, Ni 0,10-0,09
E 727b 3-4 (**727a**)				**10,6-9,4**	99,1-99,3	0,03-0,04	0-0	0,02-0,04	**As 0,36-0,56**, Fe 0,06-0,18, Ni 0,07-0,07
	B5l-B3l	**13,05**	8,851	**Fr 11**	98,5-98,7	0,08-0,11	0-0	0,04-0,07	**As 0,85-1,12**, Fe 0,10-0,18, Ni 0,06-0,08
E 727b 5-6	B4c-B3b	11,34	8,4231	15,5-15,2	66,9-67,1	33,0-32,6	0,00-0,00	0,16-0,13	
E 727b 7-8 M	B2j-B2p	11,61	8,4033	13,3-13,7	70,3-69,4	29,0-30,0	0,03-0,02	0,35-0,41	Fe 0,07-0,06, Ni 0,11-0,10
E 727b 9-10	B2d-B2f	10,54	8,416	12,7-13,4	77,5-79,2	21,7-20,1	0,08-0,05	0,47-0,50	Ni 0,10-0,10
E 727b 11-12	B2g-B2i	11,67	8,336	12,0-12,2	70,8-69,0	28,5-30,4	0,02-0,04	0,38-0,22	Fe 0,09-0,10, Ni 0,11-0,09
E 727b 13-14 M	B2i?-B2o-M	11,03	8,4456	13,7-13,7	69,9-68,8	29,4-30,6	0,01-0,03	0,38-0,30	Fe 0,08-0,13, Ni 0,10-0,09
E 727b 15-16	B2b-B2d	11,08	8,1947	12,4-12,3	70,6-71,0	28,8-28,6	0,02-0,02	0,23-0,25	Fe 0,22-0,05, Ni 0,10-0,10
E 727b 17-18	B2j-B2p	11,95	8,3817	13,4-12,8	71,4-70,9	28,2-28,6	0,01-0,04	0,17-0,29	Fe 0,08-0,10, Ni 0,10-0,10
E 727b 19-20 GL	B2b-B2d-GL	11,17	8,358	12,4-12,5	70,9-72,1	28,4-27,2	0,04-0,03	0,35-0,37	Fe 0,07-0,05, Ni 0,10-0,09
E 727b 21-22 GL	B2d-B2f-GL	11,47	8,519	14,0-14,3	69,9-72,0	29,6-27,5	0,06-0,04	0,23-0,19	Fe 0,04-0,07, Ni 0,10-0,11