

# INDEX

ALUMINUM 2, 3, 4  
ALUMINUM IN XRF DISCS 15  
AUSMON 25, 26

BARIUM IN XRF DISCS 15  
BAUXITE 25  
BORON IN XRF DISCS 15  
BRASS 5  
BRONZE 5

CALCIUM IN XRF DISCS 16  
CARBON STEEL 11, 12  
CARBONATE IN XRF DISC 16  
CAST IRON 9, 10  
CEMENT 25  
CERAMIC 4  
COBALT 5  
COPPER 5

ELEMENTS IN XRF DISCS 17

FLUORITE IN XRF DISCS 16

GEOLOGICAL 24  
GLASS XRF DISCS AND PLATES 17

HIGH ALLOY STEEL 14

ILMENITE 25  
IRON 9, 10  
IRON ORE 25

JASPEROID 24

LAYER 7  
LEAD 6  
LEAD IN XRF DISCS 17  
LOW ALLOY STEEL 11, 12, 13

MAGNESIUM 6  
MANGANESE ORE 25  
MINERAL SANDS 25  
MONAZITE 25  
MULTI-ELEMENT XRF DISCS 19

NEODYMIUM IN XRF DISCS 17  
NICKEL 7  
NICKEL ORE 25

ORE 24

PHOSPHORUS IN XRF DISCS 17  
POWDER 24

RARE EARTHS 25  
RoHS 7  
RUTILE 25

SETS 10, 13  
SILICA IN XRF DISCS 18, 25  
SOIL 24  
STAINLESS STEEL 13, 14  
SULFIDES 25

TIN 7  
TITANIUM 8

URANIUM IN XRF DISCS 18

WEEE 7

XENOTIME 25  
XRF DISCS 7, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26

ZINC 8  
ZINC IN XRF DISCS 18  
ZIRCONIUM 8  
ZIRCONIUM IN XRF DISCS 18

## PURITY ALUMINUM SETTING-UP SAMPLES

typical analysis listed in mass % except \* which is mg/kg

Number	Si	Ag	As	B*	Ba*	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe
AL RC11/06	0.025	0.010	0.003	.	40	0.002	0.010	0.0023	0.0050	0.002	0.011	0.010	0.015	0.048
PY 60548	<0.01	<0.001	.	.	.	<0.001	<0.001	<0.001	<0.001	.	<0.001	<0.001	<0.01	<0.01
R A 10	<0.0020	<0.0005	.	<5	.	<0.0001	<0.0020	<0.0005	<0.0010	.	<0.0010	<0.0010	<0.0010	<0.0010
AL RC10/02	<0.002	<0.0002	.	<2	<1	<0.0001	<0.0002	<0.0001	<0.0002	.	<0.0002	<0.0002	<0.0002	<0.001
IARM 220G	0.0014	<0.00001	.	5.7	2.2	<0.00001	<0.00001	0.000010	<0.00001	.	<0.00001	0.000030	0.0027	0.0021
KUT Al 4N	0.0013	.	.	0.6	.	0.00001	0.00001	0.00002	0.0001	.	.	0.00006	0.0025	0.0018
V E10	<0.0010	<0.00005	.	<2	<3	<0.00002	<0.0003	<0.0001	<0.0001	.	<0.0001	<0.0001	<0.0004	<0.0005
V E1/0	<0.0005	<0.00001	.	<2	<1	<0.00001	<0.00005	<0.0001	<0.00002	.	<0.00001	<0.00005	<0.0004	<0.0003
V E0	<0.00008	<0.00001	.	<0.4	<0.1	<0.00001	<0.00002	<0.00004	<0.00002	.	<0.00001	<0.00003	<0.00004	<0.00005
AA SQ-10	.	.	.	.	.	.	.	.	.	.	.	.	.	.
C Fe 0	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Ga	Hg	In	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sc
AL RC11/06	<0.001	0.005	0.010	0.010	<0.0001	0.018	0.016	0.067	0.002	0.010	0.0026	0.015	0.013	0.010
PY 60548	<0.0010	.	.	.	<0.001	<0.001	<0.001	.	<0.001	<0.001	.	<0.001	<0.001	.
R A 10	0.00014	.	.	.	<0.0010	<0.0010	<0.0010	.	<0.0001	<0.0020	.	<0.0010	<0.0020	.
AL RC10/02	<0.0002	.	<0.0002	.	<0.0001	<0.0003	<0.0002	.	<0.0001	0.0002	<0.0005	<0.0003	<0.0003	.
IARM 220G	0.00005	.	<0.00001	.	<0.00001	0.00087	0.00023	.	0.000030	0.000060	.	0.000015	0.000010	.
KUT Al 4N	<0.0001	.	.	.	0.00002	0.0015	0.0002	.	0.0001	0.00004	.	0.0001	0.0002	.
V E10	<0.00002	.	<0.00002	.	<0.00002	<0.0003	<0.0001	.	<0.0001	<0.0001	.	<0.0002	<0.0003	.
V E1	<0.00001	.	<0.00001	.	<0.00001	<0.0003	<0.00005	.	<0.0001	<0.00005	.	<0.00005	<0.0001	.
V E0	.	.	<0.00001	.	<0.00001	<0.00006	<0.00002	.	<0.00002	<0.00001	.	<0.00001	<0.00002	.
AA SQ-10	.	.	.	.	.	.	.	.	.	.	.	.	.	.
C Al 0	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Sn	Sr	Ti	V	W	Zn	Zr	Units
AL RC11/06	0.015	0.006	0.016	0.018	0.0057	0.019	0.017	60 mm Ø x 25 mm
PY 60548	<0.001	<0.001	<0.001	<0.001	.	<0.001	<0.001	60 mm Ø x 40 mm
R A 10	<0.0010	<0.0010	<0.0010	<0.0010	.	<0.0010	<0.0010	50 mm Ø x 50 mm
AL RC10/02	<0.0002	<0.0001	0.0004	<0.0002	.	<0.0005	<0.0002	60 mm Ø x 25 mm
IARM 220G	<0.00001	<0.00001	<0.0002	0.00052	.	0.0003	0.000088	57 mm Ø x 38 mm
KUT Al 4N	0.00005	0.0001	0.00006	0.0001	.	0.0003	0.00005	50 mm Ø x 35 mm
V E10	<0.0003	<0.00005	<0.0001	<0.0002	.	<0.0003	<0.0001	60 mm Ø x 40 mm
V E1	<0.00002	<0.00005	<0.0001	<0.00003	.	<0.0002	<0.00005	60 mm Ø x 40 mm
V E0	<0.00002	<0.00002	<0.00005	<0.00003	.	<0.00005	<0.00003	60 mm Ø x 40 mm
AA SQ-10	.	.	.	.	.	.	.	64 mm Ø x 37 mm
C Al 0	.	.	.	.	.	.	.	50 mm Ø x 30-50 mm

Al: 99.96

many more elements

1199 Alloy, no analysis issued

no analysis issued

## POT METAL SETTING-UP SAMPLE typical analysis

Number	Base Metal	B	Li	Na	Units
AA SQ-18	P0506	0.02	0.02	0.02	64 mm Ø x 25 mm

## SPECIALTY SETTING-UP SAMPLES typical analysis

Number	As	Bi	Cu	Fe	Mg	P	Pb	Sb	Sc	Si	Ti	Units
PY 10914	.	0.7	0.3	0.2	1.2	.	0.8	.	.	0.9	0.05	60 mm Ø x 41 mm
AA SQ-19	0.03	.	.	.	.	0.014	.	0.02	0.20	.	.	64 mm Ø x 37 mm

## ALUMINUM SETTING-UP SAMPLES, chart 1 of 2

typical analysis

Number	Si	Cu	Fe	Mg	Mn	Ni	Zn	Be	Ca	Cr	Na	Pb	Sb	Sn	Sr	Ti
C Al 4	18	0.01	5	<0.001	0.03	1.9	<0.01	.	0.009	.	.	<0.01	.	.	.	.
PY 9601	17.3	1.21	0.43	1.09	0.12	1.1	0.07	.	0.0026	.	0.0003	0.006	0.02	0.004	0.0058	0.08
R A 18	16.5	8.4	0.4	0.15	0.3	2.9	0.3	.	0.02	<0.005	0.004	0.3	0.09	0.2	0.05	<0.002
R A 16	15	4	0.2	0.2	<0.001	2.7	0.3	<0.001	0.002	0.003	0.003	0.4	>0.2	0.1	0.03	<0.001
KUT ASC-1	14.0	6.0	1.6	1.2	0.4	0.6	0.5	0.003	0.02	0.2	.	0.1	0.02	0.1	0.03	0.5
R A 20	13.5	5.2	0.7	1	0.25	2.7	0.17	<0.0001	0.005	0.09	0.008	0.1	0.008	0.06	0.004	0.05
AL RC40/02	13.2	1.03	1.19	1.09	.	.	6.03	.	0.0131	.	.	0.10	.	0.21	0.14	0.20
PY 9327	12.8	0.01	0.15	0.003	0.005	0.003	0.01	.	<0.0007	.	<0.0004	0.001	<0.0003	0.0003	.	0.006
PY 9326	12.8	0.01	0.15	0.003	0.005	0.003	0.01	.	<0.0007	.	<0.0004	0.001	<0.0003	0.0003	.	0.006
AL RC40/03	12.5	1.03	1.23	1.05	.	.	6.14	.	0.0195	.	.	0.11	.	0.21	0.14	0.20
AA SQ-15	12.0	0.5	0.7	1.2	0.05	2.5	.	.	.	0.05	.	.	.	.	0.02	0.1
PY 9415	11.7	1.24	0.53	1	0.12	0.86	0.07	.	0.0006	.	0.00004	0.01	0.01	0.01	0.01	0.02
PY 2150	10.6	0.6	.	0.9	0.4	0.5	1.2	.	.	0.06	.	0.8	.	0.3	0.1	0.3
V E3	10.0	4.0	.	.	.	0.9	.	.	0.009	.	.	0.25	0.3	.	.	.
164X ALSUS 8	9.5	0.75	0.25	0.9	0.45	0.12	0.25	0.015	<0.001	0.06	.	0.001	0.03	0.13	0.07	0.02
C Al 5	8.8	1.4	0.7	1.9	0.08	1.3	0.24	.	.	0.08	.	0.07	.	0.07	.	0.09
PY 9313	8.8	0.003	0.1	0.32	0.005	<0.002	0.01	.	0.0009	.	<0.0004	<0.0004	<0.003	0.0004	.	0.12
PY 2003	8.6	3	0.71	0.22	0.23	0.05	0.13	.	0.001	.	0.0003	0.07	.	0.012	.	0.08
PY 2001	8.5	2.9	0.7	0.22	0.23	0.05	0.13	.	0.002	.	.	0.07	.	0.012	.	0.08
PY 9520	6.6	0.012	0.1	0.34	0.005	0.003	0.017	.	0.0044	.	0.0005	<0.0001	<0.008	0.0004	0.052	0.12
PY 9517	6.4	2.8	0.48	0.3	0.25	0.02	0.2	.	0.009	.	0.001	0.02	0.01	0.01	0.014	0.13
AL RC41/01	5.9	5.1	0.4	0.09	0.5	0.02	1.3	.	0.004	0.03	.	0.02	.	0.02	0.02	0.03
PY 9809	5.5	.	0.5	.	.	1.9	.	.	.	.	.	.	.	.	.	.
PY 20001	5.4	3.1	0.48	0.23	0.22	0.03	0.14	.	0.0033	.	0.00004	0.01	.	0.01	.	0.07
58A AC19215b	5.05	0.049	1.0	0.08	.	.	.	.	.	.	.	.	.	.	.	.
AA SQ-16	4.0	10.0	1.0	0.3	0.2	0.2	0.2	.	.	.	.	.	.	.	.	.
58A AC19214b	3.96	0.096	2.07	0.041	.	.	.	.	.	.	.	.	.	.	.	.
58A AC19213b	2.88	0.21	3.15	0.017	.	.	.	.	.	.	.	.	.	.	.	.
V P-2	2.2	0.5	1.8	2.8	1.5	0.03	0.54	0.002	0.018	0.34	0.002	0.06	.	0.03	<0.0002	0.24
58A AC19212b	1.92	0.41	4.14	0.011	.	.	.	.	.	.	.	.	.	.	.	.
AL RC60/02	1.34	0.29	0.49	0.92	1.1	0.10	0.10	.	.	0.20	.	.	.	.	.	0.21
R A 19	1.3	0.5	1.2	8.3	1.1	0.5	7.8	0.005	0.003	0.2	<0.001	<0.01	.	.	<0.01	0.2
C Al 2	1.205	0.0614	0.439	0.809	0.662	.	.	.	.	0.0036	.	.	.	.	.	0.052
KUT AMS-1	1.2	0.6	0.8	1.3	0.5	0.02	0.4	0.002	0.01	0.2	0.005	0.05	0.02	0.03	.	0.2
PY 2006	1.2	0.07	0.11	6.2	0.07	0.06	7.8	0.002	0.03	0.02	0.02	0.04	.	0.06	.	0.06
AA SQ-12	1.1	4.8	0.6	0.15	1.1	0.25	0.20	0.005	.	.	.	0.06	.	0.06	.	.
PY 2004	1.1	0.08	0.11	6.1	0.07	0.07	7.7	0.01	0.03	.	0.03	0.04	.	0.06	.	0.06
58A AC19211b	0.97	0.82	(4.94)	.	.	.	.	.	.	.	.	.	.	.	.	.
164X ALSUS 7	0.9	4	0.55	0.15	0.06	1.1	0.12	0.1	<0.001	0.01	.	0.11	0.12	0.01	0.003	0.3
V E2	0.9	0.20	0.9	0.20	0.20	0.20	0.10	0.004	0.008	0.05	0.008	0.10	.	0.20	0.11	0.20

Number	Si	Cu	Fe	Mg	Mn	Ni	Zn	Be	Ca	Cr	Na	Pb	Sb	Sn	Sr	Ti
C Al 4	.	.	0.0008	.	.	.	.	.	.	.	.	.	.	75	50x30-50	.
PY 9601	.	.	.	.	.	.	.	.	.	.	0.0086	.	.	.	50 x 50	.
R A 18	<0.001	<0.005	0.006	<0.005	0.001	0.003	<0.005	<0.001	<0.001	.	0.01	<0.005	<0.005	70	50 x 50	.
R A 16	<0.001	.	0.01	<0.001	0.01	<0.001	0.01	<0.001	<0.001	.	0.005	<0.001	0.002	Rem	50 x 45	last
KUT ASC-1	.	.	.	0.1	0.05	.	0.04	.	.	.	.	0.02	0.01	.	45 x 35	.
R A 20	.	.	0.0007	.	.	0.017	.	.	.	0.001	0.02	0.1	0.09	Rem	50 x 50	Sc: 0.20
AL RC40/02	.	.	.	.	.	.	.	.	.	.	.	.	.	.	60 x 25	.
PY 9327	.	.	.	.	.	.	.	.	.	.	0.0017	.	.	.	50 x 50	.
PY 9326	.	.	.	.	.	.	.	.	.	.	0.0017	.	.	.	50 x 50	.
AL RC40/03	.	.	.	.	.	.	.	.	.	.	.	.	.	.	60 x 25	Sc: 0.20
AA SQ-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	64 x 37	.
PY 9415	.	.	.	.	.	.	.	.	.	.	0.0058	.	.	.	50 x 50	.
PY 2150	0.9	.	.	0.02	.	0.04	.	0.06	.	0.007	0.04	0.02	.	.	60 x 40	.
V E3	.	.	0.01	.	.	.	.	.	0.007	.	.	.	.	.	60 x 40	.
164X ALSUS 8	0.09	.	.	.	.	0.025	.	.	.	.	.	.	0.025	.	50 x 25	.
C Al 5	.	.	0.0010	.	.	.	.	.	.	.	0.0050	.	.	85.3	50x30-50	.
PY 9313	.	.	.	.	.	.	.	.	.	.	0.0011	.	.	.	50 x 50	.
PY 2003	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 x 50	.
PY 2001	.	.	.	.	.	.	.	.	.	.	.	.	.	.	50 x 50	.
PY 9520	.	.	.	.	.	.	.	.	.	.	0.0009	.	.	.	50 x 50	.
PY 9517	.	.	.	.	.	.	.	.	.	.	0.002	.	.	.	50 x 50	.
AL RC41/01	.	.	.	.	0.001	.	0.01	.	.	.	.	0.008	0.005	.	60 x 25	.
PY 9809	.	.	.	.	.	.	.	.	.	.	0.01	0.12	0.14	.	60 x 40	.
PY 20001	.	.	.	.	.	.	.	.	.	.	0.001	.	.	.	50 x 50	.
58A AC19215b	.	.	.	.	.	.	0.083	.	.	.	.	.	.	.	45 x 35	.
AA SQ-16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	64 x 37	.
58A AC19214b	.	.	.	.	.	.	0.044	.	.	.	.	.	.	.	45 x 35	.
58A AC19213b	.	.	.	.	.	.	0.024	.	.	.	.	.	.	.	45 x 35	.
V P-2	0.0006	.	0.002	0.022	0.004	0.007	0.037	.	0.007	.	.	0.017	0.09	.	52 x 40	.
58A AC19212b	.	.	.	.	.	.	0.011	.	.	.	.	.	.	.	45 x 35	.
AL RC60/02	.	.	.	0.10	.	.	0.011	.	.	0.0045	.	0.11	.	.	60 x 25	.
R A 19	0.2	.	0.002	0.2	0.02	0.3	0.08	0.1	0.01	.	<0.01	0.02	0.2	.	50 x 50	.
C Al 2	.	.	.	.	.	.	0.010	.	.	.	.	.	.	.	50x30-50	.
KUT AMS-1	.	.	0.004	0.01	0.03	.	0.01	.	0.01	.	.	.	0.03	.	45 x 35	.
PY 2006	.	.	.	.	0.01	.	0.03	.	0.01	.	.	.	0.02	.	50 x 50	.
AA SQ-12	0.05	.	.	0.06	0.20	0.01	0.03	.	.	.	.	0.10	0.15	.	64 x 37	Hg: 0.01
PY 2004	.	.	.	0.02	0.02	.	0.03	.	0.01	.	.	.	0.02	.	60 x 40	.
58A AC19211b	.	.	.	.	.	.	0.0073	.	.	.	.	.	.	.	45 x 35	.
164X ALSUS 7	.	.	.	.	.	0.2	.	.	.	.	.	.	0.18	.	50 x 25	.
V E2	0.22	.	.	.	.	0.04	0.06	.	.	.	.	0.11	.	.	60 x 40	.

Number	Ag	As	B	Bi	Cd	Co	Ga	In	Li	Mo	P	V	Zr	Al	Ø X H mm
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## ALUMINUM SETTING-UP SAMPLES, chart 2 of 2

typical analysis

Number	Si	Cu	Fe	Mg	Mn	Ni	Zn	Be	Ca	Cr	Na	Pb	Sb	Sn	Sr	Ti
PY 9632	0.8	4.1	0.32	0.48	0.71	.	0.033	.	.	0.0181	.	0.0096	.	.	.	0.022
AA SQ-17	0.7	0.35	0.4	1.6	0.12	0.12	0.12	0.005	.	0.25	.	0.1	.	0.1	.	0.08
BS 6061	0.55	0.29	0.19	0.81	0.010	0.004	0.04	.	.	0.050	.	0.010	.	<0.001	.	0.024
AA SQ-13	0.5	0.04	0.6	0.04	0.04	0.04	0.04	0.005	.	0.04	.	0.04	.	0.04	.	0.04
AL RC50/02	0.5	0.003	0.85	4.5	0.005	0.5	0.02	0.005	0.02	0.5	0.004	.	0.05	0.3	0.02	.
PY 906	0.40	0.005	0.19	0.43	0.03	0.005	0.019	.	.	<0.004	<0.0001	.	.	.	.	0.011
BS 2017	0.30	4.05	0.25	0.51	0.51	0.006	0.065	.	.	0.015	.	0.010	.	0.002	.	0.020
IARM 221C	0.2	0.6	0.2	4.8	0.4	.	6.8	0.005	0.03	0.2	.	.	0.01	.	.	0.1
IARM 221D	0.2	0.6	0.2	4.7	0.4	.	6.7	0.005	0.03	0.2	.	.	0.02	.	.	0.1
IARM 221B	0.2	0.6	0.2	4.8	0.4	.	6.8	0.005	0.03	0.2	.	.	0.01	.	.	0.1
AA SQ-11	0.2	0.5	0.2	3.0	0.4	.	6.6	0.005	0.02	0.25	.	.	.	.	.	0.10
PY 9627	0.2	0.13	0.57	0.0004	1.06	0.01	0.057	.	.	0.0223	<0.00002	0.0065	.	.	.	0.022
PY 310	0.16	0.0037	0.58	0.0003	0.0078	0.004	0.017	.	.	0.0028	<0.00002	0.0019	.	.	.	0.004
PY 9325	0.11	0.0069	0.24	4.33	0.4	.	0.014	0.0001	0.0003	0.0007	<0.00002	0.007	.	.	.	0.005
PY 9324	0.11	0.0055	0.24	4.28	0.4	.	0.014	0.0001	0.0003	0.0007	<0.00002	0.007	.	.	.	0.005
BS 7075	0.10	1.40	0.13	2.26	0.03	0.005	5.6	.	.	0.19	.	0.003	.	0.001	.	0.028
AA SQ-14	0.1	0.5	0.1	0.9	0.4	0.4	1.2	0.002	.	.	.	0.5	.	0.1	.	0.1
PY 9630	0.1	0.062	0.46	0.0006	0.0123	0.008	0.054	.	.	0.0216	0.00003	0.0035	.	.	.	0.018
PY 325	0.1	0.003	0.27	0.74	0.005	<0.001	0.021	.	0.0011	0.011	0.0001	0.001	.	.	.	0.01
PY 9806-1	0.08	6.9	1.3	0.08	1.9	.	0.05	.	.	0.3	.	.	0.4	.	.	.
BS 2024	0.08	4.7	0.20	1.30	0.57	0.006	0.07	.	.	0.03	.	0.006	.	0.001	.	0.030
PY 9614	0.08	0.043	0.18	2.28	0.055	0.01	0.051	.	0.0009	0.21	0.00006	0.0057	.	.	.	0.019
C Al 3	0.08	0.004	0.17	2.8	0.215	0.002	0.007	.	.	0.001	.	0.002	.	0.002	.	0.009
PY 9321	0.07	4.2	0.013	0.27	0.02	0.01	0.04	.	.	.	<0.00002	0.001	.	.	.	0.21
BS 2011	0.052	5.2	0.32	0.016	0.010	0.004	0.024	.	.	0.001	.	0.56	.	0.001	.	0.006
PY 9401	0.04	1.58	0.12	2.29	0.01	0.007	5.84	.	.	0.006	<0.00002	.	.	.	.	0.032
AL RC20/02	0.029	6.0	0.061	0.29	0.24	1.45	0.24	.	.	.	.	0.41	0.20	0.051	.	.
V E8	0.012	0.020	0.014	0.005	0.006	0.004	0.005	0.001	0.004	0.005	.	0.003	0.010	0.003	0.002	0.004
R Al Mn 12	.	.	.	.	12	.	.	.	.	.	.	.	.	.	.	.
R Al Ce	Ce: 1.0	.	.	4.6	.	La: 0.4	.	Nd: 0.1	.	Pr: 0.07	.	Sm: 0.01	.	Y: 0.2	.	.
V E5	.	.	.	4.8	1.3	.	.	.	.	.	.	.	.	.	.	.
V E4	.	.	.	1.1	0.7	.	5.2	.	.	0.2	.	.	.	.	.	.
V E13	.	.	4.8	.	.	.	.	.	.	.	.	.	.	.	.	.

Number	Si	Cu	Fe	Mg	Mn	Ni	Zn	Be	Ca	Cr	Na	Pb	Sb	Sn	Sr	Ti
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Number	Ag	B	Ba	Bi	Cd	Co	Ga	Hg	In	Li	V	Zr	Al	Ø X H mm
PY 9632	.	.	.	.	.	.	.	.	.	.	.	0.033	.	50 x 50
AA SQ-17	.	.	.	0.08	.	.	0.03	.	.	.	0.03	.	.	64 x 37
BS 6061	.	.	.	0.006	.	.	.	.	.	.	0.01	<0.002	.	62 x 50
AA SQ-13	.	.	.	0.04	0.04	0.01	0.03	.	.	.	0.04	0.4	.	64 x 37
AL RC50/02	Ce:0.1	0.005	0.02	La:0.1	0.2	Mo:0.03	0.03	P:0.005	0.05	0.003	0.01	0.01	W:0.04	60 x 25
PY 906	.	.	.	.	.	.	.	.	.	.	.	.	.	50 x 50
BS 2017	.	.	.	0.002	.	.	.	.	.	.	0.007	0.002	.	62 x 50
IARM 221C	.	.	.	.	.	0.2	0.03	.	.	.	.	.	.	63 x 39
IARM 221D	.	.	.	.	.	0.2	0.03	.	.	.	.	.	.	63 x 39
IARM 221B	.	.	.	.	.	0.2	0.03	.	.	.	.	.	.	63 x 39
AA SQ-11	.	.	.	.	.	0.01	0.03	.	.	.	.	.	.	64 x 37
PY 9627	.	.	.	.	<0.0001	.	.	0.0001	.	0.00002	.	0.01	.	50 x 50
PY 310	.	.	.	.	<0.0002	.	.	<0.00002	.	0.00004	.	.	.	50 x 50
PY 9325	.	.	.	.	<0.0001	.	.	.	.	.	.	.	.	50 x 50
PY 9324	.	.	.	.	<0.0001	.	.	.	.	.	.	.	.	50 x 50
BS 7075	.	.	.	<0.001	.	.	.	.	.	.	0.006	0.006	.	62 x 50
AA SQ-14	.	.	.	0.5	.	.	.	.	.	.	.	.	.	64 x 37
PY 9630	.	.	.	.	0.0002	.	.	0.0001	.	0.00007	.	.	.	50 x 50
PY 325	.	0.0007	.	.	.	.	.	.	.	.	0.006	0.0005	.	50 x 50
PY 9806-1	.	.	.	0.7	.	0.9	.	.	.	.	.	.	.	60 x 40
BS 2024	.	.	.	0.002	.	.	.	.	.	.	0.01	0.01	.	62 x 50
PY 9614	.	.	.	.	0.0001	.	.	0.0004	.	.	.	0.02	.	50 x 50
C Al 3	.	.	.	.	.	.	0.011	.	.	.	.	.	96	50x30-50
PY 9321	.	.	.	.	.	.	.	.	.	.	.	.	.	50 x 50
BS 2011	.	.	.	0.44	.	.	.	.	.	.	0.007	<0.002	.	62 x 50
PY 9401	.	.	.	.	.	.	.	.	.	.	.	0.13	.	50 x 50
AL RC20/02	0.73	.	.	0.38	0.036	0.44	.	.	.	.	.	0.17	.	60 x 25
V E8	0.005	.	0.004	0.005	0.003	0.003	0.006	.	0.005	.	0.003	0.004	.	60 x 40
R Al Mn 12	.	.	.	.	.	.	.	.	.	.	.	.	3	50 x 50
R Al Ce	.	.	.	.	.	.	.	.	.	.	.	0.02	Rem	40 x 25
V E5	.	.	.	0.2	.	.	.	.	.	0.01	.	.	.	60 x 40
V E4	0.20	.	.	.	0.06	0.4	.	.	.	.	.	0.2	.	60 x 40
V E13	.	.	.	.	.	.	.	.	.	.	.	.	.	60 x 40

Number	Ag	B	Ba	Bi	Cd	Co	Ga	Hg	In	Li	V	Zr	Al	Ø X H mm
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## CERAMIC SETTING-UP SAMPLE

Number	Al	C	Fe	O	Ti	W	Units
JK CE 650A	34	6	2.1	30	21	0.8	~25 mm Ø x 8 mm

## COBALT BASE SETTING-UP SAMPLES

typical analysis T = trace, such as "&lt;0.005" or "&lt;0.01"

~35 mm Ø x ~25-35 mm

Number	Al	B	C	Cr	Cu	Fe	Mn	Mo	Nb	Ni	P	S	Si	Ta	Ti	V	W	Zr
R Co 16	0.3	0.02	0.2	0.04	1	21	0.03	3	2	<0.01	<0.01	<0.01	0.2	0.05	0.6	0.7	(0.01)	.
R Co 15	0.05	.	0.8	0.3	2	22	.	8	2	0.1	0.03	0.06	0.9	0.08	.	0.1	0.1	.
R Co 14	0.03	0.04	0.46	28.6	.	0.87	0.35	.	.	10.1	0.003	<0.01	0.64	.	<0.01	6.8	.	.
R Co 11	T	.	T	T	0.01	T	T	T	T	T	T	.	T	.	T	T	T	T

## COPPER BASE SETTING-UP SAMPLES

typical analysis listed in mass %

Number	Cu	Sn	Zn	Al	Bi	Cr	Fe	Mn	Ni	Pb	Si	Ag	As	Au	Be
<b>COPPER</b>															
R C 11	99.98	<0.0030	<0.0005	.	<0.0010	<0.0005	<0.0005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	.	.
BS SU Cu1	99.96	0.0001	0.0001	0.0001	.	0.0001	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	0.0012	0.0001	0.0001
R C 20	99.9	.	.	.	.	.	.	.	.	.	.	.	.	.	.
R C 110	Rem	0.006	0.006	0.002	0.004	0.004	0.005	0.004	0.002	0.003	0.003	0.005	0.001	0.002	0.0002
R C 14	98.8	<0.01	<0.002	<0.01	<0.01	0.9	0.03	<0.01	<0.01	<0.01	<0.02	.	<0.01	.	.
C Cu 2	.	0.2100	0.1150	.	0.0102	0.0113	0.0220	0.0112	1.0100	0.3710	.	0.5800	.	0.0046	.
C Cu 3	.	.	.	.	.	.	.	.	.	.	.	.	0.0875	.	.
R C 38	67.96	<0.01	<0.01	<0.01	<0.01	<0.01	0.72	0.93	29.9	<0.01	0.01	<0.01	<0.01	.	.
<b>BRASS</b>															
BS SU 464	[60.3]	0.73	38.8	.	.	.	0.05	.	0.007	0.04	0.004	.	0.001	.	.
C38.07	60	0.2	REM	0.1	0.1	.	0.1	0.2	0.2	0.2	0.03	.	0.1	.	.
R C 32	59.4	0.17	34.8	1.57	<0.01	<0.01	0.18	1.79	0.75	0.82	0.41	0.001	0.02	.	.
<b>BRONZE</b>															
R C 12	Rem	0.2	0.34	0.09	0.01	0.04	0.1	0.04	0.08	0.08	0.08	0.06	0.04	0.002	<0.002
165X PB10SUS	Rem	11	0.05	0.001	0.02	0.001	0.002	<0.001	0.06	0.04	0.001	.	0.02	.	.
BS SU 932A	83.5	6.88	2.29	.	0.003	.	0.008	0.002	0.19	6.9	0.011	0.0198	0.047	.	.
BS SU 932B	83.1	6.15	2.77	.	.	.	0.05	0.0005	0.52	7.1	0.004	0.0006	0.016	.	.
BS SU 936	82.5	7.0	0.25	0.001	.	.	0.003	0.001	0.36	9.6	0.004	.	0.002	.	.
BS SU 936A	82.5	7.0	0.24	0.0003	.	.	0.0007	0.0006	0.35	9.7	0.004	.	0.004	.	.
BS SU 932	82.1	7.28	2.80	.	0.002	.	0.03	0.002	0.19	7.4	0.015	0.0107	0.049	.	.
BS SU 936B	81.0	7.5	0.54	<0.005	.	<0.005	0.006	<0.001	0.51	10.2	0.003	.	0.01	.	.
R C 40	Rem	0.04	<0.01	8	.	<0.01	1.6	5	2	0.05	0.02	.	<0.01	.	.
165X ALB1 SUS	82	0.03	0.06	9.0	0.015	0.01	2.8	0.08	5.3	0.20	0.10	.	0.005	.	.
R C 33	81.42	0.03	0.18	10.0	0.004	0.005	3.8	0.3	4.1	<0.01	0.08	<0.001	0.02	.	<0.001
R C 36	76.98	7.70	0.68	<0.01	0.009	<0.001	0.016	<0.01	1.68	12.86	<0.01	0.02	0.01	.	<0.001
BS SU 863	62.7	0.031	27.1	4.87	.	0.0005	2.3	2.85	0.06	0.040	0.025	.	<0.005	.	.

Number	Cu	Sn	Zn	Al	Bi	Cr	Fe	Mn	Ni	Pb	Si	Ag	As	Au	Be
<b>COPPER</b>															
R C 11	.	.	<0.0001	<0.0010	<0.0001	(0.0010)	<0.0005	<0.0001	<0.0010	<0.0001	<0.0010	.	.	40 mm Ø x 40 mm	.
BS SU Cu1	0.0003	0.0001	.	0.0001	0.0001	0.0300	0.0001	0.0003	0.0001	.	0.0001	.	.	45 mm Ø x 40+ mm	.
R C 20	.	.	.	.	.	0.038	.	.	.	.	.	.	.	40 mm Ø x 40 mm	.
R C 110	.	.	0.003	0.003	0.003	.	0.003	0.004	0.006	0.005	0.007	0.001	<0.002	40 mm Ø x 40 mm	.
R C 14	.	.	.	.	.	.	<0.01	.	.	.	.	.	0.05	40 mm Ø x 40 mm	.
C Cu 2	.	.	.	.	.	.	.	.	0.2840	.	.	.	last	40 mm Ø x 30 mm	.
C Cu 3	.	.	0.0096	0.0496	.	.	.	0.0229	.	0.0475	0.0194	.	last	40 mm Ø x 30 mm	.
R C 38	.	.	<0.01	0.01	<0.01	.	<0.01	<0.01	0.04	.	.	.	0.07	40 mm Ø x 40 mm	.
<b>BRASS</b>															
BS SU 464	0.0006	.	.	.	.	0.0009	0.005	0.001	0.006	.	.	.	.	38 mm Ø x 40 mm	.
C38.07	.	.	.	.	.	.	.	.	0.1	.	.	.	last	50 mm Ø x 10-12 mm	.
R C 32	.	.	0.001	<0.01	.	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm	.
<b>BRONZE</b>															
R C 12	.	.	0.06	0.05	0.002	.	0.10	0.05	0.02	0.02	0.04	0.005	0.002	40 mm Ø x 40 mm	.
165X PB10SUS	.	.	.	0.01	.	.	0.002	0.03	0.15	0.01	.	.	.	~42 mm Ø x ~18 mm	.
BS SU 932A	0.001	.	.	.	.	.	0.007	0.053	0.15	.	.	.	.	38 mm Ø x 40+ mm	.
BS SU 932B	0.002	.	.	.	.	.	0.008	0.046	0.19	.	.	.	.	38 mm Ø x 40+ mm	.
BS SU 936	0.0008	.	.	0.009	.	0.003	0.07	0.007	0.10	.	.	.	.	50 mm Ø x 19 mm	.
BS SU 936A	0.009	.	.	0.008	.	0.0037	0.031	0.007	0.13	.	.	.	.	50 mm Ø x 19 mm	.
BS SU 932	0.002	.	.	.	.	.	0.008	0.051	0.13	.	.	.	.	38 mm Ø x 40+ mm	.
BS SU 936B	<0.05	.	0.01	.	.	0.01	0.03	0.03	0.14	.	.	.	.	38 mm Ø x 40+ mm	.
R C 40	.	.	.	.	<0.01	.	<0.01	.	.	.	.	.	.	40 mm Ø x 40 mm	.
165X ALB1 SUS	.	.	.	0.04	.	.	0.015	.	.	.	.	.	.	40 mm Ø x 18 mm	.
R C 33	.	.	<0.005	0.04	<0.001	.	<0.01	0.002	<0.001	.	.	<0.01	<0.001	40 mm Ø x 40 mm	.
R C 36	.	.	0.001	<0.001	<0.001	.	<0.01	0.03	0.25	.	.	<0.001	<0.001	40 mm Ø x 40 mm	.
BS SU 863	0.002	.	.	<0.005	<0.005	.	0.0081	0.0003	0.009	.	.	.	<0.005	38 mm Ø x 40+ mm	.

Number	C	Ca	Cd	Co	Mg	O	P	S	Sb	Se	Te	Ti	Zr	Units
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## LEAD BASE SETTING-UP SAMPLES

chill cast typical analysis listed in mass % except \* which is mg/kg

Number	Sn	Sb	Ag	As	Bi	Cd	Cu	Fe	In	Ni	S	Te	Tl	Zn
R Pb 15	33.2	2.0	2.7	0.03	0.13	0.01	(2.0)	<0.01	<0.01	(0.003)	.	0.01	<0.001	0.14
R Pb 17	3.24	10.9	2.01	0.15	0.11	0.002	1.38	<0.001	0.0001	0.002	<0.001	0.006	<0.001	<0.001
168X Pb SUS1	1.3	6.2	0.01	0.37	0.04	0.015	0.03	0.002	0.01	0.003	0.002	0.01	0.001	0.001
168X Pb SUS5	0.9	0.4	0.2	0.3	0.35	0.09	0.06	(0.0002)	0.07	0.0005	0.0005	0.007	0.005	.
R Pb 16	0.22	0.003	0.004	<0.001	0.02	<0.01	<0.01	<0.001	<0.0005	<0.0001	<0.0005	<0.001	<0.001	0.001
R Pb 13	0.16	0.13	0.03	0.06	0.19	0.03	0.10	.	<0.0001	<0.001	.	(0.01)	(0.02)	0.03
168X Pb SUS6	0.15	0.12	0.04	0.025	0.22	0.015	0.10	<0.001	0.01	0.003	0.0005	0.0005	0.03	0.002
R Pb 18	0.07	1.28	0.11	3.32	>3.34	0.02	0.05	<0.0001	0.02	<0.001	0.003	0.02	0.019	0.0001
R Pb 14	0.006	12.0	0.008	1.3	0.03	0.003	0.07	<0.001	0.001	<0.001	0.008	<0.005	<0.001	<0.001
R Pb 11	<0.0005	<0.0005	<0.0010	<0.0005	0.0010	<0.0005	<0.0005	<0.0005	.	<0.0005	.	<0.0005	.	<0.0005
168X Pb SUSPM1	.	0.0001	0.0040	0.0002	0.0100	.	0.0005	0.0001	.	0.0003	0.0002	0.0001	0.0010	.
R Pb PM	.	.	0.0100	.	.	.	.	.	.	.	.	.	.	.

continued

R Pb: 40 mm Ø x 30 mm      168X: ~45-50 mm Ø x ~20-40 mm

Number	Al	Au	Ba	Ca	Co*	Cr*	Ge	Hg	Ir*	Mg*	Mn*	Na	Pd	Pt	Rh*	Ru*	Se
R Pb 15	.	.	.	.	.	.	.	.	.	.	<1	.	.	.	.	.	.
R Pb 17	<0.001	(0.002)	.	.	20	<10	(0.001)	.	.	<10	.	(0.001)	(0.001)	.	.	.	.
168X Pb SUS1	.	0.001	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.01
168X Pb SUS5	.	0.002	.	.	.	.	.	0.015	.	.	.	.	.	.	.	.	0.002
R Pb 16	0.002	.	(0.01)	0.23	<1	<1	.	.	(10)	<1	(0.004)	.	.	.	.	.	.
R Pb 13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(0.004)
168X Pb SUS6	.	0.001	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.003
R Pb 18	<0.0001	.	.	<0.0001	<1	1	.	.	.	<10	.	.	.	.	.	.	(0.01)
R Pb 14	.	.	.	.	.	.	.	.	.	<10	.	.	.	.	.	.	.
R Pb 11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
168X Pb SUSPM1	.	0.0035	.	.	0.5	.	.	.	2	.	.	0.0020	0.0055	12	1	.	.
R Pb PM	.	0.0100	.	.	.	.	.	.	3	.	.	0.0050	0.0050	50	50	.	.

## MAGNESIUM BASE SETTING-UP SAMPLES

cast typical analysis listed in mass %

Number	Mg	Al	Cd	Cu	Fe	Mn	Ni	Pb	Si	Sn	Zn	Zr
R Mg 11	99.9	0.022	.	<0.003	<0.004	0.022	<0.005	.	0.037	.	<0.005	.
166X MG SUS3	Rem	0.4	0.005	0.07	<0.005	0.8	0.02	0.04	0.01	0.005	0.09	.
58A ST6310	Rem	2.84	.	0.017	0.0057	0.437	(0.0018)	.	0.052	.	0.865	.
58A ST6420	Rem	3.37	1.39	0.02	0.0048	0.079	(0.0019)	.	0.026	.	0.324	.
R Mg 13 *	Rem	5.7	0.0001	0.006	0.001	0.2	0.001	0.001	0.01	0.001	0.8	0.004
C Mg 2 *	Rem	5.7	0.0001	0.006	0.001	0.2	0.001	0.001	0.01	0.001	0.8	0.004
R Mg 16	Rem	.	.	0.001	.	.	.	.	.	.	.	0.06
58A ST7310	Rem	0.004	.	1.64	0.0098	0.967	0.002	.	0.025	.	7.2	.
58A ST6610	Rem	6.57	.	0.036	0.01	0.421	0.0044	.	0.103	.	1.08	.
R Mg 14	Rem	8	<0.01	0.3	0.01	(0.5)	0.05	.	0.8	0.1	1	<0.001

continued \* currently R Mg 13 and C Mg 2 have the same chemistry

Number	Ag	Be	Ca	Ce	Na	Nd	P	Pr	Sr	Ti	Y	Units
R Mg 11	.	.	.	.	.	.	.	.	.	.	.	50 mm Ø x 40-50 mm
166X MG SUS3	0.02	0.0005	.	.	.	.	<0.001	.	.	<0.001	.	~50 mm Ø x ~20 mm
58A ST6310	.	.	.	.	.	.	.	.	.	.	.	45 mm Ø x 25 mm
58A ST6420	.	.	.	.	.	.	.	.	.	.	.	45 mm Ø x 25 mm
R Mg 13 *	.	.	.	0.001	.	.	.	.	.	.	.	50 mm Ø x 40-50 mm
C Mg 2 *	.	.	.	0.001	.	.	.	.	.	.	.	50 mm Ø x 40-50 mm
R Mg 16	.	.	.	2.2	.	1.6	.	0.26	.	.	2.2	50 mm Ø x 40 mm
58A ST7310	.	.	.	.	.	.	.	.	.	.	.	45 mm Ø x 25 mm
58A ST6610	.	.	.	.	.	.	.	.	.	.	.	45 mm Ø x 25 mm
R Mg 14	.	.	.	<0.01	.	.	.	.	.	.	.	50 mm Ø x 50 mm last of stock

## NICKEL BASE SETTING-UP SAMPLES

typical analysis

Number	Ni	Al	C	Co	Cr	Cu	Fe	Mn	Mo	Nb	P	S	Si	Ti	W
R Ni 10	>99.90	<0.001	<0.001	<0.001	.	<0.01	<0.03	.	.	.	.	<0.005	<0.001	.	.
R Ni 11	99.4	<0.01	0.02	0.05	<0.01	.	0.06	0.27	.	.	<0.01	<0.01	0.18	<0.01	.
PV 202/1	.	.	0.085	.	14.48	0.253	7.48	0.217	.	.	(<0.01)	(<0.01)	0.472	.	.
BS SU 750	71.0	0.92	0.05	0.11	15.3	0.027	8.22	0.155	0.147	1.05	0.006	0.002	0.148	2.56	<0.5
R Ni 17	Rem	0.01	0.20	0.2	0.8	0.3	18	0.25	0.2	0.2	<0.01	<0.01	0.32	0.3	10
R Ni 12	65.0	3.2	0.12	<0.01	0.12	29.0	1.0	0.74	.	.	<0.01	<0.01	0.17	0.51	.
BS SU H230	60	0.26	0.087	0.26	22.4	0.08	1.2	0.47	1.44	0.016	0.0004	0.0002	0.42	0.016	12.7
R Ni 13	55.7	0.32	<0.01	0.14	16.0	0.01	6.1	0.5	17.5	0.01	<0.002	<0.001	.	<0.02	3.4
R Ni 15	52.6	0.5	0.02	0.2	18.8	0.06	18.2	0.11	2.9	5.2	<0.01	<0.01	0.11	0.9	0.2
R Ni 14	50.0	0.6	0.06	19.9	19.89	0.018	0.54	0.44	6.25	0.05	<0.01	<0.01	0.10	2.03	0.09
PV 204/1	39.46	.	0.017	.	22.49	1.93	30.35	0.773	3.27	.	0.014	(<0.01)	0.268	.	.

Number	As	B	Mg	N	O	Ta	V	Zr	Units
R Ni 10	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
R Ni 11	.	.	0.02	.	.	.	.	.	40 mm Ø x 40 mm
PV 202/1	.	.	.	.	.	.	.	.	40 mm Ø x 25 mm
BS SU 750	<0.005	0.005	0.003	0.005	<0.05	<0.05	0.04	0.035	38 mm Ø x 40+ mm
R Ni 17	.	0.02	.	.	.	0.02	0.06	.	40 mm Ø x 30 mm
R Ni 12	.	.	.	.	.	<0.01	.	.	40 mm Ø x 40 mm
BS SU H230	0.0040	0.010	.	0.059	0.0003	0.079	0.005	0.004	38 mm Ø x 40+ mm
R Ni 13	.	0.007	.	.	.	<0.003	0.18	.	40 mm Ø x 40 mm
R Ni 15	.	0.003	.	.	.	<0.01	0.09	0.02	40 mm Ø x 40 mm
R Ni 14	.	0.003	.	.	.	<0.01	<0.01	<0.01	40 mm Ø x 40 mm
PV 204/1	.	.	.	.	.	.	.	.	40 mm Ø x 25 mm

## NICKEL-PHOSPHORUS LAYER ON STEEL

Number	Ni	P%	Pb%	Layer	Intended For	Unit
JK SUS NiP-1	Rem	5.8	0.26	8.7µm	GD-OES	plate 102mm x 68mm x 0.5mm

## ROHS/WEEE DIRECTIVE XRF DISCS

available individually or in SET/3

typical analysis

40 mm Ø x 5 mm

Number	Al <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	Br	CaO	CdO	Cl	Cr <sub>2</sub> O <sub>3</sub>	MgO	Na <sub>2</sub> O	PbO	Sb <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>
BR ROHS 1/3	7.0	5.5	0	10.0	0	0	0	6.5	17.0	0	1.0	53.0
BR ROHS 2/3	7.0	4.536	0.100	10.0	0.011	0.5	0.146	6.5	17.0	0.107	1.1	53.0
BR ROHS 3/3	7.0	2.118	0.5	10.0	0.114	1.0	0.73	6.5	17.0	0.538	1.5	53.0

## TIN BASE SETTING-UP SAMPLES

typical analysis

Number	Sn	As	Bi	Cu	Fe	Pb	Sb	Ag	Al	Au	Cd	Co	Ge
R Sn 10	>99.99	<0.0010	<0.0005	<0.0005	<0.0005	<0.0010	<0.0020	<0.0001	<0.0005	.	<0.0001	.	.
R Sn 11	99.9	<0.001	<0.001	0.003	0.003	<0.001	0.012	.	.	.	.	.	.
1611X Sn SUS 6	.	0.3	0.08	0.4	0.03	1.0	0.15	0.1	.	0.001	0.01	0.02	.
1611X SAC305	.	.	.	0.47	.	0.11	.	2.9	.	.	0.35	.	.
R Sn 21	Rem	0.006	0.1	0.4	0.1	0.09	0.06	10	0.02	.	<0.001	0.1	0.1
R Sn 13	84.7	<0.01	0.05	0.2	0.13	1.3	13.4	<0.01	0.04	.	0.02	0.05	.
1611X Sn SUS 7	.	2.1	2.3	11	(0.06)	0.35	9	0.3	<0.001	0.005	0.03	0.005	.
R Sn 15	Rem	.	0.3	7.0	0.04	.	8	2.5	0.04	0.01	.	.	0.8
R Sn 20	Rem	<0.001	10	<0.01	<0.01	0.07	0.02	<0.001	<0.001	.	<0.001	<0.001	.
R Sn 12	Rem	0.26	0.11	1.0	<0.01	41.8	1.85	0.21	<0.001	.	0.12	<0.01	.
R Sn 14	45	.	40	.	.	.	.	.	.	.	12	.	.

Number	In	Ni	P	Pt	S	Se	Te	Tl	Zn	Units
R Sn 10	<0.0005	<0.0005	<0.0003	.	<0.0003	.	.	<0.0005	<0.0001	40 mm Ø x 40 mm
R Sn 11	.	.	.	.	.	.	.	.	<0.002	40 mm Ø x 40 mm
1611X Sn SUS 6	0.005	0.03	(0.005)	.	(0.001)	0.003	0.001	0.005	0.005	50 mm Ø x 20 mm
1611X SAC305	.	.	.	.	.	.	.	.	.	40 mm Ø x 6-10 mm
R Sn 21	0.08	0.4	<0.001	.	.	.	.	<0.001	0.3	40 mm Ø x 40 mm
R Sn 13	<0.01	0.23	.	.	.	.	.	<0.001	0.02	40 mm Ø x 40 mm
1611X Sn SUS 7	0.03	0.05	.	.	.	0.005	0.003	0.03	0.005	50 mm Ø x 20 mm
R Sn 15	.	0.03	.	.	.	.	.	.	0.06	40 mm Ø x 40 mm
R Sn 20	7.7	<0.01	<0.01	.	.	.	.	<0.001	25	40 mm Ø x 40 mm
R Sn 12	0.11	<0.01	.	.	.	.	.	0.03	<0.01	40 mm Ø x 40 mm
R Sn 14	.	.	0.05	.	.	.	.	.	.	40 mm Ø x 40 mm

**TITANIUM BASE SETTING-UP SAMPLES**

typical analysis		40 mm Ø x 40 mm								
Number	Ti	Al	C	Fe	Mo	Pd	Sn	V	Zr	
R Ti 11	99.9	.	0.01	0.05	.	.	.	.	.	.
R Ti 12	Rem.	.	0.02	0.2	.	0.2	.	.	.	.
R Ti 13	Rem.	6	<0.01	0.2	.	.	.	4	.	.
R Ti 14	Rem.	6	<0.02	0.02	2	.	2	.	4	.

**ZINC BASE SETTING-UP SAMPLES**

typical analysis		169X, 1690X: 50 mm Ø x 20 mm					C: 40 mm Ø x 30 mm			R: 40 mm Ø x 30 mm						
Number	Zn	Ag	Al	Bi	Cd	Cu	Fe	In	Mg	Mn	Ni	Pb	Sb	Sn	Ti	Tl
R Zn 14	87	<0.001	9.8	.	0.02	2.8	0.06	<0.005	0.10	0.02	<0.005	0.05	<0.001	0.04	0.03	<0.005
C Zn 3/4	.	.	3.93	.	0.001	0.071	0.016	.	0.055	.	.	0.0056	.	0.001	.	.
C Zn 3/3	.	.	3.92	.	0.0001	0.064	0.0106	.	0.046	.	.	0.0054	.	0.0010	.	last
C Zn 4/8	.	.	0.93	.	0.10	0.51	.	.	.	.	.	1.26	.	0.99	.	.
C Zn 4/3	.	.	0.54	.	0.110	0.39	.	.	.	.	.	1.95	.	0.98	.	last
169X ZnSUS1 *	.	0.04	0.35	0.005	0.3	0.35	0.05	0.25	0.002	0.001	0.06	0.6	0.2	0.3	0.001	0.06 last
R Zn 13	97.5	0.05	0.3	.	0.3	0.3	0.009	0.26	<0.01	<0.01	0.05	0.6	0.2	0.3	<0.01	0.03
R Zn 15	Rem.	.	0.20	.	0.5	0.23	0.2	.	.	0.01	.	0.14	0.03	0.05	.	.
R Zn 16	.	.	0.23	.	0.049	0.011	0.092	.	.	.	.	0.23	.	0.009	.	.
R Zn 12	99.9	0.004	0.006	0.006	0.008	0.009	0.024	0.009	0.005	0.002	0.008	0.009	(0.01)	0.007	0.006	0.007
R Zn 11	99.99	.	<0.0005	.	<0.0005	<0.0005	<0.0005	.	<0.0005	<0.0005	<0.0005	<0.0005	.	<0.0005	<0.0010	.

\* 169X ZN SUS1 also contains Cr: 0.001 and Si: 0.003

**RM ZINC BINARY**

cast typical analysis listed in mass %

Number	Mn	Sb	Zn	Size
41X ZMn1	1.06	.	Remainder	50 mm Ø x 20 mm
41X ZSb1	.	1.03	Remainder	40 mm Ø x 15 mm
41X ZSb4	.	3.78	Remainder	40 mm Ø x 15 mm
41X ZSb8	.	7.68	Remainder	40 mm Ø x 15 mm

**ZIRCONIUM ALLOY**

\* mill certificate given as provisional analysis listed in mass %

Number	Al	Bi	C	Cr	Cu	Fe	H	Hf	Mo	N	Nb	Ni
IARM Zr705 *	0.015	0.0003	0.007	<0.01	<0.0025	0.08	0.0004	1.2	<0.0025	0.003	2.5	0.004

  

Number	O	P	Si	Sn	Ta	Ti	V	W	Zr	Units
IARM Zr705 *	0.12	0.0003	0.003	0.004	<0.01	<0.0035	<0.0025	0.002	96	31 mm Ø x 18 mm



CAST IRON SETTING-UP SAMPLES

chill cast		typical analysis															
Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	Sn	Ti	V	W	Mg	Ce
C Fe 5	4.12	0.2	0.09	0.03	0.36	0.08	0.08	0.11	0.11	0.05	<0.0015	0.003	0.02	0.13	.	.	.
NCS AH11355a	4.07	0.220	0.054	0.041	1.45	0.266	1.46	2.12	0.724	0.073	0.022	0.146	0.042	0.090	0.039	0.0024	(0.0006)
SUS 5/55	3.8	0.61	.	0.008	2.1	0.003	0.97	0.02	.	0.03	.	0.07	<0.005	0.48	.	0.09	0.03
NCS AH11356a	3.78	0.618	0.084	0.021	2.47	0.68	0.522	0.175	0.344	0.079	0.037	0.076	0.085	0.265	0.105	0.054	(0.045)
SUS 5/54	3.7	0.60	.	0.008	2.1	0.007	1.0	0.02	.	0.04	.	0.07	<0.005	0.49	.	0.08	0.03
C Fe 7	(3.7)	0.07	0.015	0.005	3.15	0.14	0.05	0.03	<0.01	0.015	.	0.003	0.010	0.018	.	0.035	.
SUS 2/48	3.6	0.73	0.17	0.12	1.8	0.23	0.49	0.07	0.11	0.01	.	0.10	0.06	0.53	.	.	.
IARM 215A	3.5	1.3	0.3	0.13	2.1	0.6	0.9	0.6	0.5	0.037	.	0.17	0.07	0.5	.	.	.
SUS GGG	3.45	0.18	0.02	0.005	2.35	0.088	0.022	0.045	.	0.004	.	.	.	.	.	0.035	.
R G 13+Se	3.4	1.0	0.6	0.06	2.1	0.7	0.5	1.0	0.3	0.05	<0.01	0.3	0.03	0.3	0.01	.	.
SUS 3/21	3.4	0.90	1.0	0.10	2.2	0.01	0.01	0.25	<0.005	<0.005	.	<0.005	0.11	0.27	.	.	.
C Fe 6	(3.3)	0.7	0.04	0.03	2.6	0.8	0.03	0.03	<0.01	0.004	.	0.002	0.02	0.007	.	.	.
R G 14	3.3	0.2	0.06	<0.01	1.8	0.07	1.1	1.0	.	0.03	.	0.2	<0.01	0.1	.	0.05	0.02
BS SU CCD	3.28	0.59	0.020	0.008	2.53	0.050	0.020	0.030	0.002	0.015	.	0.002	0.006	0.014	.	0.032	.
C Fe 8	3.2	0.42	0.025	0.02	1.3	0.062	0.11	0.05	<0.01	0.05	<0.001	0.01	0.05	0.04	<0.01	.	.
R G 16	3.2	0.2	0.3	<0.01	1.9	0.07	1.2	1.0	.	0.05	.	0.2	<0.01	0.1	.	0.06	0.03
SUS 4/27	3.2	0.17	.	0.01	2.7	0.78	0.10	0.09	.	0.02	.	<0.005	0.05	0.50	.	0.03	.
SUS 4/28	3.2	0.15	.	0.02	2.7	0.79	0.11	0.08	.	0.02	.	<0.005	0.06	0.50	.	0.03	.
R G 13	3.1	0.9	0.4	0.04	1.9	0.5	0.5	1.1	0.3	0.04	<0.01	0.3	0.01	0.3	<0.01	.	.
SUS 1/19	3.1	0.44	0.05	0.07	2.8	0.47	0.19	0.50	0.33	0.02	.	0.05	<0.005	0.04	.	.	.
R N 15	2.9	1.6	0.008	0.07	<0.1	.	2.3	0.05	.	0.14	.	0.05	0.06	0.01	.	.	.
CKD T	2.8	1.3	0.15	0.18	1.6	0.3	0.2	0.1	0.2	.	.	0.04	0.05	0.05	.	.	.
SUS 7/8	2.8	0.29	0.09	0.18	0.94	0.21	.	0.07	.	0.02	.	<0.01	.	0.06	.	.	.
BS DNR-2	2.72	0.85	0.031	0.006	2.52	0.02	18.9	1.62	0.007	<0.1	<0.05	<0.1	<0.05	<0.1	.	0.05	.
BS DNR-1	2.52	0.88	0.031	0.005	2.79	0.016	18.6	1.56	0.006	<0.1	<0.1	<0.1	<0.1	<0.1	.	0.04	.
SUS 6/6	2.5	0.65	0.05	0.12	1.8	0.02	.	0.10	.	<0.005	.	0.05	0.02	0.02	.	.	.
NCS AH11354a	2.25	1.17	0.375	0.095	2.66	1.65	0.623	0.493	0.253	0.072	0.117	0.046	0.184	0.518	0.434	0.0056	(0.0033)
R G 15	2.0	0.7	0.3	0.1	4.2	<0.01	0.5	0.5	0.8	0.06	.	0.1	.	.	.	.	.
C Fe 4	1.53	0.40	0.012	0.012	0.31	0.06	0.27	11.4	0.75	<0.005	<0.02	<0.02	<0.02	0.90	<0.02	.	.

Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Nb	Sn	Ti	V	W	Mg	Ce
C Fe 5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS AH11355a	.	0.013	.	.	.	0.027	(0.0003)	.	.	.	.	.	.	.	.	.	.
SUS 5/55	<0.005	.	.	.	.	.	.	.	0.04	.	.	.	.	.	.	.	.
NCS AH11356a	.	0.041	.	.	.	0.032	(0.020)	.	.	.	.	.	.	.	.	.	.
SUS 5/54	<0.005	.	.	.	.	.	.	.	0.04	.	.	.	.	.	.	.	.
C Fe 7	.	.	.	.	.	.	.	<0.001	.	.	.	.	.	.	.	.	.
SUS 2/48	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
IARM 215A	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SUS GGG	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
R G 13+Se	.	.	.	.	<0.01	.	.	<0.001	.	~0.02	.	.	.	.	.	.	.
SUS 3/21	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
C Fe 6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
R G 14	.	0.02	.	.	.	0.01	.	.	.	.	.	.	.	.	.	.	.
BS SU CCD	0.001	.	.	0.0027	0.009	.	.	.	.	.	.	.	.	.	.	.	.
C Fe 8	.	0.03	.	.	0.005	.	.	.	.	.	0.003	.	.	.	.	.	.
R G 16	.	0.01	.	.	.	0.01	.	.	.	.	.	.	.	.	.	.	.
SUS 4/27	<0.005	.	.	.	.	.	.	.	<0.005	.	.	.	.	.	.	.	.
SUS 4/28	<0.005	.	.	.	.	.	.	.	<0.005	.	.	.	.	.	.	.	.
R G 13	.	.	.	.	<0.01	.	.	<0.001	.	.	.	.	.	.	.	.	.
SUS 1/19	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
R N 15	.	0.01	.	.	.	.	.	.	0.03	.	.	.	.	.	.	.	.
CKD T	0.03	.	.	.	0.05	.	.	.	0.1	.	0.02	.	0.01	.	.	.	.
SUS 7/8	.	0.004	<0.001	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BS DNR-2	.	.	.	.	<0.1	Fe: [73.3]	.	.	<0.1	.	.	.	.	.	.	.	.
BS DNR-1	.	.	.	.	<0.1	Fe: [73.5]	.	.	<0.1	.	.	.	.	.	.	.	.
SUS 6/6	.	<0.001	0.01	.	.	.	.	.	.	.	.	.	.	.	.	.	.
NCS AH11354a	.	0.055	.	.	0.094	(0.0013)	.	.	.	.	.	.	.	.	.	.	.
R G 15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
C Fe 4	.	.	.	.	0.02	.	0.047	<0.02	.	.	.	.	.	.	.	.	.

CAST IRON SETTING-UP SET

DUCTILE IRON SETTING-UP SET

typical analysis		available in SET/6 only					34 mm Ø x 5 mm			
Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	
KTC-9 B1	2.40	0.04	0.005	0.11	3.03	0.04	1.03	0.99	0.049	
KTC-9 B2	2.61	0.23	0.024	0.082	2.69	0.20	0.81	0.81	0.20	
KTC-9 B3	3.05	0.37	0.049	0.059	2.28	0.40	0.60	0.62	0.43	
KTC-9 B4	3.36	0.55	0.069	0.039	1.91	0.61	0.41	0.42	0.62	
KTC-9 B5	3.70	0.83	0.094	0.021	1.49	0.82	0.21	0.21	0.83	
KTC-9 B6	4.08	0.99	0.12	0.003	0.94	1.01	0.05	0.06	1.06	

sold in set/5 only		typical analysis				45 mm Ø x 5 mm	
Number	Mg	C	Mn	P	S	Si	
KTC-10 M-1	0.05	3.4	0.1	0.015	0.002	2.5	
KTC-10 M-2	0.04	3.4	0.1	0.015	0.002	2.5	
KTC-10 M-3	0.03	3.4	0.1	0.015	0.002	2.5	
KTC-10 M-4	0.02	3.4	0.1	0.015	0.002	2.5	
KTC-10 M-5	0.01	3.4	0.1	0.015	0.002	2.5	





## CARBON AND LOW ALLOY STEEL SETTING-UP SAMPLES - CONTINUED FROM PREVIOUS

## typical analysis

Number	As	B	Bi	Ca	Nb	O	Pb	Sb	Ta	Te	Zn	Zr	Units
BS SU D2	0.003	0.0002	.	.	0.004	.	0.0006	0.003	.	.	.	.	38 mm Ø x 40 mm
R H 18	.	.	.	Fe:68.1	0.03	.	.	.	.	.	.	.	40 mm Ø x 40 mm
BR ST2	0.027	0.0018	.	.	0.086	.	(0.001)	(0.002)	.	.	.	0.005	45 mm Ø x 30 mm
KUT K3	.	.	.	.	.	.	.	.	.	.	.	.	30-35 mm Ø x 39 mm
BS SU E52100	0.004	0.0001	.	<0.0005	0.0008	0.001	<0.0005	.	.	.	.	0.0004	38 mm Ø x 40 mm Fe: [96.7]
R N 13	<0.01	<0.001	<0.005	<0.001	<0.01	.	<0.01	0.04	<0.01	<0.01	.	0.17	40 mm Ø x 40 mm
R H 13	.	.	.	.	0.02	.	.	.	.	.	.	.	40 mm Ø x 40 mm
R N 16	<0.01	<0.001	<0.001	<0.001	<0.01	.	<0.01	0.04	<0.01	<0.01	.	0.18	40 mm Ø x 40 mm
R N 19	0.07	<0.01	0.02	<0.001	>0.4	.	0.03	0.07	0.31	0.06	0.02	0.11	40 mm Ø x 40 mm
BAM SUS-1 R	.	.	.	.	0.6	.	.	.	.	.	.	.	50 mm Ø x 42 mm
IARM 219A	0.01	0.01	.	<0.0001	0.4	.	0.003	0.1	0.01	.	0.01	0.002	38 mm Ø x 38 mm
R Fe D	0.007	<0.01	<0.01	<0.001	>0.42	.	<0.01	0.09	0.07	0.01	.	0.04	40 mm Ø x 40 mm
NCS AH21311	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
SUS D	.	<0.001	.	.	0.05	.	.	.	.	.	.	.	44 mm Ø x 25, 75, or 150 mm
NCS AH21313	0.027	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
BS SU LAS-14	0.004	0.0006	0.0025	0.0008	0.0069	.	<0.001	0.023	0.004	0.0045	<0.001	0.001	40 mm Ø x 40 mm Fe: [95.4]
NCS AH21309	0.017	0.0041	.	0.0009	0.313	.	.	0.0034	0.098	.	.	.	40 mm Ø x 40 mm
KUT K4	.	.	.	.	.	.	.	.	.	.	.	.	30-35 mm Ø x 39 mm
KUT K6	.	.	.	.	.	.	.	.	.	.	.	.	30-35 mm Ø x 39 mm
IMZ S-04	.	.	.	.	.	.	.	.	.	.	.	.	43 mm Ø x ~35 mm
BS 02H	0.006	0.0004	.	0.0012	<0.001	.	<0.001	<0.001	<0.001	.	.	<0.001	38 mm Ø x 150 mm
PV 101/1	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 25 mm
BS SU 4340	0.005	0.0002	.	0.0002	0.004	0.0007	0.0001	.	.	.	.	0.002	38 mm Ø x 40 mm Fe: 95.5
BS SU 8740	.	.	.	.	.	0.0016	.	.	.	.	.	.	38 mm Ø x 40 mm
BS SU41L40	<0.05	<0.005	.	<0.005	<0.05	<0.05	0.14	.	.	.	.	<0.05	41 mm Ø x 40+ mm Fe: 96.6
BS SU 4942	0.0009	<0.0005	.	<0.005	0.001	0.001	<0.005	.	.	.	.	<0.005	38 mm Ø x 40 mm Fe: [96.7]
BS SU P-20B	0.007	<0.001	.	0.0022	0.003	.	<0.005	<0.01	.	.	.	0.0032	38 mm Ø x 40 mm
C Fe 2 50mm	0.053	0.0032	.	0.0006	0.015	.	(0.0006)	0.02	0.02	.	.	.	40 mm Ø x 50 mm
BS SU 4130A	0.005	.	.	<0.001	0.002	.	<0.0005	<0.01	0.009	.	.	0.001	38 mm Ø x 40 mm Fe: [97.4]
C Fe 2	0.045	0.0015	.	<0.001	0.018	.	(0.0009)	0.005	0.03	.	.	.	40 mm Ø x 40 mm
Number	As	B	Bi	Ca	Nb	O	Pb	Sb	Ta	Te	Zn	Zr	Units
BS SU 4130	.	.	.	.	.	0.002	.	.	.	.	.	.	44 mm Ø x 40 mm
BS 210	.	.	.	.	0.016	.	.	.	.	.	.	.	32 mm Ø x 17 mm last
BS SU LF-1a	<0.005	<0.005	.	0.002	<0.005	0.012	0.001	.	.	.	.	<0.005	~36 mm Ø x ~40 mm Fe: 98.69
BS SU8620MOD	0.005	0.0002	.	0.0007	0.001	0.0009	.	Fe:[97.6]	Mg:0.0002	.	.	<0.001	38 mm Ø x 40 or 150 mm
BS SU LF-1	<0.005	<0.005	.	0.002	<0.005	0.010	0.001	.	.	.	.	<0.005	~36 mm Ø x ~40 mm Fe: 98.71
BS SU 8620A	0.005	0.0003	.	0.0006	0.003	0.0019	0.0005	.	.	.	Mg: 0.0002	0.0007	38 mm Ø x 40 mm Fe: 97.1
BS SU 4620	.	.	.	.	.	0.002	.	.	.	.	.	.	44 mm Ø x 40 mm
BS SU 4820	0.006	<0.0005	.	0.0003	0.003	0.0016	<0.0005	0.003	0.006	Mg:0.0004	.	<0.0005	38 mm Ø x 40 mm Fe: [95.2]
BS SU LF-2A	0.003	.	.	<0.0002	.	0.002	.	.	.	.	.	0.001	48 mm Ø x 150 mm
PV 102/1	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 25 mm
BS 03D	.	.	.	.	.	.	.	.	.	.	.	.	41 mm Ø x 150 mm
IMZ S-07	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x ~30 mm
BS SU LF-2	.	.	.	.	.	0.002	.	.	.	.	.	.	38 mm Ø x 40 mm
BS SU LF-3	.	.	.	.	.	0.002	.	.	.	.	.	.	44 mm Ø x 40 mm
BS SU 11L17	.	<0.0005	.	<0.0005	0.002	0.016	0.27	.	.	.	.	.	41 mm Ø x 40 mm Fe: [98.1]
BS SU 1018E	0.006	0.0003	.	0.0010	0.001	Mg:<0.0005	0.0011	<0.01	<0.01	.	.	0.0015	38 mm Ø x 150 mm Fe: [98.3]
R N 17	0.04	0.003	0.01	0.003	0.5	.	0.01	0.01	0.11	0.02	.	0.002	40 mm Ø x 40 mm
BS 213	.	.	.	.	0.013	.	.	.	.	.	.	.	32 mm Ø x 17 mm Tl: (0.002)
R Fe C	0.05	<0.001	0.02	<0.01	0.07	.	0.03	0.01	0.13	0.03	0.016	<0.01	40 mm Ø x 40 mm
BS 207	.	.	.	.	0.024	.	.	.	.	.	.	.	32 mm Ø x 17 mm
IMZ 501	.	.	.	.	.	.	.	.	.	.	.	.	48 mm Ø x 25 mm
NCS AH11357	.	.	.	.	.	.	.	.	.	.	.	.	38 mm Ø x 40 mm
IMZ S-13	.	.	.	.	0.45	.	.	.	.	.	.	.	40 mm Ø x ~29 mm
IMZ 503	.	.	.	.	.	.	.	.	.	.	.	.	48 mm Ø x 25 mm
BS SU 9310	.	.	.	.	0.006	0.002	.	.	.	.	.	.	38 mm Ø x 40 mm
BS SU 9310A	0.004	<0.005	.	<0.005	0.008	0.0016	<0.005	.	.	.	.	<0.005	38 mm Ø x 40+ mm Fe: [94.1]
BS SU LAS13-2	0.04	0.005	0.02	0.0005	0.05	<0.05	0.003	0.005	0.008	Ce:0.004	0.01	0.02	36 mm Ø x 40 mm also Fe and Mg
BS 214	.	.	.	.	(0.007)	.	.	.	.	.	.	.	32 mm Ø x 17 mm Tl: (0.002)
KUT K9	.	.	.	.	(0.04)	.	.	.	.	.	.	.	30-35 mm Ø x 18 or 39 mm
IMZ S-11	.	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x ~25 mm
C Fe 9	0.003	0.0001	.	.	.	.	0.3	0.0005	.	.	.	.	40 mm Ø x 30, 40, or 50 mm
IARM 218A	0.1	0.0004	.	<0.0001	<0.0001	.	<0.001	0.02	0.02	.	<0.001	<0.001	38 mm Ø x 38 mm
SUS A	.	.	.	.	<0.005	.	.	.	.	.	.	.	44 mm Ø x 75 mm or 150 mm
IARM 217A	0.003	<0.0001	.	<0.0001	0.001	.	0.004	0.006	0.01	.	<0.0001	0.005	38 mm Ø x ~20-30 mm
R N 14	0.06	0.005	<0.01	<0.001	>0.4	.	0.01	0.02	0.2	0.02	.	<0.005	40 mm Ø x 40 mm
DSZU SUS 40L	0.0006	.	0.0004	0.003	0.0006	.	0.0005	0.002	.	.	0.001	0.002	40 mm Ø x 50 mm
NCS AH21308	.	0.0011	.	0.0005	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
SAG 0203	0.002	<0.0005	.	<0.001	<0.001	.	<0.001	<0.001	<0.001	<0.001	.	.	32 mm Ø x 40 mm
SAG 0204	0.002	<0.0005	.	<0.001	<0.001	.	<0.001	<0.001	<0.001	<0.001	.	.	40 mm Ø x 40 mm
SAG 0202	0.001	.	.	.	.	.	.	.	.	.	.	.	40 mm Ø x 40 mm
Number	As	B	Bi	Ca	Nb	O	Pb	Sb	Ta	Te	Zn	Zr	Units

\* NCS 28301 also contains Al(ins): 0.0049 and Al(sol): 0.0056.

## LOW ALLOY STEEL SETTING-UP SETS WITH SOLUBLE/INSOLUBLE VALUES

available in SETS only, as grouped																Sol. = soluble		Ins. = insoluble		typical analysis				35 mm Ø x 20 mm			
Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Sol.Al	Ins.Al	B	Ca	Sol.N	Ins.N											
KTC-1/5 01	0.0008	0.01	0.001	<0.001	<0.01	0.01	0.01	0.01	<0.001	.	<0.001	<0.001	0.0002	0.0001	.	.											
KTC-1/5 02	0.10	0.21	0.003	0.005	0.61	0.07	0.05	3.99	0.50	.	0.003	0.001	.	.	.	.											
KTC-1/5 03	0.16	0.76	0.002	0.009	0.40	0.70	0.10	3.24	0.40	.	0.012	<0.001	.	.	.	.											
KTC-1/5 04	0.20	2.01	0.010	0.016	0.05	0.10	0.52	2.51	0.32	.	0.083	<0.001	.	.	.	.											
KTC-1/5 05	0.24	1.63	0.013	<0.001	0.26	0.40	1.02	2.04	0.10	.	0.036	0.002	.	0.0002	.	.											
KTC-1/5 06	0.36	1.33	0.049	0.001	0.36	0.50	1.53	1.54	0.20	.	0.020	0.001	0.0005	0.0006	.	.											
KTC-1/5 07	0.51	1.02	0.040	0.029	0.30	0.20	2.05	1.02	0.62	.	0.029	0.001	0.0009	0.0018	.	.											
KTC-1/5 08	0.66	0.50	0.031	0.023	0.16	0.31	2.54	0.51	1.01	.	0.056	<0.001	0.0020	0.0030	.	.											
KTC-1/5 09	0.80	0.31	0.019	<0.001	0.20	0.15	3.26	0.10	0.84	.	0.064	<0.001	0.0038	0.0031	.	.											
KTC-1/5 10	1.05	0.10	0.006	0.022	0.10	0.07	4.06	0.07	0.050	.	0.090	0.001	0.0088	.	.	.											
KTC-15 N-1	0.015	0.10	0.002	0.003	0.10	.	.	0.21	.	0.050	.	.	.	.	0.0012	0.0001											
KTC-15 N-2	0.014	0.10	0.002	0.003	0.10	.	.	0.29	.	0.048	.	.	.	.	0.0048	0.0002											
KTC-15 N-3	0.012	0.10	0.002	0.003	0.10	.	.	0.19	.	0.048	.	.	.	.	0.0076	0.0003											
KTC-15 N-4	0.012	0.10	0.003	0.004	0.10	.	.	0.20	.	0.048	.	.	.	.	0.0110	0.0002											
KTC-15 N-5	0.012	0.11	0.003	0.004	0.10	.	.	0.41	.	0.050	.	.	.	.	0.0194	0.0008											

Number	As	Co	Nb	Sn	Ti	V	W
KTC-1/5 01	<0.001	<0.001	0.001	0.001	0.001	0.001	<0.01
KTC-1/5 02	.	0.010	0.10	0.062	0.021	0.40	.
KTC-1/5 03	0.010	0.15	0.069	0.042	0.10	0.022	.
KTC-1/5 04	0.021	0.050	0.019	0.021	0.31	.	.
KTC-1/5 05	0.044	0.10	0.040	0.010	0.011	0.31	.
KTC-1/5 06	0.062	0.20	0.010	.	0.054	0.052	.
KTC-1/5 07	.	.	.	.	0.20	0.11	0.05
KTC-1/5 08	.	.	.	.	0.16	0.15	0.12
KTC-1/5 09	.	.	.	.	.	0.21	0.22
KTC-1/5 10	.	.	.	.	.	0.50	0.15
KTC-15 N-1	.	.	.	.	.	.	.
KTC-15 N-2	.	.	.	.	.	.	.
KTC-15 N-3	.	.	.	.	.	.	.
KTC-15 N-4	.	.	.	.	.	.	.
KTC-15 N-5	.	.	.	.	.	.	.

## LOW ALLOY STEEL SETTING-UP SET

SOLD AS SET/3 ONLY																typical analysis				formerly known as set ST A-C				35 mm Ø x 20 mm			
Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Sol.Al	Ins.Al	Nb	Ti	V	W	As	B	Ca	Co							
KTC-2 A	1.00	0.01	0.002	0.001	0.05	0.11	4.09	.	.	.	0.086	<0.001	0.10	0.36	0.03	0.19	.	.	.	.							
KTC-2 B	0.01	0.52	0.045	.	0.57	0.69	0.50	3.98	0.20	0.093	.	.	.	0.03	.	.	0.050	0.0085	0.0035	0.01							
KTC-2 C	0.11	1.96	.	0.028	.	.	.	0.50	1.00	.	0.019	0.001	.	.	0.50	.	.	.	.	0.20							

## STAINLESS STEEL SETTING-UP SAMPLE SETS

available in SETS only, as grouped																Sol. = soluble		Ins. = insoluble		typical analysis				35 mm Ø x 20 mm			
Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sol.Al	Ins.Al	As	Co	Nb	Ti												
ST I	0.26	0.21	0.008	0.024	0.19	0.01	0.01	26.78	0.046	0.002	0.004	<0.001	0.003	0.013	0.010												
ST H	0.088	0.47	0.009	0.010	0.50	0.04	0.57	17.95	0.49	0.031	0.005	0.011	0.054	0.094	0.094												
ST G	0.031	1.37	0.029	0.005	1.26	0.19	3.87	11.85	1.14	0.086	0.005	0.075	0.19	0.98	0.30												
KTC-5 31	0.068	0.51	0.023	0.005	1.24	0.19	3.91	11.23	0.71	0.10	0.003	0.10	0.19	0.90	0.31												
KTC-5 32	0.040	1.16	0.030	0.007	0.52	0.01	2.56	12.71	1.01	0.013	0.004	0.008	0.014	0.082	0.051												
KTC-5 33	0.044	0.30	0.008	0.022	0.32	0.10	1.03	15.12	1.19	0.031	0.004	0.001	0.10	0.30	0.007												
KTC-5 34	0.084	0.99	0.025	0.004	0.78	0.04	0.48	16.99	0.48	0.045	0.006	0.009	0.051	0.083	0.098												
KTC-5 35	0.22	1.35	0.002	0.029	0.58	<0.01	0.05	24.14	0.029	0.057	0.007	<0.001	0.005	0.007	0.005												
KTC-5 36	0.15	0.43	0.014	0.009	0.14	<0.01	0.11	22.31	0.043	0.001	0.008	<0.001	0.003	0.001	0.005												
KTC-5 37	0.11	0.74	0.007	0.019	0.99	<0.01	0.20	19.51	0.20	0.001	0.002	<0.001	0.002	<0.001	0.003												
KTC-5 38	0.30	0.19	0.010	0.013	0.40	<0.01	0.01	25.52	0.004	0.001	0.002	<0.001	0.002	<0.001	0.003												

STAINLESS AND HIGH ALLOY STEEL SETTING-UP SAMPLES

typical analysis

Table with columns: Number, C, Mn, P, S, Si, Cu, Ni, Cr, Mo, Sn, Al, Co, Nb, Ti, V, W, N. Rows include various steel grades like IMZ S-22, 162X FeSUS1, R N 18, etc.

Table with columns: Number, As, B, Bi, Ca, Fe, O, Pb, Sb, Ta, Te, Zn, Zr, Units. Rows include various steel grades and their corresponding units and analysis notes.

## ALUMINUM IN XRF DISCS

typical analysis

30-40 mm  $\emptyset$  x 5 mm

Number	Al <sub>2</sub> O <sub>3</sub>	As <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	BaO	Bi <sub>2</sub> O <sub>3</sub>	CaO	Fe <sub>2</sub> O <sub>3</sub>	GeO <sub>2</sub>	K <sub>2</sub> O	MgO	MoO <sub>3</sub>	Na <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	PbO	Sb <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	TiO <sub>2</sub>	V <sub>2</sub> O <sub>5</sub>	WO <sub>3</sub>
BR CH1	28.0	0.8	20.0	1.0	1.0	.	7.0	0.3	8.0	.	.	6.5	14.0	.	.	9.11	0.1	0.3	1.2
SV C	27.15	0.78	19.23	1.0	0.5	0.03	5.4	0.27	6.9	.	2.0	7.9	15.6	.	.	9.9	0.1	0.26	0.9
BR PC 3	27.1	0.78	19.1	1.0	0.50	0.03	5.4	0.27	6.9	.	2.0	7.9	15.6	.	.	9.9	0.10	0.26	0.90
BR CS1	27.1	0.78	19.23	1.0	0.5	0.03	5.4	0.27	6.9	.	2.0	7.9	15.6	.	.	11.3	0.1	0.26	0.05
BR CH2/1	23.5	2.8	10.0	.	0.5	16.5	0.9	2.0	0.2	7.7	1.3	9.5	5.5	3.8	2.4	7.5	.	1.7	0.5
BR ACEM	21.68	.	19.88	.	.	10.53	11.93	.	3.14	7.03	.	11.15	0.20	2.0	2.0	9.56	0.20	.	.
FLX PR3	17.68	.	.	.	.	3.16	.	.	.	6.76	.	.	9.72	.	.	41.28	3.32	.	.
FLX S7	15.46	.	.	.	.	10.1	11.52	.	3.14	4.71	.	3.38	0.28	.	.	48.06	2.36	.	.

Number	CdO	Ce <sub>2</sub> O <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>	La <sub>2</sub> O <sub>3</sub>	MnO	Mn <sub>2</sub> O <sub>3</sub>	Nb <sub>2</sub> O <sub>5</sub>	Nd <sub>2</sub> O <sub>3</sub>	NiO	Pr <sub>2</sub> O <sub>3</sub>	Rb <sub>2</sub> O	SO <sub>3</sub>	SrO	U <sub>3</sub> O <sub>8</sub>	ZrO <sub>2</sub>
BR CH1	0.15	.	.	.	0.5	.	0.7	0.5	0.3	0.4	0.04	.	.	0.1	.
SV C	0.66	.	.	.	0.47	.	0.6	0.46	0.29	0.2	.	.	.	.	.
BR PC 3	0.16	.	.	.	0.47	.	0.60	0.46	0.29	0.20	.	.	.	.	.
BR CS1	0.16	.	.	.	0.47	.	.	0.46	0.29	0.2	.	.	.	.	.
BR CH2/1	.	1.2	.	1.0	.	.	.	0.5	.	.	.	0.50	.	.	0.4
BR ACEM	.	.	.	.	.	0.20	.	.	.	.	.	.	.	.	.
FLX PR3	.	.	1.07	.	.	.	.	.	0.373	.	.	.	.	.	.
FLX S7	.	.	.	.	0.234	.	.	.	.	.	.	.	.	.	.

## ANTIMONY AND ARSENIC IN XRF DISC

typical analysis

40 mm  $\emptyset$  x 6 mm

Number	As <sub>2</sub> O <sub>3</sub>	CaO	Co <sub>3</sub> O <sub>4</sub>	K <sub>2</sub> O	MnO	MoO <sub>3</sub>	Na <sub>2</sub> O	Sb <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>
FLX K04	2.12	14.8	0.52	2.18	6.81	2.9	5.22	2.12	29.9

## BARIUM IN XRF DISCS

typical analysis

40 mm  $\emptyset$  x 5 mm

Number	BaO	SiO <sub>2</sub>	TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	As <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	CaO	CeO <sub>2</sub>	Cr <sub>2</sub> O <sub>3</sub>	CuO	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	Na <sub>2</sub> O	PbO	Sb <sub>2</sub> O <sub>3</sub>	SrO	ZnO	ZrO <sub>2</sub>
BR M 1	62.2	0.2	33.5	1.3	.	.	.	.	2.8	.	0.02	.	.	.	.	.	.	.	last
BR 7/L	45.60	30.60	2.78	0.91	.	9.63	3.23	0.0	.	.	0.03	0.12	.	0.06	0.26	0.62	0.27	5.27	.
BR 4/L	24.70	35.00	2.33	0.70	0.31	4.25	4.77	0.0	.	.	0.02	1.85	0.0	1.08	18.70	0.20	0.22	4.98	0.0
BR BG18	11.5	78.4	.	.	.	3.5	.	.	.	3.6	.	1.0	.	.	.	.	.	1.0	.

## BORON IN XRF DISCS

typical analysis

30-40 mm  $\emptyset$  x 5 mm

Number	B <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	As <sub>2</sub> O <sub>3</sub>	CaO	CdO	Cr <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	Na <sub>2</sub> O	NiO	P <sub>2</sub> O <sub>5</sub>	PbO	SO <sub>3</sub>	Sb <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	SnO	SnO <sub>2</sub>	TiO <sub>2</sub>	ZnO	
BR AN1/1	61.43	22.6	.	0.03	1.04	0.68	0.1	0.83	0.6	.	1.7	0.78	0.4	0.92	0.5	.	3.0	.	.	0.6	1.2	
BR DSH2	45.0	21.80	.	0.71	.	0.68	0.70	0.83	0.60	.	17.82	0.78	0.57	0.92	0.50	.	3.0	.	.	0.60	0.80	
BR DSH1	41.82	21.82	.	0.71	2.0	0.68	0.70	0.83	0.60	2.0	17.0	0.78	0.57	0.92	0.50	.	3.0	.	0.79	0.60	0.80	
FLX PR2	41.0	.	.	.	.	.	.	9.02	19.45	.	.	.	.	2.79	.	.	23.57	.	1.05	.	.	
BR WR2	40.0	0.1	.	1.1	.	0.1	9.0	5.0	15.0	0.5	10.0	.	0.5	.	0.5	0.5	15.8	.	.	0.5	.	
BR BP2	36.0	20.33	1.0	14.0	.	0.7	.	.	6.0	.	12.0	.	.	.	.	2.0	4.27	.	.	0.33	4.0	
BR MM1	31.10	9.0	.	3.0	.	.	0.50	2.0	5.0	10.0	16.0	2.0	0.50	4.0	0.10	0.50	6.0	.	1.0	3.0	5.0	
BR WR1	30.0	13.0	.	30.0	.	1.5	0.1	2.0	5.0	0.2	5.0	.	0.1	.	0.1	0.5	12.5	.	.	.	.	
BR OS1	26.68	15.11	2.0	14.0	.	.	.	13.43	.	10.78	.	5.0	.	.	.	2.0	5.0	.	.	.	6.0	
SV D	25.2	15.3	2.0	15.0	.	.	0.5	.	9.0	.	10.0	.	5.0	1.0	.	2.0	3.0	.	.	.	5.0	
BR DS1	23.62	20.0	.	14.40	.	.	0.58	0.09	7.4	.	9.6	.	5.8	1.7	.	1.85	6.6	.	.	0.03	3.7	
BR AX3	23.28	18.89	.	7.0	.	.	12.0	3.14	7.03	.	11.15	.	0.2	4.0	0.5	2.0	9.56	.	.	.	.	
BR PD 3	22.2	20.6	1.86	14.4	.	.	0.58	0.09	7.4	.	9.6	.	5.8	1.7	.	1.85	5.48	.	.	0.03	3.7	
BR U 30	22.0	20.0	.	.	.	.	.	14.0	.	14.0	.	14.0	.	.	.	.	.	.	.	.	.	6.0
BR WIE3/II	21.77	.	.	8.0	.	.	.	10.0	.	15.0	12.73	.	10.77	.	.	2.0	7.28	.	.	.	12.45	
BR KA1	20.79	20.0	.	10.0	.	.	0.01	1.0	15.0	.	11.0	.	2.0	.	0.2	1.0	4.0	.	.	.	15.0	
BR WIE3/I	20.0	18.9	.	5.0	.	.	14.3	3.0	.	.	11.0	.	.	.	.	2.0	7.28	11.32	.	.	.	
BR ARL2	20.0	12.0	0.5	0.5	2.0	.	.	.	3.0	25.0	12.0	.	1.0	.	0.5	.	19.4	.	0.5	.	2.0	

Number	Ag <sub>2</sub> O	BaO	Bi <sub>2</sub> O <sub>3</sub>	CuO	CeO <sub>2</sub>	Ce <sub>2</sub> O <sub>3</sub>	Cl	Ga <sub>2</sub> O <sub>3</sub>	GeO <sub>2</sub>	In <sub>2</sub> O <sub>3</sub>	La <sub>2</sub> O <sub>3</sub>	Nb <sub>2</sub> O <sub>5</sub>	MoO	MoO <sub>3</sub>	Se	SrO	Ta <sub>2</sub> O <sub>5</sub>	Te <sub>2</sub> O <sub>3</sub>	V <sub>2</sub> O <sub>5</sub>	WO <sub>3</sub>	ZrO <sub>2</sub>	
BR AN1/1	.	0.89	1.2	0.8	.	.	0.1	.	.	.	.	.	.	.	.	.	.	.	0.6	.	.	.
BR DSH2	.	0.89	1.20	0.80	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.60	.	.	.
BR DSH1	0.93	0.89	.	0.80	.	.	0.60	.	.	.	.	.	0.66	.	.	.	.	.	.	.	.	.
FLX PR2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.76	.
BR WR2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.5
BR BP2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR MM1	.	.	0.30	.	.	.	.	.	.	.	.	.	.	.	1.0	.	.	.	.	.	.	.
BR WR1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR OS1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SV D	.	.	1.0	.	1.0	.	.	.	1.5	.	1.0	.	1.0	.	.	.	.	.	1.0	.	.	0.5
BR DS1	.	.	.	.	0.84	.	0.46	.	0.88	.	.	.	0.87	.	0.13	.	.	0.86	0.05	0.34	.	.
BR AX3	.	.	.	1.25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR PD 3	.	.	0.18	.	.	0.84	.	0.46	0.41	.	0.88	.	0.87	.	0.13	.	.	0.86	0.32	0.34	.	.
BR U 30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR WIE3/II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR KA1	.	.	.	.	.	.	.	.	.	1.21	.	1.43	.	1.43	.	.	.	.	.	.	.	.
BR WIE3/I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.8	1.26	.	.
BR ARL2	.	.	0.5	.	.	.	.	.	.	.	.	.	.	.	.	.	0.5	0.1	.	.	.	0.5

## CARBONATE IN XRF DISC

typical analysis 38-40 mm Ø x 5-8 mm

Number	CO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	BaO	CaO	Cl	F	Fe <sub>2</sub> O <sub>3</sub>	MgO	Na <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	SO <sub>3</sub>	SiO <sub>2</sub>	SrO
FLX MB2	Rem	0.02	0.03	50.04	.	.	.	0.91	0.07	.	.	0.02	0.02
ASO TUD	47.51	0.207	.	30.28	0.013	<0.01	0.023	21.76	0.046	0.012	0.023	0.093	0.004

## CALCIUM AND FLUORITE IN XRF DISCS

typical analysis 38-40 mm Ø x 5-8 mm

Number	CaO	CaF <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	As <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>	F	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	Mn <sub>2</sub> O <sub>3</sub>	Na <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	SO <sub>3</sub>	SiO <sub>2</sub>	TiO <sub>2</sub>
BR U 33	56	.	0.25	.	.	.	.	0.2	.	.	.	.	.	.	.	0.3	.
FLX C1	44.11	.	10.09	.	23.8	0.07	.	2.27	0.76	1.51	0.16	.	0.80	0.17	0.53	16.59	0.14
BR SP1/1	40.60	.	5.0	.	25.65	.	.	2.0	2.0	8.0	.	.	1.0	.	0.05	15.0	.
BR BF2	37.0	.	10.0	.	3.43	.	.	1.0	0.4	8.0	0.77	.	.	2.0	0.2	36.0	1.0
BR BCEM	35.00	.	4.88	.	2.40	.	.	2.25	0.99	2.37	.	0.01	2.12	0.01	0.50	49.15	0.01
FLX C2	33.69	.	2.75	.	18.1	0.18	1.63	1.6	0.51	1.27	0.07	.	0.3	0.45	0.18	36.16	0.12
FLX Z1	32.77	.	0.42	.	41.6	.	3.54	0.09	0.09	0.29	0.05	.	5.51	0.23	3.59	12.18	0.08
BR SP2	30.0	.	9.0	.	19.50	.	.	5.0	2.0	6.0	.	.	2.0	.	0.30	25.0	.
BR WR1	30.0	.	13.0	.	30.0	1.5	.	0.1	2.0	5.0	0.2	.	5.0	0.1	0.1	12.5	.
FLX C3	29.36	.	11.16	.	31.0	0.09	.	1.87	0.733	2.87	0.16	.	2.22	0.58	0.40	19.76	0.19
FLX SP1	28.61	.	.	3.53	.	.	.	2.72	.	.	.	.	14.84	.	.	45.57	.
FLX SLAG2	27.8	.	6.0	.	.	0.28	1.05	5.68	0.14	10.8	2.53	.	.	1.59	1.61	31.4	1.41
FLX D1	26.52	.	0.51	.	21.5	.	.	.	0.44	19.14	0.35	.	.	0.47	0.01	30.46	0.43
BR B 1	25.0	.	.	.	.	.	.	19.0	.	.	.	.	.	.	.	51.0	.
FLX Z4	24.93	.	16.07	0.147	.	.	0.37	0.179	0.249	0.701	.	.	.	.	.	56.94	0.253
BR SS3	24.0	.	17.6	.	16.6	0.2	.	10.5	0.4	4.1	3.5	.	.	0.9	.	21.4	0.8
FLX Z5	22.67	.	18.16	.	.	0.19	.	9.39	0.41	4.07	2.7	.	.	0.89	.	25.63	0.73
FLX SLAG1	19.12	.	1.02	.	Rem	0.09	0.91	0.46	0.55	2.04	0.07	.	0.57	0.54	0.51	41.95	0.49
BR VA2/2	15.0	.	10.0	.	8.7	.	.	12.0	5.0	15.0	4.0	.	14.0	3.0	0.1	13.2	.
FLX S10	12.15	.	4.25	.	.	.	.	0.285	0.223	2.29	.	.	9.09	0.104	.	65.94	0.116
BR U 29	.	71.0	.	.	.	.	48	.	.	.	.	.	.	.	.	.	.
BR WC	.	20.00	25.00	.	.	.	.	0.80	.	5.00	.	.	10.00	0.15	.	38.10	0.80

Number	BaO	Cl	Cr <sub>2</sub> O <sub>3</sub>	CuO	FeO	GeO <sub>2</sub>	Li <sub>2</sub> O	MoO <sub>3</sub>	Nb <sub>2</sub> O <sub>5</sub>	NiO	PbO	Sb <sub>2</sub> O <sub>3</sub>	SrO	V <sub>2</sub> O <sub>5</sub>	ZnO	ZrO <sub>2</sub>
BR U 33	.	.	.	.	.	.	.	.	.	.	.	.	0.17	.	0.07	.
FLX C1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR SP1/1	.	0.20	.	.	.	.	.	.	.	.	.	0.50	.	.	.	.
BR BF2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR BCEM	.	.	.	.	.	.	.	.	.	.	.	0.31	.	.	.	.
FLX C2	.	0.15	.	.	.	3.9	.	.	.	.	.	.	0.1	.	0.08	.
FLX Z1	.	1.15	.	.	.	.	.	.	.	.	.	.	0.01	.	.	.
BR SP2	.	0.70	.	.	.	.	.	.	.	.	.	0.50	.	.	.	.
BR WR1	.	.	1.5	.	.	.	.	.	.	.	.	0.5	.	.	.	.
FLX C3	.	0.21	.	.	.	1.5	.	.	.	.	.	.	0.21	.	0.09	.
FLX SP1	.	.	.	.	.	.	5.37	.	.	.	.	.	.	3.76	.	.
FLX SLAG2	0.09	.	.	0.09	.	0.11	Rem	0.08	0.06	0.08	.	.	1.61	0.09	0.08	.
FLX D1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR B 1	.	.	0.5	3.0	.	.	.	.	.	1.0	.	.	.	.	.	last of stock
FLX Z4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR SS3	.	.	0.2	.	.	.	.	.	.	.	.	.	.	.	.	.
FLX Z5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
FLX SLAG1	0.11	.	.	0.09	.	.	5.0	.	0.11	0.09	0.09	.	0.09	0.49	0.09	0.10
BR VA2/2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
FLX S10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR U 29	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR WC	.	.	.	.	.	.	.	.	.	.	.	.	0.15	.	.	.

## CLASSIC XRF DISC SET

available in set/6 or individually

typical analysis

40 mm Ø x 5 mm

Number	Al <sub>2</sub> O <sub>3</sub>	As <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	BaO	CaO	CoO	CuO	F	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	Na <sub>2</sub> O	NiO	P <sub>2</sub> O <sub>5</sub>	PbO	Sb <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	TiO <sub>2</sub>	V <sub>2</sub> O <sub>5</sub>	WO <sub>3</sub>	ZnO
BR PA	15.8	.	4.2	2.0	0.83	.	.	0.17	1.16	2.16	3.2	20.3	0.13	.	0.58	.	.	36.52	3.9	0.01	.	7.4
BR PB	6.75	.	0.04	21.3	1.62	0.25	1.4	12.2	0.04	0.23	0.89	0.09	0.79	2.1	4.4	.	.	42.54	1.2	.	1.85	0.45
BR PC	27.18	0.78	19.1	1.0	0.03	.	.	.	5.4	6.9	.	0.47	7.9	0.29	15.6	.	.	9.9	0.10	0.26	0.90	.
BR PD	20.22	1.86	22.2	.	14.3	.	.	.	0.58	0.09	7.3	.	9.6	.	5.8	1.7	1.85	5.48	0.03	0.86	0.32	3.7
BR PE	8.5	0.44	4.0	4.6	0.60	0.74	0.82	1.3	0.03	0.95	.	6.5	15.3	1.85	.	0.45	0.43	50.07	0.02	.	.	0.92
BR PF	3.85	.	2.0	0.34	2.84	0.25	1.8	5.0	0.07	18.3	0.82	.	1.2	.	.	0.05	0.86	56.31	0.04	1.7	.	.
Number	Ag <sub>2</sub> O	Ga <sub>2</sub> O <sub>3</sub>	Bi <sub>2</sub> O <sub>3</sub>	CdO	Ce <sub>2</sub> O <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>	Cs <sub>2</sub> O	GeO <sub>2</sub>	In <sub>2</sub> O <sub>3</sub>	La <sub>2</sub> O <sub>3</sub>	MoO <sub>3</sub>	Nb <sub>2</sub> O <sub>5</sub>	Nd <sub>2</sub> O <sub>3</sub>	Pr <sub>2</sub> O <sub>3</sub>	Rb <sub>2</sub> O	Sm <sub>2</sub> O <sub>3</sub>	SnO <sub>2</sub>	SrO	Ta <sub>2</sub> O <sub>5</sub>	TeO <sub>2</sub>	Y <sub>2</sub> O <sub>3</sub>	ZrO <sub>2</sub>
BR PA	.	.	.	0.39	.	0.15	0.04	0.08	0.04	.	.	.	.	.	0.04	.	.	0.71	.	0.04	.	0.15
BR PB	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.92	0.008	0.85	0.08	.	.
BR PC	.	.	0.50	0.16	.	.	.	0.27	.	.	2.0	0.60	0.46	0.20	.	.	.	.	.	.	.	.
BR PD	.	0.46	0.18	.	0.84	.	.	0.41	.	0.88	0.87	.	.	.	.	.	.	0.13	.	.	.	0.34
BR PE	0.13	.	0.08	.	0.56	.	.	0.09	0.40	.	0.05	.	.	.	.	.	0.60	0.31	0.05	0.03	0.18	.
BR PF	.	0.09	.	0.96	0.39	0.27	0.13	.	0.26	.	0.38	.	.	.	0.16	0.18	0.20	.	0.36	.	0.45	0.74



**LEAD IN XRF DISCS**

typical analysis

40 mm Ø x 5 mm

Number	PbO	Al <sub>2</sub> O <sub>3</sub>	As <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	BaO	CaO	CdO	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	Na <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	SO <sub>3</sub>	SiO <sub>2</sub>	ZnO
BR SF6	71.5	.	0.3	.	.	.	.	.	2.0	.	.	1.0	.	.	25.2	.
BR SF1	62.2	.	0.5	.	.	.	.	.	3.2	.	.	.	.	.	34.1	.
BR AK2	50.0	.	.	.	1.0	1.0	1.0	.	0.50	.	.	10.0	4.0	0.67	30.83	1.00
BR VA1	50.0	0.5	.	20.96	.	2.79	.	4.27	0.1	3.31	0.64	0.4	0.23	0.3	1.2	15.0
BR H 1	23.5	4.00	.	.	.	3.8	.	.	8.7	2.6	.	6.2	.	.	51.1	.

**NEODYMIUM IN XRF DISCS**

typical analysis

Number	Nd <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	CaO	F	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	Na <sub>2</sub> O	SO <sub>3</sub>	Sb <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZnO	Units
BR U 38	2.5	1.2	5.3	0.5	0.04	7.5	0.07	9.2	0.11	0.2	72.0	1.1	40 mm Ø x 5-8 mm

**PHOSPHORUS IN XRF DISCS**

typical analysis

40 mm Ø x 5-6 mm

Number	P <sub>2</sub> O <sub>5</sub>	Al <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	BaO	CaO	Cl	CoO	Cr <sub>2</sub> O <sub>3</sub>	F	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	MoO <sub>3</sub>	Na <sub>2</sub> O	NiO	SO <sub>3</sub>	SiO <sub>2</sub>	SrO	TiO <sub>2</sub>	V <sub>2</sub> O <sub>5</sub>	ZnO	
BR UC5	67.88	6.0	.	11.0	.	.	8.99	.	.	.	3.7	.	.	.	.	2.43	.	.	.	.	.	.	.
BR HPII	30.0	25.0	20.0	.	.	.	.	.	.	.	5.0	.	.	.	10.0	.	.	10.0	.	.	.	.	.
FLX R5	18.61	0.195	.	5.87	0.11	1.01	.	.	.	.	4.19	.	4.22	6.18	13.47	.	.	42.04	.	.	2.94	5.9	
FLX PR3	9.72	17.68	.	.	3.16	.	.	1.07	.	.	.	6.76	.	.	.	0.373	.	41.28	.	3.32	.	.	
FLX Z2	6.75	7.17	34.8	.	7.35	0.15	.	0.23	0.91	1.92	2.17	7.33	0.50	.	0.73	.	0.11	29.97	0.05	0.98	.	0.10	

**ELEMENTS IN XRF DISCS**

typical analysis listed in mass % all available individually

40 mm Ø x 6 mm

Number	Ag	Al	As	B <sub>2</sub> O <sub>3</sub>	Ba	Ca	Cd	Cl	Co	Cr	Cu	Fe	K	Li <sub>2</sub> O	Mg	Mn	Mo
FLX OME 5	<0.0001	0.0005	.	.	0.0005	0.0005	<0.0001	<0.0001	.	0.0005	<0.0001	0.0005	0.0005	.	0.0005	0.0005	0.0005
FLX OME 10	<0.0001	0.0010	.	.	0.0010	0.0010	<0.0001	<0.0001	.	0.0010	<0.0001	0.0010	0.0010	.	0.0010	0.0010	0.0010
FLX OME 25	0.0025	0.0025	.	.	0.0025	0.0025	0.0025	<0.0001	.	0.0025	0.0008	0.0025	0.0025	.	0.0025	0.0025	0.0025
FLX OME 50	0.0050	0.0050	.	.	0.0050	0.0050	0.0055	<0.0004	.	0.0050	0.0033	0.0050	0.0050	.	0.0050	0.0050	0.0050
FLX OME 100	0.0100	0.0100	.	.	0.0100	0.0100	0.0100	<0.0003	.	0.0100	0.0056	0.0100	0.0100	.	0.0100	0.0100	0.0100
FLX OME 250	0.0250	0.0250	.	.	0.0250	0.0250	0.0250	0.0058	.	0.0250	0.0203	0.0250	0.0250	.	0.0250	0.0250	0.0250
FLX OME 500	0.0500	0.0500	.	.	0.0500	0.0500	0.0500	0.0123	.	0.0500	0.0500	0.0500	0.0500	.	0.0500	0.0500	0.0500
FLX OME 900	0.0900	0.0900	.	.	0.0900	0.0900	0.0900	0.0250	.	0.0900	0.0900	0.0900	0.0900	.	0.0900	0.0900	0.0900
FLX OME 1000	0.0684	0.0886	.	.	0.0924	0.1010	0.0967	0.0190	.	0.0906	0.0925	0.0961	0.0864	.	0.0958	0.0934	0.1120
FLX OME 2500	0.1960	0.2500	.	.	0.2500	0.2500	0.2500	0.0808	.	0.2500	0.2500	0.2500	0.2500	.	0.2500	0.2500	0.2500
FLX O1	0.52	1.93	.	.	5.61	4.3	0.53	0.35	.	0.63	0.90	0.80	0.87	.	2.82	0.27	1.55
FLX L2	.	5.88	0.12	37.2	.	0.17	.	.	0.56	.	.	0.25	.	8.0	.	.	2.59

Number	Na	Ni	P	Pb	S	Si	SiO <sub>2</sub>	Sn	Ti	V	W	Zn	Zr
FLX OME 5	0.0005	<0.0001	0.0005	0.0005	0.0004	0.0005	0.0005	<0.0001	0.0005	0.0005	.	0.0005	0.0005
FLX OME 10	0.0010	<0.0001	0.0010	0.0010	<0.0001	0.0010	0.0010	<0.0001	0.0010	0.0010	.	0.0010	0.0010
FLX OME 25	0.0025	0.0016	0.0025	0.0025	<0.0001	0.0025	0.0025	<0.0008	0.0025	0.0025	.	0.0025	0.0025
FLX OME 50	0.0050	0.0041	0.0050	0.0050	0.0024	0.0050	0.0050	0.0029	0.0050	0.0050	.	0.0050	0.0050
FLX OME 100	0.0100	0.0086	0.0100	0.0100	0.0057	0.0100	0.0100	0.0057	0.0100	0.0100	.	0.0100	0.0100
FLX OME 250	0.0250	0.0250	0.0250	0.0250	0.0215	0.0250	0.0250	0.0250	0.0250	0.0250	.	0.0250	0.0250
FLX OME 500	0.0500	0.0500	0.0500	0.0500	0.0366	0.0500	0.0500	0.0500	0.0500	0.0500	.	0.0500	0.0500
FLX OME 900	0.0900	0.0900	0.0900	0.0900	0.0790	0.0900	0.0900	0.0900	0.0900	0.0900	.	0.0900	0.0900
FLX OME 1000	0.0938	0.0995	0.0967	0.0908	0.0801	0.0926	.	0.1030	0.0939	0.0946	.	0.0921	.
FLX OME 2500	0.2500	0.2500	0.2500	0.2500	0.2007	0.2500	.	0.2500	0.2500	0.2500	.	0.2500	0.2500
FLX O1	5.26	0.92	0.58	2.79	0.07	24.75	.	0.90	0.66	0.63	.	3.51	.
FLX L2	0.18	1.21	0.59	0.11	0.02	.	43.55	.	.	0.55	0.22	.	.

**CRM GLASS XRF DISCS AND PLATES**

analysis listed in mass %

typical analysis

Number	Type	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	BaO	CaO	CdO	FeO	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	Na <sub>2</sub> O	SO <sub>3</sub>	SrO	TiO <sub>2</sub>	ZnO
SRM 93a	Borosilicate	80.8	2.28	12.56	.	0.01	.	0.016	0.028 (T.Fe)	0.014	0.005	3.98	.	.	0.014	.
SRM 1831	Soda-Lime Sheet	73.08	1.21	.	.	8.20	.	0.025	0.087 (T.Fe)	0.33	3.51	13.32	0.25	.	0.019	.
SRM 1830	Soda-Lime Float	73.07	0.12	.	.	8.56	.	0.032	0.121 (T.Fe)	0.04	3.90	13.75	0.26	.	0.011	.
SRM 620	Soda-Lime Flat	72.08	1.80	.	.	7.11	.	.	0.043	0.41	3.69	14.39	0.28	.	0.018	.
SRM 1411	Soft Borosilicate	58.04	5.68	10.94	5.00	2.18	.	.	0.050	2.97	0.33	10.14	.	0.09	0.02	3.85
SRM 1412	Multicomponent	42.38	7.52	4.53	4.67	4.53	4.38	.	(0.031)	4.14	(4.69)	4.69	.	4.55	.	4.48

continued

Number	As <sub>2</sub> O <sub>3</sub>	Cl	Li <sub>2</sub> O	PbO	ZrO <sub>2</sub>	Units
SRM 93a	.	0.060	.	.	0.042	1 Disc 32 mm Ø x 6 mm
SRM 1831	.	.	.	.	.	3 Plates 37 mm x 37 mm x 3 mm
SRM 1830	.	.	.	.	.	3 Plates 32 mm x 32 mm x 6 mm
SRM 620	0.056	.	.	.	.	3 Plates 35 mm x 35 mm x 3 mm
SRM 1411	.	.	.	.	.	10 Plates 32 mm x 32 mm x 3 mm
SRM 1412	.	.	(4.50)	4.40	.	8 Plates 32 mm x 32 mm x 3 mm

## HIGH SILICA IN XRF DISCS

typical analysis

40 mm Ø x 5-6 mm

Number	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	BaO	Bi <sub>2</sub> O <sub>3</sub>	CaO	Cl	K <sub>2</sub> O	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	Na <sub>2</sub> O	SO <sub>3</sub>	Sb <sub>2</sub> O <sub>3</sub>	SrO	TiO <sub>2</sub>	
ASO TU1	99.99	0.005	.	.	0.005	.	.	<0.01	.	0.005	.	.	.	.	last of stock
FLX Q0	99.99	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR K 1/3	99.5	0.17	.	.	0.02	0.05	.	0.02	0.07	0.10	0.04	.	.	0.02	.
ASO TU7	61.2	.	0.5	8.4	.	0.6	10.0	.	.	17.0	.	0.14	0.25	2.0	last of stock

## CRM URANIUM IN XRF DISCS

typical analysis listed in mg/kg

12 mm Ø x 5 mm

Number	U
IRMM 540R	15.0
IRMM 541	49.4

## URANIUM IN XRF DISCS

typical analysis

30-40 mm Ø x 5 mm

Number	UO <sub>3</sub>	U <sub>3</sub> O <sub>8</sub>	Al <sub>2</sub> O <sub>3</sub>	As <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	BaO	CaO	CdO	CoO	Cr <sub>2</sub> O <sub>3</sub>	CuO	F	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	Na <sub>2</sub> O	NiO	P <sub>2</sub> O <sub>5</sub>	SiO <sub>2</sub>	Sb <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	ZnO
SV F	1.0	.	2.0	.	3.0	0.3	3.0	.	0.5	.	.	4.0	.	29.3	1.0	.	1.0	.	.	58.23	1.0	1.0	0.2
SV E	0.5	.	1.5	0.5	6.0	3.0	5.0	.	1.0	4.0	1.0	0.8	.	2.5	.	5.0	15.0	0.5	.	50.9	.	.	2.0
BR AS1	0.01	.	15.8	0.44	3.22	.	0.83	0.39	.	0.15	.	0.17	1.16	2.16	3.20	20.3	0.13	.	0.58	38.9	.	3.9	7.4
BR U 26	.	1.0	1.5	.	.	0.1	6.5	.	.	.	.	1.0	0.07	3.0	.	.	13.3	.	.	69.98	0.25	.	1.0
BR U 21	.	0.40	2.0	.	10	.	6.5	1.5	0.25	0.6	1	.	0.05	5.8	0.05	0.15	10.0	0.15	.	60.0	0.25	.	.
BR EK01	.	0.10	.	0.13	0.74	2.24	4.96	0.02	0.38	1.17	0.63	.	.	6.82	.	.	8.54	0.64	.	67.05	0.44	.	3.73
BR U 25	.	0.10	3.0	.	.	.	6.9	.	.	0.27	0.18	.	0.34	2.9	0.15	6.0	9.3	.	.	69.3	0.20	.	0.8
BR CH1	.	0.1	28.0	0.8	20.0	1.0	.	0.15	.	.	.	.	7.0	8.0	.	0.5	6.5	0.3	14.0	9.11	.	0.1	.

Number	Bi <sub>2</sub> O <sub>3</sub>	CeO <sub>2</sub>	Cs <sub>2</sub> O	Ga <sub>2</sub> O <sub>3</sub>	GeO <sub>2</sub>	In <sub>2</sub> O <sub>3</sub>	La <sub>2</sub> O <sub>3</sub>	MoO <sub>3</sub>	Nb <sub>2</sub> O <sub>5</sub>	Nd <sub>2</sub> O <sub>3</sub>	PbO	Pr <sub>2</sub> O <sub>3</sub>	Rb <sub>2</sub> O	SO <sub>3</sub>	SeO <sub>2</sub>	SnO	SrO	Ta <sub>2</sub> O <sub>5</sub>	TeO <sub>2</sub>	ThO <sub>2</sub>	V <sub>2</sub> O <sub>5</sub>	WO <sub>3</sub>	ZrO <sub>2</sub>
SV F	.	0.5	.	0.1	.	.	0.5	.	0.5	0.6	.	0.15	.	.	.	.	1.0	0.12	.	.	.	.	1.0
SV E	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.5	0.3	.	.	.	.	.	.
BR AS1	.	.	0.04	.	0.08	0.04	.	.	.	.	0.5	.	0.04	.	.	.	0.71	.	0.04	0.04	0.01	.	0.15
BR U 26	.	2.0	.	.	.	.	.	.	.	.	.	.	.	0.2	0.14	.	.	.	.	.	.	.	.
BR U 21	.	0.15	.	.	.	.	.	.	.	.	.	.	.	0.15	0.02	.	.	.	.	.	.	.	.
BR EK01	.	.	.	.	.	.	.	0.30	.	.	0.65	.	.	.	.	0.57	.	.	.	.	0.89	.	.
BR U 25	.	.	.	.	.	.	.	.	.	.	.	.	.	0.12	.	.	.	.	.	.	.	.	.
BR CH1	1.0	.	.	.	0.3	.	.	.	0.7	0.5	.	0.4	0.04	.	.	.	.	.	.	.	0.3	1.2	.

## ZINC AND ZIRCONIUM IN XRF DISCS

typical analysis

40 mm Ø x 5-6 mm

Number	ZnO	ZrO <sub>2</sub>	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	BaO	Bi <sub>2</sub> O <sub>3</sub>	CaO	Cr <sub>2</sub> O <sub>3</sub>	CdO	Co <sub>2</sub> O <sub>3</sub>	F	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	Li <sub>2</sub> O	MgO	MnO <sub>2</sub>	Na <sub>2</sub> O	
BR TL2	.	30	10	0.5	9.3	.	.	.	.	.	.	.	0.1	15	5	.	.	.	15
BR N 1	80.2	.	0.2	.	.	.	4.5	.	1.6	.	.	1.9	.	.	.	.	.	0.7	.
FLX F1	12.92	.	65.81	2.14	.	.	.	1.62	.	0.181	.	2.57	0.116	0.781	.	.	.	.	13.53
FLX SP2	2.50	2.17	44.75	.	20.0	5.35	.	.	.	3.71	.	.	.	.	.	18.42	.	.	.

Number	NiO	P <sub>2</sub> O <sub>5</sub>	PbO	Sb <sub>2</sub> O <sub>3</sub>	SO <sub>3</sub>	TiO <sub>2</sub>
BR TL2	.	0.1	10	.	.	5
BR N 1	0.7	.	.	9.3	.	0.9
FLX F1	.	.	.	.	0.264	.
FLX SP2	.	.	4.65	.	.	.

## MULTI-ELEMENT XRF DISCS

typical analysis

40 mm Ø x 5-6 mm

Number	Ag <sub>2</sub> O	Al <sub>2</sub> O <sub>3</sub>	As <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	BaO	Bi <sub>2</sub> O <sub>3</sub>	Br	CaO	CdO	CeO <sub>2</sub>	Ce <sub>2</sub> O <sub>3</sub>	Cl	CoO	Co <sub>3</sub> O <sub>4</sub>	Cr <sub>2</sub> O <sub>3</sub>	Cs <sub>2</sub> O
BR AS1	.	15.8	0.05	3.22	.	.	.	0.83	0.39	.	.	.	.	.	0.15	0.04
BR CH3	0.5	15.0	0.5	5.0	5.0	0.08	.	0.6	.	.	.	.	1.0	.	0.6	0.05
FLX CH3	0.56	13.59	0.53	.	5.51	2.07	.	0.59	.	.	.	.	.	0.93	0.64	0.05
BR ES1	0.13	13.2	0.2	1.1	4.6	0.08	.	0.60	.	.	.	.	0.74	.	0.56	.
FLX B2	.	9.23	.	Rem	.	.	.	32.48	.	.	.	.	.	.	.	.
FLX B4	.	8.59	.	Rem	.	.	.	7.31	.	.	.	.	.	.	.	.
BR PE 3	0.13	8.5	0.44	4.0	4.6	0.08	.	0.60	.	.	.	.	0.74	.	0.56	.
FLX B1	.	7.34	0.57	.	0.10	.	.	17.37	.	.	.	.	.	.	1.72	.
FLX S6M	.	6.14	0.15	6.9	1.57	.	.	4.87	0.28	0.37	.	.	.	0.52	0.31	.
FLX MON-UT	0.16	5.75	0.19	Rem	0.19	0.18	0.23	9.32	0.17	0.43	.	0.24	.	0.17	0.13	.
FLX MON	0.15	5.07	0.17	Rem	0.21	0.19	0.19	8.53	0.16	0.36	.	0.24	.	0.17	0.14	.
FLX S5	.	4.11	.	.	0.84	2.26	.	4.6	0.339	0.409	.	.	.	0.418	0.427	.
FLX S13	0.27	3.95	0.18	8.8	1.20	2.17	0.21	5.21	0.42	0.46	.	0.42	.	0.45	0.47	.
BR PF 3	.	3.85	.	2.0	0.34	.	.	2.84	0.96	.	0.39	.	0.25	.	0.27	0.13
BR FS1	.	3.85	.	2.0	0.34	.	.	2.84	0.2	.	0.39	.	0.25	.	0.27	0.13
BR CH4	.	3.0	.	2.65	0.30	.	.	4.00	1.00	.	0.40	.	0.50	.	0.10	0.15
BR WIE2	0.54	1.89	0.66	5.0	2.0	0.56	.	3.0	0.57	.	.	.	1.27	.	1.46	.
FLX B3	.	0.37	.	Rem	.	.	.	5.73	.	.	.	0.09	.	.	0.29	.
BR WIE1/1	0.11	0.19	0.13	9.05	2.0	0.11	.	3.0	0.12	.	.	.	0.13	.	0.15	.
FLX B5	.	.	.	Rem	.	.	.	8.67	.	.	.	.	.	.	.	.

Number	CuO	Dy <sub>2</sub> O <sub>3</sub>	Er <sub>2</sub> O <sub>3</sub>	F	Fe <sub>2</sub> O <sub>3</sub>	Ga <sub>2</sub> O <sub>3</sub>	Gd <sub>2</sub> O <sub>3</sub>	GeO <sub>2</sub>	HfO <sub>2</sub>	In <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	La <sub>2</sub> O <sub>3</sub>	MgO	MnO	MnO <sub>2</sub>	MoO <sub>3</sub>
BR AS1	.	.	.	0.17	1.16	.	.	0.08	.	0.04	2.16	.	3.20	20.3	.	.
BR CH3	0.3	.	.	.	.	1.0	.	.	.	0.1	2.0	0.3	0.1	12.0	.	.
FLX CH3	0.33	.	.	.	.	1.19	.	.	.	0.11	1.73	0.25	0.18	10.17	.	.
BR ES1	0.25	.	.	1.3	0.03	.	.	.	.	0.09	2.7	0.40	.	6.2	.	.
FLX B2	.	.	.	.	0.94	.	.	.	.	.	0.43	.	5.01	0.83	.	.
FLX B4	.	.	.	.	10.04	.	.	.	.	.	3.60	.	9.83	3.73	.	.
BR PE 3	0.82	.	.	1.3	0.03	.	.	.	0.09	0.95	0.40	.	.	6.5	.	.
FLX B1	0.10	.	.	1.16	9.48	.	.	.	.	.	0.40	.	10.32	0.88	.	.
FLX S6M	0.39	0.19	0.18	.	0.47	.	0.17	.	0.40	.	3.27	0.38	1.43	0.15	Li <sub>2</sub> O:1.5	0.47
FLX MON-UT	0.15	.	.	2.26	0.95	.	0.35	0.26	0.18	.	1.53	0.34	2.67	0.88	Li <sub>2</sub> O:3.4	0.22
FLX MON	0.16	.	.	1.47	1.20	.	0.36	0.26	0.19	.	1.91	0.41	2.51	0.69	Li <sub>2</sub> O:3.4	0.22
FLX S5	0.412	.	.	0.89	0.478	.	.	.	.	.	3.95	0.426	1.68	0.382	.	0.43
FLX S13	0.42	0.27	0.21	1.21	0.45	.	0.26	0.09	0.29	0.25	4.76	0.42	1.88	0.43	Li <sub>2</sub> O:1.8	0.25
BR PF 3	1.8	.	.	5.0	0.07	0.09	.	.	(0.01)	0.26	18.3	.	0.82	.	.	.
BR FS1	1.8	.	.	2.9	0.07	0.09	.	.	.	0.26	18.4	.	0.82	.	.	.
BR CH4	2.00	.	.	.	0.10	0.10	.	.	.	0.40	20.00	.	1.00	.	.	0.20
BR WIE2	2.5	.	.	.	2.86	.	.	.	.	.	5.0	.	1.66	.	3.16	.
FLX B3	0.27	.	.	.	0.30	.	.	.	.	.	7.11	.	.	.	.	.
BR WIE1/1	0.13	.	.	.	0.15	.	.	.	.	0.12	12.0	.	0.17	.	0.16	0.15
FLX B5	.	.	.	.	.	.	.	.	.	.	9.02	.	.	.	.	.

Number	Na <sub>2</sub> O	Nb <sub>2</sub> O <sub>5</sub>	Nd <sub>2</sub> O <sub>3</sub>	NiO	P <sub>2</sub> O <sub>5</sub>	PbO	Pr <sub>2</sub> O <sub>3</sub>	Pr <sub>6</sub> O <sub>11</sub>	Rb <sub>2</sub> O	S	SO <sub>3</sub>	Sb <sub>2</sub> O <sub>3</sub>	Sc <sub>2</sub> O <sub>3</sub>	Se	SiO <sub>2</sub>	Sm <sub>2</sub> O <sub>3</sub>
BR AS1	0.13	.	.	.	0.58	0.5	.	.	0.04	.	.	.	.	.	38.9	.
BR CH3	16.0	.	.	2.0	0.6	0.5	0.15	.	.	.	.	0.4	.	.	31.83	.
FLX CH3	17.39	.	.	2.04	0.60	0.48	.	0.18	.	.	.	0.42	.	.	36.76	.
BR ES1	14.6	0.05	.	1.85	.	0.3	.	.	.	.	.	0.43	.	.	48.03	.
FLX B2	.	.	.	.	2.17	.	.	.	.	.	0.21	.	.	.	42.33	.
FLX B4	15.40	.	.	.	2.81	.	.	.	.	.	0.12	.	.	.	34.60	.
BR PE 3	15.3	0.05	.	1.85	.	0.45	.	.	(0.01)	.	.	0.43	.	.	50.07	.
FLX B1	0.56	0.60	.	0.80	2.16	4.55	.	.	.	.	.	.	.	.	33.80	.
FLX S6M	9.16	0.90	0.29	0.48	0.70	1.83	.	0.22	.	.	.	0.22	.	.	47.26	0.12
FLX MON-UT	5.61	0.21	0.24	0.17	1.56	0.22	.	0.15	0.12	.	0.11	0.17	0.19	.	44.39	0.27
FLX MON	5.09	0.20	0.16	0.18	1.47	0.18	.	0.09	0.14	.	0.11	0.17	0.20	.	47.02	0.27
FLX S5	10.04	0.615	.	0.444	0.453	2.64	.	.	.	.	.	.	.	.	54.36	.
FLX S13	7.74	0.28	0.36	0.49	0.55	1.81	0.27	0.10	0.10	0.47	0.16	0.16	0.09	SeO <sub>2</sub> :0.01	45.13	0.26
BR PF 3	1.2	0.38	.	.	.	0.05	.	0.16	(0.01)	.	0.86	.	.	.	56.31	0.18
BR FS1	1.2	0.38	.	.	.	0.05	.	0.16	.	.	0.25	.	.	.	59.6	0.18
BR CH4	0.80	0.10	.	.	.	0.10	.	0.20	.	.	1.00	.	.	.	56.83	.
BR WIE2	14.0	.	.	2.55	1.15	2.15	.	.	.	.	1.25	0.6	.	0.5	38.95	.
FLX B3	9.66	.	.	0.24	0.47	0.25	.	.	.	.	0.48	0.58	.	.	64.18	.
BR WIE1/1	17.0	0.14	.	0.13	0.23	0.11	.	.	.	.	0.25	0.12	.	0.10	53.10	.
FLX B5	10.62	.	.	8.24	.	11.26	.	.	.	.	.	2.21	.	.	29.78	.

Number	SnO	SnO <sub>2</sub>	SrO	Ta <sub>2</sub> O <sub>5</sub>	Te	TeO <sub>2</sub>	ThO <sub>2</sub>	TiO <sub>2</sub>	UO <sub>3</sub>	V <sub>2</sub> O <sub>5</sub>	WO <sub>3</sub>	Y <sub>2</sub> O <sub>3</sub>	Yb <sub>2</sub> O <sub>3</sub>	ZnO	ZrO <sub>2</sub>
BR AS1	.	.	0.71	.	.	0.04	0.04	3.9	0.01	0.01	.	.	.	7.4	0.15
BR CH3	.	0.8	0.1	0.05*	.	.	0.44	1.0	.	.	.	0.20	.	1.8	.
FLX CH3	.	0.86	0.08	0.03	.	.	0.5	1.03	.	.	.	0.18	.	1.82	.
BR ES1	.	0.6	0.31	0.05	.	0.03	0.44	0.8	.	0.2	.	0.18	.	0.15	.
FLX B2	.	.	.	.	.	.	.	1.04	.	.	.	.	.	.	.
FLX B4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
BR PE 3	.	0.60	0.31	0.05	.	0.03	.	0.02	.	.	.	0.18	.	0.92	.
FLX B1	.	0.21	0.11	.	.	0.11	.	1.15	.	.	1.97	.	.	0.11	.
FLX S6M	.	0.57	1.02	0.53	.	.	.	4.93	.	0.49	.	0.31	0.23	1.10	0.63
FLX MON-UT	.	0.18	0.20	0.18	.	0.17	0.19	1.16	0.19	0.18	0.18	0.25	0.19	0.15	0.18
FLX MON	.	0.17	0.20	0.21	.	0.13	.	1.13	.	0.19	0.17	0.17	0.31	0.20	0.17
FLX S5	.	0.451	0.783	0.431	.	.	.	0.476	.	0.451	0.414	.	.	0.908	0.453
FLX S13	.	0.41	0.99	0.46	.	0.42	.	0.48	.	0.46	0.42	0.19	0.19	0.94	0.47
BR PF 3	.	0.20	.	0.36	.	.	.	0.04	.	1.7	.	0.45	.	.	0.74
BR FS1	.	0.2	.	0.36	.	.	.	0.04	.	1.7	.	0.45	.	.	0.74
BR CH4	.	0.20	.	0.50*	.	.	.	2.00	.	0.70	0.10	0.60	.	0.80	1.00
BR WIE2	2.27	.	.	.	0.5	.	.	0.83	.	.	.	.	.	2.49	0.68
FLX B3	.	.	.	.	.	.	.	.	.	.	.	.	.	0.25	.
BR WIE1/1	0.11	.	.	.	0.10	.	.	0.17	.	0.18	0.13	.	.	0.12	0.14
FLX B5	.	.	.	.	.	.	.	.	.	.	.	.	.	13.70	.

\* BR CH3 and BR CH4 list Ta<sub>2</sub>O<sub>3</sub> as Ta<sub>2</sub>O<sub>5</sub>









## GEOLOGICAL POWDER SETTING-UP SAMPLES

analysis in mass %

Data Sheet shows two lists of analytical results, no uncertainties

100 g powder

Number	Al <sub>2</sub> O <sub>3</sub>	Ba	CaO	Cu	F	T.Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	Na <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	Pb	S	SiO <sub>2</sub>	TiO <sub>2</sub>	W	Zn
US GXR-6	33.4	0.13	0.25	0.0066	0.022	7.98	2.25	1.01	0.13	0.14	0.08	0.0101	0.016	46.68	0.83	0.00019	0.0118
US GXR-2	31.10	0.224	1.30	0.0076	0.045	2.66	1.65	1.41	0.13	0.75	0.24	0.069	0.0313	47.54	0.5	0.00019	0.053
US GXR-4	13.6	0.164	1.41	0.652	0.284	4.42	4.83	2.75	0.02	0.76	0.27	0.0052	1.77	66.19	0.48	0.00308	0.0073
US GXR-3	12.1	0.50	19.0	0.0015	8.62	27.2	0.88	1.34	2.88	1.13	0.25	0.0015	0.232	13.36	0.17	1.07	0.0207
US GXR-1	6.64	0.068	1.34	0.111	0.126	33.8	0.06	0.36	0.11	0.07	0.15	0.072	0.26	48.57	0.06	0.0164	0.076

continued analysis in mg/kg

Number	Ag	As	Au	B	Be	Bi	Br	Cd	Ce	Cl	Co	Cr	Cs	Hg	La
US GXR-6	1.3	330	0.095	9.8	1.4	0.29	1.4	1	36	.	13.8	96	4.2	0.068	13.9
US GXR-2	17	25	0.036	42	1.7	0.7	3.2	4.1	51.4	.	8.6	36	5.2	2.9	25.6
US GXR-4	4	98	0.47	4.5	1.9	19	0.5	0.86	102	78	14.6	64	2.8	0.11	64.5
US GXR-3	2.4	3970	.	160	26	16	.	0.3	18	.	43	19.3	175	0.33	8.8
US GXR-1	31	401	3.4	15	1.22	1380	0.5	3.3	17	136	8.2	13	3	3.9	7.5

Number	Li	Mo	Ni	Rb	Sc	Se	Sn	Sr	Te	Th	U	V	Y	Zr	Type
US GXR-6	32	2.4	27	90	27.6	0.94	1.7	35	0.018	5.3	1.54	186	14	110	Soil
US GXR-2	54	2.1	21	78	6.88	0.61	1.7	160	0.69	8.8	2.9	52	17	269	Soil
US GXR-4	11.1	310	42	160	7.7	5.6	5.6	221	0.97	22.5	6.2	87	14	186	Copper Ore
US GXR-3	114	6.6	60	92	16.8	0.15	.	950	0.009	2.94	3	42	15	63	Tungsten Ore
US GXR-1	8.2	18	41	14	1.58	16.6	55	259	13	2.44	33	76	32	38	Jasperoid



## AUSMON XRF DRIFT MONITORS (wavelength dispersive XRF)

The monitors listed below have been formulated so that they have appropriate count rates for different ores and products. The monitors contain little flux and most have been in use for many years and have given excellent stability.

The monitor discs are 32 or 40mm diameter and about 4mm high. The monitors are polished flat so that they can be mounted precisely and are easily cleaned. The following types for wavelength dispersive XRF are available:

### AUSMON Bauxite

Suitable with bauxites and other materials with high Aluminum and contain **Fe, Si, Al, Ca, F, Na, Mg, P, S, Cl, K, Ti, V, Cr, Mn, Co, Ni, Cu, Zn, As, Br, Sn, and Ga.** (24 elements)

### AUSMON Cement A

Suitable when making detailed analyses of cements or other materials with high Calcium and contain **Ca, Si, Al, Mg, Fe, Na, Cl, S, F, P, K, Ti, Cr, Mn, Zn, Sr, Br, Ba, and Pb.** (19 elements)

### AUSMON Iron Ore

Suitable with iron ores and related materials, containing **Fe, Si, Al, Ca, F, Na, Mg, P, S, Cl, K, Ti, V, Cr, Mn, Co, Ni, Cu, Zn, As, Br, Sn, Cd, Sb, Bi, Mo, Ba, and Pb.** (28 elements)

### AUSMON Manganese Ore

Suitable with manganese ores and contain: **Mn, Fe, Si, Na, Mg, Al, P, K, Ca, Ti, V, Sr, Br, Ba, and Pb.** (15 elements)

### AUSMON Mineral Sands

Suitable with mineral sand products, including but not limited to ilmenite, rutile, zircon, monazite and xenotime. The following elements are present: **Ti, Fe, Zr, Si, Y, La, Ce, Nd, Pr, Yb, P, F, Na, Mg, Al, S, Cl, K, Ca, Sc, V, Mn, Cr, Co, Ni, Cu, Zn, Br, As, Sr, Nb, Mo, Cd, Sn, Ba, Hf, Pb, Th, and U.** (39 elements)

### AUSMON Nickel Ore

Suitable with nickel ores and related materials, containing **Ni, Fe, S, Si, F, Na, Mg, Al, P, Cl, K, Ca, Ti, Mn, Cr, Co, Cu, Zn, As, Se, Br, Mo, Ag, Pb, and Bi.** (25 elements)

### AUSMON Rare Earths

Suitable with monazite, xenotime and other rare earth minerals for the rare earth oxides. The following elements are present: **La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Y, P, F, Na, Mg, Al, Si, S, Cl, K, Ca, Sc, Ti, Mn, Fe, Ni, Br, Sr, Zr, Nb, Ba, Hf, Pb, Th, and U.** (39 elements)

### AUSMON Silicates

These monitors were designed for the analysis of rocks, soils and related materials. They can also be used as general purpose monitors for a wide range of materials, eg. vegetables, etc. They contain the following elements as majors: **Fe, Mn, Ti, Ca, K, Cl, S, P, Si, Al, Mg, Na and F.** In addition about 2000ppm of each of the following are present: **Sc** (1000ppm), **V, Cr, Co, Cu, Ni, Zn, Ga, Ge, Se, As, Rb, Sr, Br, Y, Zr, Nb, Mo, Ag, Cd, Sn, Sb, Te, Cs, Ba, La, Ce, Nd, Pr, Gd, Sm, Yb, Hf, Ta, W, Bi, Tl, Pb, Th, and U.** (53 elements)

### AUSMON Sulfides

These monitors are for use with lead, zinc, iron and copper sulphides, as ores, concentrates and related products. They contain: **Pb, Zn, Fe, Cu, S, F, Na, Mg, Al, Si, P, K, Ca, Cl, Ti, Co, Ni, Cr, Mn, As, Sr, Se, Ag, Cd, Sn, Sb, Ba, Te, Tl, Mo, U, and Bi.** (32 elements)

## AUSMON XRF DRIFT MONITORS (energy dispersive XRF)

The monitors listed below have been formulated so that they have appropriate count rates for different ores and products. The monitors contain little flux and most have been in use for many years and have given excellent stability.

The monitor discs (except AUSMON Cement B) are 32mm diameter and about 4mm high. The monitors are polished flat so that they can be mounted precisely and are easily cleaned. The following types for energy dispersive XRF are available:

### AUSMON MCACAL

Intended for the energy dispersive XRF system, this monitor contains the following elements: **F, Na, Mg, Si, Cl, Ca, V, Zn, As, Fe, Y, Mo, Cd, Ba.** (14 elements)

### AUSMON Mon A

This is intended as a drift monitor with the following elements: **Mg, Si, P, W, Pb, Sn.** (6 elements)

### AUSMON Mon B

This is a drift monitor with the following elements: **Na, Al, Si, Ca, Ti, Cr, and Ni.** (7 elements)

## AUSMON SPECIALS

Monitor discs can be made to suite needs not covered by the above. Very often this is for laboratories performing analysis on materials that do not have long term stability and so they cannot use a similar product as a monitor, eg aqueous liquids or liquids from the petroleum industry. Cl in brine, Ca in milk, Cl, Br, and trace elements in synthetic rubbers are some common examples for which custom monitors have been made.