



# ICP-MS Standards

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## ICP-MS Calibration Standards

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
61D0.4.2N.L1	ICP-MS Calibration standard - 3 components; Cr 4mg/l ; Sr 4mg/l ; Fe 20mg/l in HNO3 2%	100	ml	6	Yes
61D0.4.2N.L5	ICP-MS Calibration standard - 3 components; Cr 4mg/l ; Sr 4mg/l ; Fe 20mg/l in HNO3 2%	500	ml	6	Yes
D298.10.2N01F.L1	ICP-MS Calibration standard - 4 components; 10mg/l each of Mo ; Sb ; Sn ; Ti in HNO3 2% ; HF 0.1%	100	ml	6	Yes
D298.10.2N01F.L5	ICP-MS Calibration standard - 4 components; 10mg/l each of Mo ; Sb ; Sn ; Ti in HNO3 2% ; HF 0.1%	500	ml	6	Yes
MS8675.10.10C.L1	ICP-MS Calibration standard - 4 components; 10mg/l each of Ir ; Pd ; Pt ; Ru in HCl 10%	100	ml	12	Yes
MS91C8.1K.2N.L1	ICP-MS Calibration standard - 4 components; 1000mg/l each of Ca ; Mg ; K ; Na in HNO3 2%	100	ml	12	Yes
MS91C8.1K.2N.L5	ICP-MS Calibration standard - 4 components; 1000mg/l each of Ca ; Mg ; K ; Na in HNO3 2%	500	ml	12	Yes
MS13BF.1K.2N.L1	ICP-MS Calibration standard - 5 components; 1000mg/l each of Ca ; Mg ; K ; Na ; Fe in HNO3 2%	100	ml	12	Yes
MS13BF.1K.2N.L25	ICP-MS Calibration standard - 5 components; 1000mg/l each of Ca ; Mg ; K ; Na ; Fe in HNO3 2%	250	ml	12	Yes
161D.D001.2.5N05C.L5	ICP-MS tuning solution B ICAP - 7 components; 1ug/l each of Ba ; Bi ; Ce ; Co ; In ; Li ; U in HNO3 2.5% ; HCl 0.5%	500	ml	4	Yes
2407.2.2N.L1	ICP-MS Calibration standard - 8 components; As 2mg/l ; Cd 2mg/l ; Cr 3mg/l ; Cu 10mg/l ; Fe 4mg/l ; Ni 2mg/l ; Pb 5mg/l ; Zn 10mg/l in HNO3 2%	100	ml	6	Yes
2407.2.2N.L25	ICP-MS Calibration standard - 8 components; As 2mg/l ; Cd 2mg/l ; Cr 3mg/l ; Cu 10mg/l ; Fe 4mg/l ; Ni 2mg/l ; Pb 5mg/l ; Zn 10mg/l in HNO3 2%	250	ml	6	Yes
2407.2.2N.L5	ICP-MS Calibration standard - 8 components; As 2mg/l ; Cd 2mg/l ; Cr 3mg/l ; Cu 10mg/l ; Fe 4mg/l ; Ni 2mg/l ; Pb 5mg/l ; Zn 10mg/l in HNO3 2%	500	ml	6	Yes
A2E5.10.5C.L1	ICP-MS Calibration Precious Metals Standard - 8 components; 10mg/l each of Au ; Ir ; Os ; Pd ; Pt ; Re ; Rh ; Ru in HCl 5%	100	ml	6	Yes
MSBD60.10.2N01F.L1	ICP-MS Calibration standard - 8 components: 10 mg/l each of Ge, Hf, Mo, Sb, Sn, Te, W, Zr, in HNO3 2%; HF 0.1%;	100	ml	6	Yes
MSBD60.10.2N01F.L5	ICP-MS Calibration standard - 8 components: 10 mg/l each of Ge, Hf, Mo, Sb, Sn, Te, W, Zr, in HNO3 2%; HF 0.1%;	500	ml	6	Yes
C304.50.2CtrF.L1	ICP-MS Calibration standard - 10 components; W 40mg/l ; Rh 40mg/l ; Pt 40mg/l ; Pd 40mg/l ; Te 40mg/l ; Zr 40mg/l ; Si 40mg/l ; Mo 50mg/l ; Sb 80mg/l ; Sn 80mg/l in HCl 2% ; HF tr	100	ml	6	Yes
C304.50.2CtrF.L5	ICP-MS Calibration standard - 10 components; W 40mg/l ; Rh 40mg/l ; Pt 40mg/l ; Pd 40mg/l ; Te 40mg/l ; Zr 40mg/l ; Si 40mg/l ; Mo 50mg/l ; Sb 80mg/l ; Sn 80mg/l in HCl 2% ; HF tr	500	ml	6	Yes
D743.10.2N.L1	ICP-MS Calibration standard - 10 components; 10mg/l each of Ba ; Be ; Bi ; Ce ; Co ; In ; Li ; Ni ; Pb ; U in HNO3 2%	100	ml	6	Yes
D743.10.2N.L5	ICP-MS Calibration standard - 10 components; 10mg/l each of Ba ; Be ; Bi ; Ce ; Co ; In ; Li ; Ni ; Pb ; U in HNO3 2%	500	ml	6	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
E9A6.2D5.2N.L1	ICP-MS Calibration standard - 12 components; As 2.5mg/l ; Cd 0.5mg/l ; Cr 5mg/l ; Hg 0.2mg/l ; Ni 5mg/l ; Pb 5mg/l ; Zn 5mg/l ; Ba 2.5mg/l ; Cu 5mg/l ; Mo 3mg/l ; Sb 0.5mg/l ; Se 0.7mg/l in HNO3 2%	100	ml	4	Yes
E9A6.2D5.2N.L5	ICP-MS Calibration standard - 12 components; As 2.5mg/l ; Cd 0.5mg/l ; Cr 5mg/l ; Hg 0.2mg/l ; Ni 5mg/l ; Pb 5mg/l ; Zn 5mg/l ; Ba 2.5mg/l ; Cu 5mg/l ; Mo 3mg/l ; Sb 0.5mg/l ; Se 0.7mg/l in HNO3 2%	500	ml	4	Yes
058E.10.5N.L1	ICP-MS Refractory Elements Standard - 12 components; 10mg/l each of Ge ; Hf ; Mo ; Nb ; Sb ; Si ; Sn ; Ta ; Te ; Ti ; W ; Zr in HNO3 5% ; HF tr%	100	ml	6	Yes
MSE5D8.10.5N.L1	ICP-MS Calibration standard - 16 components; 10ug/ml each of Cu ; Sr ; Mn ; Li ; Co ; As ; Zn ; Se ; Cs ; Rb ; Pb ; Sc ; Ni ; V ; Cr ; Be in HNO3 5%	100	ml	6	Yes
MSE5D8.10.5N.L5	ICP-MS Calibration standard - 16 components; 10ug/ml each of Cu ; Sr ; Mn ; Li ; Co ; As ; Zn ; Se ; Cs ; Rb ; Pb ; Sc ; Ni ; V ; Cr ; Be in HNO3 5%	500	ml	6	Yes
MSBEDC.10.2N.L1	ICP-MS Calibration standard - 18 components; 10mg/l each of Ag ; Al ; As ; Ba ; Be ; Cd ; Cr ; Co ; Cu ; Mn ; Ni ; Pb ; Se ; Th ; Tl ; U ; V ; Zn in HNO3 2%	100	ml	6	Yes
E5B8.K1.5N.L1	ICP-MS Calibration standard - 21 components; 100ug/ml each of Al ; Ag ; As ; Ba ; Be ; Cd ; Co ; Cr ; Cu ; Fe ; K ; Mn ; Mo ; Ni ; Pb ; Sb ; Se ; Tl ; V ; Zn ; Sn in HNO3 5%	100	ml	12	Yes
E5B8.K1.5N.L25	ICP-MS Calibration standard - 21 components; 100ug/ml each of Al ; Ag ; As ; Ba ; Be ; Cd ; Co ; Cr ; Cu ; Fe ; K ; Mn ; Mo ; Ni ; Pb ; Sb ; Se ; Tl ; V ; Zn ; Sn in HNO3 5%	250	ml	12	Yes
E5B8.K1.5N.L5	ICP-MS Calibration standard - 21 components; 100ug/ml each of Al ; Ag ; As ; Ba ; Be ; Cd ; Co ; Cr ; Cu ; Fe ; K ; Mn ; Mo ; Ni ; Pb ; Sb ; Se ; Tl ; V ; Zn ; Sn in HNO3 5%	500	ml	12	Yes
MS069C.5.2N.L1	ICP-MS Calibration standard - 22 components; Ag 5mg/l ; Al 30mg/l ; As 10mg/l ; B 30mg/l ; Ba 10mg/l ; Be 3mg/l ; Cd 3mg/l ; Co 5mg/l ; Cr 10mg/l ; Cu 10mg/l ; Mn 5mg/l ; Mo 3mg/l ; Ni 10mg/l ; Pb 5mg/l ; Se 5mg/l ; Sn 10mg/l ; Tl 2mg/l ; Te 10mg/l ; V 10mg/l ; Zn 100mg/l ; Sr 100mg/l ; Ti 3mg/l in HNO3 2%	100	ml	6	Yes
MS069C.5.2N.L5	ICP-MS Calibration standard - 22 components; Ag 5mg/l ; Al 30mg/l ; As 10mg/l ; B 30mg/l ; Ba 10mg/l ; Be 3mg/l ; Cd 3mg/l ; Co 5mg/l ; Cr 10mg/l ; Cu 10mg/l ; Mn 5mg/l ; Mo 3mg/l ; Ni 10mg/l ; Pb 5mg/l ; Se 5mg/l ; Sn 10mg/l ; Tl 2mg/l ; Te 10mg/l ; V 10mg/l ; Zn 100mg/l ; Sr 100mg/l ; Ti 3mg/l in HNO3 2%	500	ml	6	Yes
0F49.50.2N.L1	ICP-MS Calibration standard - 27 components; B 40mg/l ; Be 40mg/l ; Cd 40mg/l ; Se 40mg/l ; Tl 40mg/l ; Li 40mg/l ; Ti 40mg/l ; In 40mg/l ; Ag 50mg/l ; Ba 50mg/l ; Co 50mg/l ; Cr 50mg/l ; Cu 50mg/l ; Fe 50mg/l ; Mn 50mg/l ; Ni 50mg/l ; Sr 50mg/l ; V 50mg/l ; Zn 50mg/l ; Al 80mg/l ; As 80mg/l ; K 80mg/l ; Pb 80mg/l ; Na 80mg/l ; Mg 80mg/l ; Ca 80mg/l ; P 200mg/l in HNO3 2%	100	ml	6	Yes
0F49.50.2N.L5	ICP-MS Calibration standard - 27 components; B 40mg/l ; Be 40mg/l ; Cd 40mg/l ; Se 40mg/l ; Tl 40mg/l ; Li 40mg/l ; Ti 40mg/l ; In 40mg/l ; Ag 50mg/l ; Ba 50mg/l ; Co 50mg/l ; Cr 50mg/l ; Cu 50mg/l ; Fe 50mg/l ; Mn 50mg/l ; Ni 50mg/l ; Sr 50mg/l ; V 50mg/l ; Zn 50mg/l ; Al 80mg/l ; As 80mg/l ; K 80mg/l ; Pb 80mg/l ; Na 80mg/l ; Mg 80mg/l ; Ca 80mg/l ; P 200mg/l in HNO3 2%	500	ml	6	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
0956.D05.5N.L1	ICP-MS Calibration standard - 28 components; Al 0.050mg/l ; As 0.050mg/l ; B 0.2mg/l ; Ba 0.050mg/l ; Bi 0.050mg/l ; Ca 0.5mg/l ; Cd 0.005mg/l ; Co 0.050mg/l ; Cr 0.1mg/l ; Be 0.010mg/l ; Cu 0.050mg/l ; Fe 0.1mg/l ; K 0.2mg/l ; Na 0.5mg/l ; Li 0.020mg/l ; Mg 0.250mg/l ; Mn 0.050mg/l ; Mo 0.050mg/l ; Ni 0.1mg/l ; P 0.3mg/l ; Pb 0.050mg/l ; Se 0.05mg/l ; Si 1mg/l ; S 1mg/l ; Ti 0.050mg/l ; U 0.050mg/l ; V 0.050mg/l ; Zn 0.1mg/l in HNO3 5%	100	ml	4	Yes
0956.D05.5N.L5	ICP-MS Calibration standard - 28 components; Al 0.050mg/l ; As 0.050mg/l ; B 0.2mg/l ; Ba 0.050mg/l ; Bi 0.050mg/l ; Ca 0.5mg/l ; Cd 0.005mg/l ; Co 0.050mg/l ; Cr 0.1mg/l ; Be 0.010mg/l ; Cu 0.050mg/l ; Fe 0.1mg/l ; K 0.2mg/l ; Na 0.5mg/l ; Li 0.020mg/l ; Mg 0.250mg/l ; Mn 0.050mg/l ; Mo 0.050mg/l ; Ni 0.1mg/l ; P 0.3mg/l ; Pb 0.050mg/l ; Se 0.05mg/l ; Si 1mg/l ; S 1mg/l ; Ti 0.050mg/l ; U 0.050mg/l ; V 0.050mg/l ; Zn 0.1mg/l in HNO3 5%	500	ml	4	Yes
MSE194.10.2N.L1	ICP-MS Calibration standard - 31 components: 10mg/l each of Ag ; Al ; As ; Ba ; B ; Cd ; Ce ; Co ; Cr ; Cu ; Dy ; Er ; Gd ; Ho ; La ; Li ; Lu ; Mn ; Nd ; Ni ; P ; Pb ; Rb ; Se ; Sm ; Sr ; Tl ; Tm ; U ; V ; Zn in HNO3 2%	100	ml	6	Yes
MSE194.10.2N.L25	ICP-MS Calibration standard - 31 components: 10mg/l each of Ag ; Al ; As ; Ba ; B ; Cd ; Ce ; Co ; Cr ; Cu ; Dy ; Er ; Gd ; Ho ; La ; Li ; Lu ; Mn ; Nd ; Ni ; P ; Pb ; Rb ; Se ; Sm ; Sr ; Tl ; Tm ; U ; V ; Zn in HNO3 2%	250	ml	6	Yes

## Quality Control Standards for ICP-MS

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
MSD0BC.D01.2N.L1	ICP-MS QCS - 0.01 mg/l Hg in HNO3 2%	100	ml	6	Yes
MSD0BC.D01.2N.L5	ICP-MS QCS - 0.01 mg/l Hg in HNO3 2%	500	ml	6	Yes
MSBEDC.D01.1N.L1	ICP-MS QCS - 18 elements : 0.01 mg/l each of Ag, Al, As, Ba, Be, Cd, Cr, Co, Cu, Mn, Ni, Pb, Se, Th, Tl, U, V, Zn, in HNO3 1%	100	ml	6	Yes
MSBEDC.D01.1N.L5	ICP-MS QCS - 18 elements : 0.01 mg/l each of Ag, Al, As, Ba, Be, Cd, Cr, Co, Cu, Mn, Ni, Pb, Se, Th, Tl, U, V, Zn, in HNO3 1%	500	ml	6	Yes
A19C.D002.2N01F.L1	ICP-MS QCS - Trace Metals in Drinking Water Standard - 29 components; Al 120ug/l ; Sb 10ug/l ; As 80ug/l ; Ba 50ug/l ; Be 20ug/l ; Bi 10ug/l ; Cd 10ug/l ; Ca 35000ug/l ; Cr 20ug/l ; Co 25ug/l ; Cu 20ug/l ; Fe 100ug/l ; Pb 40ug/l ; Li 20ug/l ; Mg 9000ug/l ; Mn 40ug/l ; Mo 100ug/l ; Ni 60ug/l ; K 2500ug/l ; Rb 10ug/l ; Se 10ug/l ; Ag 2ug/l ; Na 6000ug/l ; Sr 250ug/l ; Te 3ug/l ; Tl 10ug/l ; U 10ug/l ; V 30ug/l ; Zn 70ug/l in HNO3 2% ; HF 0.1%	100	ml	4	Yes

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
A19C.D002.2N01F.L25	ICP-MS QCS - Trace Metals in Drinking Water Standard - 29 components; Al 120ug/l; Sb 10ug/l; As 80ug/l; Ba 50ug/l; Be 20ug/l; Bi 10ug/l; Cd 10ug/l; Ca 35000ug/l; Cr 20ug/l; Co 25ug/l; Cu 20ug/l; Fe 100ug/l; Pb 40ug/l; Li 20ug/l; Mg 9000ug/l; Mn 40ug/l; Mo 100ug/l; Ni 60ug/l; K 2500ug/l; Rb 10ug/l; Se 10ug/l; Ag 2ug/l; Na 6000ug/l; Sr 250ug/l; Te 3ug/l; Tl 10ug/l; U 10ug/l; V 30ug/l; Zn 70ug/l in HNO <sub>3</sub> 2%; HF 0.1%	250	ml	4	Yes
A19C.D002.2N01F.L5	ICP-MS QCS - Trace Metals in Drinking Water Standard - 29 components; Al 120ug/l; Sb 10ug/l; As 80ug/l; Ba 50ug/l; Be 20ug/l; Bi 10ug/l; Cd 10ug/l; Ca 35000ug/l; Cr 20ug/l; Co 25ug/l; Cu 20ug/l; Fe 100ug/l; Pb 40ug/l; Li 20ug/l; Mg 9000ug/l; Mn 40ug/l; Mo 100ug/l; Ni 60ug/l; K 2500ug/l; Rb 10ug/l; Se 10ug/l; Ag 2ug/l; Na 6000ug/l; Sr 250ug/l; Te 3ug/l; Tl 10ug/l; U 10ug/l; V 30ug/l; Zn 70ug/l in HNO <sub>3</sub> 2%; HF 0.1%	500	ml	4	Yes
MSE194.D01.1N.L1	ICP-MS QCS - 31 components; 0.01mg/l each of Ag; Al; As; B; Ba; Cd; Ce; Co; Cr; Cu; Dy; Er; Gd; Ho; La; Li; Lu; Mn; Nd; Ni; P; Pb; Rb; Se; Sm; Sr; Tl; Tm; U; V; Zn in HNO <sub>3</sub> 1%	100	ml	6	Yes
MSE194.D01.1N.L5	ICP-MS QCS - 31 components; 0.01mg/l each of Ag; Al; As; B; Ba; Cd; Ce; Co; Cr; Cu; Dy; Er; Gd; Ho; La; Li; Lu; Mn; Nd; Ni; P; Pb; Rb; Se; Sm; Sr; Tl; Tm; U; V; Zn in HNO <sub>3</sub> 1%	500	ml	6	Yes

## Internal Standards for ICP-MS

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
MSA965.K1.2C.L1	ICP-MS Internal Standard - Au 100 mg/l in HCl 2%	100	ml	12	Yes
MS6925.K1.2N.L1	ICP-MS Internal Standard - Be 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MS3926.K1.2N.L1	ICP-MS Internal Standard - Bi 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MSE11C.K1.2N.L1	ICP-MS Internal Standard - Cs 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MS6994.K1.2N.L1	ICP-MS Internal Standard - Eu 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MS59E8.K1.2N.L1	ICP-MS Internal Standard - Ga 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MS69E9.K1.2N.L1	ICP-MS Internal Standard - Ge 100 mg/l in HNO <sub>3</sub> 2%/0.1% HF	100	ml	12	Yes
MSB0BE.K1.2N.L1	ICP-MS Internal Standard - Ho 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MS8C82.K1.2N.L1	ICP-MS Internal Standard - In 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MSDE98.K1.2N.L1	ICP-MS Internal Standard - Pr 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MSAAE4.K1.2N.L1	ICP-MS Internal Standard - Re 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MS06E6.K1.2C.L1	ICP-MS Internal Standard - Rh 100 mg/l in HCl 2%	100	ml	12	Yes
MSE2D9.K1.2N.L1	ICP-MS Internal Standard - Sc 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MSDE6D.K1.2N.L1	ICP-MS Internal Standard - Tb 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MS1837.K1.2N.L1	ICP-MS Internal Standard - Y 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
MS1F40.K1.2N.L1	ICP-MS Internal Standard - Yb 100 mg/l in HNO <sub>3</sub> 2%	100	ml	12	Yes
7556.10.N.L1	ICP-MS Internal Standard 2 - 8 components; 10mg/l each of Bi; Ho; In; <sup>6</sup> Li; Sc; Tb; Y; Rh in HNO <sub>3</sub> 2%	100	ml	6	Yes
5188-6525.L1	ICP-MS Alternate Internal Standard 2 - 8 components; 100mg/l each of Bi; Ge; In; <sup>6</sup> Li; Lu; Rh; Sc; Tb in HNO <sub>3</sub> 10%	100	ml	12	Yes

## Instrument Check Standards

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
MS4C39.10.2N.L1	ICP-MS ICS - Tuning Solution 4 elements : Cerium 10mg/l; Lithium 10mg/l; Thallium 10mg/l; Yttrium 10mg/l; Nitric Acid 2%;	100	ml	6	Yes
161D.1.2N05C.L1	ICP-MS ICS - Tuning Solution - Tune B ICAP - 7 components; 1mg/l each of Ba ; Bi ; Ce ; Co ; In ; Li ; U in HNO3 2% ; HCl 0.5%	100	ml	6	Yes
MS8AC1.10.2N.L1	ICP-MS ICS - Tuning Solution 9 elements: 10mg/l each of Ba ; Be ; Ce ; Co ; In ; Pb ; Mg ; Rh ; U in HNO3 2%	100	ml	12	Yes
9781.2.5NTF.L1	ICP-MS ICS - Contract Required Detection Limit Standard 2 - 22 components; Ca 1000mg/l ; Mg 1000mg/l ; K 1000mg/l ; Na 1000mg/l ; Fe 400mg/l ; Al 40mg/l ; Ba 20mg/l ; Se 10mg/l ; V 10mg/l ; Sb 4mg/l ; Cr 4mg/l ; Cu 4mg/l ; Zn 4mg/l ; As 2mg/l ; Be 2mg/l ; Cd 2mg/l ; Co 2mg/l ; Pb 2mg/l ; Mn 2mg/l ; Ni 2mg/l ; Ag 2mg/l ; Tl 2mg/l in HNO3 5% ; C4H6O6 tr% ; HF tr%	100	ml	6	Yes

## Plasma Setup Standards

Ref. Number	Description	Volume	Msr. Unit	Shelf-life (months)	ISO 17034 ISO 17025
MSD0BC.1.2N.L1	ICP-MS PSS - Mercury 1mg/l; Nitric Acid 2%;	100	ml	6	Yes
MS9562.D01.05N.L1	ICP-MS PSS - 13 components: 0.01 mg/l each of Mg, Al, Cr, Mn, Cu, Rh, In, Cd, Ce, Pb, Th, B, Ba, in HNO3 0.5%;	100	ml	6	Yes
MS9562.D01.05N.L5	ICP-MS PSS - 13 components: 0.01 mg/l each of Mg, Al, Cr, Mn, Cu, Rh, In, Cd, Ce, Pb, Th, B, Ba, in HNO3 0.5%;	500	ml	6	Yes