

ICP Method 6010



ICP Method 6010

Method 6010B (Revision 2, Dec. 1996 from SW-846) Calibration Standards

Mixed Calibration Standard #1

MCS-01-1 100 mL
MCS-01-5 500 mL

6 components in 2% HNO₃

Element	µg/mL	λ (nm)
Be (<i>Beryllium</i>)	50	313.042
Cd (<i>Cadmium</i>)	150	214.438
Pb (<i>Lead</i>)	500	220.353
Mn (<i>Manganese</i>)	100	220.353
Se (<i>Selenium</i>)	200	196.090
Zn (<i>Zinc</i>)	150	213.856

Mixed Calibration Standard #2

MCS-02-1 100 mL
MCS-02-5 500 mL

5 components in 2% HNO₃

Element	µg/mL	λ (nm)
Ba (<i>Barium</i>)	100	233.527
Co (<i>Cobalt</i>)	100	228.616
Cu (<i>Copper</i>)	100	324.754
Fe (<i>Iron</i>)	10,000	259.940
V (<i>Vanadium</i>)	100	292.402

Mixed Calibration Standard #3R

MCS-03R-1 100 mL
MCS-03R-5 500 mL

2 components in 2% HNO₃ tr. HF

Element	µg/mL	λ (nm)
As (<i>Arsenic</i>)	500	189.042
Mo (<i>Molybdenum</i>)	100	202.030

Mixed Calibration Standard #4R

MCS-04R-1 100 mL
MCS-04R-5 500 mL

8 components in 2% HNO₃

Element	µg/mL	λ (nm)
Al (<i>Aluminum</i>)	200	396.152
Ca (<i>Calcium</i>)	1000	317.933
Cr (<i>Chromium</i>)	20	205.552
Li (<i>Lithium</i>)	100	670.784
Ni (<i>Nickel</i>)	20	231.604
K (<i>Potassium</i>)	400	766.490
Na (<i>Sodium</i>)	200	589.592
Sr (<i>Strontium</i>)	10	407.771

Mixed Calibration Standard #5R

MCS-05R-1 100 mL
MCS-05R-5 500 mL

4 components in 2% HNO₃

Element	µg/mL	λ (nm)
Sb (<i>Antimony</i>)	200	217.581
Mg (<i>Magnesium</i>)	1000	279.553
Ag (<i>Silver</i>)	50	328.068
Tl (<i>Thallium</i>)	200	351.924

Mixed Calibration Standard 6R

MCS-06R-1 100 mL
MCS-06R-5 500 mL

5 components in 2-5% HNO₃ tr. HF

Element	µg/mL	λ (nm)
P (<i>Phosphorus</i>)	200	213.618
Sn (<i>Tin</i>)	200	189.980
Ti (<i>Titanium</i>)	100	334.941
B (<i>Boron</i>)	50	249.678
Si (<i>Silicon</i>) †	100	251.611

† 214 µg/mL as SiO₂

Complete 6010B, Rev. 2, 1996 Calibration Set

MCS-1996-1-SET 7 x 100 mL
MCS-01-1 MCS-04R-1 MCS-06R-1
MCS-02-1 MCS-05R-1 TCLP-02-1
MCS-03R-1

MCS-1996-5-SET 7 x 500 mL
MCS-01-5 MCS-04R-5 MCS-06R-5
MCS-02-5 MCS-05R-5 TCLP-02-5
MCS-03R-5

Technical Note

Additional Analyte Calibration Standards. The use of this Standard Solution (MCS-06R), plus a Mercury Standard (TCLP-02), completes the analyte list for the 1996 Revision 2.

Mercury Standard

Mercury is available in a separate solution due to its incompatibility with other elements.

TCLP-02-1 100 mL
TCLP-02-5 500 mL

1 component in 5% HNO₃

Element	µg/mL	λ (nm)
Hg (<i>Mercury</i>)	20	194.227

Method 6010 (Revision 0, Sept. 1986) Interference Check Standards

Four standard mixtures are available for interference checks in SW-846, Method 6010 (Rev. 0, Sept. 1986) and Method 200.7.

Interference Check Standard #1

INT-01-1 100 mL
INT-01-5 500 mL

17 components in 5% HNO₃

Element	µg/mL	λ (nm)
As (<i>Arsenic</i>)	1000	189.042
Ba (<i>Barium</i>)	300	233.527
Be (<i>Beryllium</i>)	100	313.042
Cd (<i>Cadmium</i>)	300	214.438
Cr (<i>Chromium</i>)	300	205.552
Co (<i>Cobalt</i>)	300	228.616
Cu (<i>Copper</i>)	300	324.754
Pb (<i>Lead</i>)	1000	220.353
Mn (<i>Manganese</i>)	200	257.610
Hg (<i>Mercury</i>)	50	194.232
Ni (<i>Nickel</i>)	300	231.604
K (<i>Potassium</i>)	20,000	766.490
Se (<i>Selenium</i>)	500	196.090
Ag (<i>Silver</i>)	300	328.068
Tl (<i>Thallium</i>)	1000	351.924
V (<i>Vanadium</i>)	300	292.402
Zn (<i>Zinc</i>)	300	213.856

Interference Check Standard #2

INT-02-1 100 mL
INT-02-5 500 mL

4 components in 5% HNO₃ tr. HF

Element	µg/mL	λ (nm)
B (<i>Boron</i>)	500	249.773
Mo (<i>Molybdenum</i>)	300	202.030
Si (<i>Silicon</i>)	200	251.611
Ti (<i>Titanium</i>)	1000	334.941

Interference Check Standard #3

INT-03-1 * 100 mL
INT-03-5 * 500 mL

1 component in H₂O tr. HNO₃ tr. Tartaric acid

Element	µg/mL	λ (nm)
Sb (<i>Antimony</i>)	500	217.581

Interference Check Standard #4

INT-04-1 100 mL
INT-04-5 500 mL

5 components in 5% HNO₃

Element	µg/mL	λ (nm)
Al (<i>Aluminum</i>)	1200	396.152
Ca (<i>Calcium</i>)	6000	317.933
Fe (<i>Iron</i>)	5000	259.940
Mg (<i>Magnesium</i>)	3000	279.553
Na (<i>Sodium</i>)	1000	589.592

Interference Check Standards Sets

For SW-846 Method 6010 (Rev. 0, 9/86)

INT-1986-1-SET 4 x 100 mL

INT-01-1 INT-03-1
INT-02-1 INT-04-1

INT-1986-5-SET 4 x 500 mL

INT-01-5 INT-03-5
INT-02-5 INT-04-5



ICP Method 6010

Method 6010B (Revision 2 from SW-846, Dec. 1996) Performance and Interference Check Standards

ICP Method 6010B

Laboratory Performance Check

Standard

LPCS-01R-1 100 mL
LPCS-01R-5 500 mL
 30 components in 5% HNO₃ tr. HF

Element	µg/mL	λ (nm)
Al (Aluminum)	20	308.215
Sb (Antimony)	20	217.581
As (Arsenic)	20	193.696
Ba (Barium)	20	493.409
Be (Beryllium)	20	313.042
B (Boron)	20	249.678
Cd (Cadmium)	20	226.502
Ca (Calcium)	20	315.887
Cr (Chromium)	20	205.552
Co (Cobalt)	20	228.616
Cu (Copper)	20	324.754
Fe (Iron)	20	259.940
Pb (Lead)	20	220.353
Li (Lithium)	20	670.786
Mg (Magnesium)	20	279.079
Mn (Manganese)	20	257.610
Mo (Molybdenum)	20	203.844
Ni (Nickel)	20	231.604
P (Phosphorous)	100	213.618
K (Potassium)	100	766.490
Se (Selenium)	20	196.090
Si (Silicon) †	100	251.611
Ag (Silver)	5	328.068
Na (Sodium)	20	588.595
Sr (Strontium)	20	421.552
Tl (Thallium)	20	190.864
Sn (Tin)	20	189.980
Ti (Titanium)	20	334.941
V (Vanadium)	20	292.402
Zn (Zinc)	20	213.856

† 214 µg/mL as SiO₂

Primary Interferents

CLP-PIN-01-1 100 mL
CLP-PIN-01-5 500 mL
 4 components in 5% HNO₃

Element	µg/mL	λ (nm)
Al (Aluminum)	5000	396.152
Ca (Calcium)	5000	317.933
Fe (Iron)	2000	259.940
Mg (Magnesium)	5000	297.553

Alternate Interferents

CLP-PIN-02-1 100 mL
CLP-PIN-02-5 500 mL
 6 components in 5% HNO₃

Element	µg/mL	λ (nm)
Cr (Chromium)	1000	205.552
Cu (Copper)	1000	324.754
Mn (Manganese)	1000	257.610
Ni (Nickel)	1000	231.604
Ti (Titanium)	1000	334.941
V (Vanadium)	1000	292.402

Interference Set

Because interference problems are dependent on the types of sample matrices encountered - it is often easier to create your own set of matrix matching interference check solutions. Therefore, we are offering a set of single element solutions to be used for that purpose.

SIC-SING-R-1-SET set of 10 x 100 mL
 Single Elements in HNO₃ @ 1,000 ppm

Al (Aluminum)	ICP-01N-1
Ca (Calcium)	ICP-09N-1
Cr (Chromium)	ICP-13N-1
Cu (Copper)	ICP-15N-1
Fe (Iron)	ICP-27N-1
Mg (Magnesium)	ICP-32N-1
Mn (Manganese)	ICP-33N-1
Ni (Nickel)	ICP-37N-1
Ti (Titanium)	ICP-64W-1
V (Vanadium)	ICP-67N-1

If you would like us to formulate an interference check solution to meet your needs, please call our Technical Service Department for a custom quotation.

Set-up Solutions

Nebulizer Adjustment Solution

(Yttrium)

ICP-69N-1 100 mL
 Y at 1000 µg/mL in HNO₃

Method 6010B Spiking Standards

Three convenient solutions that can be used for spiking samples pre- or post- digestion.

Spiking Standard #1

QCS-01-1 100 mL
QCS-01-5 500 mL
 23 components in 5% HNO₃ tr. HF

Element	µg/mL	λ (nm)
Sb (Antimony)	100	206.833
As (Arsenic)	100	193.696
Be (Beryllium)	100	313.042
Cd (Cadmium)	100	226.502
Ca (Calcium)	100	315.887
Cr (Chromium)	100	205.552
Co (Cobalt)	100	228.616
Cu (Copper)	100	324.754
Fe (Iron)	100	259.940
Pb (Lead)	100	220.353
Li (Lithium)	100	670.784
Mg (Magnesium)	100	279.079
Mn (Manganese)	100	257.610
Mo (Molybdenum)	100	203.844
Ni (Nickel)	100	231.604
P (Phosphorus)	100	214.914
Se (Selenium)	100	196.090
Sr (Strontium)	100	421.552
Tl (Thallium)	100	190.864
Sn (Tin)	100	189.980
Ti (Titanium)	100	334.941
V (Vanadium)	100	292.402
Zn (Zinc)	100	213.856

Spiking Standard #2

QCS-02-1 100 mL
QCS-02-5 500 mL
 7 components in 5% HNO₃ tr. HF

Element	µg/mL	λ (nm)
Al (Aluminum)	100	308.215
Ba (Barium)	100	493.409
B (Boron)	100	249.678
K (Potassium)	1000	766.491
Si (Silicon) †	500	251.611
Ag (Silver)	50	328.068
Na (Sodium)	100	588.995

† 1070 µg/mL as SiO₂

QC Standard #2R

QCS-02-R1-1 100 mL
QCS-02-R1-5 500 mL
 7 components in 5% HNO₃ tr. HF

Element	µg/mL	λ (nm)
Al (Aluminum)	100	308.215
Ba (Barium)	100	493.409
B (Boron)	100	249.678
K (Potassium)	100	766.491
Si (Silicon) †	100	251.611
Ag (Silver)	100	328.068
Na (Sodium)	100	588.995

† 214 µg/mL as SiO₂

Technical Note

Three convenient solutions that can be used for spiking samples pre- or post-digestion.

Mercury Standard

Mercury is available in a separate solution due to incompatibility with other elements.

TCLP-02-1 100 mL
TCLP-02-5 500 mL
 1 component in 5% HNO₃

Element	µg/mL	λ (nm)
Hg (Mercury)	20	194.227

These products require a Hazardous Shipping Fee except products marked with an asterisk *



TCLP Multi-Element Calibration Standards

For use in SW-846, Method 1311 Toxicity Characteristic Leaching Procedure

TCLP Standard #1

TCLP-01-1 100 mL
TCLP-01-5 500 mL
7 components in 5% HNO₃

Element	µg/mL	λ (nm)
As (<i>Arsenic</i>)	25	189.042
Ba (<i>Barium</i>)	500	233.527
Cd (<i>Cadmium</i>)	5	214.438
Cr (<i>Chromium</i>)	25	205.552
Pb (<i>Lead</i>)	25	220.353
Se (<i>Selenium</i>)	5	196.090
Ag (<i>Silver</i>)	25	328.068

TCLP Standard for ICP

TCLP-ICP-1 100 mL
TCLP-ICP-5 500 mL
4 components in 2% HNO₃

Element	µg/mL	λ (nm)
Ba (<i>Barium</i>)	500	233.527
Cd (<i>Cadmium</i>)	5	214.438
Cr (<i>Chromium</i>)	25	205.552
Ag (<i>Silver</i>)	25	328.068

TCLP Standard for GFAA

TCLP-GFAA-1 100 mL
TCLP-GFAA-5 500 mL
3 components in 5% HNO₃

Element	µg/mL	λ (nm)
As (<i>Arsenic</i>)	25	189.042
Pb (<i>Lead</i>)	25	220.353
Se (<i>Selenium</i>)	5	196.090

TCLP Standard #2

For Mercury Analysis using ICP or Cold Vapor AA
TCLP-02-1 100 mL
TCLP-02-5 500 mL
1 component in 5% HNO₃

Element	µg/mL	λ (nm)
Hg (<i>Mercury</i>)	20	194.232

TCLP

Custom Standards

When you have a need for unique Analytical Standards, let the experts at AccuStandard assist in designing your formulation. Our technical group, with over 80 years of combined analytical experience, will review your request, suggest the most economical and stable formulation, and provide pricing all within 24 hours.

For a Quick Quote, copy the custom quote form in the back of catalog and fax it back. We will get right back to you.

Plus we typically ship within one week after order receipt.



SDWA

SDWA Standards

For use in SW-846, Method 1310 and U.S. NPDWR 40CFR Part 141. The three Drinking Water Standards are used for monitoring drinking water and/or ground and surface water.

Primary Drinking Water Metals

SDWA-01-1 100 mL
SDWA-01-5 500 mL

7 components in 2% HNO₃

Element	µg/mL	λ (nm)
As (Arsenic)	10	193.696
Ba (Barium)	100	493.409
Cd (Cadmium)	5	226.502
Cr (Chromium)	10	205.552
Pb (Lead)	10	220.353
Se (Selenium)	5	196.090
Ag (Silver)	10	328.068

Secondary Drinking Water Metals

SDWA-02-1 100 mL
SDWA-02-5 500 mL

4 components in 2% HNO₃

Element	µg/mL	λ (nm)
Cu (Copper)	100	324.754
Fe (Iron)	30	259.940
Mn (Manganese)	5	257.610
Zn (Zinc)	500	213.856

Mercury Solution

SDWA-03-1 100 mL
SDWA-03-5 500 mL

1 component in 5% HNO₃

Element	µg/mL	λ (nm)
Hg (Mercury)	20	194.232

Set of Drinking Water Standards

SDWA-1-SET 3 x 100 mL

SDWA-01-1 SDWA-02-1 SDWA-03-1

SDWA-5-SET 3 x 500 mL

SDWA-01-5 SDWA-02-5 SDWA-03-5

Standards for Analytes covered in the Safe Drinking Water Act (SDWA)

Primary Metals for Analysis by GFAA

Contains GFAA approved elements

SDWA-05-1 100 mL
SDWA-05-5 500 mL

9 components in 2-5% HNO₃

Element	µg/mL	λ (nm)
Sb (Antimony)	10	206.833
As (Arsenic)	10	193.696
Cd (Cadmium)	10	226.502
Cr (Chromium)	10	205.552
Cu (Copper)	10	324.754
Pb (Lead)	10	220.353
Ni (Nickel)	10	231.604
Se (Selenium)	10	196.090
Tl (Thallium)	10	190.864

Primary Metals for Analysis by ICP

Contains all approved elements

SDWA-04-1 100 mL
SDWA-04-5 500 mL

9 components in 2-5% HNO₃

Element	µg/mL	λ (nm)
As (Arsenic)	100	193.696
Ba (Barium)	10	493.409
Be (Beryllium)	10	313.042
Cd (Cadmium)	10	226.502
Ca (Calcium)	100	317.933
Cr (Chromium)	10	205.552
Cu (Copper)	10	324.754
Ni (Nickel)	10	231.604
Na (Sodium)	100	588.995

Primary Metals for Analysis by ICP-MS

Contains all approved elements

SDWA-06-MS-1 100 mL
SDWA-06-MS-5 500 mL

11 components in 2% HNO₃

Element	µg/mL	λ (nm)
Sb (Antimony)	10	206.833
As (Arsenic)	10	193.696
Ba (Barium)	10	493.409
Be (Beryllium)	10	313.042
Cd (Cadmium)	10	226.502
Cr (Chromium)	10	205.552
Cu (Copper)	10	324.754
Pb (Lead)	10	220.353
Ni (Nickel)	10	231.604
Se (Selenium)	10	196.090
Tl (Thallium)	10	190.864

Primary Metals for Analysis by GFAA / ICP / ICP-MS

SDWA-07-1 100 mL
SDWA-07-5 500 mL

14 components in 2% HNO₃

Element	µg/mL	λ (nm)
Sb (Antimony)	100	206.833
As (Arsenic)	100	193.696
Ba (Barium)	10	493.409
Be (Beryllium)	10	313.042
Cd (Cadmium)	10	226.502
Ca (Calcium)	100	317.933
Cr (Chromium)	10	205.552
Cu (Copper)	10	324.754
Pb (Lead)	10	220.353
Ni (Nickel)	10	231.604
Se (Selenium)	10	196.090
Si (Silicon) †	100	251.611
Na (Sodium)	100	588.995
Tl (Thallium)	10	190.864

† 214 µg/mL as SiO₂

Secondary Metals for Analysis by GFAA / ICP / ICP-MS

SDWA-08-1 100 mL
SDWA-08-5 500 mL

5 components in 2-5% HNO₃

Element	µg/mL	λ (nm)
Al (Aluminum)	10	308.215
Fe (Iron)	100	259.940
Mn (Manganese)	10	257.610
Ag (Silver)	10	328.068
Zn (Zinc)	10	213.856

Primary & Secondary Metals for Analysis by GFAA/ICP/ICP-MS

Contains all Primary & Secondary Metals

SDWA-09-1 100 mL
SDWA-09-5 500 mL

19 components in 2% HNO₃

Element	µg/mL	λ (nm)
Al (Aluminum)	10	308.215
Sb (Antimony)	100	206.833
As (Arsenic)	100	193.696
Ba (Barium)	10	493.409
Be (Beryllium)	10	313.042
Cd (Cadmium)	10	226.502
Ca (Calcium)	100	317.933
Cr (Chromium)	10	205.552
Cu (Copper)	10	324.754
Fe (Iron)	100	259.940
Pb (Lead)	10	220.353
Mn (Manganese)	10	257.610
Ni (Nickel)	10	231.604
Se (Selenium)	10	196.090
Si (Silicon) †	100	251.611
Ag (Silver)	10	328.068
Na (Sodium)	100	588.995
Tl (Thallium)	10	190.864
Zn (Zinc)	10	213.856

† 214 µg/mL as SiO₂



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CLP-PIN-01-1:38
CLP-PIN-01-5:38
CLP-PIN-02-1:38
CLP-PIN-02-5:38
ICP-69N-1:38
INT-01-1:37
INT-01-5:37
INT-02-1:37
INT-02-5:37
INT-03-1:37
INT-03-5:37
INT-04-1:37
INT-04-5:37
INT-1986-1-SET:37
INT-1986-5-SET:37
LPCS-01R-1:38
LPCS-01R-5:38
MCS-01-1:37
MCS-01-5:37
MCS-02-1:37
MCS-02-5:37
MCS-03R-1:37
MCS-03R-5:37
MCS-04R-1:37
MCS-04R-5:37
MCS-05R-1:37
MCS-05R-5:37
MCS-06R-1:37
MCS-06R-5:37
MCS-1996-1-SET:37
MCS-1996-5-SET:37
QCS-01-1:38
QCS-01-5:38
QCS-02-1:38
QCS-02-5:38
QCS-02-R1-1:38
QCS-02-R1-5:38
SDWA-01-1:40
SDWA-01-5:40
SDWA-02-1:40
SDWA-02-5:40
SDWA-03-1:40
SDWA-03-5:40
SDWA-04-1:40
SDWA-04-5:40
SDWA-05-1:40
SDWA-05-5:40
SDWA-06-MS-1:40
SDWA-06-MS-5:40
SDWA-07-1:40
SDWA-07-5:40
SDWA-08-1:40
SDWA-08-5:40
SDWA-09-1:40
SDWA-09-5:40
SDWA-1-SET:40
SDWA-5-SET:40
SIC-SING-R-1-SET:38
TCLP-01-1:39
TCLP-01-5:39
TCLP-02-1:37, 38, 39
TCLP-02-5:37, 38, 39
TCLP-GFAA-1:39
TCLP-GFAA-5:39
TCLP-ICP-1:39
TCLP-ICP-5:39