# Single-Element Standards

*1000 mg/l for ICP*

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Silver** | Ag | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C001.2NP.L03 |
| | | | | 100 | ml | C001.2NP.L1 |
| | | | | 250 | ml | C001.2NP.L25 |
| | | | | 500 | ml | C001.2NP.L5 |
| **Aluminium** | Al | in 2-5% HCl | 1000 mg/l | 30 | ml | C002.2CP.L03 |
| | | | | 100 | ml | C002.2CP.L1 |
| | | | | 250 | ml | C002.2CP.L25 |
| | | | | 500 | ml | C002.2CP.L5 |
| **Aluminium** | Al | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C002.2NP.L03 |
| | | | | 100 | ml | C002.2NP.L1 |
| | | | | 250 | ml | C002.2NP.L25 |
| | | | | 500 | ml | C002.2NP.L5 |
| **Arsenic** | As | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C003.2NP.L03 |
| | | | | 100 | ml | C003.2NP.L1 |
| | | | | 250 | ml | C003.2NP.L25 |
| | | | | 500 | ml | C003.2NP.L5 |
| **Gold** | Au | in 2-5% HCl | 1000 mg/l | 30 | ml | C004.2CP.L03 |
| | | | | 100 | ml | C004.2CP.L1 |
| | | | | 250 | ml | C004.2CP.L25 |
| | | | | 500 | ml | C004.2CP.L5 |
| **Boron** | B | in $H_2O$ | 1000 mg/l | 30 | ml | C005.W.L03 |
| | | | | 100 | ml | C005.W.L1 |
| | | | | 250 | ml | C005.W.L25 |
| | | | | 500 | ml | C005.W.L5 |
| **Barium** | Ba | in 2-5% HCl | 1000 mg/l | 30 | ml | C006.2CP.L03 |
| | | | | 100 | ml | C006.2CP.L1 |
| | | | | 250 | ml | C006.2CP.L25 |
| | | | | 500 | ml | C006.2CP.L5 |
| **Barium** | Ba | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C006.2NP.L03 |
| | | | | 100 | ml | C006.2NP.L1 |
| | | | | 250 | ml | C006.2NP.L25 |
| | | | | 500 | ml | C006.2NP.L5 |
| **Beryllium** | Be | in 2-5% HCl | 1000 mg/l | 30 | ml | C007.2CP.L03 |
| | | | | 100 | ml | C007.2CP.L1 |
| | | | | 250 | ml | C007.2CP.L25 |
| | | | | 500 | ml | C007.2CP.L5 |
| **Beryllium** | Be | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C007.2N05FP.L03 |
| | | | | 100 | ml | C007.2N05FP.L1 |
| | | | | 250 | ml | C007.2N05FP.L25 |
| | | | | 500 | ml | C007.2N05FP.L5 |
| **Bismuth** | Bi | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C008.10NP.L03 |
| | | | | 100 | ml | C008.10NP.L1 |
| | | | | 250 | ml | C008.10NP.L25 |
| | | | | 500 | ml | C008.10NP.L5 |

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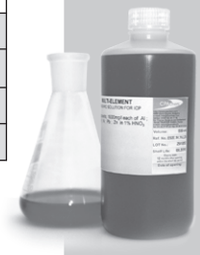
| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Calcium** | Ca | in 2-5% HCl | 1000 mg/l | 30 | ml | C009.2CP.L03 |
| | | | | 100 | ml | C009.2CP.L1 |
| | | | | 250 | ml | C009.2CP.L25 |
| | | | | 500 | ml | C009.2CP.L5 |
| **Calcium** | Ca | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C009.2NP.L03 |
| | | | | 100 | ml | C009.2NP.L1 |
| | | | | 250 | ml | C009.2NP.L25 |
| | | | | 500 | ml | C009.2NP.L5 |
| **Cadmium** | Cd | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C010.2NP.L03 |
| | | | | 100 | ml | C010.2NP.L1 |
| | | | | 250 | ml | C010.2NP.L25 |
| | | | | 500 | ml | C010.2NP.L5 |
| **Cerium** | Ce | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C011.2NP.L03 |
| | | | | 100 | ml | C011.2NP.L1 |
| | | | | 250 | ml | C011.2NP.L25 |
| | | | | 500 | ml | C011.2NP.L5 |
| **Cobalt** | Co | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C012.2NP.L03 |
| | | | | 100 | ml | C012.2NP.L1 |
| | | | | 250 | ml | C012.2NP.L25 |
| | | | | 500 | ml | C012.2NP.L5 |
| **Chromium** | Cr | in 2-5% HCl | 1000 mg/l | 30 | ml | C013.2CP.L03 |
| | | | | 100 | ml | C013.2CP.L1 |
| | | | | 250 | ml | C013.2CP.L25 |
| | | | | 500 | ml | C013.2CP.L5 |
| **Chromium** | Cr | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C013.2NP.L03 |
| | | | | 100 | ml | C013.2NP.L1 |
| | | | | 250 | ml | C013.2NP.L25 |
| | | | | 500 | ml | C013.2NP.L5 |
| **Cesium** | Cs | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C014.2NP.L03 |
| | | | | 100 | ml | C014.2NP.L1 |
| | | | | 250 | ml | C014.2NP.L25 |
| | | | | 500 | ml | C014.2NP.L5 |
| **Cesium** | Cs | in $H_2O$ | 1000 mg/l | 30 | ml | C014.W.L03 |
| | | | | 100 | ml | C014.W.L1 |
| | | | | 250 | ml | C014.W.L25 |
| | | | | 500 | ml | C014.W.L5 |
| **Copper** | Cu | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C015.2NP.L03 |
| | | | | 100 | ml | C015.2NP.L1 |
| | | | | 250 | ml | C015.2NP.L25 |
| | | | | 500 | ml | C015.2NP.L5 |
| **Dysprosium** | Dy | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C016.2NP.L03 |
| | | | | 100 | ml | C016.2NP.L1 |
| | | | | 250 | ml | C016.2NP.L25 |
| | | | | 500 | ml | C016.2NP.L5 |
| **Erbium** | Er | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C017.2NP.L03 |
| | | | | 100 | ml | C017.2NP.L1 |
| | | | | 250 | ml | C017.2NP.L25 |
| | | | | 500 | ml | C017.2NP.L5 |

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Europium** | Eu | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C018.2NP.L03 |
| | | | | 100 | ml | C018.2NP.L1 |
| | | | | 250 | ml | C018.2NP.L25 |
| | | | | 500 | ml | C018.2NP.L5 |
| **Iron** | Fe | in 2-5% HCl | 1000 mg/l | 30 | ml | C019.2CP.L03 |
| | | | | 100 | ml | C019.2CP.L1 |
| | | | | 250 | ml | C019.2CP.L25 |
| | | | | 500 | ml | C019.2CP.L5 |
| **Iron** | Fe | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C019.2NP.L03 |
| | | | | 100 | ml | C019.2NP.L1 |
| | | | | 250 | ml | C019.2NP.L25 |
| | | | | 500 | ml | C019.2NP.L5 |
| **Gallium** | Ga | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C020.2NP.L03 |
| | | | | 100 | ml | C020.2NP.L1 |
| | | | | 250 | ml | C020.2NP.L25 |
| | | | | 500 | ml | C020.2NP.L5 |
| **Gadolinium** | Gd | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C021.2NP.L03 |
| | | | | 100 | ml | C021.2NP.L1 |
| | | | | 250 | ml | C021.2NP.L25 |
| | | | | 500 | ml | C021.2NP.L5 |
| **Germanium** | Ge | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C022.5N1FP.L03 |
| | | | | 100 | ml | C022.5N1FP.L1 |
| | | | | 250 | ml | C022.5N1FP.L25 |
| | | | | 500 | ml | C022.5N1FP.L5 |
| **Hafnium** | Hf | in 2-5% HCl/HF tr | 1000 mg/l | 30 | ml | C023.2C05FP.L03 |
| | | | | 100 | ml | C023.2C05FP.L1 |
| | | | | 250 | ml | C023.2C05FP.L25 |
| | | | | 500 | ml | C023.2C05FP.L5 |
| **Hafnium** | Hf | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C023.2N1FP.L03 |
| | | | | 100 | ml | C023.2N1FP.L1 |
| | | | | 250 | ml | C023.2N1FP.L25 |
| | | | | 500 | ml | C023.2N1FP.L5 |
| **Mercury** | Hg | in 5-10% $HNO_3$ | 1000 mg/l | 30 | ml | C024.10NP.L03 |
| | | | | 100 | ml | C024.10NP.L1 |
| | | | | 250 | ml | C024.10NP.L25 |
| | | | | 500 | ml | C024.10NP.L5 |
| **Holmium** | Ho | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C025.2NP.L03 |
| | | | | 100 | ml | C025.2NP.L1 |
| | | | | 250 | ml | C025.2NP.L25 |
| | | | | 500 | ml | C025.2NP.L5 |
| **Indium** | In | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C026.2NP.L03 |
| | | | | 100 | ml | C026.2NP.L1 |
| | | | | 250 | ml | C026.2NP.L25 |
| | | | | 500 | ml | C026.2NP.L5 |
| **Iridium** | Ir | in 5-10% HCl | 1000 mg/l | 30 | ml | C027.10CP.L03 |
| | | | | 100 | ml | C027.10CP.L1 |
| | | | | 250 | ml | C027.10CP.L25 |
| | | | | 500 | ml | C027.10CP.L5 |



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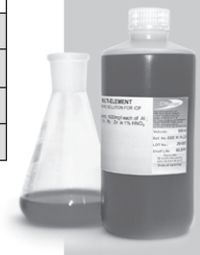
|---|---|---|---|---|---|---|
| **Potassium** | K | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C028.2NP.L03 |
| | | | | 100 | ml | C028.2NP.L1 |
| | | | | 250 | ml | C028.2NP.L25 |
| | | | | 500 | ml | C028.2NP.L5 |
| **Potassium** | K | in $H_2O$ | 1000 mg/l | 30 | ml | C028.W.L03 |
| | | | | 100 | ml | C028.W.L1 |
| | | | | 250 | ml | C028.W.L25 |
| | | | | 500 | ml | C028.W.L5 |
| **Lanthanum** | La | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C029.2NP.L03 |
| | | | | 100 | ml | C029.2NP.L1 |
| | | | | 250 | ml | C029.2NP.L25 |
| | | | | 500 | ml | C029.2NP.L5 |
| **Lithium** | Li | in 2-5% HCl | 1000 mg/l | 30 | ml | C030.2CP.L03 |
| | | | | 100 | ml | C030.2CP.L1 |
| | | | | 250 | ml | C030.2CP.L25 |
| | | | | 500 | ml | C030.2CP.L5 |
| **Lithium** | Li | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C030.2NP.L03 |
| | | | | 100 | ml | C030.2NP.L1 |
| | | | | 250 | ml | C030.2NP.L25 |
| | | | | 500 | ml | C030.2NP.L5 |
| **Lutetium** | Lu | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C031.2NP.L03 |
| | | | | 100 | ml | C031.2NP.L1 |
| | | | | 250 | ml | C031.2NP.L25 |
| | | | | 500 | ml | C031.2NP.L5 |
| **Magnesium** | Mg | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C032.2NP.L03 |
| | | | | 100 | ml | C032.2NP.L1 |
| | | | | 250 | ml | C032.2NP.L25 |
| | | | | 500 | ml | C032.2NP.L5 |
| **Manganese** | Mn | in 2-5% HCl | 1000 mg/l | 30 | ml | C033.2CP.L03 |
| | | | | 100 | ml | C033.2CP.L1 |
| | | | | 250 | ml | C033.2CP.L25 |
| | | | | 500 | ml | C033.2CP.L5 |
| **Manganese** | Mn | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C033.2NP.L03 |
| | | | | 100 | ml | C033.2NP.L1 |
| | | | | 250 | ml | C033.2NP.L25 |
| | | | | 500 | ml | C033.2NP.L5 |
| **Molybdenum** | Mo | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C034.1N1FP.L03 |
| | | | | 100 | ml | C034.1N1FP.L1 |
| | | | | 250 | ml | C034.1N1FP.L25 |
| | | | | 500 | ml | C034.1N1FP.L5 |
| **Molybdenum** | Mo | in 2-5% $NH_4OH$ | 1000 mg/l | 30 | ml | C034.4AP.L03 |
| | | | | 100 | ml | C034.4AP.L1 |
| | | | | 250 | ml | C034.4AP.L25 |
| | | | | 500 | ml | C034.4AP.L5 |
| **Sodium** | Na | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C035.2NP.L03 |
| | | | | 100 | ml | C035.2NP.L1 |
| | | | | 250 | ml | C035.2NP.L25 |
| | | | | 500 | ml | C035.2NP.L5 |

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Sodium** | Na | in $H_2O$ | 1000 mg/l | 30 | ml | C035.W.L03 |
| | | | | 100 | ml | C035.W.L1 |
| | | | | 250 | ml | C035.W.L25 |
| | | | | 500 | ml | C035.W.L5 |
| **Niobium** | Nb | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C036.5N1FP.L03 |
| | | | | 100 | ml | C036.5N1FP.L1 |
| | | | | 250 | ml | C036.5N1FP.L25 |
| | | | | 500 | ml | C036.5N1FP.L5 |
| **Neodymium** | Nd | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C037.2NP.L03 |
| | | | | 100 | ml | C037.2NP.L1 |
| | | | | 250 | ml | C037.2NP.L25 |
| | | | | 500 | ml | C037.2NP.L5 |
| **Nickel** | Ni | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C038.2NP.L03 |
| | | | | 100 | ml | C038.2NP.L1 |
| | | | | 250 | ml | C038.2NP.L25 |
| | | | | 500 | ml | C038.2NP.L5 |
| **Osmium** | Os | in 2-5% HCl | 1000 mg/l | 30 | ml | C039.2CP.L03 |
| | | | | 100 | ml | C039.2CP.L1 |
| | | | | 250 | ml | C039.2CP.L25 |
| | | | | 500 | ml | C039.2CP.L5 |
| **Phosphorus** | P | in 0.5% $H_2SO_4$ | 1000 mg/l | 30 | ml | C040.05SP.L03 |
| | | | | 100 | ml | C040.05SP.L1 |
| | | | | 250 | ml | C040.05SP.L25 |
| | | | | 500 | ml | C040.05SP.L5 |
| **Phosphorus** | P | in $H_2O$ | 1000 mg/l | 30 | ml | C040.W.L03 |
| | | | | 100 | ml | C040.W.L1 |
| | | | | 250 | ml | C040.W.L25 |
| | | | | 500 | ml | C040.W.L5 |
| **Lead** | Pb | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C041.2NP.L03 |
| | | | | 100 | ml | C041.2NP.L1 |
| | | | | 250 | ml | C041.2NP.L25 |
| | | | | 500 | ml | C041.2NP.L5 |
| **Palladium** | Pd | in 2-5% HCl | 1000 mg/l | 30 | ml | C042.5CP.L03 |
| | | | | 100 | ml | C042.5CP.L1 |
| | | | | 250 | ml | C042.5CP.L25 |
| | | | | 500 | ml | C042.5CP.L5 |
| **Palladium** | Pd | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C042.5NP.L03 |
| | | | | 100 | ml | C042.5NP.L1 |
| | | | | 250 | ml | C042.5NP.L25 |
| | | | | 500 | ml | C042.5NP.L5 |
| **Praseodymium** | Pr | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C043.2NP.L03 |
| | | | | 100 | ml | C043.2NP.L1 |
| | | | | 250 | ml | C043.2NP.L25 |
| | | | | 500 | ml | C043.2NP.L5 |
| **Platinium** | Pt | in 5-10% HCl | 1000 mg/l | 30 | ml | C044.10CP.L03 |
| | | | | 100 | ml | C044.10CP.L1 |
| | | | | 250 | ml | C044.10CP.L25 |
| | | | | 500 | ml | C044.10CP.L5 |



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|---|---|---|---|---|---|---|
| **Rubidium** | Rb | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C045.2NP.L03 |
| | | | | 100 | ml | C045.2NP.L1 |
| | | | | 250 | ml | C045.2NP.L25 |
| | | | | 500 | ml | C045.2NP.L5 |
| **Rubidium** | Rb | in $H_2O$ | 1000 mg/l | 30 | ml | C045.W.L03 |
| | | | | 100 | ml | C045.W.L1 |
| | | | | 250 | ml | C045.W.L25 |
| | | | | 500 | ml | C045.W.L5 |
| **Rhenium** | Re | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C046.2NP.L03 |
| | | | | 100 | ml | C046.2NP.L1 |
| | | | | 250 | ml | C046.2NP.L25 |
| | | | | 500 | ml | C046.2NP.L5 |
| **Rhenium** | Re | in $H_2O$ | 1000 mg/l | 30 | ml | C046.W.L03 |
| | | | | 100 | ml | C046.W.L1 |
| | | | | 250 | ml | C046.W.L25 |
| | | | | 500 | ml | C046.W.L5 |
| **Rhodium** | Rh | in 2-5% HCl | 1000 mg/l | 30 | ml | C047.5CP.L03 |
| | | | | 100 | ml | C047.5CP.L1 |
| | | | | 250 | ml | C047.5CP.L25 |
| | | | | 500 | ml | C047.5CP.L5 |
| **Ruthenium** | Ru | in 2-5% HCl | 1000 mg/l | 30 | ml | C048.5CP.L03 |
| | | | | 100 | ml | C048.5CP.L1 |
| | | | | 250 | ml | C048.5CP.L25 |
| | | | | 500 | ml | C048.5CP.L5 |
| **Sulphur** | S | in $H_2O$ | 1000 mg/l | 30 | ml | C049.W.L03 |
| | | | | 100 | ml | C049.W.L1 |
| | | | | 250 | ml | C049.W.L25 |
| | | | | 500 | ml | C049.W.L5 |
| **Antimony** | Sb | in 10-20% HCl | 1000 mg/l | 30 | ml | C050.20CP.L03 |
| | | | | 100 | ml | C050.20CP.L1 |
| | | | | 250 | ml | C050.20CP.L25 |
| | | | | 500 | ml | C050.20CP.L5 |
| **Antimony** | Sb | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C050.5N1FP.L03 |
| | | | | 100 | ml | C050.5N1FP.L1 |
| | | | | 250 | ml | C050.5N1FP.L25 |
| | | | | 500 | ml | C050.5N1FP.L5 |
| **Scandium** | Sc | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C051.2NP.L03 |
| | | | | 100 | ml | C051.2NP.L1 |
| | | | | 250 | ml | C051.2NP.L25 |
| | | | | 500 | ml | C051.2NP.L5 |
| **Selenium** | Se | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C052.2NP.L03 |
| | | | | 100 | ml | C052.2NP.L1 |
| | | | | 250 | ml | C052.2NP.L25 |
| | | | | 500 | ml | C052.2NP.L5 |
| **Silicon** | Si | in $H_2O$ | 1000 mg/l | 30 | ml | C053.W.L03 |
| | | | | 100 | ml | C053.W.L1 |
| | | | | 250 | ml | C053.W.L25 |
| | | | | 500 | ml | C053.W.L5 |

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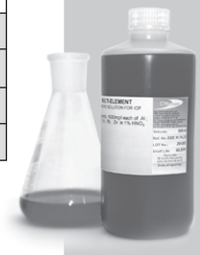
|---|---|---|---|---|---|---|
| **Samarium** | Sm | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C054.2NP.L03 |
| | | | | 100 | ml | C054.2NP.L1 |
| | | | | 250 | ml | C054.2NP.L25 |
| | | | | 500 | ml | C054.2NP.L5 |
| **Tin** | Sn | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C055.1N1FP.L03 |
| | | | | 100 | ml | C055.1N1FP.L1 |
| | | | | 250 | ml | C055.1N1FP.L25 |
| | | | | 500 | ml | C055.1N1FP.L5 |
| **Tin** | Sn | in 20% HCl | 1000 mg/l | 30 | ml | C055.20CP.L03 |
| | | | | 100 | ml | C055.20CP.L1 |
| | | | | 250 | ml | C055.20CP.L25 |
| | | | | 500 | ml | C055.20CP.L5 |
| **Strontium** | Sr | in 2-5% HCl | 1000 mg/l | 30 | ml | C056.2CP.L03 |
| | | | | 100 | ml | C056.2CP.L1 |
| | | | | 250 | ml | C056.2CP.L25 |
| | | | | 500 | ml | C056.2CP.L5 |
| **Strontium** | Sr | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C056.2NP.L03 |
| | | | | 100 | ml | C056.2NP.L1 |
| | | | | 250 | ml | C056.2NP.L25 |
| | | | | 500 | ml | C056.2NP.L5 |
| **Tantalum** | Ta | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C057.5N1FP.L03 |
| | | | | 100 | ml | C057.5N1FP.L1 |
| | | | | 250 | ml | C057.5N1FP.L25 |
| | | | | 500 | ml | C057.5N1FP.L5 |
| **Terbium** | Tb | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C058.2NP.L03 |
| | | | | 100 | ml | C058.2NP.L1 |
| | | | | 250 | ml | C058.2NP.L25 |
| | | | | 500 | ml | C058.2NP.L5 |
| **Tellurium** | Te | in 10-20% HCl | 1000 mg/l | 30 | ml | C059.20CP.L03 |
| | | | | 100 | ml | C059.20CP.L1 |
| | | | | 250 | ml | C059.20CP.L25 |
| | | | | 500 | ml | C059.20CP.L5 |
| **Tellurium** | Te | in 10-20% $HNO_3$ | 1000 mg/l | 30 | ml | C059.20NP.L03 |
| | | | | 100 | ml | C059.20NP.L1 |
| | | | | 250 | ml | C059.20NP.L25 |
| | | | | 500 | ml | C059.20NP.L5 |
| **Thorium** | Th | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C060.2NP.L03 |
| | | | | 100 | ml | C060.2NP.L1 |
| | | | | 250 | ml | C060.2NP.L25 |
| | | | | 500 | ml | C060.2NP.L5 |
| **Titanium** | Ti | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C061.5N05FP.L03 |
| | | | | 100 | ml | C061.5N05FP.L1 |
| | | | | 250 | ml | C061.5N05FP.L25 |
| | | | | 500 | ml | C061.5N05FP.L5 |
| **Titanium** | Ti | in 5 %HCl/HF tr | 1000 mg/l | 30 | ml | C061.5C05FP.L03 |
| | | | | 100 | ml | C061.5C05FP.L1 |
| | | | | 250 | ml | C061.5C05FP.L25 |
| | | | | 500 | ml | C061.5C05FP.L5 |



* Custom Standards for ICP & ICP-MS are available upon request.

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Thallium** | Tl | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C062.2NP.L03 |
| | | | | 100 | ml | C062.2NP.L1 |
| | | | | 250 | ml | C062.2NP.L25 |
| | | | | 500 | ml | C062.2NP.L5 |
| **Thulium** | Tm | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C063.2NP.L03 |
| | | | | 100 | ml | C063.2NP.L1 |
| | | | | 250 | ml | C063.2NP.L25 |
| | | | | 500 | ml | C063.2NP.L5 |
| **Uranium** | U | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C064.2NP.L03 |
| | | | | 100 | ml | C064.2NP.L1 |
| | | | | 250 | ml | C064.2NP.L25 |
| | | | | 500 | ml | C064.2NP.L5 |
| **Vanadium** | V | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C065.2NP.L03 |
| | | | | 100 | ml | C065.2NP.L1 |
| | | | | 250 | ml | C065.2NP.L25 |
| | | | | 500 | ml | C065.2NP.L5 |
| **Vanadium** | V | in 2% $H_2SO_4$ | 1000 mg/l | 30 | ml | C065.2SP.L03 |
| | | | | 100 | ml | C065.2SP.L1 |
| | | | | 250 | ml | C065.2SP.L25 |
| | | | | 500 | ml | C065.2SP.L5 |
| **Tungsten** | W | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C066.1N2FP.L03 |
| | | | | 100 | ml | C066.1N2FP.L1 |
| | | | | 250 | ml | C066.1N2FP.L25 |
| | | | | 500 | ml | C066.1N2FP.L5 |
| **Tungsten** | W | in 2-5% NH4OH | 1000 mg/l | 30 | ml | C066.4AP.L03 |
| | | | | 100 | ml | C066.4AP.L1 |
| | | | | 250 | ml | C066.4AP.L25 |
| | | | | 500 | ml | C066.4AP.L5 |
| **Yttrium** | Y | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C067.2NP.L03 |
| | | | | 100 | ml | C067.2NP.L1 |
| | | | | 250 | ml | C067.2NP.L25 |
| | | | | 500 | ml | C067.2NP.L5 |
| **Ytterbium** | Yb | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C068.2NP.L03 |
| | | | | 100 | ml | C068.2NP.L1 |
| | | | | 250 | ml | C068.2NP.L25 |
| | | | | 500 | ml | C068.2NP.L5 |
| **Zinc** | Zn | in 2-5% HCl | 1000 mg/l | 30 | ml | C069.2CP.L03 |
| | | | | 100 | ml | C069.2CP.L1 |
| | | | | 250 | ml | C069.2CP.L25 |
| | | | | 500 | ml | C069.2CP.L5 |
| **Zinc** | Zn | in 2-5% $HNO_3$ | 1000 mg/l | 30 | ml | C069.2NP.L03 |
| | | | | 100 | ml | C069.2NP.L1 |
| | | | | 250 | ml | C069.2NP.L25 |
| | | | | 500 | ml | C069.2NP.L5 |
| **Zirconium** | Zr | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 30 | ml | C070.2N05FP.L03 |
| | | | | 100 | ml | C070.2N05FP.L1 |
| | | | | 250 | ml | C070.2N05FP.L25 |
| | | | | 500 | ml | C070.2N05FP.L5 |
| **Zirconium** | Zr | in 2-5% HCl/HF tr | 1000 mg/l | 30 | ml | C070.5C05FP.L03 |
| | | | | 100 | ml | C070.5C05FP.L1 |
| | | | | 250 | ml | C070.5C05FP.L25 |
| | | | | 500 | ml | C070.5C05FP.L5 |

## *10 000 mg/l for ICP*

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Silver** | Ag | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C101.5NP.L5 |
| | | | | 100 | ml | C101.5NP.L03 |
| | | | | 250 | ml | C101.5NP.L1 |
| | | | | 500 | ml | C101.5NP.L25 |
| **Aluminium** | Al | in 2-5% HCl | 10 000 mg/l | 30 | ml | C102.5CP.L03 |
| | | | | 100 | ml | C102.5CP.L1 |
| | | | | 250 | ml | C102.5CP.L25 |
| | | | | 500 | ml | C102.5CP.L5 |
| **Aluminium** | Al | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C102.5NP.L03 |
| | | | | 100 | ml | C102.5NP.L1 |
| | | | | 250 | ml | C102.5NP.L25 |
| | | | | 500 | ml | C102.5NP.L5 |
| **Arsenic** | As | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C103.5NP.L03 |
| | | | | 100 | ml | C103.5NP.L1 |
| | | | | 250 | ml | C103.5NP.L25 |
| | | | | 500 | ml | C103.5NP.L5 |
| **Gold** | Au | in 2-5% HCl | 10 000 mg/l | 30 | ml | C104.5CP.L03 |
| | | | | 100 | ml | C104.5CP.L03 |
| | | | | 250 | ml | C104.5CP.L1 |
| | | | | 500 | ml | C104.5CP.L25 |
| **Boron** | B | in $H_2O$ | 10 000 mg/l | 30 | ml | C105.W.L03 |
| | | | | 100 | ml | C105.W.L1 |
| | | | | 250 | ml | C105.W.L25 |
| | | | | 500 | ml | C105.W.L5 |
| **Barium** | Ba | in 2-5% HCl | 10 000 mg/l | 30 | ml | C106.5CP.L03 |
| | | | | 100 | ml | C106.5CP.L1 |
| | | | | 250 | ml | C106.5CP.L25 |
| | | | | 500 | ml | C106.5CP.L5 |
| **Barium** | Ba | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C106.2NP.L03 |
| | | | | 100 | ml | C106.2NP.L1 |
| | | | | 250 | ml | C106.2NP.L25 |
| | | | | 500 | ml | C106.2NP.L5 |
| **Beryllium** | Be | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C107.5N1FP.L03 |
| | | | | 100 | ml | C107.5N1FP.L1 |
| | | | | 250 | ml | C107.5N1FP.L25 |
| | | | | 500 | ml | C107.5N1FP.L5 |
| **Bismuth** | Bi | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C108.10NP.L03 |
| | | | | 100 | ml | C108.10NP.L1 |
| | | | | 250 | ml | C108.10NP.L25 |
| | | | | 500 | ml | C108.10NP.L5 |
| **Calcium** | Ca | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C109.2NP.L03 |
| | | | | 100 | ml | C109.2NP.L1 |
| | | | | 250 | ml | C109.2NP.L25 |
| | | | | 500 | ml | C109.2NP.L5 |
| **Cadmium** | Cd | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C110.5NP.L03 |
| | | | | 100 | ml | C110.5NP.L1 |
| | | | | 250 | ml | C110.5NP.L25 |
| | | | | 500 | ml | C110.5NP.L5 |

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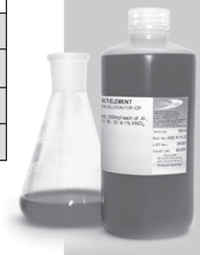
| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Cerium** | Ce | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C111.5NP.L03 |
| | | | | 100 | ml | C111.5NP.L1 |
| | | | | 250 | ml | C111.5NP.L25 |
| | | | | 500 | ml | C111.5NP.L5 |
| **Cobalt** | Co | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C112.5NP.L03 |
| | | | | 100 | ml | C112.5NP.L1 |
| | | | | 250 | ml | C112.5NP.L25 |
| | | | | 500 | ml | C112.5NP.L5 |
| **Chromium** | Cr | in 2-5% HCl | 10 000 mg/l | 30 | ml | C113.5CP.L03 |
| | | | | 100 | ml | C113.5CP.L1 |
| | | | | 250 | ml | C113.5CP.L25 |
| | | | | 500 | ml | C113.5CP.L5 |
| **Chromium** | Cr | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C113.5NP.L03 |
| | | | | 100 | ml | C113.5NP.L1 |
| | | | | 250 | ml | C113.5NP.L25 |
| | | | | 500 | ml | C113.5NP.L5 |
| **Cesium** | Cs | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C114.2NP.L03 |
| | | | | 100 | ml | C114.2NP.L1 |
| | | | | 250 | ml | C114.2NP.L25 |
| | | | | 500 | ml | C114.2NP.L5 |
| **Cesium** | Cs | in $H_2O$ | 10 000 mg/l | 30 | ml | C114.W.L03 |
| | | | | 100 | ml | C114.W.L1 |
| | | | | 250 | ml | C114.W.L25 |
| | | | | 500 | ml | C114.W.L5 |
| **Copper** | Cu | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C115.5NP.L03 |
| | | | | 100 | ml | C115.5NP.L1 |
| | | | | 250 | ml | C115.5NP.L25 |
| | | | | 500 | ml | C115.5NP.L5 |
| **Dysprosium** | Dy | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C116.5NP.L03 |
| | | | | 100 | ml | C116.5NP.L1 |
| | | | | 250 | ml | C116.5NP.L25 |
| | | | | 500 | ml | C116.5NP.L5 |
| **Erbium** | Er | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C117.5NP.L03 |
| | | | | 100 | ml | C117.5NP.L1 |
| | | | | 250 | ml | C117.5NP.L25 |
| | | | | 500 | ml | C117.5NP.L5 |
| **Europium** | Eu | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C118.2NP.L03 |
| | | | | 100 | ml | C118.2NP.L1 |
| | | | | 250 | ml | C118.2NP.L25 |
| | | | | 500 | ml | C118.2NP.L5 |
| **Iron** | Fe | in 2-5% HCl | 10 000 mg/l | 30 | ml | C119.5CP.L03 |
| | | | | 100 | ml | C119.5CP.L1 |
| | | | | 250 | ml | C119.5CP.L125 |
| | | | | 500 | ml | C119.5CP.L5 |
| **Iron** | Fe | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C119.5NP.L03 |
| | | | | 100 | ml | C119.5NP.L1 |
| | | | | 250 | ml | C119.5NP.L25 |
| | | | | 500 | ml | C119.5NP.L5 |

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Gallium** | Ga | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C120.5NP.L03 |
| | | | | 100 | ml | C120.5NP.L1 |
| | | | | 250 | ml | C120.5NP.L25 |
| | | | | 500 | ml | C120.5NP.L5 |
| **Gadolinium** | Gd | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C121.5NP.L03 |
| | | | | 100 | ml | C121.5NP.L1 |
| | | | | 250 | ml | C121.5NP.L25 |
| | | | | 500 | ml | C121.5NP.L5 |
| **Germanium** | Ge | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C122.5N1FP.L03 |
| | | | | 100 | ml | C122.5N1FP.L1 |
| | | | | 250 | ml | C122.5N1FP.L25 |
| | | | | 500 | ml | C122.5N1FP.L5 |
| **Hafnium** | Hf | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C123.5N2FP.L03 |
| | | | | 100 | ml | C123.5N2FP.L1 |
| | | | | 250 | ml | C123.5N2FP.L25 |
| | | | | 500 | ml | C123.5N2FP.L5 |
| **Mercury** | Hg | in 5-10% HNO3 | 10 000 mg/l | 30 | ml | C124.10NP.L03 |
| | | | | 100 | ml | C124.10NP.L1 |
| | | | | 250 | ml | C124.10NP.L25 |
| | | | | 500 | ml | C124.10NP.L5 |
| **Holmium** | Ho | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C125.5NP.L03 |
| | | | | 100 | ml | C125.5NP.L1 |
| | | | | 250 | ml | C125.5NP.L25 |
| | | | | 500 | ml | C125.5NP.L5 |
| **Indium** | In | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C126.5NP.L03 |
| | | | | 100 | ml | C126.5NP.L1 |
| | | | | 250 | ml | C126.5NP.L25 |
| | | | | 500 | ml | C126.5NP.L5 |
| **Iridium** | Ir | in 5-10% HCl | 10 000 mg/l | 30 | ml | C127.10CP.L03 |
| | | | | 100 | ml | C127.10CP.L1 |
| | | | | 250 | ml | C127.10CP.L25 |
| | | | | 500 | ml | C127.10CP.L5 |
| **Potassium** | K | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C128.2NP.L03 |
| | | | | 100 | ml | C128.2NP.L1 |
| | | | | 250 | ml | C128.2NP.L25 |
| | | | | 500 | ml | C128.2NP.L5 |
| **Potassium** | K | in $H_2O$ | 10 000 mg/l | 30 | ml | C128.W.L03 |
| | | | | 100 | ml | C128.W.L1 |
| | | | | 250 | ml | C128.W.L25 |
| | | | | 500 | ml | C128.W.L5 |
| **Lanthanum** | La | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C129.5NP.L03 |
| | | | | 100 | ml | C129.5NP.L1 |
| | | | | 250 | ml | C129.5NP.L25 |
| | | | | 500 | ml | C129.5NP.L5 |
| **Lithium** | Li | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C130.5NP.L03 |
| | | | | 100 | ml | C130.5NP.L1 |
| | | | | 250 | ml | C130.5NP.L25 |
| | | | | 500 | ml | C130.5NP.L5 |



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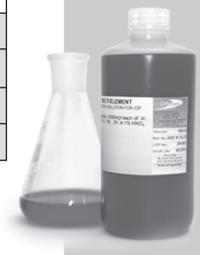
| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Lutetium** | Lu | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C131.5NP.L03 |
| | | | | 100 | ml | C131.5NP.L1 |
| | | | | 250 | ml | C131.5NP.L25 |
| | | | | 500 | ml | C131.5NP.L5 |
| **Magnesium** | Mg | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C132.2NP.L03 |
| | | | | 100 | ml | C132.2NP.L1 |
| | | | | 250 | ml | C132.2NP.L25 |
| | | | | 500 | ml | C132.2NP.L5 |
| **Manganese** | Mn | in 2-5% HCl | 10 000 mg/l | 30 | ml | C133.5CP.L03 |
| | | | | 100 | ml | C133.5CP.L1 |
| | | | | 250 | ml | C133.5CP.L25 |
| | | | | 500 | ml | C133.5CP.L5 |
| **Manganese** | Mn | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C133.5NP.L03 |
| | | | | 100 | ml | C133.5NP.L1 |
| | | | | 250 | ml | C133.5NP.L25 |
| | | | | 500 | ml | C133.5NP.L5 |
| **Molybdenum** | Mo | in 2-5 % $NH_4OH$ | 10 000 mg/l | 30 | ml | C134.4AP.L03 |
| | | | | 100 | ml | C134.4AP.L1 |
| | | | | 250 | ml | C134.4AP.L25 |
| | | | | 500 | ml | C134.4AP.L5 |
| **Molybdenum** | Mo | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C134.5N4FP.L03 |
| | | | | 100 | ml | C134.5N4FP.L1 |
| | | | | 250 | ml | C134.5N4FP.L25 |
| | | | | 500 | ml | C134.5N4FP.L5 |
| **Sodium** | Na | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C135.2NP.L03 |
| | | | | 100 | ml | C135.2NP.L1 |
| | | | | 250 | ml | C135.2NP.L25 |
| | | | | 500 | ml | C135.2NP.L5 |
| **Sodium** | Na | in $H_2O$ | 10 000 mg/l | 30 | ml | C135.W.L03 |
| | | | | 100 | ml | C135.W.L1 |
| | | | | 250 | ml | C135.W.L25 |
| | | | | 500 | ml | C135.W.L5 |
| **Niobium** | Nb | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C136.5N5FP.L03 |
| | | | | 100 | ml | C136.5N5FP.L1 |
| | | | | 250 | ml | C136.5N5FP.L25 |
| | | | | 500 | ml | C136.5N5FP.L5 |
| **Neodymium** | Nd | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C137.5N.L03 |
| | | | | 100 | ml | C137.5N.L1 |
| | | | | 250 | ml | C137.5N.L25 |
| | | | | 500 | ml | C137.5N.L5 |
| **Nickel** | Ni | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C138.5NP.L03 |
| | | | | 100 | ml | C138.5NP.L1 |
| | | | | 250 | ml | C138.5NP.L25 |
| | | | | 500 | ml | C138.5NP.L5 |
| **Phosphorus** | P | in 0,5% $H_2SO_4$ | 10 000 mg/l | 30 | ml | C140.05SP.L03 |
| | | | | 100 | ml | C140.005SP.L1 |
| | | | | 250 | ml | C140.005SP.L25 |
| | | | | 500 | ml | C140.005SP.L5 |

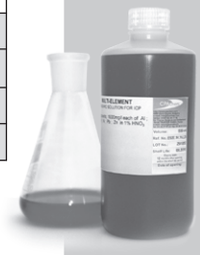
| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Phosphorus** | P | in $H_2O$ | 10 000 mg/l | 30 | ml | C140.W.L03 |
| | | | | 100 | ml | C140.W.L1 |
| | | | | 250 | ml | C140.W.L25 |
| | | | | 500 | ml | C140.W.L5 |
| **Lead** | Pb | in 2-5% $HNO_3$ | 10 000 mg/l | 33 | ml | C141.5NP.L03 |
| | | | | 100 | ml | C141.5NP.L1 |
| | | | | 250 | ml | C141.5NP.L25 |
| | | | | 500 | ml | C141.5NP.L5 |
| **Palladium** | Pd | in 5-10% HNO3 | 10 000 mg/l | 30 | ml | C142.10NP.L03 |
| | | | | 100 | ml | C142.10NP.L1 |
| | | | | 250 | ml | C142.10NP.L25 |
| | | | | 500 | ml | C142.10NP.L5 |
| **Palladium** | Pd | in 2-5% HCl | 10 000 mg/l | 30 | ml | C142.5CP.L03 |
| | | | | 100 | ml | C142.5CP.L1 |
| | | | | 250 | ml | C142.5CP.L25 |
| | | | | 500 | ml | C142.5CP.L5 |
| **Praseodymium** | Pr | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C143.5NP.L03 |
| | | | | 100 | ml | C143.5NP.L1 |
| | | | | 250 | ml | C143.5NP.L25 |
| | | | | 500 | ml | C143.5NP.L5 |
| **Platinum** | Pt | in 10-20% HCl | 10 000 mg/l | 30 | ml | C144.10CP.L03 |
| | | | | 100 | ml | C144.10CP.L1 |
| | | | | 250 | ml | C144.10CP.L25 |
| | | | | 500 | ml | C144.10CP.L5 |
| **Rubidium** | Rb | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C145.2NP.L03 |
| | | | | 100 | ml | C145.2NP.L1 |
| | | | | 250 | ml | C145.2NP.L25 |
| | | | | 500 | ml | C145.2NP.L5 |
| **Rubidium** | Rb | in $H_2O$ | 10 000 mg/l | 30 | ml | C145.W.L03 |
| | | | | 100 | ml | C145.W.L1 |
| | | | | 250 | ml | C145.W.L25 |
| | | | | 500 | ml | C145.W.L5 |
| **Rhenium** | Re | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C146.5NP.L03 |
| | | | | 100 | ml | C146.5NP.L1 |
| | | | | 250 | ml | C146.5NP.L25 |
| | | | | 500 | ml | C146.5NP.L5 |
| **Rhenium** | Re | in $H_2O$ | 10 000 mg/l | 30 | ml | C146.W.L03 |
| | | | | 100 | ml | C146.W.L1 |
| | | | | 250 | ml | C146.W.L25 |
| | | | | 500 | ml | C146.W.L5 |
| **Ruthenium** | Ru | in 10-20% HCl | 10 000 mg/l | 30 | ml | C148.10CP.L03 |
| | | | | 100 | ml | C148.10CP.L1 |
| | | | | 250 | ml | C148.10CP.L25 |
| | | | | 500 | ml | C148.10CP.L5 |
| **Sulfur** | S | in $H_2O$ | 10 000 mg/l | 30 | ml | C149.W.L03 |
| | | | | 100 | ml | C149.W.L1 |
| | | | | 250 | ml | C149.W.L25 |
| | | | | 500 | ml | C149.W.L5 |



* Custom Standards for ICP & ICP-MS are available upon request.

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Antimony** | Sb | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C150.10N2FP.L03 |
| | | | | 100 | ml | C150.10N2FP.L1 |
| | | | | 250 | ml | C150.10N2FP.L25 |
| | | | | 500 | ml | C150.10N2FP.L5 |
| **Antimony** | Sb | in 10-20% HCl | 10 000 mg/l | 30 | ml | C150.20CP.L03 |
| | | | | 100 | ml | C150.20CP.L1 |
| | | | | 250 | ml | C150.20CP.L25 |
| | | | | 500 | ml | C150.20CP.L5 |
| **Scandium** | Sc | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C151.5NP.L03 |
| | | | | 100 | ml | C151.5NP.L1 |
| | | | | 250 | ml | C151.5NP.L25 |
| | | | | 500 | ml | C151.5NP.L5 |
| **Selenium** | Se | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C152.5NP.L03 |
| | | | | 100 | ml | C152.5NP.L1 |
| | | | | 250 | ml | C152.5NP.L25 |
| | | | | 500 | ml | C152.5NP.L5 |
| **Silicon** | Si | in $H_2O$ | 10 000 mg/l | 30 | ml | C153.W.L03 |
| | | | | 100 | ml | C153.W.L1 |
| | | | | 250 | ml | C153.W.L25 |
| | | | | 500 | ml | C153.W.L5 |
| **Samarium** | Sm | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C154.2NP.L03 |
| | | | | 100 | ml | C154.2NP.L1 |
| | | | | 250 | ml | C154.2NP.L25 |
| | | | | 500 | ml | C154.2NP.L5 |
| **Tin** | Sn | in 10-20% HCl | 10 000 mg/l | 30 | ml | C155.20CP.L03 |
| | | | | 100 | ml | C155.20CP.L1 |
| | | | | 250 | ml | C155.20CP.L25 |
| | | | | 500 | ml | C155.20CP.L5 |
| **Tin** | Sn | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C155.2N2FP.L03 |
| | | | | 100 | ml | C155.2N2FP.L1 |
| | | | | 250 | ml | C155.2N2FP.L25 |
| | | | | 500 | ml | C155.2N2FP.L5 |
| **Strontium** | Sr | in 2-5% HCl | 10 000 mg/l | 30 | ml | C156.2CP.L03 |
| | | | | 100 | ml | C156.2CP.L1 |
| | | | | 250 | ml | C156.2CP.L25 |
| | | | | 500 | ml | C156.2CP.L5 |
| **Strontium** | Sr | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C156.2NP.L03 |
| | | | | 100 | ml | C156.2NP.L1 |
| | | | | 250 | ml | C156.2NP.L25 |
| | | | | 500 | ml | C156.2NP.L5 |
| **Tantalum** | Ta | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C157.5N2FP.03 |
| | | | | 100 | ml | C157.5N2FP.L1 |
| | | | | 250 | ml | C157.5N2FP.L25 |
| | | | | 500 | ml | C157.5N2FP.L5 |
| **Terbium** | Tb | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C158.5NP.L03 |
| | | | | 100 | ml | C158.5NP.L1 |
| | | | | 250 | ml | C158.5NP.L25 |
| | | | | 500 | ml | C158.5NP.L5 |

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Tellurium** | Te | in 10-20% $HNO_3$ | 10 000 mg/l | 30 | ml | C159.20NP.L03 |
| | | | | 100 | ml | C159.20NP.L1 |
| | | | | 250 | ml | C159.20NP.L25 |
| | | | | 500 | ml | C159.20NP.L5 |
| **Titanium** | Ti | in 2-5% HCl/HF tr | 10 000 mg/l | 30 | ml | C161.5C05FP.L03 |
| | | | | 100 | ml | C161.5C05FP.L1 |
| | | | | 250 | ml | C161.5C05FP.L25 |
| | | | | 500 | ml | C161.5C05FP.L5 |
| **Titanium** | Ti | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C161.5N2FP.L03 |
| | | | | 100 | ml | C161.5N2FP.L1 |
| | | | | 250 | ml | C161.5N2FP.L25 |
| | | | | 500 | ml | C161.5N2FP.L5 |
| **Thallium** | Tl | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C162.5NP.L03 |
| | | | | 100 | ml | C162.5NP.L1 |
| | | | | 250 | ml | C162.5NP.L25 |
| | | | | 500 | ml | C162.5NP.L5 |
| **Thulium** | Tm | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C163.5NP.L03 |
| | | | | 100 | ml | C163.5NP.L1 |
| | | | | 250 | ml | C163.5NP.L25 |
| | | | | 500 | ml | C163.5NP.L5 |
| **Uranium** | U | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C164.5NP.L03 |
| | | | | 100 | ml | C164.5NP.L1 |
| | | | | 250 | ml | C164.5NP.L25 |
| | | | | 500 | ml | C164.5NP.L5 |
| **Vanadium** | V | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C165.5NP.L03 |
| | | | | 100 | ml | C165.5NP.L1 |
| | | | | 250 | ml | C165.5NP.L25 |
| | | | | 500 | ml | C165.5NP.L5 |
| **Vanadium** | V | in 2-5% $H_2SO_4$ | 10 000 mg/l | 30 | ml | C165.5SP.L03 |
| | | | | 100 | ml | C165.5SP.L1 |
| | | | | 250 | ml | C165.5SP.L25 |
| | | | | 500 | ml | C165.5SP.L5 |
| **Tungsten** | W | in 5-10% $NH_4OH$ | 10 000 mg/l | 30 | ml | C166.10AP.L03 |
| | | | | 100 | ml | C166.10AP.L1 |
| | | | | 250 | ml | C166.10AP.L25 |
| | | | | 500 | ml | C166.10AP.L5 |
| **Tungsten** | W | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C166.2N5FP.L03 |
| | | | | 100 | ml | C166.2N5FP.L1 |
| | | | | 250 | ml | C166.2N5FP.L25 |
| | | | | 500 | ml | C166.2N5FP.L5 |
| **Yttrium** | Y | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C167.5NP.L03 |
| | | | | 100 | ml | C167.5NP.L1 |
| | | | | 250 | ml | C167.5NP.L25 |
| | | | | 500 | ml | C167.5NP.L5 |
| **Ytterbium** | Yb | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C168.5NP.L03 |
| | | | | 100 | ml | C168.5NP.L1 |
| | | | | 250 | ml | C168.5NP.L25 |
| | | | | 500 | ml | C168.5NP.L5 |



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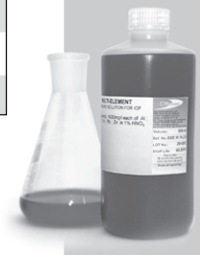
| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| **Zinc** | Zn | in 2-5% HCl | 10 000 mg/l | 30 | ml | C169.5CP.L03 |
| | | | | 100 | ml | C169.5CP.L1 |
| | | | | 250 | ml | C169.5CP.L25 |
| | | | | 500 | ml | C169.5CP.L5 |
| **Zinc** | Zn | in 2-5% $HNO_3$ | 10 000 mg/l | 30 | ml | C169.5NP.L03 |
| | | | | 100 | ml | C169.5NP.L1 |
| | | | | 250 | ml | C169.5NP.L25 |
| | | | | 500 | ml | C169.5NP.L5 |
| **Zirconium** | Zr | in 2-5% HCl/HF tr | 10 000 mg/l | 30 | ml | C170.5C2FP.L03 |
| | | | | 100 | ml | C170.5C2FP.L1 |
| | | | | 250 | ml | C170.5C2FP.L25 |
| | | | | 500 | ml | C170.5C2FP.L5 |
| **Zirconium** | Zr | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 30 | ml | C170.5N2FP.L03 |
| | | | | 100 | ml | C170.5N2FP.L1 |
| | | | | 250 | ml | C170.5N2FP.L25 |
| | | | | 500 | ml | C170.5N2FP.L5 |

## *10 mg/l for ICP-MS*

| TYPE NAME | ELEMENT | STARTING MATERIAL | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|---|
| **Silver** | Ag | Ag 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M401.2NP.L1 |
| **Aluminium** | Al | $Al(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M402.2NP.L1 |
| **Arsenic** | As | As 99.9999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M403.2NP.L1 |
| **Gold** | Au | Au 99.999% | in 2-5% HCl | 10 mg/l | 100 | ml | M404.2CP.L1 |
| **Boron** | B | $(NH_4)_2B_4O_7$ 99.999% | in $H_2O$ | 10 mg/l | 100 | ml | M405.W.L1 |
| **Barium** | Ba | $BaCO_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M406.2NP.L1 |
| **Beryllium** | Be | $Be_4O(C_2H_3O_2)_6$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M407.2NP.L1 |
| **Bismuth** | Bi | Bi 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M408.2NP.L1 |
| **Calcium** | Ca | $CaCO_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M409.2NP.L1 |
| **Cadmium** | Cd | Cd 99.9999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M410.2NP.L1 |
| **Cerium** | Ce | $Ce(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M411.2NP.L1 |
| **Cobalt** | Co | Co 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M412.2NP.L1 |
| **Chromium** | Cr | $Cr(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M413.2NP.L1 |
| **Cesium** | Cs | $CsNO_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M414.2NP.L1 |
| **Copper** | Cu | Cu 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M415.2NP.L1 |
| **Dysprosium** | Dy | $Dy_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M416.2NP.L1 |
| **Erbium** | Er | $Er_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M417.2NP.L1 |
| **Europium** | Eu | $Eu_2O_3$ 99.99% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M418.2NP.L1 |
| **Iron** | Fe | $Fe(NO_3)_3$ 99.9995% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M419.2NP.L1 |
| **Gallium** | Ga | Ga 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M420.2NP.L1 |
| **Gadolinium** | Gd | $Gd_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M421.2NP.L1 |
| **Germanium** | Ge | Ge 99.999% | in 2-5% $HNO_3$/HF tr | 10 mg/l | 100 | ml | M422.2N02FP.L1 |
| **Hafnium** | Hf | $HfO_2$ 99.995% | in 2-5% $HNO_3$/HF tr | 10 mg/l | 100 | ml | M423.2N05FP.L1 |
| **Mercury** | Hg | HgO 99.999+% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M424.5NP.L1 |
| **Holmium** | Ho | $HoO_3$ 99.99% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M425.2NP.L1 |
| **Indium** | In | In 99.999% | in 2-5% HCl | 10 mg/l | 100 | ml | M426.2NP.L1 |

| TYPE NAME | ELEMENT | STARTING MATERIAL | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|---|
| **Iridium** | Ir | $(NH_4)_2IrCl_6$ 99.99% | in 2-5% HCl | 10 mg/l | 100 | ml | M427.2CP.L1 |
| **Potassium** | K | $KNO_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M428.2NP.L1 |
| **Lanthanum** | La | $La_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M429.2NP.L1 |
| **Lithium** | Li | $Li_2CO_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M430.2NP.L1 |
| **Lutetium** | Lu | $Lu_2O_3$ 99.99% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M431.2NP.L1 |
| **Magnesium** | Mg | $Mg(NO_3)_2$, 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M432.2NP.L1 |
| **Manganese** | Mn | $Mn(NO_3)_2$, 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M433.2NP.L1 |
| **Molybdenum** | Mo | $(NH_4)_2MoO_4$, 99.999% | in $H_2O$ | 10 mg/l | 100 | ml | M434.W.L1 |
| **Sodium** | Na | $NaNO_3$ 99.999% | in 2-5% HNO3 | 10 mg/l | 100 | ml | M435.2NP.L1 |
| **Niobium** | Nb | Nb 99.99% | in 2-5% $HNO_3$/HF tr | 10 mg/l | 100 | ml | M436.2N05FP.L1 |
| **Neodymium** | Nd | $Nd_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M437.2NP.L1 |
| **Nickel** | Ni | $Ni(NO_3)_2$ 99.9998% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M438.2NP.L1 |
| **Phosphorus** | P | $NH_4H_2PO_4$ 99.999% | in $H_2O$ | 10 mg/l | 100 | ml | M440.W.L1 |
| **Lead** | Pb | $Pb(NO_3)_2$ 99.9995% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M441.2NP.L1 |
| **Palladium** | Pd | Pd 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M442.2NP.L1 |
| **Praseodymium** | Pr | $Pr_6O_{11}$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M443.2NP.L1 |
| **Platinum** | Pt | Pt 99.999% | in 2-5% HCl | 10 mg/l | 100 | ml | M444.2CP.L1 |
| **Rubidium** | Rb | $RbNO_3$ 99.99% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M445.2NP.L1 |
| **Rhenium** | Re | Re 99.995+% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M446.2NP.L1 |
| **Rhodium** | Rh | $RhCl_3$ 99.99% | in 2-5% HCl | 10 mg/l | 100 | ml | M447.2CP.L1 |
| **Ruthenium** | Ru | $RuCl_3$ 99.99% | in 2-5% HCl | 10 mg/l | 100 | ml | M448.2CP.L1 |
| **Sulphur** | S | $(NH_4)_2SO_4$ 99.999% | in $H_2O$ | 10 mg/l | 100 | ml | M449.W.L1 |
| **Antimony** | Sb | Sb 99.999% | in 2-5% $HNO_3$/HF tr | 10 mg/l | 100 | ml | M450.2N05FP.L1 |
| **Scandium** | Sc | $Sc(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M451.2NP.L1 |
| **Selenium** | Se | Se 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M452.2NP.L1 |
| **Silicon** | Si | $(NH_4)_2SiF_6$ 99.999% | in H2O | 10 mg/l | 100 | ml | M453.W.L1 |
| **Samarium** | Sm | $Sm_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M454.2NP.L1 |
| **Tin** | Sn | Sn 99.9999% | in 2-5% $HNO_3$/HF tr | 10 mg/l | 100 | ml | M455.1N05FP.L1 |
| **Strontium** | Sr | $SrCO_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M456.2NP.L1 |
| **Tantalum** | Ta | Ta 99.99+% | in 2-5% $HNO_3$/HF tr | 10 mg/l | 100 | ml | M457.2N05FP.L1 |
| **Terbium** | Tb | $Tb(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M458.2NP.L1 |
| **Tellurium** | Te | Te 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M459.2NP.L1 |
| **Titanium** | Ti | $(NH_4)_2TiF_6$, 99.998% | in 2-5% $HNO_3$/HF tr | 10 mg/l | 100 | ml | M461.2N02FP.L1 |
| **Thallium** | Tl | $TlNO_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M462.2NP.L1 |
| **Thulium** | Tm | $Tm_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M463.2NP.L1 |
| **Uranium** | U | $UO_2(OOCCH_3)_2$ 99.99% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M464.2NP.L1 |
| **Vanadium** | V | $NH_4VO_3$ 99.999% | in 2-5% HNO3 | 10 mg/l | 100 | ml | M465.2NP.L1 |
| **Tungsten** | W | $WO_3$ 99.999% | in H2O/$NH_4OH$ tr | 10 mg/l | 100 | ml | M466.W.L1 |
| **Yttrium** | Y | $Y_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M467.2NP.L1 |
| **Ytterbium** | Yb | $Yb_2O_3$ 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M468.2NP.L1 |
| **Zinc** | Zn | Zn 99.999% | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | M469.2NP.L1 |
| **Zirconium** | Zr | $ZrO(NO_3)_2$ 99.99% | in 2-5% $HNO_3$/HF tr | 10 mg/l | 100 | ml | M470.2N05FP.L1 |



* Custom Standards for ICP & ICP-MS are available upon request.

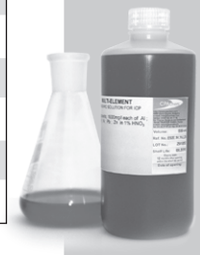
## *100 mg/l for ICP-MS*

| TYPE NAME | ELEMENT | STARTING MATERIAL | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|---|
| **Silver** | Ag | Ag 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M301.2NP.L1 |
| **Aluminium** | Al | Al(NO3)3 99.999% | in 2-5% HNO3 | 100 mg/l | 100 | ml | M302.2NP.L1 |
| **Arsenic** | As | As 99.999% | in 2-5% HNO3 | 100 mg/l | 100 | ml | M303.2NP.L1 |
| **Gold** | Au | Au 99.999% | in 2-5% HCl | 100 mg/l | 100 | ml | M304.2CP.L1 |
| **Boron** | B | $(NH_4)_2B_4O_7$ 99.999% | in $H_2O$ | 100 mg/l | 100 | ml | M305.W.L1 |
| **Barium** | Ba | $BaCO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M306.2NP.L1 |
| **Beryllium** | Be | $Be_4O(C_2H_3O_2)_6$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M307.2NP.L05 |
| **Bismuth** | Bi | Bi 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M308.2NP.L1 |
| **Calcium** | Ca | $CaCO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M309.2NP.L1 |
| **Cadmium** | Cd | Cd 99.9999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M310.2NP.L1 |
| **Cerium** | Ce | $Ce(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M311.2NP.L1 |
| **Cobalt** | Co | $Co(NO_3)_2$99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M312.2NP.L1 |
| **Chromium** | Cr | $Cr(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M313.2NP.L1 |
| **Cesium** | Cs | $CsNO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M314.2NP.L1 |
| **Copper** | Cu | Cu 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M315.2NP.L1 |
| **Dysprosium** | Dy | $Dy_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M316.2NP.L1 |
| **Erbium** | Er | $Er_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M317.2NP.L1 |
| **Europium** | Eu | $Eu_2O_3$ 99.99% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M318.2NP.L1 |
| **Iron** | Fe | $Fe(NO_3)_3$ 99.9995% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M319.2NP.L1 |
| **Gallium** | Ga | Ga 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M320.2NP.L1 |
| **Gadolinium** | Gd | $Gd_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M321.2NP.L1 |
| **Germanium** | Ge | Ge 99.999% | in 2-5% $HNO_3$/HF tr | 100 mg/l | 100 | ml | M322.2N02FP.L1 |
| **Hafnium** | Hf | $HfO_2$ 99.995% | in 2-5% $HNO_3$/HF tr | 100 mg/l | 100 | ml | M323.2N05FP.L1 |
| **Mercury** | Hg | HgO 99.999+% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M324.5NP.L1 |
| **Holmium** | Ho | $HoO_3$ 99.99% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M325.2NP.L1 |
| **Indium** | In | In 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M326.2NP.L1 |
| **Iridium** | Ir | $(NH_4)_2IrCl_6$ 99.99% | in 2-5% HCl | 100 mg/l | 100 | ml | M327.2CP.L1 |
| **Potassium** | K | $KNO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M328.2NP.L1 |
| **Lanthanum** | La | $La_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M329.2NP.L1 |
| **Lithium** | Li | $Li_2CO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M330.2NP.L1 |
| **Lutetium** | Lu | $Lu_2O_3$ 99.99% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M331.2NP.L1 |
| **Magnesium** | Mg | $Mg(NO_3)_2$ 99.9995% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M332.2NP.L1 |
| **Manganese** | Mn | $Mn(NO_3)_2$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M333.2NP.L1 |
| **Molybdenum** | Mo | $(NH_4)_2MoO_4$, 99.999% | in $H_2O$ | 100 mg/l | 100 | ml | M334.W.L1 |
| **Sodium** | Na | $NaNO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M335.2NP.L1 |
| **Niobium** | Nb | Nb 99.99% | in 2-5% $HNO_3$/HF tr | 100 mg/l | 100 | ml | M336.2N05FP.L1 |
| **Neodymium** | Nd | $Nd_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M337.2NP.L1 |
| **Nickel** | Ni | Ni 99.9998% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M338.2NP.L1 |
| **Phosphorus** | P | $NH_4H_2PO_4$ 99.999% | in $H_2O$ | 100 mg/l | 100 | ml | M340.W.L1 |
| **Lead** | Pb | $Pb(NO_3)_2$ 99.9995% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M341.2NP.L1 |
| **Palladium** | Pd | Pd 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M342.2NP.L1 |
| **Praseodymium** | Pr | $Pr_6O_{11}$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M343.2NP.L1 |
| **Platinum** | Pt | Pt 99.999% | in 2-5% HCl | 100 mg/l | 100 | ml | M344.2CP.L1 |

| TYPE NAME | ELEMENT | STARTING MATERIAL | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|---|
| **Rubidium** | Rb | $RbNO_3$ 99.99% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M345.2NPL1 |
| **Rhenium** | Re | Re 99.995+% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M346.2NPL1 |
| **Rhodium** | Rh | $RhCl_3$ 99.99% | in 2-5% HCl | 100 mg/l | 100 | ml | M347.2CPL1 |
| **Ruthenium** | Ru | $RuCl_3$ 99.99% | in 2-5% HCl | 100 mg/l | 100 | ml | M348.2CPL1 |
| **Sulphur** | S | $(NH_4)_2SO_4$ 99.999% | in $H_2O$ | 100 mg/l | 100 | ml | M349.W.L1 |
| **Antimony** | Sb | Sb 99.999% | in 2-5% $HNO_3$/HF tr | 100 mg/l | 100 | ml | M350.2N05FPL1 |
| **Scandium** | Sc | $Sc(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M351.2NPL1 |
| **Selenium** | Se | Se 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M352.2NPL1 |
| **Silicon** | Si | $(NH_4)_2SiF_6$ 99.999% | in $H_2O$ | 100 mg/l | 100 | ml | M353.W.L1 |
| **Samarium** | Sm | $Sm_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M354.2NPL1 |
| **Tin** | Sn | Sn 99.9999% | in 2-5% $HNO_3$/HF tr | 100 mg/l | 100 | ml | M355.1N05FPL1 |
| **Strontium** | Sr | $SrCO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M356.2NPL1 |
| **Tantalum** | Ta | Ta 99.99+% | in 2-5% $HNO_3$/HF tr | 100 mg/l | 100 | ml | M357.2N05FPL1 |
| **Terbium** | Tb | $Tb(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M358.2NPL1 |
| **Tellurum** | Te | Te 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M359.2NPL1 |
| **Titanium** | Ti | $(NH_4)_2TiF_6$, 99.998% | in 2-5% $HNO_3$/HF tr | 100 mg/l | 100 | ml | M361.2N02FPL1 |
| **Thallium** | Tl | $TlNO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M362.2NPL1 |
| **Thulium** | Tm | $Tm_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M363.2NPL1 |
| **Uranium** | U | $UO_2(OOCCH_3)_2$ 99.99% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M364.2NPL1 |
| **Vanadium** | V | $NH_4VO_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M365.2NPL1 |
| **Tungsten** | W | $WO_3$ 99.999% | in 0,05% $NH_3$ | 100 mg/l | 100 | ml | M366.W.L1 |
| **Yttrium** | Y | $Y_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M367.2NPL1 |
| **Ytterbium** | Yb | $Yb_2O_3$ 99.999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M368.2NPL1 |
| **Zinc** | Zn | Zn 99.9999% | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | M369.2NPL1 |
| **Zirconium** | Zr | $ZrO(NO_3)_2$ 99.99% | in 2-5% $HNO_3$/HF tr | 100 mg/l | 100 | ml | M370.2N05FPL1 |

## *1000 mg/l for ICP-MS*

| TYPE NAME | ELEMENT | STARTING MATERIAL | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|---|
| **Silver** | Ag | Ag 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M201.2NPL1 |
| **Gold** | Au | Au 99.999% | in 2-5% HCl | 1000 mg/l | 100 | ml | M204.2CPL1 |
| **Barium** | Ba | $BaCO_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M206.2NPL1 |
| **Beryllium** | Be | $Be_4O(C_2H_3O_2)_6$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M207.2NP;L1 |
| **Bismuth** | Bi | Bi 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M208.2NPL1 |
| **Cadmium** | Cd | Cd 99.9999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M210.2NPL1 |
| **Cobalt** | Co | $Co(NO_3)_2$99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M212.2NPL1 |
| **Chromium** | Cr | $Cr(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M213.2NPL1 |
| **Copper** | Cu | Cu 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M215.2NPL1 |
| **Iron** | Fe | $Fe(NO_3)_3$ 99.9995% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M219.2NPL1 |
| **Germanium** | Ge | Ge 99.999% | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 100 | ml | M222.2N2FPL1 |
| **Mercury** | Hg | HgO 99.999+% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M224.5NPL1 |
| **Indium** | In | In 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M226.2NPL1 |
| **Potassium** | K | $KNO_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M228.2NPL1 |
| **Lithium** | Li | $Li_2CO_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M230.2NPL1 |



* Custom Standards for ICP & ICP-MS are available upon request.

| TYPE NAME | ELEMENT | STARTING MATERIAL | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|---|
| **Magnesium** | Mg | $Mg(NO_3)_2$, 99.9995% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M232.2NP.L1 |
| **Manganese** | Mn | $Mn(NO_3)_2$, 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M233.2NP.L1 |
| **Sodium** | Na | $NaNO_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M235.2NP.L1 |
| **Nickel** | Ni | Ni 99.9998% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M238.2NP.L1 |
| **Phosphorus** | P | $NH_4H_2PO_4$ 99.999% | in $H_2O$ | 1000 mg/l | 100 | ml | M240.W.L1 |
| **Lead** | Pb | $Pb(NO_3)_2$ 99.9995% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M241.2NP.L1 |
| **Platinum** | Pt | Pt 99.999% | in 2-5% HCl | 1000 mg/l | 100 | ml | M244.2NP.L1 |
| **Rhodium** | Rh | $RhCl_3$ 99.99% | in 2-5% HCl | 1000 mg/l | 100 | ml | M247.2CP.L1 |
| **Sulphur** | S | $(NH_4)_2SO_4$ 99.999% | in $H_2O$ | 1000 mg/l | 100 | ml | M249.W.L1 |
| **Antimony** | Sb | Sb 99.999% | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 100 | ml | M250.2N05FP.L1 |
| **Scandium** | Sc | $Sc(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M251.2NP.L1 |
| **Selenium** | Se | Se 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M252.2NP.L1 |
| **Tin** | Sn | Sn 99.9999% | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 100 | ml | M255.1N05FP.L1 |
| **Strontium** | Sr | $SrCO_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M256.2NP.L1 |
| **Terbium** | Tb | $Tb(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M258.2NP.L1 |
| **Titanium** | Ti | $(NH_4)_2TiF_6$, 99.998% | in 2-5% $HNO_3$/HF tr | 1000 mg/l | 100 | ml | M261.2N2FP.L1 |
| **Thallium** | Tl | $TlNO_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M262.2NP.L1 |
| **Vanadium** | V | $NH_4VO_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M265.2NP.L1 |
| **Yttrium** | Y | $Y_2O_3$ 99.999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M267.2NP.L1 |
| **Zinc** | Zn | Zn 99.9999% | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | M269.2NP.L1 |

## *10 000 mg/l for ICP-MS*

| TYPE NAME | ELEMENT | STARTING MATERIAL | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|---|
| **Bismuth** | Bi | Bi 99.999% | in 5-10% HNO3 | 10 000 mg/l | 100 | ml | M108.10NP.L1 |
| **Calcium** | Ca | $CaCO_3$ 99.999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M109.2NP.L1 |
| **Cadmium** | Cd | Cd 99.9999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M110.5NP.L1 |
| **Cobalt** | Co | $Co(NO_3)_2$ 99.999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M112.5NP.L1 |
| **Chromium** | Cr | $Cr(NO_3)_3$ 99.999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M113.5NP.L1 |
| **Copper** | Cu | Cu 99.999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M115.5NP.L1 |
| **Iron** | Fe | $Fe(NO_3)_3$99.9995% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M119.5NP.L5 |
| **Potassium** | K | $KNO_3$ 99.999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M128.2NP.L1 |
| **Lithium** | Li | $Li_2CO_3$ 99.999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M130.2NP.L1 |
| **Magnesium** | Mg | $Mg(NO_3)_2$ 99.9995% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M132.2NP.L1 |
| **Manganese** | Mn | $Mn(NO_3)_2$ 99.999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M133.5NP.L1 |
| **Sodium** | Na | $NaNO_3$ 99.999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M135.2NP.L1 |
| **Phosphorus** | P | $NH_4H_2PO_4$ 99.999% | in $H_2O$ | 10 000 mg/l | 100 | ml | M140.W.L100 |
| **Sulphur** | S | $(NH_4)_2SO_4$ 99.999% | in H2O | 10 000 mg/l | 100 | ml | M149.W.L1 |
| **Antimony** | Sb | Sb 99.999% | in 5-10% $HNO_3$/HF tr | 10 000 mg/l | 100 | ml | M150.10N2FP.L1 |
| **Tin** | Sn | Sn 99.9999% | in 2-5% $HNO_3$/HF tr | 10 000 mg/l | 100 | ml | M155.2N2FP.L1 |
| **Zinc** | Zn | Zn 99.9999% | in 2-5% $HNO_3$ | 10 000 mg/l | 100 | ml | M169.5NP.L1 |

## *Specification Standards*

| TYPE NAME | ELEMENT | STARTING MATERIAL | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|---|
| **Arsenic (III)** | As (III) | $As_2O_3$ | in NaOH/NaCl | 100 mg/l | 100 | ml | SP371.05O01NC.L1 |
| **Arsenic (III)** | As (III) | $As_2O_3$ | in NaOH/NaCl | 1000 mg/l | 100 | ml | SP071.05O01NC.L1 |
| **Arsenic (V)** | As (III) | $As_2O_5$ | in $H_2O$ | 100 mg/l | 100 | ml | SP372.W.L1 |
| **Arsenic (V)** | As (III) | $As_2O_5$ | in $H_2O$ | 1000 mg/l | 100 | ml | SP072.W.L1 |
| **Chromium (III)** | Cr (III) | Cr metal | in 2-5% $HNO_3$ | 10 mg/l | 100 | ml | SP473.5N.L1 |
| **Chromium (III)** | Cr (III) | Cr metal | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | SP373.5N.L1 |
| **Chromium (III)** | Cr (III) | Cr metal | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | SP073.5N.L1 |
| **Chromium (III)** | Cr (III) | Cr metal | in 2-5% $HNO_3$ | 10000 mg/l | 100 | ml | SP173.5N.L1 |
| **Chromium (VI)** | Cr (VI) | $(NH_4)_2Cr_2O_7$ | in $H_2O$ | 100 mg/l | 100 | ml | SP374.W.L1 |
| **Chromium (VI)** | Cr (VI) | $(NH_4)_2Cr_2O_7$ | in $H_2O$ | 1000 mg/l | 100 | ml | SP074.W.L1 |
| **Selenium (IV)** | Se (IV) | Se metal | in 2-5% $HNO_3$ | 100 mg/l | 100 | ml | SP375.2N.L1 |
| **Selenium (IV)** | Se (IV) | Se metal | in 2-5% $HNO_3$ | 1000 mg/l | 100 | ml | SP075.2N.L1 |
| **Selenium (VI)** | Se (VI) | Selenic acid | in $H_2O$/tr $HNO_3$ | 100 mg/l | 100 | ml | SP376.01N.L1 |
| **Selenium (VI)** | Se (VI) | Selenic acid | in $H_2O$/tr $HNO_3$ | 1000 mg/l | 100 | ml | SP076.01N.L1 |

## *Blanks & dilution matrix*

| TYPE NAME | MATRIX | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|
| Blank- Nitric Acid | in 0.5% $HNO_3$(v/v) | 500 | ml | MS6469.0.05N.L5 |
| Blank- Nitric Acid | in 5% $HNO_3$(v/v) | 500 | ml | MS6469.0.5N.L5 |
| High - purity Water | | 500 | ml | MS6469.0.W.L5 |
| Water | in 5% HCl | 500 | ml | AW.5CP.L5 |
| Water | in 5% $HNO_3$ | 500 | ml | AW.5NP.L5 |

* Custom Standards for ICP & ICP-MS are available upon request.

# ICP Multi-Element Standards

## ICP Standards

### *ICP Calibration Standards*

| Standard 33 components | | Reference: M8A96.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | | | Reference: M8A96.K1.5N.L5<br>Volume: 500 ml<br>Matrix: in 5 % $HNO_3$ | | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 100 mg/l | **Cs** | 100 mg/l | **Mn** | 100 mg/l | **Sr** | 100 mg/l |
| **Sb** | 100 mg/l | **Cr** | 100 mg/l | **Mo** | 100 mg/l | **Tl** | 100 mg/l |
| **As** | 100 mg/l | **Co** | 100 mg/l | **Ni** | 100 mg/l | **Ti** | 100 mg/l |
| **Ba** | 100 mg/l | **Cu** | 100 mg/l | **Nb** | 100 mg/l | **U** | 100 mg/l |
| **Be** | 100 mg/l | **In** | 100 mg/l | **K** | 100 mg/l | **V** | 100 mg/l |
| **Bi** | 100 mg/l | **Fe** | 100 mg/l | **Rb** | 100 mg/l | **Zn** | 100 mg/l |
| **B** | 100 mg/l | **Pb** | 100 mg/l | **Se** | 100 mg/l | | |
| **Cd** | 100 mg/l | **Li** | 100 mg/l | **Ag** | 100 mg/l | | |
| **Ca** | 100 mg/l | **Mg** | 100 mg/l | **Na** | 100 mg/l | | |

| Standard 28 components | | Reference: MB56A.K1.5N.L05<br>Volume: 50 ml<br>Matrix: in 5 % $HNO_3$ | | Reference: MB56A.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | | Reference: MB56A.K1.5N.L5<br>Volume: 500 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 100 mg/l | **Cd** | 100 mg/l | **Li** | 100 mg/l | **Ag** | 100 mg/l |
| **Al** | 100 mg/l | **Ca** | 100 mg/l | **Mg** | 100 mg/l | **Na** | 100 mg/l |
| **As** | 100 mg/l | **Co** | 100 mg/l | **Mn** | 100 mg/l | **Sr** | 100 mg/l |
| **Ba** | 100 mg/l | **Cr** | 100 mg/l | **Mo** | 100 mg/l | **Tl** | 100 mg/l |
| **Be** | 100 mg/l | **Cu** | 100 mg/l | **Ni** | 100 mg/l | **Ti** | 100 mg/l |
| **Bi** | 100 mg/l | **Fe** | 100 mg/l | **K** | 100 mg/l | **V** | 100 mg/l |
| **B** | 100 mg/l | **Pb** | 100 mg/l | **Se** | 100 mg/l | **Zn** | 100 mg/l |

| Standard 4 components | | Reference: 91C8.1K.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | | | Reference: 91C8.1K.2N.L5<br>Volume: 500 ml<br>Matrix: in 2 % $HNO_3$ | | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 1000 mg/l | **Mg** | 1000 mg/l | **K** | 1000 mg/l | **Na** | 1000 mg/l |

| Standard 2 components: P, S | | Reference: F4AD.1K.W.L1<br>Volume: 100 ml<br>Matrix: in $H_2O$ | | Reference: F4AD.1K.W.L5<br>Volume: 500 ml<br>Matrix: in $H_2O$ | |
|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | | |
| **P** | 1000 mg/l | **S** | 1000 mg/l | | |

| Standard precious metals - 8 components | | Reference: A2E5.K1.5C.L1<br>Volume: 100 ml<br>Matrix: in 5 % HCl | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Au | 100 mg/l | Pt | 100 mg/l |
| Ir | 100 mg/l | Re | 100 mg/l |
| Os | 100 mg/l | Rh | 100 mg/l |
| Pd | 100 mg/l | Ru | 100 mg/l |

| Calibration Standard 7 - 3 components | | Reference: E210.K5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| B | 500 mg/l | Si | 500 mg/l |
| Mo | 500 mg/l | | |

| Calibration Standard - 15 components | | Reference: E592.1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| B | 1 mg/l | Lu | 1 mg/l |
| Ba | 1 mg/l | Na | 1 mg/l |
| Co | 1 mg/l | Rh | 1 mg/l |
| Fe | 1 mg/l | Sc | 1 mg/l |
| Ga | 1 mg/l | Tl | 1 mg/l |
| In | 1 mg/l | U | 1 mg/l |
| K | 1 mg/l | Y | 1 mg/l |
| Li | 1 mg/l | | |

| GENESIS Calibration Standard - 22 components | | Reference: 3965.2.2N2C.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$/ 2 % HCl/ tr. HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| S | 50 mg/l | V | 10 mg/l |
| Ce | 10 mg/l | Y | 10 mg/l |
| Cu | 10 mg/l | Zr | 10 mg/l |
| Eu | 10 mg/l | Mn | 5 mg/l |
| Fe | 10 mg/l | Mo | 5 mg/l |
| In | 10 mg/l | Na | 5 mg/l |
| K | 10 mg/l | Sc | 5 mg/l |
| Ni | 10 mg/l | Be | 2 mg/l |
| P | 10 mg/l | Li | 2 mg/l |
| Si | 10 mg/l | Sr | 2 mg/l |
| Ti | 10 mg/l | Ca | 1 mg/l |

| Standard precious metals - 3 components | | Reference: C56D.K1.5C.L1<br>Volume: 100 ml<br>Matrix: in 5 % HCl | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Au | 100 mg/l | Pt | 100 mg/l |
| Pd | 100 mg/l | | |

| Calibration Standard - 10 components | | Reference: 1E1E.1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| P | 10 mg/l | Mn | 1 mg/l |
| Ni | 5 mg/l | Ba | 0.2 mg/l |
| K | 5 mg/l | Ca | 0.2 mg/l |
| Al | 1 mg/l | Mg | 0.2 mg/l |
| Cu | 1 mg/l | Zn | 0.2 mg/l |

| ICP Calibration Standard - Toxic components - 7 components | | Reference: 8E66.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| As | 100 mg/l | Pb | 100 mg/l |
| Be | 100 mg/l | Se | 100 mg/l |
| Cd | 100 mg/l | Tl | 100 mg/l |
| Ni | 100 mg/l | | |

| ICP-MS Precious Metals Standard - 8 components | | Reference: A2E5.10.5C.L1<br>Volume: 100 ml<br>Matrix: in 5 % HCl | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Au | 10 mg/l | Pt | 10 mg/l |
| Ir | 10 mg/l | Re | 10 mg/l |
| Os | 10 mg/l | Rh | 10 mg/l |
| Pd | 10 mg/l | Ru | 10 mg/l |

* Custom Standards for ICP & ICP-MS are available upon request.

## Calibration Standard - 26 components

**Reference:** MU01100100

**Volume:** 100 ml
**Matrix:** in 5 % $HNO_3$

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| Al | 100 mg/l | Li | 100 mg/l |
| As | 100 mg/l | Mg | 100 mg/l |
| Ba | 100 mg/l | Mn | 100 mg/l |
| Be | 100 mg/l | Mo | 100 mg/l |
| Bi | 100 mg/l | Ni | 100 mg/l |
| B | 100 mg/l | K | 100 mg/l |
| Cd | 100 mg/l | Se | 100 mg/l |
| Ca | 100 mg/l | Na | 100 mg/l |
| Cr | 100 mg/l | Sr | 100 mg/l |
| Co | 100 mg/l | Tl | 100 mg/l |
| Cu | 100 mg/l | Ti | 100 mg/l |
| Fe | 100 mg/l | V | 100 mg/l |
| Pb | 100 mg/l | Zn | 100 mg/l |

## Multi-element standard - 16 components

**Reference:** MU01060100

**Volume:** 100 ml
**Matrix:** in 10 % $HNO_3$

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| Al | 100 mg/l | Fe | 20 mg/l |
| Ba | 5 mg/l | Pb | 200 mg/l |
| Be | 2 mg/l | Mn | 10 mg/l |
| B | 20 mg/l | Ni | 50 mg/l |
| Cd | 20 mg/l | Se | 5 mg/l |
| Cr | 20 mg/l | Tl | 100 mg/l |
| Co | 50 mg/l | V | 50 mg/l |
| Cu | 20 mg/l | Zn | 50 mg/l |

## MISA Standard 3 - Tellurium

**Reference:** AA6C.K1.10C.L1

**Volume:** 100 ml
**Matrix:** in 10 % HCl

| Element | Concentration |
|---|---|
| Te | 100 mg/l |

## Multi-element standard - 4 components

**Reference:** MU01090100

**Volume:** 100 ml
**Matrix:** in 1 % HCl

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| Ca | 100 mg/l | K | 150 mg/l |
| Mg | 20 mg/l | Na | 3300 mg/l |

## MISA Standard 1 - Rare Earth Metals - 18 components

**Reference:** 7027.K1.5N.L1

**Volume:** 100 ml
**Matrix:** in 5 % $HNO_3$

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| Ce | 100 mg/l | Pr | 100 mg/l |
| Dy | 100 mg/l | Sc | 100 mg/l |
| Er | 100 mg/l | Sm | 100 mg/l |
| Eu | 100 mg/l | Tb | 100 mg/l |
| Gd | 100 mg/l | Th | 100 mg/l |
| Ho | 100 mg/l | Tm | 100 mg/l |
| La | 100 mg/l | U | 100 mg/l |
| Lu | 100 mg/l | Y | 100 mg/l |
| Nd | 100 mg/l | Yb | 100 mg/l |

## MISA Standard 2 - Precious Metals - 6 components

**Reference:** 397C.K1.10C.L1

**Volume:** 100 ml
**Matrix:** in 10 % HCl

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| Au | 100 mg/l | Pt | 100 mg/l |
| Ir | 100 mg/l | Rh | 100 mg/l |
| Pd | 100 mg/l | Ru | 100 mg/l |

## MISA Standard 4 - Alkali, Alkaline Earth, Non-Transition Group - 16 components

**Reference:** 942A.K1.10N.L1

**Volume:** 100 ml
**Matrix:** in 10 % $HNO_3$

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| Al | 100 mg/l | In | 100 mg/l |
| As | 100 mg/l | Li | 100 mg/l |
| Ba | 100 mg/l | Mg | 100 mg/l |
| Bi | 100 mg/l | K | 100 mg/l |
| Be | 100 mg/l | Rb | 100 mg/l |
| Ca | 100 mg/l | Se | 100 mg/l |
| Cs | 100 mg/l | Na | 100 mg/l |
| Ga | 100 mg/l | Sr | 100 mg/l |

| MISA Standard 5 - Fluoride Soluble Group 15 components | | Reference: 32D7.K1.5NF.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$/tr. HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 100 mg/l | **Si** | 100 mg/l |
| **B** | 100 mg/l | **S** | 100 mg/l |
| **Ge** | 100 mg/l | **Ta** | 100 mg/l |
| **Hf** | 100 mg/l | **Sn** | 100 mg/l |
| **Mo** | 100 mg/l | **Ti** | 100 mg/l |
| **Nb** | 100 mg/l | **W** | 100 mg/l |
| **P** | 100 mg/l | **Zr** | 100 mg/l |
| **Re** | 100 mg/l | | |

| MISA Standard 6 - Transition Metals - 13 components | | Reference: E579.K1.10N.L1<br>Volume: 100 ml<br>Matrix: in 10 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Cd** | 100 mg/l | **Hg** | 100 mg/l |
| **Co** | 100 mg/l | **Ni** | 100 mg/l |
| **Cu** | 100 mg/l | **Ag** | 100 mg/l |
| **Cr** | 100 mg/l | **Tl** | 100 mg/l |
| **Fe** | 100 mg/l | **V** | 100 mg/l |
| **Pb** | 100 mg/l | **Zn** | 100 mg/l |
| **Mn** | 100 mg/l | | |

| Continuing Calibration Verification for CLP - 5 components | | Reference: 30A8.50.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **As** | 50 mg/l | **Pb** | 25 mg/l |
| **Tl** | 50 mg/l | **Se** | 25 mg/l |
| **Cd** | 25 mg/l | | |

| Continuing Calibration Verification for CLP - 16 components | | Reference: 199B.50.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 2500 mg/l | **V** | 250 mg/l |
| **Mg** | 2500 mg/l | **Ni** | 200 mg/l |
| **K** | 2500 mg/l | **Cu** | 125 mg/l |
| **Na** | 2500 mg/l | **Zn** | 100 mg/l |
| **Al** | 1000 mg/l | **Mn** | 75 mg/l |
| **Ba** | 1000 mg/l | **Cr** | 50 mg/l |
| **Fe** | 500 mg/l | **Ag** | 50 mg/l |
| **Co** | 250 mg/l | **Be** | 25 mg/l |

| Continuing Calibration Verification Standard - 16 components | | Reference: AC25.K125.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 2500 mg/l | **V** | 250 mg/l |
| **Mg** | 2500 mg/l | **Co** | 250 mg/l |
| **Na** | 2500 mg/l | **Ni** | 250 mg/l |
| **K** | 2500 mg/l | **Zn** | 250 mg/l |
| **Al** | 1000 mg/l | **Ag** | 125 mg/l |
| **Ba** | 1000 mg/l | **Cu** | 125 mg/l |
| **Fe** | 500 mg/l | **Cr** | 100 mg/l |
| **Mn** | 250 mg/l | **Be** | 25 mg/l |

* Custom Standards for ICP & ICP-MS are available upon request.

# *Quality Control Standards for ICP*

| Quality Control Standard 1 - 23 components | | Reference: B0D3.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$/tr. HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 100 mg/l | **Mn** | 100 mg/l |
| **As** | 100 mg/l | **Mo** | 100 mg/l |
| **Be** | 100 mg/l | **Ni** | 100 mg/l |
| **Cd** | 100 mg/l | **P** | 100 mg/l |
| **Ca** | 100 mg/l | **Se** | 100 mg/l |
| **Cr** | 100 mg/l | **Sr** | 100 mg/l |
| **Co** | 100 mg/l | **Sn** | 100 mg/l |
| **Cu** | 100 mg/l | **Tl** | 100 mg/l |
| **Fe** | 100 mg/l | **Ti** | 100 mg/l |
| **Pb** | 100 mg/l | **V** | 100 mg/l |
| **Li** | 100 mg/l | **Zn** | 100 mg/l |
| **Mg** | 100 mg/l | | |

| Quality Control Standard 4 - 19 components | | Reference: 4176.50.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Bi** | 200 mg/l | **Co** | 20 mg/l |
| **In** | 200 mg/l | **Cu** | 20 mg/l |
| **Pb** | 200 mg/l | **Zn** | 20 mg/l |
| **Ga** | 150 mg/l | **B** | 15 mg/l |
| **Al** | 100 mg/l | **Fe** | 15 mg/l |
| **Ag** | 50 mg/l | **Ba** | 5 mg/l |
| **Ni** | 50 mg/l | **Mn** | 5 mg/l |
| **Tl** | 40 mg/l | **Be** | 1 mg/l |
| **Cr** | 25 mg/l | **Sr** | 1 mg/l |
| **Cd** | 20 mg/l | | |

| Quality Control Standard 6 - 4 components | | Reference: F9B8.1K.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ba** | 1000 mg/l | **Mg** | 1000 mg/l |
| **Ca** | 1000 mg/l | **Sr** | 1000 mg/l |

| Quality Control Standard 2R - 7 components | | Reference: 01EC.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$/tr. HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 100 mg/l | **Si** | 100 mg/l |
| **Ba** | 100 mg/l | **Ag** | 100 mg/l |
| **B** | 100 mg/l | **Na** | 100 mg/l |
| **K** | 100 mg/l | | |

| Quality Control Standard 3 - 15 components | | Reference: CF34.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$/tr. HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 100 mg/l | **Pb** | 100 mg/l |
| **Ba** | 100 mg/l | **Mg** | 100 mg/l |
| **Cd** | 100 mg/l | **Mn** | 100 mg/l |
| **Ca** | 100 mg/l | **Ni** | 100 mg/l |
| **Cr** | 100 mg/l | **Na** | 100 mg/l |
| **Co** | 100 mg/l | **Ti** | 100 mg/l |
| **Cu** | 100 mg/l | **Zn** | 100 mg/l |
| **Fe** | 100 mg/l | | |

| Quality Control Standard 5 - 3 components | | Reference: A895.10K.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **K** | 10000 mg/l | **Li** | 250 mg/l |
| **Na** | 1000 mg/l | | |

| Quality Control Standard 24 - 22 components | | Reference: 3865.10.10N.L1<br>Volume: 100 ml<br>Matrix: in 10 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 10 mg/l | **Fe** | 10 mg/l |
| **Ba** | 10 mg/l | **Pb** | 10 mg/l |
| **Bi** | 10 mg/l | **Li** | 10 mg/l |
| **B** | 10 mg/l | **Mg** | 10 mg/l |
| **Cd** | 10 mg/l | **Mn** | 10 mg/l |
| **Ca** | 10 mg/l | **Mo** | 10 mg/l |
| **Cr** | 10 mg/l | **K** | 10 mg/l |
| **Co** | 10 mg/l | **Ag** | 10 mg/l |
| **Cu** | 10 mg/l | **Na** | 10 mg/l |
| **Ga** | 10 mg/l | **Tl** | 10 mg/l |
| **In** | 10 mg/l | **Zn** | 10 mg/l |

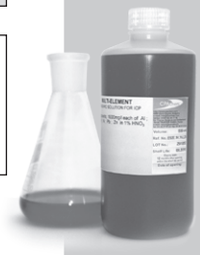
| QC Multi 22 components | | Reference: M52B5.1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | | | Reference: M52B5.1.5N.L5<br>Volume: 500 ml<br>Matrix: in 5 % $HNO_3$ | | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 1 mg/l | **Co** | 1 mg/l | **Mg** | 1 mg/l | **Tl** | 1 mg/l |
| **As** | 1 mg/l | **Cr** | 1 mg/l | **Mn** | 1 mg/l | **Ti** | 1 mg/l |
| **Be** | 1 mg/l | **Cu** | 1 mg/l | **Mo** | 1 mg/l | **V** | 1 mg/l |
| **Bi** | 1 mg/l | **Fe** | 1 mg/l | **Ni** | 1 mg/l | **Zn** | 1 mg/l |
| **Cd** | 1 mg/l | **Pb** | 1 mg/l | **Se** | 1 mg/l | | |
| **Ca** | 1 mg/l | **Li** | 1 mg/l | **Sr** | 1 mg/l | | |

| QC Multi 28 components | | Reference: MB56A.1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | | | Reference: MB56A.1.2N.L5<br>Volume: 500 ml<br>Matrix: in 2 % $HNO_3$ | | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 1 mg/l | **Cd** | 1 mg/l | **Pb** | 1 mg/l | **Ag** | 1 mg/l |
| **Al** | 1 mg/l | **Ca** | 1 mg/l | **Mg** | 1 mg/l | **Na** | 1 mg/l |
| **As** | 1 mg/l | **Cr** | 1 mg/l | **Mn** | 1 mg/l | **Sr** | 1 mg/l |
| **B** | 1 mg/l | **Co** | 1 mg/l | **Mo** | 1 mg/l | **Tl** | 1 mg/l |
| **Ba** | 1 mg/l | **Cu** | 1 mg/l | **Ni** | 1 mg/l | **Ti** | 1 mg/l |
| **Be** | 1 mg/l | **Fe** | 1 mg/l | **K** | 1 mg/l | **V** | 1 mg/l |
| **Bi** | 1 mg/l | **Li** | 1 mg/l | **Se** | 1 mg/l | **Zn** | 1 mg/l |

| QC Multi 33 components | | Reference: M8A96.1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5% $HNO_3$ | | | Reference: M8A96.1.5N.L5<br>Volume: 500 ml<br>Matrix: n 5% $HNO_3$ | | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 1 mg/l | **Cs** | 1 mg/l | **Mn** | 1 mg/l | **Sr** | 1 mg/l |
| **Al** | 1 mg/l | **Cr** | 1 mg/l | **Mo** | 1 mg/l | **Tl** | 1 mg/l |
| **As** | 1 mg/l | **Co** | 1 mg/l | **Ni** | 1 mg/l | **Ti** | 1 mg/l |
| **Ba** | 1 mg/l | **Cu** | 1 mg/l | **Nb** | 1 mg/l | **U** | 1 mg/l |
| **Be** | 1 mg/l | **In** | 1 mg/l | **K** | 1 mg/l | **V** | 1 mg/l |
| **Bi** | 1 mg/l | **Fe** | 1 mg/l | **Rb** | 1 mg/l | **Zn** | 1 mg/l |
| **B** | 1 mg/l | **Pb** | 1 mg/l | **Se** | 1 mg/l | | |
| **Cd** | 1 mg/l | **Li** | 1 mg/l | **Ag** | 1 mg/l | | |
| **Ca** | 1 mg/l | **Mg** | 1 mg/l | **Na** | 1 mg/l | | |

| QC precious metals | | Reference: M397C.1.2C.L1<br>Volume: 100 ml<br>Matrix: in 2% HCl | | | Reference: M397C.1.2C.L5<br>Volume: 500 ml<br>Matrix: in 2% HCl | | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Au** | 1 mg/l | **Rh** | 1 mg/l | **Na** | 1 mg/l | **V** | 1 mg/l |
| **Ir** | 1 mg/l | **Ru** | 1 mg/l | **Sr** | 1 mg/l | **Zn** | 1 mg/l |
| **Pd** | 1 mg/l | **Se** | 1 mg/l | **Tl** | 1 mg/l | | |
| **Pt** | 1 mg/l | **Ag** | 1 mg/l | **Ti** | 1 mg/l | | |

| Hg - Mercury | | Reference: ESD0BC.K5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5% $HNO_3$ | Reference: ESD0BC.K5.5N.L5<br>Volume: 500 ml<br>Matrix: in 5% $HNO_3$ |
|---|---|---|---|
| **Element** | **Concentration** | | |
| **Hg** | 0.5 mg/l | | |



* Custom Standards for ICP & ICP-MS are available upon request.

## *Tuning Solutions*

| Tuning Solution - 15 components | | Reference: 2197.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **B** | 10 mg/l | **Lu** | 10 mg/l |
| **Ba** | 10 mg/l | **K** | 10 mg/l |
| **Co** | 10 mg/l | **Rh** | 10 mg/l |
| **Ga** | 10 mg/l | **Sc** | 10 mg/l |
| **In** | 10 mg/l | **Na** | 10 mg/l |
| **Fe** | 10 mg/l | **Th** | 10 mg/l |
| **Li** | 10 mg/l | | |

| CIROS Tuning Solution - 9 components | | Reference: 5EC8.10.5C2N.L1<br>Volume: 100 ml<br>Matrix: in 5 % HCl/2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **S** | 50 mg/l | **Sc** | 10 mg/l |
| **Fe** | 10 mg/l | **Ti** | 10 mg/l |
| **K** | 10 mg/l | **Mg** | 5 mg/l |
| **La** | 10 mg/l | **Mn** | 5 mg/l |
| **P** | 10 mg/l | | |

## *Initial Calibration Verification*

| ICV-2A - 16 components | | Reference: 5927.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Mg** | 2000 mg/l | **V** | 500 mg/l |
| **Na** | 2000 mg/l | **Cr** | 200 mg/l |
| **Al** | 1000 mg/l | **Cu** | 200 mg/l |
| **Ba** | 1000 mg/l | **Ag** | 100 mg/l |
| **Fe** | 1000 mg/l | **Be** | 100 mg/l |
| **Co** | 500 mg/l | **Mn** | 100 mg/l |
| **Ni** | 500 mg/l | **Zn** | 100 mg/l |

| ICV-2C - 5 components | | Reference: A186.K5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **As** | 500 mg/l | **Tl** | 500 mg/l |
| **Pb** | 500 mg/l | **Cd** | 100 mg/l |
| **Se** | 500 mg/l | | |

# ICP-MS Standards

## *ICP-MS Calibration Standards*

| Standard 8 elements | | Reference: MSBD60.10.2N01F.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$/HF tr | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 10 mg/l | **Te** | 10 mg/l |
| **Ge** | 10 mg/l | **Sn** | 10 mg/l |
| **Hf** | 10 mg/l | **W** | 10 mg/l |
| **Mo** | 10 mg/l | **Zr** | 10 mg/l |

| Standard 31 elements | | Reference: MSE194.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 10 mg/l | **Mn** | 10 mg/l |
| **As** | 10 mg/l | **Nd** | 10 mg/l |
| **Ba** | 10 mg/l | **Ni** | 10 mg/l |
| **B** | 10 mg/l | **P** | 10 mg/l |
| **Cd** | 10 mg/l | **Pb** | 10 mg/l |
| **Ce** | 10 mg/l | **Rb** | 10 mg/l |
| **Co** | 10 mg/l | **Se** | 10 mg/l |
| **Cr** | 10 mg/l | **Ag** | 10 mg/l |
| **Cu** | 10 mg/l | **Sm** | 10 mg/l |
| **Dy** | 10 mg/l | **Sr** | 10 mg/l |
| **Er** | 10 mg/l | **Tl** | 10 mg/l |
| **Gd** | 10 mg/l | **Tm** | 10 mg/l |
| **Ho** | 10 mg/l | **U** | 10 mg/l |
| **La** | 10 mg/l | **V** | 10 mg/l |
| **Li** | 10 mg/l | **Zn** | 10 mg/l |
| **Lu** | 10 mg/l | | |

| Initial Calibration Verification Standard 2 - 2 components | | Reference: 1F15.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sn** | 10 mg/l | **Ti** | 10 mg/l |

| Standard 18 elements | | Reference: MSBEDC.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 10 mg/l | **Ni** | 10 mg/l |
| **As** | 10 mg/l | **Pb** | 10 mg/l |
| **Ba** | 10 mg/l | **Se** | 10 mg/l |
| **Be** | 10 mg/l | **Ag** | 10 mg/l |
| **Cd** | 10 mg/l | **Th** | 10 mg/l |
| **Cr** | 10 mg/l | **Tl** | 10 mg/l |
| **Co** | 10 mg/l | **U** | 10 mg/l |
| **Cu** | 10 mg/l | **V** | 10 mg/l |
| **Mn** | 10 mg/l | **Zn** | 10 mg/l |

| Standard 5 elements | | Reference: MS13BF.1K.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 1000 mg/l | **K** | 1000 mg/l |
| **Fe** | 1000 mg/l | **Na** | 1000 mg/l |
| **Mg** | 1000 mg/l | | |

| Standard 4 elements precious metals | | Reference: MS91C8.1K.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 1000 mg/l | **K** | 1000 mg/l |
| **Mg** | 1000 mg/l | **Na** | 1000 mg/l |

* Custom Standards for ICP & ICP-MS are available upon request.

| Initial Calibration Verification Standard 1 - 26 components | | Reference: E738.K1.10N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 1000 mg/l | **Cr** | 10 mg/l |
| **Fe** | 1000 mg/l | **Cu** | 10 mg/l |
| **K** | 1000 mg/l | **Mn** | 10 mg/l |
| **Mg** | 1000 mg/l | **Mo** | 10 mg/l |
| **Na** | 1000 mg/l | **Ni** | 10 mg/l |
| **Sr** | 1000 mg/l | **Pb** | 10 mg/l |
| **Ag** | 10 mg/l | **Sb** | 10 mg/l |
| **Al** | 10 mg/l | **Se** | 10 mg/l |
| **As** | 10 mg/l | **Tl** | 10 mg/l |
| **Ba** | 10 mg/l | **V** | 10 mg/l |
| **Be** | 10 mg/l | **Zn** | 10 mg/l |
| **Cd** | 10 mg/l | **Th** | 10 mg/l |
| **Co** | 10 mg/l | **U** | 10 mg/l |

| ICP-MS Instrument Calibration Standard 1A - 20 components | | Reference: E85B.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$/ tr. Tart. Ac. | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Se** | 50 mg/l | **Pb** | 10 mg/l |
| **Al** | 10 mg/l | **Mn** | 10 mg/l |
| **Sb** | 10 mg/l | **Mo** | 10 mg/l |
| **As** | 10 mg/l | **Ni** | 10 mg/l |
| **Ba** | 10 mg/l | **Ag** | 10 mg/l |
| **Be** | 10 mg/l | **Tl** | 10 mg/l |
| **Cd** | 10 mg/l | **Th** | 10 mg/l |
| **Cr** | 10 mg/l | **U** | 10 mg/l |
| **Co** | 10 mg/l | **V** | 10 mg/l |
| **Cu** | 10 mg/l | **Zn** | 10 mg/l |

| ICP-MS Refractory Elements Standard - 12 components | | Reference: 058E.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 1 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ge** | 10 mg/l | **Sn** | 10 mg/l |
| **Hf** | 10 mg/l | **Ta** | 10 mg/l |
| **Mo** | 10 mg/l | **Te** | 10 mg/l |
| **Nb** | 10 mg/l | **Ti** | 10 mg/l |
| **Sb** | 10 mg/l | **W** | 10 mg/l |
| **Si** | 10 mg/l | **Zr** | 10 mg/l |

| ICP-MS Calibration Standard - 10 components | | Reference: D743.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ba** | 10 mg/l | **In** | 10 mg/l |
| **Be** | 10 mg/l | **Li** | 10 mg/l |
| **Bi** | 10 mg/l | **Ni** | 10 mg/l |
| **Ce** | 10 mg/l | **Pb** | 10 mg/l |
| **Co** | 10 mg/l | **U** | 10 mg/l |

| ICP-MS Calibration Standard - 5 components | | Reference: 1ADA.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 10 mg/l | **Li** | 10 mg/l |
| **Fe** | 10 mg/l | **Na** | 10 mg/l |
| **K** | 10 mg/l | | |

| ICP Multi-Element Standard Solution XX for MS - 11 components | | Reference: CEB3.1.1N.L1<br>Volume: 100 ml<br>Matrix: in 1 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Mg** | 1 mg/l | **Tl** | 1 mg/l |
| **Cu** | 1 mg/l | **Ce** | 1 mg/l |
| **Cd** | 1 mg/l | **Ge** | 1 mg/l |
| **Pb** | 1 mg/l | **Tb** | 1 mg/l |
| **Sc** | 1 mg/l | **Ba** | 1 mg/l |
| **Rh** | 1 mg/l | | |

# *Quality Control Standards for ICP-MS*

| QC-MS 31 elements | | Reference: MSE194.D01.1N.L1<br>Volume: 100 ml<br>Matrix: in 1 % $HNO_3$ | | | Reference: MSE194.D01.1N.L5<br>Volume: 500 ml<br>Matrix: in 1 % $HNO_3$ | | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 0.01 mg/l | **Cu** | 0.01 mg/l | **Lu** | 0.01 mg/l | **Ag** | 0.01 mg/l |
| **As** | 0.01 mg/l | **Dy** | 0.01 mg/l | **Mn** | 0.01 mg/l | **Sr** | 0.01 mg/l |
| **Ba** | 0.01 mg/l | **Er** | 0.01 mg/l | **Ni** | 0.01 mg/l | **Tl** | 0.01 mg/l |
| **B** | 0.01 mg/l | **Gd** | 0.01 mg/l | **Nb** | 0.01 mg/l | **Tm** | 0.01 mg/l |
| **Cd** | 0.01 mg/l | **Ho** | 0.01 mg/l | **P** | 0.01 mg/l | **U** | 0.01 mg/l |
| **Ce** | 0.01 mg/l | **La** | 0.01 mg/l | **Rb** | 0.01 mg/l | **V** | 0.01 mg/l |
| **Cr** | 0.01 mg/l | **Pb** | 0.01 mg/l | **Sm** | 0.01 mg/l | **Zn** | 0.01 mg/l |
| **Co** | 0.01 mg/l | **Li** | 0.01 mg/l | **Se** | 0.01 mg/l | | |

| QC-MS Hg | | Reference: MSD0BC.D01.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | Reference: MSD0BC.D01.2N.L5<br>Volume: 500 ml<br>Matrix: in 2 % $HNO_3$ |
|---|---|---|---|
| **Element** | **Concentration** | | |
| **Hg** | 0.01 mg/l | | |

| QC-MS 18 elements | | Reference: MSBEDC.D01.1N.L1<br>Volume: 100 ml<br>Matrix: in 1 % $HNO_3$ | | | Reference: SBEDC.D01.1N.L5<br>Volume: 500 ml<br>Matrix: in 1 % $HNO_3$ | | |
|---|---|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 0.01 mg/l | **Cr** | 0.01 mg/l | **Ni** | 0.01 mg/l | **U** | 0.01 mg/l |
| **As** | 0.01 mg/l | **Co** | 0.01 mg/l | **Se** | 0.01 mg/l | **V** | 0.01 mg/l |
| **Ba** | 0.01 mg/l | **Cu** | 0.01 mg/l | **Ag** | 0.01 mg/l | **Zn** | 0.01 mg/l |
| **Be** | 0.01 mg/l | **Pb** | 0.01 mg/l | **Tl** | 0.01 mg/l | | |
| **Cd** | 0.01 mg/l | **Mn** | 0.01 mg/l | **Th** | 0.01 mg/l | | |

| QC-MS 18 elements | | Reference: MSBEDC.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 10 mg/l | **Mn** | 10 mg/l |
| **As** | 10 mg/l | **Ni** | 10 mg/l |
| **Ba** | 10 mg/l | **Se** | 10 mg/l |
| **Be** | 10 mg/l | **Ag** | 10 mg/l |
| **Cd** | 10 mg/l | **Tl** | 10 mg/l |
| **Cr** | 10 mg/l | **Th** | 10 mg/l |
| **Co** | 10 mg/l | **U** | 10 mg/l |
| **Cu** | 10 mg/l | **V** | 10 mg/l |
| **Pb** | 10 mg/l | **Zn** | 10 mg/l |

| QC-MS Multi 8 elements | | Reference: MSBD60.10.2N01F.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$/0.1% HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 10 mg/l | **Te** | 10 mg/l |
| **Ge** | 10 mg/l | **Sn** | 10 mg/l |
| **Hf** | 10 mg/l | **W** | 10 mg/l |
| **Mo** | 10 mg/l | **Zr** | 10 mg/l |

* Custom Standards for ICP & ICP-MS are available upon request.

# *Internal Standard for ICP-MS*

| TYPE NAME | ELEMENT | MATRIX | CONCENTRATION | VOLUME | UNIT | REFERENCE |
|---|---|---|---|---|---|---|
| Internal Standard Solumass™ | **Be** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MS6925.1K.2N.L1 |
| Internal Standard Solumass™ | **Bi** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MS3926.K1.2N.L1 |
| Internal Standard Solumass™ | **Cs** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MSE11C.K1.2N.L1 |
| Internal Standard Solumass™ | **Eu** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MS6994.K1.2N.L1 |
| Internal Standard Solumass™ | **Ga** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MS59E8.1K.2N.L1 |
| Internal Standard Solumass™ | **Ge** | in 2 %$HNO_3$/HF tr | 100 mg/l | 100 | ml | MS69E9.K1.2N.L1 |
| Internal Standard Solumass™ | **Au** | in 2% HCl | 100 mg/l | 100 | ml | MSA965.K1.2C.L1 |
| Internal Standard Solumass™ | **Ho** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MSB0BE.K1.2N.L1 |
| Internal Standard Solumass™ | **In** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MS8C82.K1.2N.L1 |
| Internal Standard Solumass™ | **Pr** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MSDE98.K1.2N.L1 |
| Internal Standard Solumass™ | **Re** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MSAAE4.K1.2N.L1 |
| Internal Standard Solumass™ | **Rh** | in 2% HCl | 100 mg/l | 100 | ml | MS06E6.K1.2C.L1 |
| Internal Standard Solumass™ | **Sc** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MSE2D9.K1.2N.L1 |
| Internal Standard Solumass™ | **Tb** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MSDE6D.K1.2N.L1 |
| Internal Standard Solumass™ | **Th** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MS066E.K1.2N.L1 |
| Internal Standard Solumass™ | **Yb** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MS1837.K1.2N.L1 |
| Internal Standard Solumass™ | **Y** | in 2 %$HNO_3$ | 100 mg/l | 100 | ml | MS1F40.K1.2N.L1 |

**ICP-MS Internal Standard 2 - 8 components**

**Reference:** 7556.10.N.L1

**Volume:** 100 ml
**Matrix:** in 2 % $HNO_3$

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| **Bi** | 10 mg/l | **Sc** | 10 mg/l |
| **Ho** | 10 mg/l | **Tb** | 10 mg/l |
| **In** | 10 mg/l | **Y** | 10 mg/l |
| **6Li** | 10 mg/l | **Rh** | 10 mg/l |

**ICP-MS Alternate Internal Standard 1 - 7 components**

**Reference:** B55E.10.N.L1

**Volume:** 100 ml
**Matrix:** in 5 % $HNO_3$ (v/v)

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| **6Li** | 10 mg/l | **In** | 10 mg/l |
| **Sc** | 10 mg/l | **Tb** | 10 mg/l |
| **Ge** | 10 mg/l | **Bi** | 10 mg/l |
| **Y** | 10 mg/l | | |

**ICP-MS Alternate Internal Standard 2 - 8 components**

**Reference:** E738.K1.10N.L1

**Volume:** 100 ml
**Matrix:** in 10 % $HNO_3$ (v/v)

| Element | Concentration | Element | Concentration |
|---|---|---|---|
| **Bi** | 100 mg/l | **Lu** | 100 mg/l |
| **Ge** | 100 mg/l | **Rh** | 100 mg/l |
| **In** | 100 mg/l | **Sc** | 100 mg/l |
| **6Li** | 100 mg/l | **Tb** | 100 mg/l |

# Instrument Check Standards

## *Instrument Check Standards*

| Spiking Standard 1R - 4 components | | Reference: D543.K4.5N.L5<br>Volume: 500 ml<br>Matrix: in 5 % $HNO_3$/tr. HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Si** | 2000 mg/l | **P** | 400 mg/l |
| **B** | 400 mg/l | **Mo** | 200 mg/l |

| Spiking Standard 2R - 4 components | | Reference: 91C8.10K.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 10 000 mg/l | **K** | 10 000 mg/l |
| **Mg** | 10 000 mg/l | **Na** | 10 000 mg/l |

| Spiking Standard 4R - Sb | | Reference: 1ED8.K2.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ |
|---|---|---|
| **Element** | **Concentration** | |
| **Sb** | 200 mg/l | |

| Spiking Standard 5R - 5 components | | Reference: F373.K2.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Se** | 400 mg/l | **Pb** | 200 mg/l |
| **Tl** | 400 mg/l | **Cd** | 100 mg/l |
| **As** | 200 mg/l | | |

| Spiking Standard 3 - 12 components | | Reference: 4554.50.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 2000 mg/l | **V** | 500 mg/l |
| **Ba** | 2000 mg/l | **Zn** | 500 mg/l |
| **Fe** | 1000 mg/l | **Cu** | 250 mg/l |
| **Co** | 500 mg/l | **Cr** | 200 mg/l |
| **Mn** | 500 mg/l | **Be** | 50 mg/l |
| **Ni** | 500 mg/l | **Ag** | 50 mg/l |

| Instrument Check Standard 1 - 9 components | | Reference: 9EF9.K1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **P** | 1000 mg/l | **Ba** | 10 mg/l |
| **Al** | 100 mg/l | **Be** | 10 mg/l |
| **B** | 100 mg/l | **Ca** | 10 mg/l |
| **Ni** | 100 mg/l | **Sc** | 10 mg/l |
| **Zn** | 100 mg/l | | |

| Instrument Check Standard 2 - 7 components | | Reference: 4855.50.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ba** | 50 mg/l | **Ni** | 20 mg/l |
| **Be** | 20 mg/l | **Sc** | 20 mg/l |
| **La** | 20 mg/l | **Zn** | 20 mg/l |
| **Mn** | 20 mg/l | | |

| Instrument Check Standard 3 - 11 components | | Reference: 198A.20.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$/tr. HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **P** | 100 mg/l | **Mn** | 20 mg/l |
| **K** | 100 mg/l | **Mo** | 20 mg/l |
| **S** | 100 mg/l | **Ni** | 20 mg/l |
| **As** | 20 mg/l | **Sc** | 20 mg/l |
| **La** | 20 mg/l | **Na** | 20 mg/l |
| **Li** | 20 mg/l | | |

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| Instrument Check Standard 4 - 12 components | | Reference: 735F.K1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| K | 500 mg/l | Mn | 100 mg/l |
| Al | 100 mg/l | Ni | 100 mg/l |
| As | 100 mg/l | P | 100 mg/l |
| Ba | 100 mg/l | Sc | 100 mg/l |
| Cu | 100 mg/l | Na | 100 mg/l |
| Pb | 100 mg/l | Zn | 100 mg/l |

| Instrument Check Standard 5 - 15 components | | Reference: 6C97.K1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Y | 600 mg/l | Pb | 100 mg/l |
| Al | 100 mg/l | Mg | 100 mg/l |
| As | 100 mg/l | Mn | 100 mg/l |
| Cd | 100 mg/l | Ni | 100 mg/l |
| Cr | 100 mg/l | K | 100 mg/l |
| Co | 100 mg/l | Na | 100 mg/l |
| Cu | 100 mg/l | Zn | 100 mg/l |
| Fe | 100 mg/l | | |

| Instrument Check Standard - 9 components | | Reference: A479.50.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | | Reference: A479.50.2N.L5<br>Volume: 500 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** | **Element** | **Concentration** |
| Al | 50 mg/l | Co | 50 mg/l | P | 50 mg/l |
| As | 50 mg/l | Cu | 50 mg/l | K | 50 mg/l |
| Cr | 50 mg/l | Pb | 50 mg/l | Na | 50 mg/l |

| Instrument Check Standard 7 - 7 components | | Reference: AAB1.50.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 %$HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| K | 500 mg/l | Cu | 50 mg/l |
| Al | 50 mg/l | Mn | 50 mg/l |
| Ba | 50 mg/l | Zn | 50 mg/l |
| Cd | 50 mg/l | | |

| Instrument Check Standard - 12 components | | Reference: 8636.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| K | 50 mg/l | Ni | 10 mg/l |
| Al | 10 mg/l | P | 10 mg/l |
| As | 10 mg/l | Pb | 10 mg/l |
| Cu | 10 mg/l | Sc | 10 mg/l |
| Mn | 10 mg/l | Zn | 10 mg/l |
| Na | 10 mg/l | Ba | 1 mg/l |

## *Quantitation Detection Limit Standard*

| Contract Required Detection Limit Standard - 9 components | | Reference: 96D3.K2.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Co | 1000 mg/l | Mn | 300 mg/l |
| V | 1000 mg/l | Ag | 200 mg/l |
| Ni | 800 mg/l | Cr | 200 mg/l |
| Cu | 500 mg/l | Be | 100 mg/l |
| Zn | 400 mg/l | | |

| Contract Required Detection Limit Standard - 5 components | | Reference: 922B.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| As | 100 mg/l | Se | 50 mg/l |
| Tl | 100 mg/l | Pb | 30 mg/l |
| Cd | 50 mg/l | | |

| Contract Required Detection Limit Standard for CLP - 23 components | | Reference: EC46.1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Ca | 500 mg/l | Ni | 4 mg/l |
| Mg | 500 mg/l | Se | 3.5 mg/l |
| Na | 500 mg/l | Tl | 2.5 mg/l |
| K | 500 mg/l | Cu | 2.5 mg/l |
| Al | 20 mg/l | As | 1.5 mg/l |
| Ba | 20 mg/l | Mn | 1.5 mg/l |
| Fe | 10 mg/l | Ag | 1 mg/l |
| Zn | 6 mg/l | Pb | 1 mg/l |
| Li | 5 mg/l | Cr | 1 mg/l |
| Co | 5 mg/l | Be | 0.5 mg/l |
| Sr | 5 mg/l | Cd | 0.5 mg/l |
| V | 5 mg/l | | |

| ICP Contract Required Detection Limit Standard 2 for CLP - 16 components | | Reference: 968A.20.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Fe | 200 mg/l | Tl | 50 mg/l |
| Sb | 120 mg/l | Mn | 30 mg/l |
| Zn | 120 mg/l | As | 20 mg/l |
| Co | 100 mg/l | Cr | 20 mg/l |
| V | 100 mg/l | Pb | 20 mg/l |
| Ni | 80 mg/l | Ag | 20 mg/l |
| Se | 70 mg/l | Be | 10 mg/l |
| Cu | 50 mg/l | Cd | 10 mg/l |

| ICP-MS Contract Required Detection Limit Standard 2 - 22 components | | Reference: 9781.2.5NTF.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$/ tr.HF/tr. Tart. Ac | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Ca | 1000 mg/l | Cu | 4 mg/l |
| Mg | 1000 mg/l | Zn | 4 mg/l |
| K | 1000 mg/l | As | 2 mg/l |
| Na | 1000 mg/l | Be | 2 mg/l |
| Fe | 400 mg/l | Cd | 2 mg/l |
| Al | 40 mg/l | Co | 2 mg/l |
| Ba | 20 mg/l | Pb | 2 mg/l |
| Se | 10 mg/l | Mn | 2 mg/l |
| V | 10 mg/l | Ni | 2 mg/l |
| Sb | 4 mg/l | Ag | 2 mg/l |
| Cr | 4 mg/l | Tl | 2 mg/l |

| Contract Required Detection Limit Standard for CLP - 16 components | | Reference: B752.1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Ba | 10 mg/l | Be | 1 mg/l |
| Se | 5 mg/l | Cd | 1 mg/l |
| Cr | 2 mg/l | Co | 1 mg/l |
| Cu | 2 mg/l | Mn | 1 mg/l |
| Sb | 2 mg/l | Ni | 1 mg/l |
| Zn | 2 mg/l | Pb | 1 mg/l |
| Ag | 1 mg/l | Tl | 1 mg/l |
| As | 1 mg/l | V | 1 mg/l |

| ICP Contract Required Detection Limit Standard 2A - 6 components | | Reference: CBBD.K2.10N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Ca | 5000 mg/l | Na | 5000 mg/l |
| Mg | 5000 mg/l | Al | 200 mg/l |
| K | 5000 mg/l | Ba | 200 mg/l |

| Contract Required Detection Limits (CRDL) | | Reference: 8005.20.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Sb | 120 mg/l | As | 20 mg/l |
| Co | 100 mg/l | Cr | 20 mg/l |
| V | 100 mg/l | Tl | 20 mg/l |
| Ni | 80 mg/l | Be | 10 mg/l |
| Cu | 50 mg/l | Cd | 10 mg/l |
| Zn | 40 mg/l | Se | 10 mg/l |
| Mn | 30 mg/l | Pb | 6 mg/l |
| Ag | 20 mg/l | | |

| Contract Required Quantitation Limit Standard for CLP - MS - 17 components | | Reference: 1F00.1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Al | 30 mg/l | Cd | 1 mg/l |
| Ba | 10 mg/l | Ni | 1 mg/l |
| Se | 5 mg/l | Pb | 1 mg/l |
| Cr | 2 mg/l | Tl | 1 mg/l |
| Cu | 2 mg/l | V | 1 mg/l |
| Sb | 2 mg/l | Zn | 1 mg/l |
| Ag | 1 mg/l | Co | 0.5 mg/l |
| As | 1 mg/l | Mn | 0.5 mg/l |
| Be | 1 mg/l | | |

* Custom Standards for ICP & ICP-MS are available upon request.

| ICP-MS Contract Required Detection Limit Standard 1 - 22 components | | Reference: A536.1.5NT.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$/ tr.HF/tr. Tart. Ac | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 500 mg/l | **Cu** | 2.5 mg/l |
| **K** | 500 mg/l | **Zn** | 2 mg/l |
| **Mg** | 500 mg/l | **Mn** | 1.5 mg/l |
| **Na** | 500 mg/l | **Ag** | 1 mg/l |
| **Al** | 20 mg/l | **As** | 1 mg/l |
| **Ba** | 20 mg/l | **Cr** | 1 mg/l |
| **Fe** | 10 mg/l | **Tl** | 1 mg/l |
| **Sb** | 6 mg/l | **Be** | 0.5 mg/l |
| **Co** | 5 mg/l | **Cd** | 0.5 mg/l |
| **V** | 5 mg/l | **Se** | 0.5 mg/l |
| **Ni** | 4 mg/l | **Pb** | 0.3 mg/l |

## *Interference Check*

| Interference Check Standard 1 - 17 components | | Reference: 8F59.K3.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **K** | 20000 mg/l | **Cu** | 300 mg/l |
| **As** | 1000 mg/l | **Ni** | 300 mg/l |
| **Pb** | 1000 mg/l | **Ag** | 300 mg/l |
| **Tl** | 1000 mg/l | **V** | 300 mg/l |
| **Se** | 500 mg/l | **Zn** | 300 mg/l |
| **Ba** | 300 mg/l | **Mn** | 200 mg/l |
| **Cd** | 300 mg/l | **Be** | 100 mg/l |
| **Cr** | 300 mg/l | **Hg** | 50 mg/l |
| **Co** | 300 mg/l | | |

| Interference Check Standard 2 - 4 components | | Reference: 4AF7.K5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Tl** | 1000 mg/l | **Mo** | 300 mg/l |
| **B** | 500 mg/l | **Si** | 200 mg/l |

| Interference Check Standard 3 - Sb | | Reference: 1ED8.K5.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ |
|---|---|---|
| **Element** | **Concentration** | |
| **Sb** | 500 mg/l | |

## *Initial Calibration Verification Standards*

| ICP-MS Initial Calibration Verification Standard 3 - 22 components | | Reference: 2EE1.10.5N.L5<br>Volume: 500 ml<br>Matrix: in 5 %HNO3/ tr. Tart. Ac. | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ca** | 100 mg/l | **Cd** | 10 mg/l |
| **Fe** | 100 mg/l | **Cr** | 10 mg/l |
| **Mg** | 100 mg/l | **Co** | 10 mg/l |
| **K** | 100 mg/l | **Cu** | 10 mg/l |
| **Na** | 100 mg/l | **Pb** | 10 mg/l |
| **Se** | 50 mg/l | **Mn** | 10 mg/l |
| **Al** | 10 mg/l | **Ni** | 10 mg/l |
| **Sb** | 10 mg/l | **Ag** | 10 mg/l |
| **As** | 10 mg/l | **Tl** | 10 mg/l |
| **Ba** | 10 mg/l | **V** | 10 mg/l |
| **Be** | 10 mg/l | **Zn** | 10 mg/l |

## *Tuning Solution*

| Tuning Solution 9 elements | | Reference: MS8AC1.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ba** | 10 mg/l | **Pb** | 10 mg/l |
| **Be** | 10 mg/l | **Mg** | 10 mg/l |
| **Ce** | 10 mg/l | **Rh** | 10 mg/l |
| **Co** | 10 mg/l | **U** | 10 mg/l |
| **In** | 10 mg/l | | |

| Tuning Solution 5 elements | | Reference: MS448B.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Be** | 10 mg/l | **Pb** | 10 mg/l |
| **Co** | 10 mg/l | **Mg** | 10 mg/l |
| **In** | 10 mg/l | | |

| Tuning Solution 4 elements | | Reference: 5EAF.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Co** | 10 mg/l | **Li** | 10 mg/l |
| **In** | 10 mg/l | **Tl** | 10 mg/l |

| ICP-MS Tuning Solution 3 - 10 components | | Reference: 0E83.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ba** | 10 mg/l | **In** | 1 mg/l |
| **Be** | 1 mg/l | **Mg** | 1 mg/l |
| **Ce** | 1 mg/l | **Pb** | 1 mg/l |
| **Co** | 1 mg/l | **Th** | 1 mg/l |
| **Fe** | 1 mg/l | **U** | 1 mg/l |

| Tuning Solution 8 elements | | Reference: MSF5AA.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ba** | 10 mg/l | **Li** | 10 mg/l |
| **Be** | 10 mg/l | **Mg** | 10 mg/l |
| **Cu** | 10 mg/l | **Tl** | 10 mg/l |
| **In** | 10 mg/l | **U** | 10 mg/l |

| Tuning Solution 4 elements | | Reference: MS4C39.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ce** | 10 mg/l | **Tl** | 10 mg/l |
| **Li** | 10 mg/l | **Y** | 10 mg/l |

| ICP-MS Tuning Solution - Tune B ICAP - 7 components | | Reference: 161D.1.2N05C.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ba** | 1 mg/l | **In** | 1 mg/l |
| **Bi** | 1 mg/l | **Li** | 1 mg/l |
| **Ce** | 1 mg/l | **U** | 1 mg/l |
| **Co** | 1 mg/l | | |

| ICP-MS Tuning Solution 4 - 4 components | | Reference: 5EAF.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Co** | 10 mg/l | **Li** | 10 mg/l |
| **In** | 10 mg/l | **Tl** | 10 mg/l |

* Custom Standards for ICP & ICP-MS are available upon request.

## *Plasma Setup Solution*

| Plasma Setup Solution 13 elements | | Reference: MS9562.D01.05N.L5<br>Volume: 100 ml<br>Matrix: in 0,5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 0.01 mg/l | **In** | 0.01 mg/l |
| **B** | 0.01 mg/l | **Pb** | 0.01 mg/l |
| **Ba** | 0.01 mg/l | **Mg** | 0.01 mg/l |
| **Cd** | 0.01 mg/l | **Mn** | 0.01 mg/l |
| **Ce** | 0.01 mg/l | **Rh** | 0.01 mg/l |
| **Cr** | 0.01 mg/l | **Th** | 0.01 mg/l |
| **Cu** | 0.01 mg/l | | |

# EPA and ISO Methods

## *EPA Method 200.7*

| EPA 200.7 - Mixed Calibration Standard 1 | | Reference: 87EA.5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **As** | 100 mg/l | **Cd** | 20 mg/l |
| **Ca** | 100 mg/l | **Cu** | 20 mg/l |
| **Sb** | 50 mg/l | **Mn** | 20 mg/l |
| **Se** | 50 mg/l | **Ba** | 10 mg/l |
| **B** | 20 mg/l | **Ag** | 5 mg/l |

| EPA 200.7 - Mixed Calibration Standard 2 - 4 components | | Reference: AE93.20.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **P** | 100 mg/l | **Co** | 20 mg/l |
| **Ce** | 20 mg/l | **V** | 20 mg/l |

| EPA 200.7 - Mixed Calibration Standard 5 - 6 components | | Reference: FE99.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Fe** | 100 mg/l | **Tl** | 50 mg/l |
| **Pb** | 100 mg/l | **Ni** | 20 mg/l |
| **Mg** | 100 mg/l | **Be** | 10 mg/l |

| EPA 200.7 - Instrument Performance Check Standard 1 | | Reference: 581A.2D5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **K** | 100 mg/l | **Fe** | 20 mg/l |
| **P** | 100 mg/l | **Pb** | 20 mg/l |
| **Al** | 20 mg/l | **Li** | 20 mg/l |
| **As** | 20 mg/l | **Mg** | 20 mg/l |
| **Ba** | 20 mg/l | **Mn** | 20 mg/l |
| **Be** | 20 mg/l | **Ni** | 20 mg/l |
| **B** | 20 mg/l | **Se** | 20 mg/l |
| **Cd** | 20 mg/l | **Na** | 20 mg/l |
| **Ca** | 20 mg/l | **Sr** | 20 mg/l |
| **Ce** | 20 mg/l | **Tl** | 20 mg/l |
| **Cr** | 20 mg/l | **V** | 20 mg/l |
| **Co** | 20 mg/l | **Zn** | 20 mg/l |
| **Cu** | 20 mg/l | **Ag** | 2.5 mg/l |

| EPA 200.7 - Mixed Calibration Standard 2 - 6 components | | Reference: B306.K2.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **K** | 200 mg/l | **Ti** | 100 mg/l |
| **Mo** | 100 mg/l | **Li** | 50 mg/l |
| **Na** | 100 mg/l | **Sr** | 10 mg/l |

| EPA 200.7 - Mixed Calibration Standard 4 - 5 components | | Reference: 58DA.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 100 mg/l | **Zn** | 50 mg/l |
| **Si** | 100 mg/l | **Sn** | 40 mg/l |
| **Cr** | 50 mg/l | | |

| EPA 200.7 - Mixed Calibration Standard 6R - 5 components | | Reference: 78DA.50.5NF.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **P** | 200 mg/l | **Si** | 100 mg/l |
| **Sn** | 200 mg/l | **B** | 50 mg/l |
| **Ti** | 100 mg/l | | |

| EPA 200.7 - Instrument Performance Check Standard 2 - 5 components | | Reference: A827.20.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Si** | 100 mg/l | **Sn** | 20 mg/l |
| **Sb** | 20 mg/l | **Ti** | 20 mg/l |
| **Mo** | 20 mg/l | | |

* Custom Standards for ICP & ICP-MS are available upon request.

| EPA 200.7 - Laboratory Fortifying Stock Solution - 25 components | | Reference: 424E.2D5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **P** | 50 mg/l | **Se** | 25 mg/l |
| **Al** | 25 mg/l | **Si** | 25 mg/l |
| **Sb** | 25 mg/l | **Sr** | 25 mg/l |
| **As** | 25 mg/l | **Tl** | 25 mg/l |
| **Ba** | 25 mg/l | **Zn** | 25 mg/l |
| **B** | 25 mg/l | **Cd** | 10 mg/l |
| **Cr** | 25 mg/l | **Co** | 10 mg/l |
| **Cu** | 25 mg/l | **Mo** | 10 mg/l |
| **Fe** | 25 mg/l | **Sn** | 10 mg/l |
| **Pb** | 25 mg/l | **V** | 10 mg/l |
| **Li** | 25 mg/l | **Be** | 5 mg/l |
| **Mn** | 25 mg/l | **Ag** | 2.5 mg/l |
| **Ni** | 25 mg/l | | |

| EPA 200.7 - Instrument Fortifying Standard for Water - 22 components | | Reference: A816.7D5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **K** | 500 mg/l | **Fe** | 20 mg/l |
| **Al** | 20 mg/l | **Pb** | 20 mg/l |
| **As** | 20 mg/l | **Li** | 20 mg/l |
| **Ba** | 20 mg/l | **Mn** | 20 mg/l |
| **Be** | 20 mg/l | **Ni** | 20 mg/l |
| **B** | 20 mg/l | **P** | 20 mg/l |
| **Cd** | 20 mg/l | **Se** | 20 mg/l |
| **Ce** | 20 mg/l | **Tl** | 20 mg/l |
| **Cr** | 20 mg/l | **V** | 20 mg/l |
| **Co** | 20 mg/l | **Zn** | 20 mg/l |
| **Cu** | 20 mg/l | **Ag** | 7.5 mg/l |

| EPA 200.7 - Laboratory Performance Check Standard - 29 components | | Reference: 0F81.5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **P** | 100 mg/l | **Pb** | 20 mg/l |
| **K** | 100 mg/l | **Li** | 20 mg/l |
| **Si** | 100 mg/l | **Mg** | 20 mg/l |
| **Al** | 20 mg/l | **Mn** | 20 mg/l |
| **Sb** | 20 mg/l | **Mo** | 20 mg/l |
| **As** | 20 mg/l | **Ni** | 20 mg/l |
| **Ba** | 20 mg/l | **Se** | 20 mg/l |
| **Be** | 20 mg/l | **Na** | 20 mg/l |
| **B** | 20 mg/l | **Sr** | 20 mg/l |
| **Cd** | 20 mg/l | **Tl** | 20 mg/l |
| **Ca** | 20 mg/l | **Sn** | 20 mg/l |
| **Cr** | 20 mg/l | **V** | 20 mg/l |
| **Co** | 20 mg/l | **Zn** | 20 mg/l |
| **Cu** | 20 mg/l | **Ag** | 5 mg/l |
| **Fe** | 20 mg/l | | |

| EPA 200.7 - Instrument Fortifying Standard - 26 components | | Reference: C2E3.7D5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **K** | 500 mg/l | **Pb** | 20 mg/l |
| **Al** | 20 mg/l | **Li** | 20 mg/l |
| **As** | 20 mg/l | **Mg** | 20 mg/l |
| **Ba** | 20 mg/l | **Mn** | 20 mg/l |
| **Be** | 20 mg/l | **Ni** | 20 mg/l |
| **B** | 20 mg/l | **P** | 20 mg/l |
| **Cd** | 20 mg/l | **Se** | 20 mg/l |
| **Ca** | 20 mg/l | **Na** | 20 mg/l |
| **Ce** | 20 mg/l | **Sr** | 20 mg/l |
| **Cr** | 20 mg/l | **Tl** | 20 mg/l |
| **Co** | 20 mg/l | **V** | 20 mg/l |
| **Cu** | 20 mg/l | **Zn** | 20 mg/l |
| **Fe** | 20 mg/l | **Ag** | 7.5 mg/l |

| Instrument Fortifying Standard for Solids - 24 components | | Reference: E5D1.7D5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **K** | 500 mg/l | **Li** | 20 mg/l |
| **As** | 20 mg/l | **Mg** | 20 mg/l |
| **Ba** | 20 mg/l | **Mn** | 20 mg/l |
| **Be** | 20 mg/l | **Ni** | 20 mg/l |
| **B** | 20 mg/l | **P** | 20 mg/l |
| **Cd** | 20 mg/l | **Se** | 20 mg/l |
| **Ca** | 20 mg/l | **Na** | 20 mg/l |
| **Ce** | 20 mg/l | **Sr** | 20 mg/l |
| **Cr** | 20 mg/l | **Tl** | 20 mg/l |
| **Co** | 20 mg/l | **V** | 20 mg/l |
| **Cu** | 20 mg/l | **Zn** | 20 mg/l |
| **Pb** | 20 mg/l | **Ag** | 7.5 mg/l |

| EPA 200.7 - SIC Solution 2 - 5 components | | Reference: B8ED.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Cu** | 40 mg/l | **Co** | 10 mg/l |
| **Cr** | 20 mg/l | **V** | 10 mg/l |
| **Mn** | 20 mg/l | | |

| 200.7 Calibration - CAL 2 - 6 components | | Reference: B306.2K.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **K** | 2000 mg/l | **Ti** | 1000 mg/l |
| **Mo** | 1000 mg/l | **Li** | 500 mg/l |
| **Na** | 1000 mg/l | **Sr** | 100 mg/l |

| EPA 200.7 - Instrument Fortifying Standard - 5 components | | Reference: 6C22.20.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 20 mg/l | **Sn** | 20 mg/l |
| **Mo** | 20 mg/l | **Ti** | 20 mg/l |
| **Si** | 20 mg/l | | |

| EPA 200.7 - SIC Solution 1 | | Reference: B072.50.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$/ tr. HF |
|---|---|---|
| **Element** | **Concentration** | |
| **Mo** | 50 mg/l | |

| EPA 200.7 - SIC Solution 3 - 3 components | | Reference: B229.30.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Fe** | 150 mg/l | **Ni** | 20 mg/l |
| **Al** | 30 mg/l | | |

| 200.7 Calibration - CAL 1 - 10 components | | Reference: AE81.50.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **As** | 1000 mg/l | **Cu** | 200 mg/l |
| **Ca** | 1000 mg/l | **Mn** | 200 mg/l |
| **Sb** | 500 mg/l | **Ba** | 100 mg/l |
| **Se** | 500 mg/l | **B** | 100 mg/l |
| **Cd** | 200 mg/l | **Ag** | 50 mg/l |

* Custom Standards for ICP & ICP-MS are available upon request.

| 200.7 Calibration - CAL 3 - 4 components | | Reference: AE93.K2.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **P** | 1000 mg/l | **Co** | 200 mg/l |
| **Ce** | 200 mg/l | **V** | 200 mg/l |

| 200.7 Calibration - CAL 4A- 4 components | | Reference: B37B.1K.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 1000 mg/l | **Zn** | 500 mg/l |
| **Cr** | 500 mg/l | **Hg** | 200 mg/l |

| 200.7 Calibration - CAL 4B- 2 components | | Reference: E2EC.1K.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 %$HNO_3$/tr.HF | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **$SiO_2$** | 1000 mg/l | **Sn** | 400 mg/l |

| 200.7 Quality Control Standard (QCS) - 3 components | | Reference: 92F5.K1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ce** | 100 mg/l | **P** | 100 mg/l |
| **Hg** | 100 mg/l | | |

## *EPA Method 200.8*

| 200.8 Calibration CAL 3 - Hg | | Reference: D0BC.1.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ (v/v) | |
|---|---|---|---|
| **Element** | **Concentration** | | |
| **Hg** | 1 mg/l | | |

## *EPA Method 6010*

| EPA 6010 - Laboratory Performance Check Standard - 30 components | | Reference: 7CF2.5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **P** | 100 mg/l | **Pb** | 20 mg/l |
| **K** | 100 mg/l | **Li** | 20 mg/l |
| **Si** | 100 mg/l | **Mg** | 20 mg/l |
| **Al** | 20 mg/l | **Mn** | 20 mg/l |
| **Sb** | 20 mg/l | **Mo** | 20 mg/l |
| **As** | 20 mg/l | **Ni** | 20 mg/l |
| **Ba** | 20 mg/l | **Se** | 20 mg/l |
| **Be** | 20 mg/l | **Na** | 20 mg/l |
| **B** | 20 mg/l | **Sr** | 20 mg/l |
| **Cd** | 20 mg/l | **Tl** | 20 mg/l |
| **Ca** | 20 mg/l | **Sn** | 20 mg/l |
| **Cr** | 20 mg/l | **Ti** | 20 mg/l |
| **Co** | 20 mg/l | **V** | 20 mg/l |
| **Cu** | 20 mg/l | **Zn** | 20 mg/l |
| **Fe** | 20 mg/l | **Ag** | 5 mg/l |

## *ISO 11885 Water Quality*

| Multi element Reference Solution 1 - 18 components | | Reference: 9B99.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Al | 10 mg/l | Mo | 10 mg/l |
| Be | 10 mg/l | Ni | 10 mg/l |
| Bi | 10 mg/l | Pb | 10 mg/l |
| Cd | 10 mg/l | Si | 10 mg/l |
| Co | 10 mg/l | Sr | 10 mg/l |
| Cu | 10 mg/l | V | 10 mg/l |
| Fe | 10 mg/l | W | 10 mg/l |
| Li | 10 mg/l | Zn | 10 mg/l |
| Mn | 10 mg/l | Zr | 10 mg/l |

| Reagent Blank Solution: Nitric Acid 1% | Reference: 842A.1K.N.L5<br>Volume: 500 ml |
|---|---|

| Multi element Reference Solution 2 - 5 components | | Reference: 2014.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| As | 10 mg/l | Sn | 10 mg/l |
| Sb | 10 mg/l | Ti | 10 mg/l |
| Se | 10 mg/l | | |

| Multi element Reference Solution 6 - 6 components | | Reference: B488.10.1N.L1<br>Volume: 100 ml<br>Matrix: in 1 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Ca | 10 mg/l | K | 10 mg/l |
| Mg | 10 mg/l | S | 10 mg/l |
| Na | 10 mg/l | P | 10 mg/l |

## *USP 232*

| Multi-element solution according to USP 232 dietary supplements - 4 components | | Reference: FDA4.15.7N.L1<br>Volume: 100 ml<br>Matrix: in 7 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Cd | 5 mg/l | As | 15 mg/l |
| Pb | 10 mg/l | Hg | 15 mg/l |

| USP 232 Parenteral Elemental Impurities - 8 components | | Reference: 121E.1D5.7N.L1<br>Volume: 100 ml<br>Matrix: in 7 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Cd | 2.5 mg/l | Mo | 10 mg/l |
| Pb | 5 mg/l | Ni | 50 mg/l |
| As | 1.5 mg/l | V | 10 mg/l |
| Hg | 1.5 mg/l | Cu | 100 mg/l |

| ICP Multi-element standard according to USP 232 parenteral dose - 6 components | | Reference: 7F97.10.15C.L1<br>Volume: 100 ml<br>Matrix: in 15 % HCl | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Ir | 10 mg/l | Rh | 10 mg/l |
| Pt | 10 mg/l | Pd | 10 mg/l |
| Os | 10 mg/l | Ru | 10 mg/l |

| USP 232 Parenteral Elemental Impurities - 8 components | | Reference: E13C.1D5.7N.L1<br>Volume: 100 ml<br>Matrix: in 7 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Cd | 25 mg/l | Mo | 100 mg/l |
| Pb | 5 mg/l | Ni | 500 mg/l |
| As | 1.5 mg/l | V | 100 mg/l |
| Hg | 15 mg/l | Cu | 1000 mg/l |

| USP 232 Parenteral Elemental Impurities - 6 components | | Reference: 7F97.K1.15C.L1<br>Volume: 100 ml<br>Matrix: in 15 % HCl | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Ir | 100 mg/l | Rh | 100 mg/l |
| Pt | 100 mg/l | Pd | 100 mg/l |
| Os | 100 mg/l | Ru | 100 mg/l |

* Custom Standards for ICP & ICP-MS are available upon request.

# Standards for Water Quality

*Reference Material for Measurement of Elements in Water*

| CRM water 1 (Ca 1000 µg/l) - 1 bottle of 100 ml | | Reference: WCEBF.D005.005N.L1<br>Volume: 100 ml<br>Matrix: in 0,05 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| S | 2000 µg/l | Al | 5 µg/l |
| Ca | 1000 µg/l | Ba | 5 µg/l |
| Si | 1000 µg/l | Cu | 5 µg/l |
| P | 500 µg/l | Pb | 5 µg/l |
| K | 500 µg/l | Mo | 5 µg/l |
| Na | 500 µg/l | Ni | 5 µg/l |
| Mg | 200 µg/l | Ag | 5 µg/l |
| B | 50 µg/l | Sr | 5 µg/l |
| Li | 50 µg/l | V | 5 µg/l |
| Sb | 10 µg/l | Be | 2 µg/l |
| As | 10 µg/l | Co | 2 µg/l |
| Bi | 10 µg/l | Cr | 2 µg/l |
| Fe | 10 µg/l | Mn | 2 µg/l |
| Se | 10 µg/l | Ti | 2 µg/l |
| Tl | 10 µg/l | Cd | 0.5 µg/l |
| Zn | 10 µg/l | | |

| CRM water 2 (Ca 10 000 µg/l) - 1 bottle of 100 ml | | Reference: WCEBF.D05.05N.L1<br>Volume: 100 ml<br>Matrix: in 0,05 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| S | 20 000 µg/l | Al | 50 µg/l |
| Ca | 10 000 µg/l | Ba | 50 µg/l |
| Si | 10 000 µg/l | Cu | 50 µg/l |
| P | 5000 µg/l | Pb | 50 µg/l |
| K | 5000 µg/l | Mo | 50 µg/l |
| Na | 5000 µg/l | Ni | 50 µg/l |
| Mg | 2000 µg/l | Ag | 50 µg/l |
| B | 500 µg/l | Sr | 50 µg/l |
| Li | 500 µg/l | V | 50 µg/l |
| Sb | 100 µg/l | Be | 20 µg/l |
| As | 100 µg/l | Co | 20 µg/l |
| Bi | 100 µg/l | Cr | 20 µg/l |
| Fe | 100 µg/l | Mn | 20 µg/l |
| Se | 100 µg/l | Ti | 20 µg/l |
| Tl | 100 µg/l | Cd | 5 µg/l |
| Zn | 100 µg/l | | |

| CRM water 3 (Ca 100 000 µg/l) - 1 bottle of 100 ml | | Reference: WCEBF.D5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| S | 200 000 µg/l | Al | 500 µg/l |
| Ca | 100 000 µg/l | Ba | 500 µg/l |
| Si | 100 000 µg/l | Cu | 500 µg/l |
| P | 50 000 µg/l | Pb | 500 µg/l |
| K | 50 000 µg/l | Mo | 500 µg/l |
| Na | 50 000 µg/l | Ni | 500 µg/l |
| Mg | 20 000 µg/l | Ag | 500 µg/l |
| B | 5000 µg/l | Sr | 500 µg/l |
| Li | 5000 µg/l | V | 500 µg/l |
| Sb | 1000 µg/l | Be | 200 µg/l |
| As | 1000 µg/l | Cr | 200 µg/l |
| Bi | 1000 µg/l | Co | 200 µg/l |
| Fe | 1000 µg/l | Mn | 200 µg/l |
| Se | 1000 µg/l | Ti | 200 µg/l |
| Tl | 1000 µg/l | Cd | 50 µg/l |
| Zn | 1000 µg/l | | |

| CRM water 4 (Ca 1 000 000 µg/l) - 1 bottle of 100 ml | | Reference: WCEBF.5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| S | 2 000 000 µg/ | Al | 5000 µg/l |
| Ca | 1000 000 µg/l | Ba | 5000 µg/l |
| Si | 1000 000 µg/l | Cu | 5000 µg/l |
| P | 500 000 µg/l | Pb | 5000 µg/l |
| K | 500 000 µg/l | Mo | 5000 µg/l |
| Na | 500 000 µg/l | Ni | 5000 µg/l |
| Mg | 200 000 µg/l | Ag | 5000 µg/l |
| B | 50 000 µg/l | Sr | 5000 µg/l |
| Li | 50 000 µg/l | V | 5000 µg/l |
| Sb | 10 000 µg/l | Be | 2000 µg/l |
| As | 10 000 µg/l | Cr | 2000 µg/l |
| Bi | 10 000 µg/l | Co | 2000 µg/l |
| Fe | 10 000 µg/l | Mn | 2000 µg/l |
| Se | 10 000 µg/l | Ti | 2000 µg/l |
| Tl | 10 000 µg/l | Cd | 500µg/l |
| Zn | 10 000 µg/l | | |

| CRM water 5 (Ca 2 000 000 µg/l) - 4 bottle of 100 ml | | Reference: WCEBF.D5.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| S | 4000 000 µg/l | Al | 10 000 µg/l |
| Ca | 2000 000 µg/l | Ba | 10 000 µg/l |
| Si | 2000 000 µg/l | Cu | 10 000 µg/l |
| P | 1000 000 µg/l | Pb | 10 000 µg/l |
| K | 1000 000 µg/l | Mo | 10 000 µg/l |
| Na | 1000 000 µg/l | Ni | 10 000 µg/l |
| Mg | 400 000 µg/l | Ag | 10 000 µg/l |
| B | 100 000 µg/l | Sr | 10 000 µg/l |
| Li | 100 000 µg/l | V | 10 000 µg/l |
| Sb | 20 000 µg/l | Be | 4000 µg/l |
| As | 20 000 µg/l | Cr | 4000 µg/l |
| Bi | 20 000 µg/l | Co | 4000 µg/l |
| Fe | 20 000 µg/l | Mn | 4000 µg/l |
| Se | 20 000 µg/l | Ti | 4000 µg/l |
| Tl | 20 000 µg/l | Cd | 1000 µg/l |
| Zn | 20 000 µg/l | | |

| TCLP Standard for ICP - 4 components | | Reference: 47BC.25.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Ba | 500 mg/l | Ag | 25 mg/l |
| Cr | 25 mg/l | Cd | 5 mg/l |

| TCLP Standard 2 - Hg | | Reference: D0BC.20.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ |
|---|---|---|
| **Element** | **Concentration** | |
| Hg | 20 mg/l | |

| ICP Calibration Standard - Sewage Sludge | | Reference: D45E.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| Zn | 2500 mg/l | Cu | 800 mg/l |
| Cr | 900 mg/l | Ni | 200 mg/l |
| Pb | 900 mg/l | Cd | 10 mg/l |

| CLP Soil Spiking Solution - 16 components | | Reference: 10D1.10.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| As | 400 mg/l | Ni | 100 mg/l |
| Ba | 400 mg/l | V | 100 mg/l |
| Se | 400 mg/l | Zn | 100 mg/l |
| Tl | 400 mg/l | Cu | 50 mg/l |
| Sb | 100 mg/l | Cr | 40 mg/l |
| Co | 100 mg/l | Be | 10 mg/l |
| Pb | 100 mg/l | Cd | 10 mg/l |
| Mn | 100 mg/l | Ag | 10 mg/l |

| TCLP Standard for ICP - 3 components | | Reference: 8050.25.5N.L1<br>Volume: 100 ml<br>Matrix: in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| As | 25 mg/l | Se | 5 mg/l |
| Pb | 25 mg/l | | |

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

| Primary Metals for Analysis by ICP - 9 components | | Reference: 6D95.K1.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| As | 100 mg/l | Cd | 10 mg/l |
| Ca | 100 mg/l | Cr | 10 mg/l |
| Na | 100 mg/l | Cu | 10 mg/l |
| Ba | 10 mg/l | Ni | 10 mg/l |
| Be | 10 mg/l | | |

| Primary Metals for Analysis by ICP-MS - 11 components | | Reference: 686F.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| As | 10 mg/l | Ni | 10 mg/l |
| Ba | 10 mg/l | Pb | 10 mg/l |
| Be | 10 mg/l | Sb | 10 mg/l |
| Cd | 10 mg/l | Se | 10 mg/l |
| Cr | 10 mg/l | Tl | 10 mg/l |
| Cu | 10 mg/l | | |

* Custom Standards for ICP & ICP-MS are available upon request.

| Primary Metals for Analysis by GFAA - 9 components | | Reference: 2495.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 10 mg/l | **Pb** | 10 mg/l |
| **As** | 10 mg/l | **Ni** | 10 mg/l |
| **Cd** | 10 mg/l | **Se** | 10 mg/l |
| **Cr** | 10 mg/l | **Tl** | 10 mg/l |
| **Cu** | 10 mg/l | | |

| Primary & Secondary Metals for Analysis by GFAA/ICP/ICP-MS - 19 components | | Reference: DE11.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 100 mg/l | **Cr** | 10 mg/l |
| **As** | 100 mg/l | **Cu** | 10 mg/l |
| **Ca** | 100 mg/l | **Pb** | 10 mg/l |
| **Fe** | 100 mg/l | **Mn** | 10 mg/l |
| **Si** | 100 mg/l | **Ni** | 10 mg/l |
| **Na** | 100 mg/l | **Se** | 10 mg/l |
| **Al** | 10 mg/l | **Ag** | 10 mg/l |
| **Ba** | 10 mg/l | **Tl** | 10 mg/l |
| **Be** | 10 mg/l | **Zn** | 10 mg/l |
| **Cd** | 10 mg/l | | |

| Primary Metals for Analysis by GFAA/ICP/ ICP-MS - 14 components | | Reference: C87D.K1.2NF.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 100 mg/l | **Cd** | 10 mg/l |
| **As** | 100 mg/l | **Cr** | 10 mg/l |
| **Ca** | 100 mg/l | **Cu** | 10 mg/l |
| **Si** | 100 mg/l | **Pb** | 10 mg/l |
| **Na** | 100 mg/l | **Ni** | 10 mg/l |
| **Ba** | 10 mg/l | **Se** | 10 mg/l |
| **Be** | 10 mg/l | **Tl** | 10 mg/l |

| Secondary Metals for Analysis by GFAA/ICP/ ICP-MS - 5 components | | Reference: F235.10.2N.L1<br>Volume: 100 ml<br>Matrix: in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Fe** | 100 mg/l | **Mn** | 10 mg/l |
| **Ag** | 10 mg/l | **Zn** | 10 mg/l |
| **Al** | 10 mg/l | | |

# ICP Standards

## *Quality Control Standards for ICP*

| **Quality Control Standard - 25 components** | | **Reference:** 64F7.10.2N.L1<br>**Volume:** 100 ml<br>**Matrix:** in 2 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Ag** | 10 mg/l | **Mn** | 10 mg/l |
| **Al** | 10 mg/l | **Mo** | 10 mg/l |
| **As** | 10 mg/l | **Na** | 10 mg/l |
| **Ba** | 10 mg/l | **Ni** | 10 mg/l |
| **Be** | 10 mg/l | **Pb** | 10 mg/l |
| **Ca** | 10 mg/l | **Sb** | 10 mg/l |
| **Cd** | 10 mg/l | **Se** | 10 mg/l |
| **Co** | 10 mg/l | **Th** | 10 mg/l |
| **Cr** | 10 mg/l | **Tl** | 10 mg/l |
| **Cu** | 10 mg/l | **U** | 10 mg/l |
| **Fe** | 10 mg/l | **V** | 10 mg/l |
| **K** | 10 mg/l | **Zn** | 10 mg/l |
| **Mg** | 10 mg/l | | |

## *ICP Calibration Standards*

| **Solids 1A CCV Solution for ICP-OES - 14 components** | | **Reference:** 06DF.K1.5N.L1<br>**Volume:** 100 ml<br>**Matrix:** in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **B** | 1000 mg/l | **Cr** | 100 mg/l |
| **Ba** | 1000 mg/l | **Cu** | 100 mg/l |
| **P** | 1000 mg/l | **Ni** | 100 mg/l |
| **Mn** | 500 mg/l | **Pb** | 100 mg/l |
| **Zn** | 500 mg/l | **V** | 100 mg/l |
| **As** | 100 mg/l | **Be** | 5 mg/l |
| **Co** | 100 mg/l | **Cd** | 5 mg/l |

| **Solids Mix 3A solution for ICP-OES - 11 components** | | **Reference:** F679.1K.5N.L1<br>**Volume:** 100 ml<br>**Matrix:** in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Mn** | 2500 mg/l | **Ni** | 1000 mg/l |
| **Zn** | 2500 mg/l | **Pb** | 1000 mg/l |
| **As** | 1000 mg/l | **V** | 1000 mg/l |
| **Co** | 1000 mg/l | **Be** | 100 mg/l |
| **Cr** | 1000 mg/l | **Cd** | 100 mg/l |
| **Cu** | 1000 mg/l | | |

| **Solids 1B CCV Solution for ICP-OES - 6 components** | | **Reference:** FC4C.5K.5N.L1<br>**Volume:** 100 ml<br>**Matrix:** in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Al** | 5000 mg/l | **Mg** | 5000 mg/l |
| **Ca** | 5000 mg/l | **Na** | 5000 mg/l |
| **Fe** | 5000 mg/l | **K** | 2000 mg/l |

| **Solids Mix 4 solution for ICP-OES - 6 components** | | **Reference:** 42F9.50.5N.L1<br>**Volume:** 100 ml<br>**Matrix:** in 5 % $HNO_3$ | |
|---|---|---|---|
| **Element** | **Concentration** | **Element** | **Concentration** |
| **Sb** | 100 mg/l | **Te** | 100 mg/l |
| **Se** | 100 mg/l | **Tl** | 100 mg/l |
| **Sn** | 100 mg/l | **Mo** | 50 mg/l |

* Custom Standards for ICP & ICP-MS are available upon request.