

Trace Analysis Arium® Comfort I

| Elements | Detection threshold | Calculated concentration Arium® ultrapure water | Unit | Procedure |
|---------------|---------------------|--|------------|-----------|
| Aluminium Al | <0.5 | 1.7 | ng/L (ppt) | ICP-SMS |
| Antimony Sb | <0.005 | 0.02 | ng/L (ppt) | ICP-SMS |
| Arsenic As | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Barium Ba | <0.02 | 0.08 | ng/L (ppt) | ICP-SMS |
| Beryllium Be | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Boron B | <2 | 4.3 | ng/L (ppt) | ICP-SMS |
| Lead Pb | <0.01 | 0.05 | ng/L (ppt) | ICP-SMS |
| Cadmium Cd | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Calcium Ca | <5 | 12 | ng/L (ppt) | ICP-SMS |
| Cesium Cs | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Cerium Ce | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Chromium Cr | 0.02 | 0.06 | ng/L (ppt) | ICP-SMS |
| Cobalt Co | <0.005 | 0.03 | ng/L (ppt) | ICP-SMS |
| Dysprosium Dy | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Iron Fe | <0.5 | 1.2 | ng/L (ppt) | ICP-SMS |
| Erbium Er | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Europium Eu | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Gadolinium Gd | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Gallium Ga | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Germanium Ge | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Gold Au | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Hafnium Hf | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Holmium Ho | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Iridium Ir | <0.001 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Copper Cu | <0.5 | 1.8 | ng/L (ppt) | ICP-SMS |
| Lanthanum La | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Lithium Li | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Lutetium Lu | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Magnesium Mg | <1 | 1.7 | ng/L (ppt) | ICP-SMS |
| Manganese Mn | <0.05 | 0.17 | ng/L (ppt) | ICP-SMS |
| Molybdenum Mo | <0.02 | 0.06 | ng/L (ppt) | ICP-SMS |
| Neodymium Nd | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |

Execution and Analysis Procedure

The water analysis was executed by ALS Scandinavia AB, an internationally recognized testing laboratory for special analytics, based on the ICP-SMS (HR-ICP-MS) after 50-fold preconcentration by sub-boiling distillation. The trace elements are determined using 18 scans over the mass range, resulting in total measurement time of 300 s. All concentrations are within $\pm 30\%$ of the reported value. This may not apply to Br and I. The tests were performed with an Arium® Comfort I, without final filter, fed with tap water.

| Elements | Detection threshold | Calculated concentration Arium® ultrapure water | Unit | Procedure |
|-----------------|---------------------|--|------------|-----------|
| Nickel Ni | <0.4 | 0.8 | ng/L (ppt) | ICP-SMS |
| Niobium Nb | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Osmium Os | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Palladium Pd | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Platinum Pt | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Potassium K | <5 | 14 | ng/L (ppt) | ICP-SMS |
| Praseodymium Pr | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Mercury Hg | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Rhenium Re | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Rhodium Rh | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Rubidium Rb | <0.01 | 0.02 | ng/L (ppt) | ICP-SMS |
| Ruthenium Ru | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Samarium Sm | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Scandium Sc | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Selenium Se | <0.05 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Silver Ag | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Sodium Na | <10 | 17 | ng/L (ppt) | ICP-SMS |
| Strontium Sr | <0.01 | 0.03 | ng/L (ppt) | ICP-SMS |
| Tantalum Ta | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Tellurium Te | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Terbium Tb | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Thallium Tl | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Thorium Th | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Thulium Tm | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Titanium Ti | <0.1 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Uranium U | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Vanadium V | <0.01 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Bismuth Bi | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Tungsten W | <0.005 | 0.02 | ng/L (ppt) | ICP-SMS |
| Ytterbium Yb | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Yttrium Y | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Zinc Zn | <2 | 3.3 | ng/L (ppt) | ICP-SMS |
| Tin Sn | <0.02 | 0.05 | ng/L (ppt) | ICP-SMS |
| Zirconium Zr | <0.005 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Silicon, Si | <30 | 190 | ng/L (ppt) | ICP-SMS |
| Bromine, Br | <5 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Phosphorus, P | <2 | 3.6 | ng/L (ppt) | ICP-SMS |
| Iodine, I | <0.2 | Under detection threshold | ng/L (ppt) | ICP-SMS |
| Sulphur, S | <20 | 36 | ng/L (ppt) | ICP-SMS |

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