

Case example of the measurement using Puric ω ultrapure water

(Analysis example of the latest triple quadrupole ICP-MS)

Case example of measuring trace metal by ICP-MS

Agilent technologies cooperated for the analysis for trace elements in Puric ω ultrapure water by using ICP-MS.

Analysis conditions

Analysis device : Agilent 8900 (manufactured by Agilent Technologies)
Analysis method: Sampling ultrapure water from the dispenser of Puric ω, and introducing it to ICP-MS (in continuous water sampling)

Analysis data of major elements by ICP-MS 8900

Element	Mass No.	DL(ppm)	BEC(ppm)
Na	23	0.08	0.13
K	39	0.03	0.04
Ca	40	0.04	0.14
Mg	24	0.01	0.01
Fe	56	0.33	<DL
Cu	63	0.01	0.06
Zn	66	0.16	0.26
Cd	111	0.02	<DL
Ni	60	0.03	0.08
Pb	208	0.03	<DL
Mn	55	0.02	0.03
Al	27	0.00	0.05
Cr	52	0.14	0.24
Ti	48	0.12	<DL

Element	Mass No.	DL(ppm)	BEC(ppm)
B	11	0.69	3.71
Li	7	0.05	<DL
V	51	0.01	0.01
Co	59	0.00	0.00
Ga	69	0.01	<DL
As	75	0.00	0.00
Rb	85	0.00	0.00
Sr	88	0.00	0.00
Zr	90	0.09	0.10
Mo	95	0.04	<DL
Ag	107	0.11	0.13
Cs	133	0.00	0.00
W	184	0.02	<DL
U	238	0.00	0.00

About the analysis results

As the latest ICP-MS makes the analysis of further ultratrace components possible, we can obtain the analysis result that shows ppt and ppq to the second decimal place level. The value is very low even for calcium which has a measuring difficulty by the effect of molecular ion and also boron which is difficult to reduce BEC, and that proves that Puric ω ultrapure water is the best as blank water.

*BEC includes the background derived from reagent and device.

If the Rinse port (A), which is a dedicated part of Puric ω, is used as an autosampler (I-AS) of ICP-MS, ultrapure water that is stable in low concentration can be supplied as rinsing water.

(Example of water quality)

Element	Mass number	Concentration (ppt)
B	11	2.55



Setting example of Rinse port (A)



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