

## Case example of the measurement using Puric ω ultrapure water

(Analysis example of the Triple Quadrupole ICP-MS)

### Case example of measuring trace metal by ICP-MS

PerkinElmer Japan cooperated for the analysis for trace metal in Puric ω ultrapure water by using ICP-MS.



NexION 5000

#### Analysis conditions

Analysis device : NexION5000 Multi-Quadrupole ICP-MS (PerkinElmer)

Analysis method : Ultrapure water is sampled from Puric ω and measured by ICP-MS

\*Calibration curve is created with 0.2% nitric acid added in Puric ω ultrapure water and, DL and BEC are calculated.

### Analysis Data of major elements by NexION5000

Element	Mass No.	BEC (ppt)	DL (ppt)	Element	Mass No.	BEC (ppt)	DL (ppt)	Element	Mass No.	BEC (ppt)	DL (ppt)
Li	7	<DL	0.0007	Co	59	<DL	0.0009	Ag	107	<DL	0.2
Be	9	<DL	0.1	Ni	60	<DL	0.2	Cd	111	<DL	0.06
B	11	<DL	1	Cu	63	<DL	0.009	In	115	<DL	0.006
Na	23	0.03	0.01	Zn	66	<DL	0.1	Sn	118	<DL	0.1
Mg	24	<DL	0.009	Ga	69	<DL	0.001	Sb	121	<DL	0.01
Al	27	0.03	0.01	Ge	74	<DL	0.03	Ba	138	<DL	0.008
P	31	4	2	As	75	<DL	0.05	Hf	180	<DL	0.02
K	39	0.06	0.02	Sr	88	<DL	0.002	Ta	181	<DL	0.009
Ca	40	0.03	0.02	Zr	90	<DL	0.009	W	184	<DL	0.03
Ti	48	<DL	0.04	Nb	93	<DL	0.02	Au	197	<DL	0.1
V	51	<DL	0.006	Mo	98	<DL	0.01	Tl	205	<DL	0.05
Cr	52	<DL	0.02	Ru	102	<DL	0.06	Pb	208	<DL	0.007
Mn	55	<DL	0.02	Rh	103	<DL	0.02	Bi	209	<DL	0.01
Fe	56	<DL	0.01	Pd	106	<DL	0.02	U	238	<DL	0.01

### About the analysis results

By “Multi-Quadrupole ICP-MS”, Puric ω water is proved to be of high purity as almost all elements shows ppq levels for BEC. Particularly, P show single-digit ppt, which is the element hard to be detected, and B shows extremely low, which is hard to reduce from ultrapure water. So, it is confirmed that Puric ω ultrapure water is suitable to blank water for Multi-Quadrupole ICP-MS.

\*BEC contains the backgrounds from air during dispensing, reagents and equipment, etc.



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<https://puric.organo.co.jp/en/>