

The total metal content of the bead suspension was established after acid digestion and was found not to be statistically different from those calculated from the mass per bead and bead number measured by SC-ICP-MS (Table 6).

Table 6. Total amount of metal in bead suspension after acid digestion.

Element	Values From Supplier (ppb)	Measured Values (ppb)
Ce 140	152.67	160.3 (7.4)
Eu 151	93.50	71.6 (7.6)
Eu 153	100.61	80.6 (8.0)
Ho 165	68.72	67.8 (8.4)
Lu 175	93.98	83.9 (8.1)

Conclusion

This work has shown that the patented Asperon spray chamber provides increased transport of micron-sized objects into the ICP-MS compared to traditional introduction systems. Coupled with the fast data acquisition capabilities of the NexION ICP-MS, the Asperon spray chamber has allowed for the quantification of masses from micron-sized objects down to the attogram per-bead level as well as providing accurate measurements of the number concentration of the beads per milliliter.

References

1. Single Cell ICP-MS Analysis: Quantification of Metal Content at the Cellular Level, PerkinElmer Inc., 2017.
2. Schaldach, G.; Berger, L.; Razilov, I.; Berndt, H., Characterization of a cyclone spray chamber for ICP spectrometry by computer simulation. *Journal of Analytical Atomic Spectrometry* 2002, 17, (4), 334-344.
3. Matusiewicz, H.; Slachcinski, M.; Almagro, B.; Canals, A., Evaluation of Various Types of Micronebulizers and Spray Chamber Configurations for Microsamples Analysis by Microwave Induced Plasma Optical Emission Spectrometry. *Chemia Analityczna* 2009, 54, (6), 1219-1244.

SC-ICP-MS Components

Component	Part Number NexION 1000/2000	Part Number NexION 300/350
Single Cell Micro DX Autosampler	N8150039	N8140039
Single Cell Sample Introduction Kit with Asperon Spray Chamber	N8150032	N8140032
Syngistix Single Cell Application Software Module	N8150321	N8150321