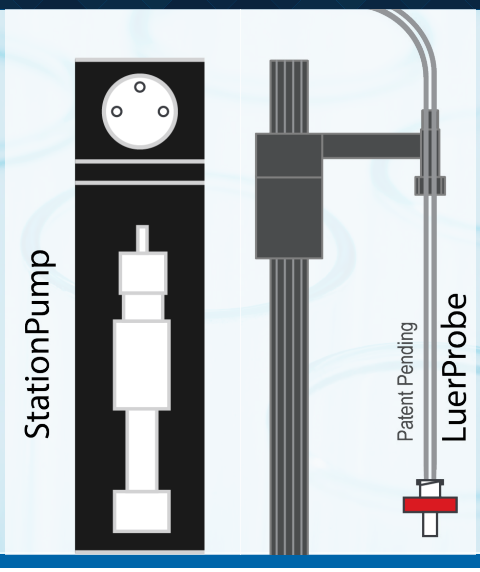
Elemental Scientific

*Automatic Aliquoting with **TRAX**Station and LuerProbe*



TRAXStation
Sample Aliquoting
Compact system prepares samples for multi-instrument analyses

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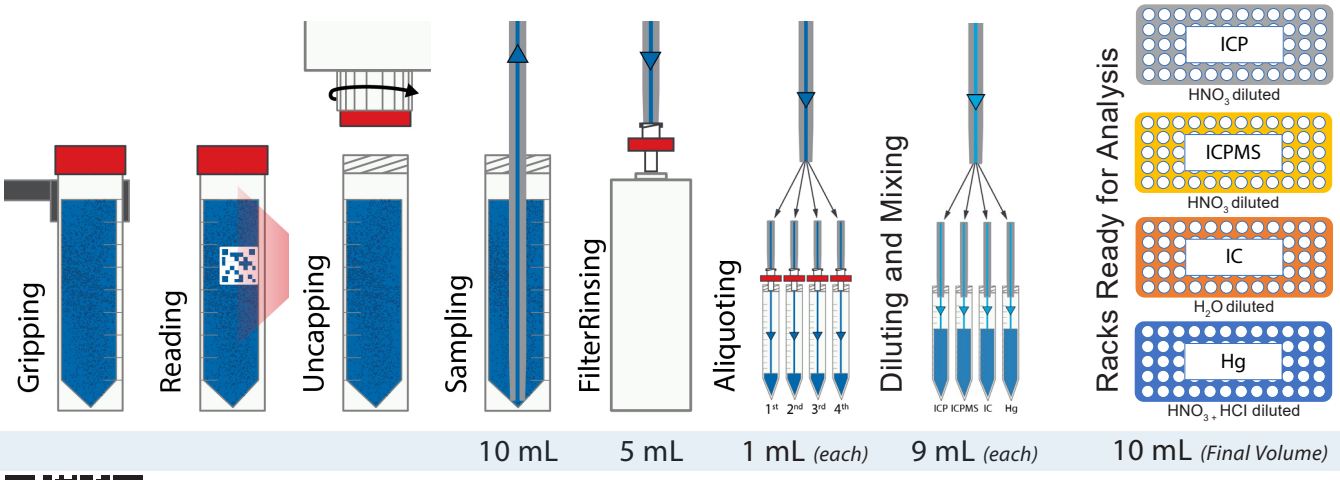
Automated Aliquoting and Filtration into Multiple Collection Vessels Using **TRAX**Station with LuerProbe

Synopsis

TRAXStation with LuerProbe prepares filtered aliquots of precise volume supporting sample preparation for multiple techniques such as ICP, ICPMS, IC, and mercury (Hg) analysis. For each incoming sample, **TRAX**Station automatically produces four 1 mL filtered (0.45 µm) aliquots in each of four vials distributed into racks destined for each corresponding analytical method. Each of the four aliquots is then automatically diluted for analysis. **TRAX**Station's procedure grips each incoming sample, reads the barcode, uncaps the vial, loads 10 mL of sample into the LuerProbe, engages a 0.45 µm filter, pre-cleans the filter, filters the sample, and dispenses the four 1 mL aliquots. The remaining unused sample is discarded. Each aliquot is diluted to a final volume of 10 mL using method-specific reagents and mixed. By automating uncapping, filtration, aliquoting, dilution, and mixing **TRAX**Station efficiently divides and prepares samples for multi-technique analyses with high reproducibility and precision. Manual procedures and errors are greatly reduced and consumable costs decreased by eliminating pipette tips and the need for initial filtrate collection tubes.



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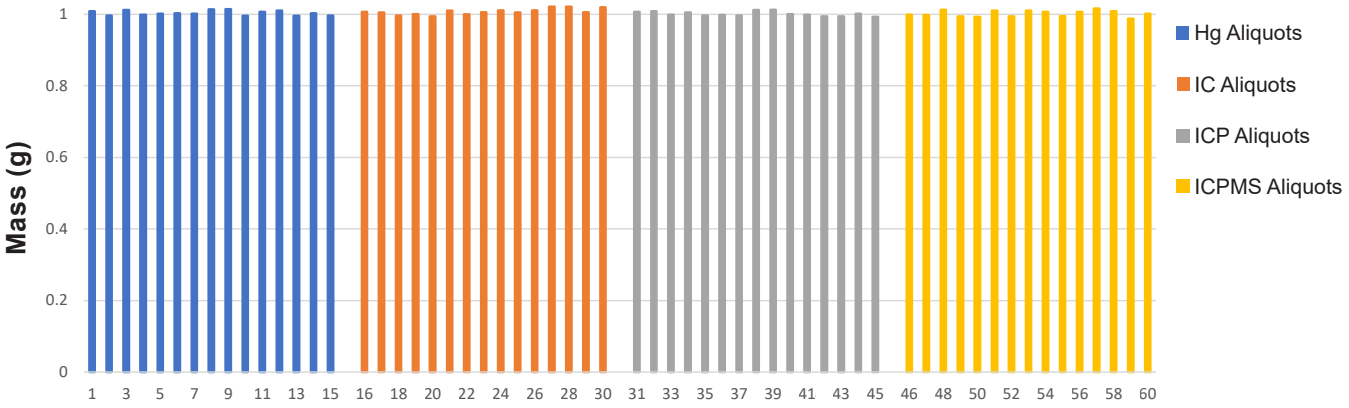
TRAXStation automatically prepares racks of samples ready for analysis. LuerProbe is used for sampling, filtering, aliquoting, diluting, and mixing each sample according to method-specific requirements for its target analytical platform.

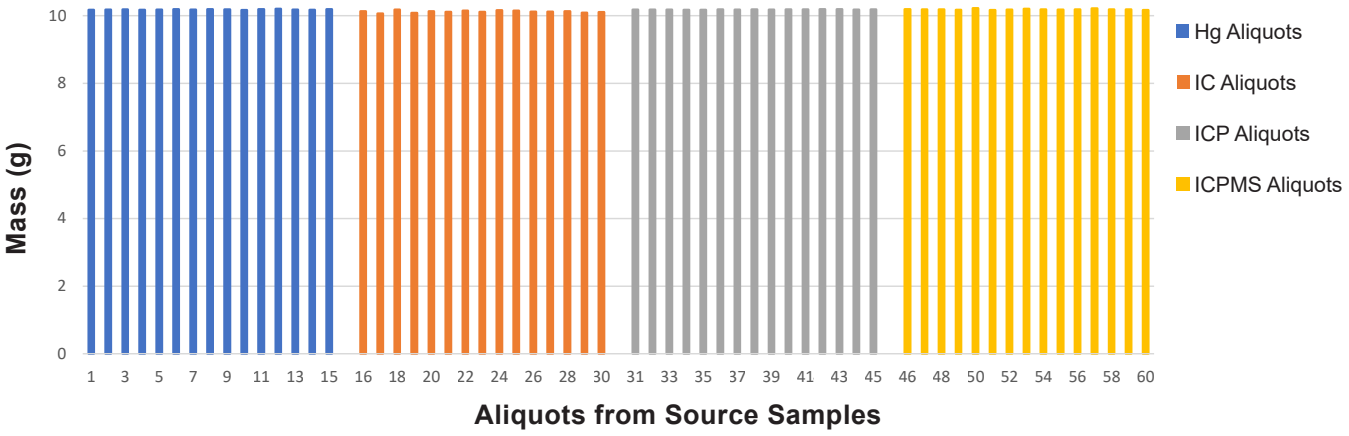
Precise Aliquoting by TRAXStation with LuerProbe

Reproducibility of Filtrate Volume (1 mL) Verified by Aliquot Mass



Automated aliquoting of filtrates using **TRAX**Station with LuerProbe. In this experiment, 15 source samples were each filtered into four 1 mL aliquots, totaling 15 aliquots per analysis type – and placed in separate racks to facilitate efficient transfer to their respective detectors. Average aliquot filtrate mass for group and RSD was as follows: Hg analysis – 1.004 g RSD 0.6%; IC – 1.007 g RSD 0.8%; ICP – 1.001 g RSD 0.6%; and ICPMS – 1.002 g RSD 0.8%. These results demonstrate the reproducibility and precision of **TRAX**Station's automated aliquoting and filtering process.

Reproducibility of 10 mL Final Prepared Sample Verified by Final Mass



Automated dilution of 60 1 mL filtrates – prepared from 15 source samples – to a final volume of 10 mL using multiple diluent matrices. For the 1 mL filtrates prepared for ICP and ICPMS analyses, 9 mL of 2% HNO_3 diluent was added; for IC, 9 mL of H_2O; and for Hg analysis, 9 mL of 1% HNO_3 and 1% HCl. All filtered and diluted aliquots showed 100% +/- 0.3% mass recovery. These results confirm **TRAX**Station's capability to consistently dilute samples to the final volume.