Electronic Supplementary Information for JAAS publication

A fast and robust direct solid sampling method for the determination of 27 trace, main and minor elements in soda-lime glass based on ETV-ICP OES and using a gaseous halogenating modifier

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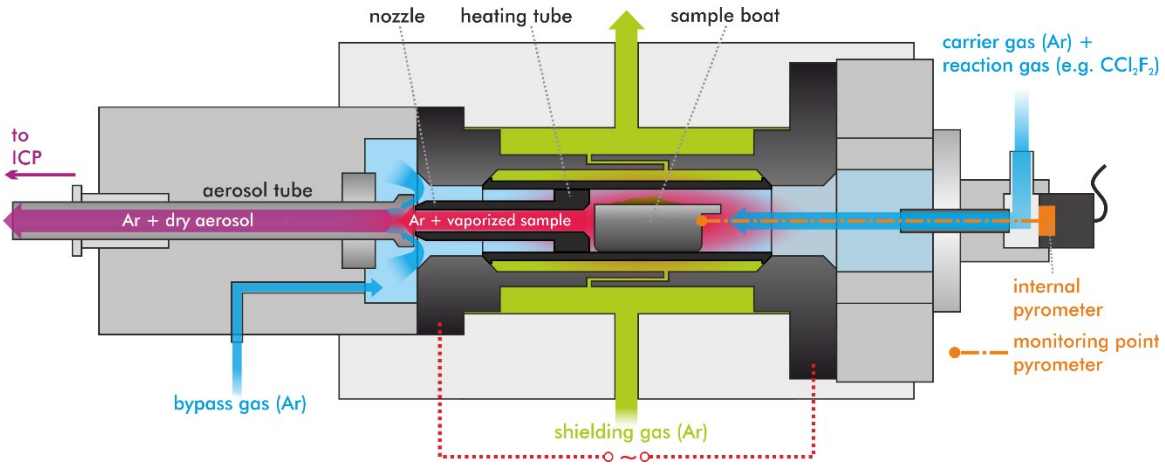

Figure S1 Schematic drawing of the electrothermal vaporization (ETV) unit coupled to an axially positioned plasma torch (according to reference[1])

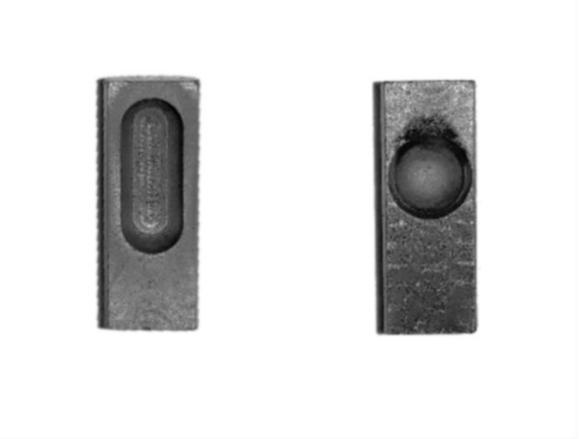

Figure S2 Comparison of types of sample-boats. Left: usual type; Right: "mini boat" with hemispherical cavity. This type was always used in this work.

Figure S3 Comparison of different types of graphite tubes. Left: “slimmed tube”; Right: “ETV tube improved”. This type was always used in this work.

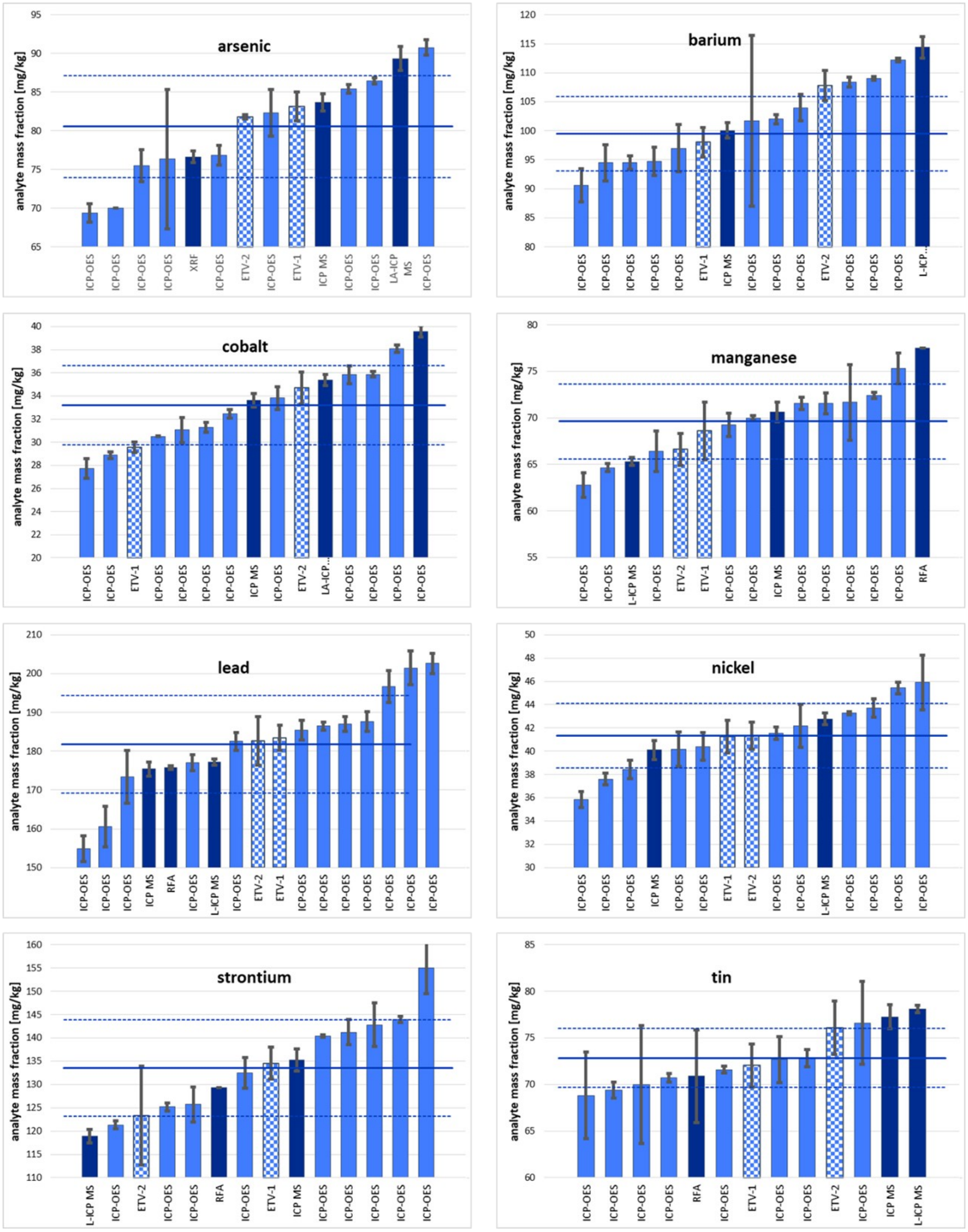

Figure S4 Accepted results of the certification of the soda-lime glass CRM BAM S005c, which were transmitted by participating laboratories and by using different analytical methods for the elements As, Co, Ni, Pb, Sn, Mn, Ba and Sr. The results achieved by using ETV-ICP OES are the blue white chess field bars. Continuous line: certified value MC; dashed lines: limits of uncertainty interval (MC ± standard deviation of all accepted laboratory mean values). Blue bars: ICP OES results, dark blue bars: results of other methods. The illustrations are based on the values given in[2]

References

1 T. Vogt, *PhD Thesis: Direkte Feststoffanalytik von Energierohstoffen mittels elektrothermischer Verdampfung in Kopplung mit Plasma-Atomemissionsspektrometrie, TU Bergakademie Freiberg*, 2016.

2 S. Recknagel, *Certification Report BAM-S005c Multielement Glass for XRF Analysis*, BAM Federal Institute for Materials Research and Testing, 2020.