



VAMAS

Graphene and Related 2D Materials

Technical Work Area 41

Project 10

Determination of the S, F, Cl and Br content of graphene powders by Combustion Ion Chromatography (C-IC)

Objectives

The aim of this project is to validate methodology for measuring the S, F, Cl and Br content of graphene powders by Combustion Ion Chromatography (C-IC).

The uncertainties associated with the measurement and data analysis will also be determined.

Background

Nonmetallic elements, including S, F, Cl, Br coming from raw materials or chemicals used during production process, are widely present in graphene powders. The content of nonmetallic elements has influence on the application of graphene powders.

C-IC is commonly used to simultaneously determine the contents of S, F, Cl and Br in widely differing matrices. The method is especially suitable for determination of total content of each element with different valence states in graphene powder.

Standardization Needs

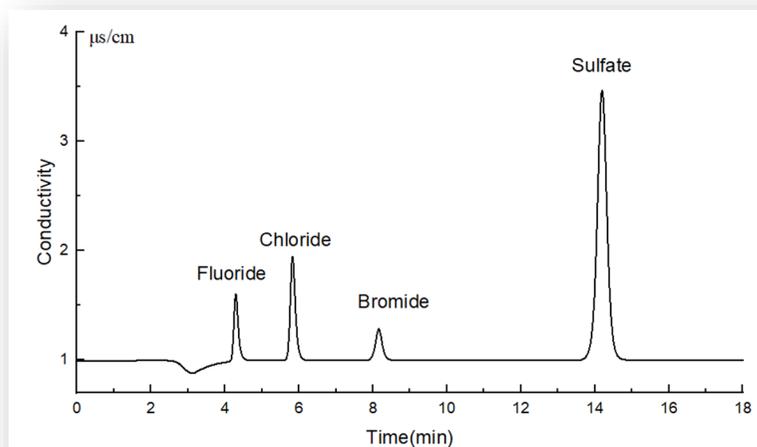
As industry uptake on this material increases, international standardization is critical to enable commercialization. Reliable, accurate and reproducible measurements are important due to the multiple production routes and producers of the material in order to maintain quality in manufacture.

Several standards are under development within ISO TC 229 or IEC TC 113, focusing on the measurements of key physiochemical or electrical specific properties of graphene. Measurement standard to determine S, F, Cl and Br content is an urgent need as one of significant and key chemical properties.

Work Programme

The samples will be prepared and delivered to each participating laboratory by the project leader.

CALL FOR PARTICIPATION



The developed protocol including sample preparation, measurement procedure and data analysis will be provided.

International Participation

Current participation includes volunteers from China and the UK. Additional volunteers for participation are welcome.

Deliverables and Dissemination

- VAMAS Technical Report.
- Publications in peer-reviewed scientific journals.
- Submission of drafts with validated data to be considered for future standardization.

Funding

Participants fund their own involvement in the project

Project Status

Project in progress. Samples ready for despatch to the participants. The duration of the project will be 16 months.

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