1. Scope and Application

1.1 The scope of this SOP covers how to operate the IRMS for certified users.

1.2 The applications of this SOP are for the Thermo Scientific Delta V Serice IRMS.

2. Summary of Method

2.1 This SOP describes how to 1) prepare samples, 2) prepare instrument, 3) set up sequence, 4) run samples, 5) clean up samples; and 6) data reduction.

Contents

3. Acknowledgements

4. Definitions

4.1 Term1: is...

5. Biases and Interferences

5.1 Biases and interferences can come from...

6. Health and Safety

6.1 Describe the risk...

Safety and Personnnel Protective Equipment

7. Personnel & Training Responsibilities

7.1 Researchers training is required before this the procedures in this method can be used...

7.2 Researchers using this SOP should be trained for the following SOPs:

- SOP01 Laboratory Safety
- SOP75A Becomming an IRMS User
- SOPXX Using the Metler WXTE

8. Required Materials and Apparati

8.1 Item 1 w/catalog number!

8.2 Item 2

9. Reagents and Standards

10. Estimated Time

10.1 This procedure requires XX minutes...

11. Sample Collection, Preservation, and Storage

12. Sample Preparation

12.1 You can start the instrument warm-up procesdures...

13. Instrument Warm-Up and Zero Enrichment Tests

13.1 Check gas tank and regulated pressures:
He?
O2?
N2?

Turning On the Instrument that has been Off

13.2 Make sure gases valves are turned on. Make sure compressed air is connceted.

13.3 check that the needle value is closed

13.4 Switch the system with MAIN SWITCH

13.5 Switch on the computer and start Isodat

13.6 Switch on pumps at the Control Panel

13.7 MS State panel, swithch on all heater you need...

13.8 In the Acessories toolobar of Isodata cline on the ion source...

13.9 The instrument will be stable in 24-48 hours.

13.10 Start the machine...

13.11 check the vacuum, the should be ??

13.12 Introduce Gas to the Continuous Flow System

13.13 Focus Settings

14. Prepare Sequence – Isodat

14.1 Open the Acquisition tool of Isodat software and open a new file and select the sequence icon.

14.2 Define the number of samples.

14.3 Select the appropriate method. If you do not have a prepared method, contact the manager for assistance.

14.4 Make sure Peak Center has a green check mark

14.5 Enter text to identify the sample in the "Identifier 1" column.

14.6 Make sure each sample has a method, you can use an autofill function to accomplish this.

15. Run Sequence

15.1 Click on the "Start" button.

15.2 Enter a file name, where the extension .seq is added automatically. The file convention used in the lab is:

YYYYMMDD_Project_SamplesIDs_Username.seq

16. End-of-Run Shut Down and Clean Up

16.1

17. Data Analysis and Calculations

18. QC/QA Criteria

19. Trouble Shooting

20. References

20.1 APHA, AWWA. WEF. (2012) Standard Methods for examination of water and wastewater. 22nd American Public Health Association (Eds.). Washington. 1360 pp. (2014).