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**Committee D02 on Petroleum Products and Lubricants
Subcommittee D02.03 on Elemental Analysis**

Research Report D02-1759

**Interlaboratory Study to Establish Precision Statements for ASTM
D7319-13, Test Method for Determination of Existent and Potential
Sulfate and Inorganic Chloride in Fuel Butanol by Direct Injection
Suppressed Ion Chromatography**

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1. Introduction:

Interlaboratory Study 698 was conducted to establish a precision statement for D7319, Test Method for Determination of Existent and Potential Sulfate and Inorganic Chloride in Fuel Butanol by Direct Injection Suppressed Ion Chromatography.

2. Test Method:

The Test Method used for this ILS is D7319-13. To obtain a copy of D7319, go to ASTM's website, www.astm.org, or contact ASTM Customer Service by phone at **610-832-9585** (8:30 a.m. - 4:30 p.m. Eastern U.S. Standard Time, Monday through Friday) or by email at service@astm.org.

3. Participating Laboratories:

The following laboratories participated in this interlaboratory study:

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4. Description of Samples:

There were 17 samples of varying targeted results used for this study. Each sample was supplied, prepared in duplicate by Madeline Jenni Sjodin and distributed by Dorothea Jeffery of GEVO. Below is a list of the samples with the corresponding description:

Stock solutions containing 5000 ppm tetrabutylammonium chloride in isobutanol, 1-butanol, and 2-butanol, as well as stock solutions containing 2000 ppm

tetrabutylammonium bisulfate in isobutanol, 1-butanol and 2-butanol were used to prepare samples at the following concentrations:

Sample A: Isobutanol containing 1 ppm Cl^- and 1 ppm SO_4^{2-}

Sample B: Isobutanol containing 50 ppm Cl^- and 1 ppm SO_4^{2-}

Sample C: Isobutanol containing 1 ppm Cl^- and 20 ppm SO_4^{2-}

Sample D: Isobutanol containing 50 ppm Cl^- and 20 ppm SO_4^{2-}

Sample E: Isobutanol containing 8 ppm Cl^- and 4 ppm SO_4^{2-}

Sample F: 1-Butanol containing 1 ppm Cl^- and 1 ppm SO_4^{2-}

Sample G: 1-Butanol containing 50 ppm Cl^- and 1 ppm SO_4^{2-}

Sample H: 1-Butanol containing 1 ppm Cl^- and 20 ppm SO_4^{2-}

Sample I: 1-Butanol containing 50 ppm Cl^- and 20 ppm SO_4^{2-}

Sample J: 1-Butanol containing 8 ppm Cl^- and 4 ppm SO_4^{2-}

Sample K: 2-Butanol containing 1 ppm Cl^- and 1 ppm SO_4^{2-}

Sample L: 2-Butanol containing 50 ppm Cl^- and 1 ppm SO_4^{2-}

Sample M: 2-Butanol containing 1 ppm Cl^- and 20 ppm SO_4^{2-}

Sample N: 2-Butanol containing 50 ppm Cl^- and 20 ppm SO_4^{2-}

Sample O: 2-Butanol containing 1 ppm Cl^- and 4 ppm SO_4^{2-}

Sample P: Ethanol Blank

Sample Q: Ultra-pure water containing 25 ppm Cl^- and 10 ppm SO_4^{2-}

5. Interlaboratory Study Instructions

Laboratory participants were emailed the test program instructions. For a copy of the instructions, please see Annex A.

6. Description of Equipment/Apparatus¹:

For information on the equipment/apparatus used by each laboratory, please see Annex B.

¹ The equipment listed was used to develop a precision statement for D7319-13. This listing is not an endorsement or certification by ASTM International.
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