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1 June 2019

**Committee D16 on Aromatic, Industrial, Specialty and Related
Chemicals
Subcommittee D16.07 on Styrene, Ethylbenzene and C9 and C10
Aromatic Hydrocarbons**

Research Report: D16-1068

**Interlaboratory Study to Establish Precision Statements for ASTM
D7977-19, Test Methods for Polymer Content of AMS (-Methylstyrene)**

**Test Method A- Determination Of Polymer In α -Methylstyrene Via
Spectrophotometer**

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1. Introduction:

Interlaboratory Study 1582 was conducted to establish a precision statement for D7977, Test Methods for Polymer Content of AMS (-Methylstyrene).

2. Test Method:

The Test Method used for this ILS is D7977-19. To obtain a copy of D7977, 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:

AmSpec Houston

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4. Description of Samples:

There were 6 samples of varying targeted results used for this study. Each sample was prepared and distributed by Xiawei Zhang of AdvanSix. All six of the samples were created and provided by Xiawei Zhang of AdvanSix.

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 D7977-19. This listing is not an endorsement or certification by ASTM International.
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7. Data Report Forms:

Each laboratory was provided with a data report form for the collection of data. A copy of the data is provided in Annex C.

Please note: The laboratories have been randomly coded and cannot be identified herein.

8. Statistical Data Summary:

A summary of the statistics calculated from the data returned by the participating laboratories is provided in Annex D.

9. Precision and Bias Statement:

9.1 An ILS was conducted which included 5 laboratories analyzing 6 samples 2 times. Practice E691 was followed for the design and analysis of the data. This ILS did not meet Practice E691 minimum requirements of six laboratories, four materials and two replicates. A sample of AMS directly off of a production unit was spiked with 0, 1, 2, 4, 8, and 15ppm polymer as specified in 7.4 and Section 10. The detailed results are given in ASTM Research Report No. D16-1068.

9.2 Repeatability

9.2.1 Results should not be suspect unless they differ by more than shown in Table 1. Results differing by less than r have a 95% probability of being correct.

9.3 Reproducibility results submitted by two labs should not be considered suspect unless they differ by more than R shown in Table 1. Results differing by less than R have a 95% probability of being correct.

9.4 Bias

9.4.1 Since there is no accepted reference material suitable for determine the bias in this test method, bias has not been determined.