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1 April 2018

**Committee D20 on Plastics  
Subcommittee D20.22 on Cellular Materials - Plastics and Elastomers**

**Research Report: D20-1271**

**Interlaboratory Study to Establish Precision Statements for ASTM  
D4875-18, Test Methods of Polyurethane Raw Materials: Determination  
of the Polymerized Ethylene Oxide Content of Polyether Polyols**

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**1. Introduction:**

Interlaboratory Study 1398 was conducted to establish a precision statement for D4875, Test Methods of Polyurethane Raw Materials: Determination of the Polymerized Ethylene Oxide Content of Polyether Polyols.

**2. Test Method:**

The Test Method used for this ILS is D4875-18. To obtain a copy of D4875, go to ASTM's website, [www.astm.org](http://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](mailto:service@astm.org).

**3. Participating Laboratories:**

The following laboratories participated in this interlaboratory study:

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**4. Description of Samples:**

There were 5 samples of varying targeted results used for this study. Each sample was prepared and distributed by Huntsman. Below is a list of the samples with the corresponding supplier:

1. BB23794- Glycerol/EO/PO (EO+PO > 6.5) mixed feed  
Provided by Huntsman
2. BB23796- EO/PO  
Provided by Dow
3. BB23797-Blend of PPG and PEG  
Provided by Huntsman and Dow
4. BB23798- DPG/EO/PO (EO+PO > 4.5)  
Provided by Huntsman
5. BB23799- Blend of PPG and PEG  
Provided by Huntsman

**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/Apparatus<sup>1</sup>:**

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

**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:**

**TEST METHOD A—PROTON NMR**

14.1 Table 1 is based on a round robin conducted in 2016 in accordance with Practice E 691, involving five materials tested by six laboratories. For each material, all the samples were prepared at one source, but the individual specimens were prepared at the laboratories which tested them. Each test result was a single determination. Each laboratory obtained two test results for each material.

14.2 Caution – The explanation of “r” and “R” is only intended to present a meaningful way of considering the approximate precision of this test method. Do not apply the data in Table 1 to accept or reject materials, as these data apply only to the materials tested in the round robin and are unlikely to be rigorously representative of other lots, formulations, conditions, materials, or laboratories. Users of this test method need to apply the principles outlined in Practice E691 to generate data specific to their materials and laboratory (or between specific laboratories). The principles would then be valid for such data.

14.3 Repeatability – Precision under repeatability conditions.

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<sup>1</sup> The equipment listed was used to develop a precision statement for D4875-18. This listing is not an endorsement or certification by ASTM International.

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