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29 July 1997

**Committee D16 on Engine Coolants
Subcommittee D16.07 on Styrene, Ethylbenzene and C9 and C10
Aromatic Hydrocarbons**

Research Report D16-1022

**Interlaboratory Study to Establish Precision Statements for ASTM
D6144, Standard Test Method for Analysis of AMS (α -Methylstyrene)
by Capillary Gas Chromatography**

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

COMMITTEE D16 ON AROMATIC HYDROCARBONS
AND RELATED CHEMICALS

RR: D16:

Interlaboratory Test Study for the Analysis of AMS (α -Methylstyrene) by Gas Chromatography (ASTM D6144)

Introduction: This study was performed in order to establish an ASTM Test Method for the analysis of AMS by gas chromatography. The method uses an internal standard to measure the level of impurities commonly found in AMS. The purity of AMS is determined by subtracting the total impurities (in wt %) from 100.

Test Method: Included is a copy of the original letter and information sent out by Mr. Burt Beitchman of Allied-Signal in 1992 plus a draft of the ASTM method prepared in 1996.

Participating Laboratories: Participants were as follows:

Mr. Burt Beitchman
Allied-Signal Inc.
Margaret & Bermuda Sts.
Philadelphia, PA 19137-1193

Mr. J. Frank Tate
Aristech Chemical Co.
P. O. Box 127
Ironton, OH 45638

Mr. Ralph Moore
Amoco Chemical Co.
2800 Farm Road 519 East
Texas City, TX 77592-0568

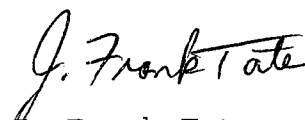
Mr. Jack Richardson
Dow Chemical Co.
Aromatic Monomers, B-2601
Freeport, TX 77541

Mr. John Griffin
Georgia Gulf Corp.
3503 Pasadena Freeway
Pasadena, TX 77501

Mr. Mark Robillard
Supelco, Inc.
Supelco Park
Bellefonte, PA 16823

Data and Summary: Included are the calculation of the effective carbon numbers, the theoretical response factors, the calculated values from each laboratory, and the statistics using E691 software.

Submitted by,



J. Frank Tate
Aristech Chemical Co.
July, 1997

Allied-Signal Inc.
Fibers Division
Margaret & Bermuda Streets
Philadelphia, PA 19137-1193
Telephone (215) 533-3000

June 9, 1992

Mr. Frank J. Tate
Aristech Chemical Corp.
U.S. Route 52
Ohio Furnace Road
Haverhill, OH 45636

Dear Frank:

At our last D-16 meeting in New Orleans, you had indicated a willingness to participate in a round robin on a capillary GC method for alpha-methylstyrene (AMS). At this meeting I had indicated the method would be one based on area percent. Because of some significant differences in response factors of some of the components, it was decided to modify the method to one that involves an internal standard.

Prior to conducting the round robin, as per recommended in E691, I am sending you a sample (SN 6154) for familiarization with the GC method. This sample is a standard which contains known levels of major impurities and n-octane added as an internal standard. I am also sending you a copy of the chromatogram obtained in our laboratory as well as the GC operating conditions and weight percents of each of the added impurities and the internal standard. Please store the sample in a refrigerator prior to running the sample.

As soon as you can run a GC employing the above conditions, please return a copy of your chromatogram and results to me as soon as possible.

Very truly yours,



B. D. BEITCHMAN

BDB:gpw

