

APPENDIX F

Residual Oil Analysis of Methanol Liquid

Analysis Report

AIR
PRODUCTS 

To: Bharat Bhatt Dept./Loc.: Proc. Eng. / A12A3
From: Dean Chin-Fatt Dept./Ext.: CRSD-ATC R3204/X3666
Date: 5 July 1995 Separations Laboratory
Subject: Residual Oil Analysis of Liquid Phase Methanol Reaction Product
Sample: See Table

cc: CS File; P.J. Clark, A.J. Di Gioia, LB File

SUMMARY

Thirteen samples of methanol (MeOH) reaction product from the Alternative Fuels Development Unit in LaPorte, TX were submitted for analysis. The methanol samples were analyzed for residual oil content using a method developed at the plant. The weight percent oil in each of the methanol samples are listed in the table below.

DATE	TIME	Wt. % Oil
5 June	0625	0.21
5 June	1500	0.21
5 June	1545	0.18
6 June	0000	0.20
6 June	1145	0.17
7 June	1700	0.13
8 June	0300	0.19
8 June	1100	0.14
8 June	1930	0.24
9 June	0600	0.18
10 June	1815	0.10
10 June	0515	0.09
11 June	0220	0.10

PROBLEM DEFINITION

The composition of the methanol produced during the June 1995 methanol run is monitored to determine mass balance data for the Liquid Phase Methanol Process. The bulk composition of the methanol samples were determined by gas chromatographic analysis at the LaPorte facility during the run. However, this gas chromatographic method is not capable of determining the residual oil content of the samples. The samples were submitted for analysis for residual oil to determine the full composition.

Request No.: 031263
Charge No.: ATTALTF22
Notebook No.: 11664-19
Data Captured: 30 June, 1995
Data Reported: 30 June, 1995

CS File No.: 1829
Analyst: DAC
Sample Received: 29 June, 1995
Data Analyzed: 30 June, 1995
File name: d:\WINWORD\REPORT\1829bhat.DOC

ANALYTICAL PROCEDURE

Residual oil content of the methanol samples were determined by weighing 25 ml. of each sample into vial of known weight. The vials were then placed in a nitrogen purged oven at 80°C, over night, to allow the methanol and other volatile components to evaporate. Any residual left after eight hours in the oven is assumed to be oil. The vials are then weighed again to determine the weight of any residue. The weight percent oil is determined by dividing the weight of the residue by the weight of the 25 ml of methanol multiplied by 100.