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PFA

To M. W. Williams At Piscataway Date Nov. 12, 1968

From H. B. Carr At Burlington Copy to P. F. Albanese

Subject VCM - Status Report E. Farber

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In telephone conversations with P. M. Reed on 11/7 and 11/8/68, the following points were discussed concerning our program for monitoring monomer:

1. It was pointed out that eleven cars were enroute for which we do not have gas chromatography analyses. These analyses are now being forwarded.
2. Following the four-day Houston plant shutdown which ended 10/14/68, the quality of monomer improved with only methyl acetylene and 1,3 butadiene exceeding our tentative specs. The methyl acetylene ranged from 5 - 7 ppm on 6 cars out of 31 as opposed to our spec. of 4 ppm. The 1,3 butadiene ranged from 2 - 6 ppm as opposed to our spec. of 1.5 ppm on the first 12 cars after 10/14/68. Thereafter, only 2 cars of 19 exceeded the 1,3 butadiene spec. at 2 and 1.6 ppm levels, respectively.

On 11/1/68, it was noted that the reported propadiene values jumped from the 20 - 40 ppm range to the 60 - 70 ppm (spec. 60 ppm) level. Paul stated that he has noted this and will follow propadiene closely. He feels that this may be an analytical problem with either his instrument or column.

3. Houston has reported an "unknown" component ranging from a trace to 42 ppm on 10 out of 31 cars since 10/14/68. Paul is coordinating analytical data with Conoco and Dow on the identification of this "unknown".

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4. Paul reported the results on a recovered monomer sample that we sent to Houston on 10/18/68. This recovered monomer from our homopolymer process during a period of "poor" monomer quality shipments is compared to a typical recovered monomer analysis that you reported in your memo to M. G. Caine, dated 10/2/68.

	<u>Tentative Spec.</u>	<u>Virgin (range for period)</u>	<u>Burlington Rec'd. VCM 10/18/68</u>	<u>MWW reported Rec'd. VCM</u>
Propane		< 1-290	162	
Propylene	20	23-148	204	200
Unknown - New			373	
Isobutane		< 1-50	110	
Propadiene	60	60-205	1401	440
Butane		1-47	66	
Butene-1	4	< 1-9	40	35
Methyl Acetylene	4	5-86	512	
Methyl Chloride		< 1-19	ND	1500
Cis-Butene-2		< 1-2	1	
1,3 Butadiene	1.5	1.6-3.0	ND	20
Ethyl Chloride (not confirmed)			4.7	
Vinyl Acetylene (not confirmed)			2.1	
Acetylene		ND	ND	100
Cyclopropane		ND	ND	

There are a few points to note from this data:

- a. A new "unknown" peak is generated in our process. This "unknown" is in a boiling point range of propylene, but is not acetylene or cyclopropane as suspected by Dow, as these components have different retention times than the "unknown". Paul will trap the peak and attempt a mass spectrographic identification.
- b. Propadiene, butene-1 and methyl acetylene concentrate in our recovered monomer, but propylene, cis-butene-2, and 1,3 butadiene apparently do not concentrate. A tentative conclusion is that these latter three impurities polymerize in our process.

The following action is planned:

1. A recovered monomer sample representing a period of "good" incoming monomer shipments (since 10/14/68) was forwarded to Paul Reed on 11/6/68 for analysis. These results will be compared to the 10/18/68 recovered sample to compare concentration effects of "good" versus "poor" virgin monomer.
2. Polymerization Research will be requested to run bottles on the following:
 - a. the two recovered monomer samples
 - b. a Conoco bomb sample
 - c. a sample with a high level of the first "unknown"
 - d. a sample of "good" quality virgin monomer that has been shipped since the plant shutdown.
3. Process Engineering has been requested to plot reaction rate history of 1730 and 1755 production from September 1, 1968 to the present to check for the correlation with trends in monomer quality. They have been given graphs to plot their data which already contain monomer analyses, light absorbance values, screen, and Tinius-Olsen results.

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