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INTER-OFFICE MEMO **TENNECO CHEMICALS, INC.** JUL 10 1968

To M. W. Williams At Piscataway Date July 9, 1968

From J. C. Fisher At Flemington Copy to M. G. Caine
H. B. Carr
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Subject MVC QUALITY PROGRAM

Paul Reed of the Pasadena, Texas MVC plant passed on information he received from a Columbia, S. A. plant to which we have shipped vinyl chloride monomer. They claim that MVC containing water will, on extended (two-month) storage, produce resin with a poorer heat stability. They claim that hydrolysis products of acetaldehyde and HCl are found in this monomer.

Of course, Tenneco Plastics has found that water and HCl will lead to the presence of soluble iron salts which can affect heat stability and result in erratic reaction kinetics with Lupersol 11 (with ferrous iron). Wacker Chemie has reported that iron salts in the polymerization will promote gels in the subsequent resin.

There have also been reports from Burlington in the past that free water was found when taking a tankcar MVC sample for Q. C. testing.

Paul Reed says that all MVC goes thru an Alumina dessicant at the end of their process. We do not know at this time the extent to which water can be present in tankcars as received by us. We do not know whether hydrolysis products and/or iron salts are indeed the cause of our present difficulties.

It is somewhat difficult to sample monomer from the bottom of the 40,000-gallon tankcars due to the position of the valve. The Pasadena plant has recently experienced a fire during sampling. They attribute this to the use of a piece of Tygon tubing between the tankcar valve and the sample bomb. Although the bomb was grounded, they believe the Tygon tubing allowed a static charge to build up which sparked during purging of the bomb. Paul Reed is evaluating a fixed sample pipe for each tankcar which will be equipped with half of a quick-fit coupling--the other halves being on the sample bombs. If this is practical, we will be notified so as to provide matching half-couplings for our bombs.

The following steps will be taken in this program which will be coordinated by H. B. Carr with the cooperation of Manufacturing and other R & D sections.

1. Assess our present VCM tankcar sampling techniques to assure safety. Consult our safety supervisor on this item.

2. Establish a system to monitor for the presence of free water when sampling tankcars and at our VCM storage tanks.

3. Analyze for the presence of trace water on representative tankcars, MVC storage tanks and MVC being pumped to the reactors. An analysis for aldehydes, iron and acidity should also be considered.

4. Arrange with Don Weintraub and plant management to be notified on anticipated delivery dates of MVC from other producers. Arrange to evaluate the effect of these monomers on resin color stability.

5. Analyze for the presence of trace metals in both good and poor color resin. A & E's atomic absorbence spectrophotometer would be a good instrument for this study.

6. Expedite the expenditure justifications required for the purchase of the bottle polymerizer and gas chromatograph scheduled for installation in the expanded Q. C. laboratory.

If the recipients of this memo have any additional suggested approaches, please contact H. B. Carr so they may be considered in this program.

J. C. Fisher

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JCF/lac