

INTER-OFFICE COMMUNICATION
TENNECO HYDROCARBON CHEMICALS DIVISION

DATE February 14, 1969

TO: FILE
FOR: MR. FRANK L. PADGITT
FROM: MR. D. C. LEE
RE: VCM QUALITY

Since August, 1968, we have been furnishing Tenneco Plastics with a chromatographic analysis of the light ends in each car of VCM shipped to them. During this period the light ends in the monomer varied appreciably. Methyl acetylene ranged from 4 ppm or less (within tentative specifications) to about 40 ppm. Propadiene ranged from about 40 ppm (within suggested specs) to a high of about 225 ppm. Other light ends varied in a similar manner.

Mr. M. W. Williams' memo of January 22, 1969, transmitted Mr. H. B. Carr's status report on the possible correlations between monomer quality as reported in these analyses and their own plant performance. Although they did not draw final conclusions from the correlations, they did observe trends relating poorer plant performance with higher levels of light ends.

The G. C. analyses have also provided us with the necessary information for trying to control the quantity of light ends in the VCM. Unfortunately, time has proven that the present plant is not capable of maintaining a consistently low level. Two factors seem responsible. First, the quantity of impurities in the acetylene feedstock varies appreciably with rate and with the degree of cleanliness of the acetylene purification system. Second, the removal of these impurities in the VCM plant is a function of catalyst activity because the only way the impurities can be removed is by reaction with hydrogen chloride. The only period that we produced VCM with low levels of light ends was when all reactors happened to have fresh catalyst. This is not a normal state of affairs, and we are now consistently exceeding the suggested specification on light ends with no way to reduce this level.

If Tenneco Plastics concludes that capital expenditures are justified to reduce the level of light ends impurities, the most practical way will be the installation of a light ends distillation column. A preliminary design indicates that the installation will require about \$100,000 capital and will result in about \$60,000/year additional costs (including \$30,000 value of VCM lost with the light ends). However, this amounts to only 0.03¢/lb of VCM.

We will proceed to firm up the design and cost of the light ends column on the assumption that its installation will be requested.

DCL/bw

