

MONSANTO COMPANY
Plastics Division
Springfield, Mass

Date: April 1, 1965

To: W. W. Alexander

EVALUATION OF MONSANTO VCM
VARIATIONS IN OPAION 440

Texas City is providing four cars of Monsanto VCM, each representing a variation in production operations. This memo outlines the plan for evaluating these cars in Opalon 440 polymerization. We would appreciate any comments on this plan from those receiving this memo.

OBJECTIVES

1. To determine the effect of VCM production variations on 440 latex stability.
2. To determine whether any of these variations is satisfactory for further evaluation in 440.

EVALUATION CRITERIA

Acceptable VCM should give a coagulation frequency of 0 to 2 per 100 batches of 440, and a median of less than 375# lumps per batch of 440. These criteria have been satisfied in 1965 while using Union Carbide VCM, and during February and May of 1964 while using Monsanto VCM.

Evaluations in this experiment will be based on an initial run of four 440 batches, followed, if not rejected, by running out the remainder of the car in 440.

These tests will lead to classifying each car as acceptable for further evaluation, borderline unacceptable, or unacceptable, as follows:

<u>No. of Batches</u>	<u>Coagulation</u>	<u>Lumps (Median)</u>	<u>Decision</u>
4	1 or more		Unacceptable
4	0	>515#	Unacceptable
4	0	≤515#	Evaluate rest of car

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<u>No of Entries</u>	<u>Coagulation</u>	<u>Lumps (Median)</u>	<u>Decision</u>
ca. 12	2 or more		Unacceptable
12	<2	>460#	Unacceptable
12	<2	380 to 460#	Borderline Unacceptable
12	<2	<380	Acceptable for further evaluation

Specific arrangements will be made with Texas City for further evaluation acceptable VCM.

MONOMER VARIATIONS

The four VCM variations to be tested in this experiment are as follows:

1. Water surge
2. High styrene oxide usage
3. Low product column bottom temperature
4. High product column bottom temperature

T. E. Shirley commented on selection of these particular variations in his memo to J. W. Kengable on 3/23/65: "VCM Quality-- Paste Resin Later Instability Problem." The "water surge" car is already at Springfield, and evaluation is planned the week of April 5. The other three cars are now being produced at Texas City using new instrumentation for improved product column control. They will be evaluated in late April - early May, as soon as 440 schedule permits.

MONOMER HANDLING

Two methods of running the desired experiment are available. One is to empty #1 tank, pump into this tank the entire car to be evaluated, transfer enough VCM for four batches, make the decision, then transfer the rest either to paste or suspension area. The alternate is to pump twice directly from the car to 84 VCM tank to make the first four batches, make the decision, then transfer the rest either to #1 tank for paste (after emptying the tank) or to another tank for suspension.

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MONOMER HANDLING

Both schemes will give good VCM segregation and are technically acceptable. The one that best fits operating needs will be selected in each case.

MONOMER SAMPLING AND TESTING

Samples will be taken in glass bombs from each car, examined for appearance, and tested for HCl. If Springfield Control Lab has a suitable GPC test at the time, GPC analyses will also be run on each car. Additional samples will be taken and held for possible Research evaluation - details to be developed with Research.

Texas City data will be available on each car.

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