

CONFIDENTIAL

INTER-OFFICE MEMO TENNECO CHEMICALS, INC.

APR 3 - 1972

TO M. W. Williams AT Flemington DATE March 28, 1972
FROM H. B. Carr AT Flemington COPY TO P. Gawason
SUBJECT Quality Control and A&E H. R. Horton
Monthly Report - March, 1972 E. J. Hourihan
E. L. Kanyok
F. W. Kanzler
M. C. Spalding
File

RESIN PLANTSRaw Materials1. DHW-80 (F. W. Kanzler, H. R. Horton)

On 3/22/72, a meeting was held in Burlington with P.E., C. W. Johnston and M. W. Williams to develop an approach for characterizing DHW-80 variables that affect plant processing. The program will emphasize a "sample library"; namely, samples will be retained and when plant upsets occur, these samples will be characterized analytically to define differences vs. control samples. Part of the program will be to define optimum sample storage conditions. June is targeted for an initial status report.

2. Lauroyl Peroxide (F. W. Kanzler)

Noury (Cadet) has been approved and Lucidol has been reapproved as sources of supply for lauroyl peroxide. Approval is based on extensive laboratory testing that includes assay and bottle polymerizer kinetic runs. The material will be monitored in the plant by Q.C. and P.E.

3. Methocel (F. W. Kanzler, E. L. Kanyok)

High metallic counts in PD-01118 (390 resin) for Nixon prompted a review of 90HG100 Methocel quality. Other Methocel types are filtered through a 5 micron filter, but the 90HG type is not. Metallic counts ranged between 200-600 particles per pound, with ca. 40% imbedded and 60% as free metallic particles. Jim Holton, Dow Q.C. Manager, was advised of these intolerable counts. Mr. Holton reviewed Dow manufacturing records and found that these lots were manufactured prior to installation of magnetic separators. As an interim step, Q.C. fabricated a lab-scale Syntron setup for removing metallic from the 90HG100. Dow has promised to step up their perusal and correction of metallic sources in their process.

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Finished Resin1. Hatfield (M. C. Spalding)

A joint Q.C., Resins Group and P.E. effort has resulted in the necessary improvements in resin to meet Hatfield requirements. Steps that were taken and supported by Q.C./A&E testing were revisions in charging procedures (eliminates glassy beads) and a reduction in Methocel (coarsened the particle size and tightened the distribution). Hatfield currently will be receiving 225/16R resin meeting customer instruction sheet requirements on dry blend and screen.

2. Control Charts (M. C. Spalding, F. W. Kanzler, E. L. Kanyok)

Control charts for dispersion resin have been completely revamped in that rheological properties will now be plotted as log distributions. Control charts in Burlington and Flemington are now up-to-date and will be utilized to alert Manufacturing of process shifts. As part of this program, a process capability and specification review was held in Flemington on 3/28/72 to review Flemington plant control and areas requiring Manufacturing and/or P.E./Q.C. attention.

General1. Nixon FDA (H. B. Carr)

On 3/17/72, S. Frankel, Foam and Plastics Division Q.C. Coordinator, visited Flemington to review FDA procedures and guidelines with W. C. Champion and H. B. Carr. The Nixon FDA program was reviewed extensively and attention was directed to BUDRUG, CMS and general handling of FDA related matters. It is felt that as a result of this meeting, Nixon will now be able to handle FDA coordination. One further step that is anticipated will be a visit by Messrs. Champion, Carr and Frankel to BUDRUG and CMS.

2. R&D Time Accounting (H. B. Carr)

An R&D time accounting system adaptable to time share computer operation was devised and circulated to R&D managers for comments. A meeting will be held early in April and the finalized system will be put into effect.

3. Display Cabinet (R. J. Eckman, H. R. Horton)

A display cabinet was installed in the Burlington Q.C. laboratory hallway. The idea behind the display cabinet is to show Burlington employees the many interesting end use applications of our resin products. As an initial display, the manufacture of a phonograph record has been shown from dry blend to record stamper, to initial cut and to the final product. Response from plant personnel has been gratifying. We feel that this approach should be expanded to other areas.

COMPOUND PLANT

1. National Lead (P. Gawason)

Two separate meetings were held with National Lead to review quality requirements of dibasic lead stearate (DS-207) and tribasic lead sulfate (CR-1). National Lead has assured us that we will receive record grade quality stabilizers. Record grade is based on an "agglomeration count." Our purchase orders now stipulate an agglomeration count maximum of 5 in each product. Compound Q.C. does not currently have the capability of checking this agglomeration count. Compound Development is working in support of Q.C. to develop an appropriate test to assure that optimum quality National Lead stabilizers are utilized in our formulations. The importance in developing this capability of course is our recent complaints at All Disc Records wherein we feel that subquality National Lead stabilizers contributed to plateout.

2. Raw Material Control (P. Gawason)

In addition to the poorly defined specifications for National Lead stabilizers, we feel that the entire raw material specification area must be upgraded. A program has been coordinated with Purchasing whereby form letters will be sent to all current approved vendors requesting: 1) specifications (not typical properties), 2) test methods, and 3) a statement of FDA sanction status where applicable. Purchasing will maintain a score card on vendor responses and it is planned that by June, Compound Q.C. will have significantly upgraded raw material specifications.

3. Hardness Testing (P. Gawason)

As a result of an effort to correlate hardness testing between Compound Q.C., R&D, and Industrial Plastics, it was noted that the Q.C. Constant Temperature Room had a considerable variation in temperature (22-29°C). A

temperature recorder has been purchased and installed to monitor temperature in the CT Room on a 24-hour basis. Based on these recordings, Maintenance will be requested to improve the temperature control. The recordings will also indicate the veracity of testing results.

4. Standard Product Listings (P. Gawason)

Standard finished product lists were issued during the month. R&D and Marketing have been requested to comment on deletions and/or additions of the standard compounds.

5. Personnel

Mr. H. Evans bid successfully on a mill operator's job and transferred from the laboratory on 3/10/72. Mr. R. Horvath transferred into the laboratory on 3/18/72.

A&E

1. Monthly Time Allocation (M. C. Spalding)

As in February, a considerable portion of A&E effort (>60%) was allocated to Flemington plant support. Physical testing accounted for 20% of A&E's allocation and this was distributed 100% to Plastics Development support. A physical testing summary is attached.

2. Flemington Plant Support (M. C. Spalding)

A joint program with P.E., Resins Group and Q.C./A&E was directed at resolving Flemington plant particle size problems. Highlights of action taken were:

a. Glassy Particles

Previously characterized by A&E as high molecular weight, nonabsorptive particles, glassy particles have been eliminated via an LOP procedure which revised the reactor charging step (lower water temperature at charge and delay of heatup until all the VCM is charged).

b. Particle Size Control

While the above LOP corrected the glassy particle problem and reduced gels, particle size distribution and loose bulk density dropped off (roughly 6-8% on +80/+100 and ca. one pound on LBD) across the product mix. We feel confident that these shifts have been corrected via Methocel reductions. Of prime significance in this effort, A&E has developed a procedure in

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in which ^{Methocel} ~~Methocel~~ is added to slurry samples to facilitate rapid drying. Utilizing this technique, A&E was able to provide P.E. and the plant with early data on particle size to hone in on optimum Methocel reductions.

c. Demineralized Water

A testing program for demineralized water has been instituted for the Flemington plant. We were particularly interested in the iron level since it is known that iron at 2 ppm will chemically interfere with Methocel and hence reduce its protective colloid properties. Thus far, iron content has been in good control varying from 0.01-0.20 ppm.

d. Methocel Solution Makeup

A&E is continuing the effort to characterize optimum Methocel makeup procedures. Utilizing a viscosimeter approach, Methocel solutions will be prepared at different temperatures, different concentrations, and once prepared will be subjected to elevated temperatures to assess gelation characteristics.


H. B. Carr

HBC:em

Att.

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DATE: 3-20-72

PHYSICAL TESTING - MARCH 1972

Work Requests Received (Feb. 22 to March 20 incl.)

Product Development Group

Resins	3
Flexible Compounds	12
Rigid Compounds	1
Rheology	1

Additives Group

Flexibles	1
Total	18

Work Requests Completed (Feb. 22 to March 20, incl.)

Product Development Group

Resins	3
Flexible Compounds	10
Rigid Compounds	2
Rheology	0

Additives Group

Flexibles	1
Total	16

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Physical Testing Report - ~~March~~ 1972

CSL & Product Development Chemicals Division General

<u>VP No.</u>	<u>Compound</u>	<u>Reason for Test</u>	<u>No. of Specimens</u>	<u>Calculated Properties</u>	<u>Tensile</u>
2896	Rigids- Injection Molding	Product to meet ASTM Type I & II requirements	45	156	15.5
2901	Flexibles- Injection Molding, Electrical	Shipping Approval	6	24	1.5
2902	Flexibles- Injection Molding	Product Development	6	24	1.5
2903	Resins - 1730 with Competitive Resins	Comparison with Developmental Copolymer Blending Resins	166	861	26.0
2904	Flexibles- Wire Insulation	Tensile Properties Improvement	18	63	2.5
2907	Rigids- Injection Molding	Product to meet ASTM Type I & II requirements	20	56	7.5
2912	Flexibles- Wire Insulation	Tensile Properties Improvement	15	81	5.5
2913	Flexibles- Wire Insulation	Confirmation of Lab. mixes vs Plant Mix	110	192	7.0
2915	Resins - Blending Resins	Evaluation of Production Batch of High Acetate Blending Resins	40	224	7.0
2916	Flexibles- Wire Insulation	Confirmation of LMP Mix Tensile Properties	6	24	1.5
2917	Flexibles- Unit Sole (Competitive)	Evaluation of Competitive Tensile Properties	6	24	1.5
2920	Flexibles- Wire Insulation	Tensile Properties Improvement	10	54	2.5
2921	Flexibles- Wire Insulation (Non-UL)	Compete with Goodrich	48	216	6.5
2923	Resins - Blending Resins	Evaluation of Competitive Blend Resins	45	215	8.0
2924	Flexibles- Unit Sole (Competitive)	Evaluation of Competitive Tensile Properties	6	24	1.0
2932	Additives- Flexible Compounds	Evaluation of Experimental Polymeric Plasticizers	55	231	9.5
Totals			532	2499	104.5

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