

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE MEMORANDUM

To: G. B. H. Speed

Date:

February 5, 1969

From: D. V. Lowe

Copies:

Re: Progress Report
PVC Production
January 1969

The following paragraphs will serve to briefly summarize the month's process improvement activities and report future plans.

Dryer Improvements - Fine Particle Size Resins

Engineering is now preparing a firm estimate for installation of new 600 psig steam coils and necessary piping on the south drying line to permit faster processing of fine resins. A new primary writeup will be progressing over the next few days as needed information becomes available. This project will be justified on dryer-limited fine particle size resins only.

Revision of Rotary Dryer and Centrifuge Speeds

The south Bird centrifuge has been speeded from 1200 RPM to 1400 RPM. Subsequently, the south rotary dryer was slowed from 4.35 RPM to 3.63 RPM to increase resin retention time. Until two non-operative air heating coils were recently replaced with operative units, not much rate improvement was detected. Since installation of good coils, however, the drying rate of PVC 6180 has been greatly improved. No fine resins have been dried as yet. The overall improvement must be attributed to the combination of centrifuge and dryer changes as each individual change was made during the same period of abnormal air heater operation. It was noted, though, that fine particle resins were drying 1.5 to 2.0 GPM faster, on the average, immediately after the dryer slowdown than immediately before. A new dryer drive sprocket and centrifuge sheave will be put on order so that like improvements can be incorporated in the north drying line. The drying rate improvements discussed in this paragraph do not negate need for those proposed by the first paragraph. Fine resins are still dryer limited and general purpose resins are now more reactor limited.

AP00046153

Agitation Improvement in PVC Blend Tanks

Two 4-blade, pitched blade stainless steel turbine impellers are due to be delivered by Chemineer in early February. These will be installed in No. 3 blend tank and effects on agitation and in-lot consistency studied. If successful, identical impellers would be purchased for our other PVC slurry blend tanks. No motor changes are required.

Bulk Transfer System Improvements

At the last moment, the manufacturer's representative reversed himself and stated that our exhaustor blowers would not pull greater vacuum with increased power input. Therefore, the existing 20 HP motor was not replaced as had been planned. However, two large dacron bags have been received and are in use as railroad bulk car exhaustor bags. No problems have been encountered, but only PVC 6180 and PVC 1225 have been thus loaded to date. Transfer rates with the large dacron socks replacing the railroad dust collectors will be studied more closely when PVC 1200 is loaded. Only costly revision of blowers and lines, along with upgrading of bulk collectors, seems to offer extensive rate improvements for many types.

Reactor Rupture Disc Performance

Our program of silicone grease application on all newly installed reactor rupture discs appears to have been successful. Buildup on the discs is reduced, disc life is greater, and product quality has not been adversely affected. A one-gallon can of the grease has been purchased from Dow-Corning Corporation, and we continue to coat all new discs.

Survey of Automatic Bag Palletizer

A preliminary cost estimate indicated about \$40,000 investment for necessary machinery to automatically stack and palletize our finished PVC bags, thus allowing considerable labor reduction. Investigation of economics revealed that the payout of investment would require approximately four years. The economics of such a process revision will be re-examined should labor costs rise substantially in the near future.

Study of Anti-Foam Agents for PVC 6180

Reduction of foaming in the stripper by 6180, 3185 and Pearl types would allow shorter stripping times and thus a faster production rate. Several anti-foam additives are being evaluated in the laboratory in unstripped 6180 slurry. Two of them, AF-66 and Colloid 680, show considerable promise.

AP00046154

Study of Anti-Foam Agents for PVC 6180 (Cont'd)

Although slurry without additive would foam after 20 seconds of air purge, samples with either additive took approximately 15 minutes to foam. A lower level of concentration of AF-66 was required for results comparable to a higher level of Colloid 680. Resin analysis proved normal and further tests have been scheduled. Meanwhile, a letter has been written to suppliers requesting information on pricing, supply containers, and delivery.

Investigation of Dual Catalyst Systems

Examination of special charges of various resin types which contained both KC and CC shows that shorter cycle times may sometimes be accomplished when polymerization is at elevated temperature, but too many drawbacks tend to temper favorable judgment of this: (a) results are not consistent, (b) improvements which are consistent are not as great as the 45 minutes/batch hoped for, (c) not enough of our resin types are reacted at a sufficiently high temperature for the dual system to be effective, (d) the dual system is more expensive than a single catalyst system, and (e) most of our types are already under 9 hours and within the effective range of good KC activity. The most important item for us to remember is that if any new PVC resin is developed which is polymerized at high temperature and exhibits very long cycle times with KC only, then dual systems should be investigated.

Study of Hot-Water Charging in PVC Bottles

A further attempt to reduce reactor cycle times of most types is the investigation of feasibility of charging pre-heated well or DM water to the reactor prior to charging VCl. The water is heated to 8 or 9°F higher than the desired running temperature and charging of cold VCl causes a composite temperature at or slightly below the running temperature. Thus, if necessary pre-heating equipment were purchased, about 45 minutes of heat-up time could be saved after VCl charging on many types. PVC 1230, 2200, and 2250 have been "hot-charged" to date, and there were no adverse quality effects. Costs for purchase and installation of heating stations on north and south water headers are being investigated. When this procedure is used in connection with KC catalyzed types, a small increase in KC must be observed to replace that catalyst which decomposes in the hot water before the VCl monomer can be charged. The cost of this catalyst increase is only about \$0.60 per batch while the time savings is much more valuable.

AP00046155

Water Meters on Reactor Charge Water Headers

Several water metering systems with totalizing and automatic cut-off features have been investigated and their costs reported. Such meters would help eliminate some manual effort and provide more automatic control of charging operations. The cost of such systems is moderate and could be included in any future proposal for expenditures to upgrade related areas of the process. Some such metering system could be attached to a "hot-charging" water heating station, for example.

Caustic Scrubber for Stripped VCl Monomer

We have briefly discussed a scrubber on the VCl lines from strippers to suction of recovered monomer compressors with R&D, but have not as yet initiated a full investigation. The need exists for removing acetic and hydrochloric acids from the stripped monomer prior to introduction to the compressors to prevent internal corrosion. During February, we will look at this more closely and try to come up with a recommendation for equipment and chemistry to do this. An alternative suggested by R&D is to simply neutralize the PVC slurry while in the stripper, but VCl may breakdown to acids after this point.

Inspection of South Bird Centrifuge

Bird Machine Company was contacted by engineering to ascertain why the new solids effluent gutter seems to produce contamination. A service representative was sent to the plant to inspect the machine and recommend changes. His most important recommendations were, a) obtain plows to better conform to the gutter, with proper clearances, b) revise the strips inside the bowl and buildup the edges of the screw conveyor to lessen bed depth and improve de-watering, c) rebuild the wipers on the exit end by welding, d) relocate slurry feed within the feed compartment to reduce resin carryover to the wash compartment, and e) analyze dark resin taken from the wash compartment. The wash compartment build-up contained iron which inferred contamination of our wash water feed.

Reactor Building Ventilation

A survey of condition and location of all reactor building ventilation equipment was conducted (along with the sprinkler system), and much of it was found to be inoperative. It has since been decided that all fans and exhaust blowers on the first and second floors will be repaired and set to blow out of the building while on the third floor, wall fans will blow out and the ceiling duct blower will blow into the floor.

AP00046156

Stainless Steel Rotex Screens

A stainless steel screen with hole opening identical to our present 100 mesh Nitex screen was used during a PVC 8200 run. It was installed on the normal wooden screen frame and grounded to the base of the rotex with stainless steel wire mesh strips to help dissipate static charge. No anti-static spray was used. The 8200 screened extremely well, no tailings were made, and no steam was sprayed into the rotex. A static-charge detector found only low charges were being built up. Although performance was good, life of the screen was poor. It was broken and useless by the end of the run. It is felt that the stainless steel screen was not tensioned properly because of lack of canvas edging so that the mesh was weakened by vibration fatigue. Three new stainless steel screens with canvas edging are on order from Orville-Simpson for further trials. If these screens can be used successfully, we could purchase larger quantities of them for use until our old rotex units are eventually replaced. The advantages to their use are greater throughput and less tailings.

D. V. Lowe
D. V. Lowe

AP00046157

To: C. L. Wallace Date: February 5, 1969

From: D. J. Mann Copies:

Re: Monthly Summary
PVC Research & Development
January 1969

1. A report was issued on the 6180 run made in December 1968, in which bulk density control was a problem. The report recommended that, in view of the difficulty encountered in preparing a stable suspension, no significant recipe modifications be attempted until a pilot plant study of this system can be completed.

2. A procedure is being worked out between R&D and Production whereby data on recipe changes and their effects can be communicated to the R&D Department on a timely basis.

- Literature covering both active and expired patents was collected on emulsion PVC technology to serve as a guideline for future work in this area.

- AP00046158**

OPERATIONS (Cont'd)

of lots 4040 and 4065, were shipped in late January for plant trials. Lot 4065 has been accepted for production, and another 350 pounds of lot 4040 has been ordered for further testing. Two additional lots have also been screened for pre-shipment sampling. (Reference 2)

5. Samples of two lots of 9250, designated for shipment to Elm Coated Fabrics, were analyzed by an independent testing laboratory and found to have a metal content an order of magnitude below earlier samples. No explanation for this difference is available at this time. Both lots were approved by Elm Coated, and one 40,000 pound truckload (lot 3926) was shipped on January 24. (Reference 3)
6. A detailed report titled "Escambia Saran Technology" has been compiled by Research and Development.
7. The following work was accomplished in Technical Service during January:

Customer Complaints

a) Complaint #38

Wiman Manufacturing returned 93,580 pounds of 156,320 pounds of PVC 2225, shipped on December 18, 1968, due to excessive "plate-out". Technical Service prepared a detailed summary of the specifications of all lots shipped to Wiman since April 1967, both accepted and rejected, along with metal analyses where available. No correlation has been found between the property data and the acceptability or non-acceptability of a given lot. Although plate-out is normally associated with excessive metal or inorganic content, the metal content of the returned material was found to be an average value for all lots (10) tested.

A sample of acceptable competitive material (Ethyl 225) has been requested through Sales. (Reference 4)

AP00046159

OPERATIONS (Cont'd)Customer Complaints

b) Unnumbered Complaint

Zapata Industries and Ohio Sealer reported difficulty in using dry-blends of PVC 2250 during the manufacture of liners for bottle caps.

Studies by the Zapata and Escambia laboratories gave data which supported the conclusion that a high static charge was the cause for the abnormal behavior of the resin which occurs only sporadically. Recommendations were made that R&D approve all future lots of 2250 designated for Zapata or Ohio Sealer and that the grounding of the finishing system downstream of the Rotex screens be double-checked. (Reference 5)

Technical Service Requests (TSR's) and Customer Inquiries

a) TSR-817-Tenneco

10-R resin was evaluated versus PVC 2170 and a report prepared. (Reference 6)

b) Twelve other customer requests/inquiries were handled.

Samples

A total of 53 PVC resin samples (378 pounds) and one dry-blend sample was sent to 28 customers.

FACILITIES1. Pilot Plant

The PVC pilot plant is nearing completion. All the major pieces of equipment and instrumentation have been received, with the exception of the drying oven. A monomer line is being run from the plant to the pilot plant storage tanks. All the water, nitrogen, air and steam lines are installed. A second centrifuge has been located and will be mounted adjacent to the one already installed.

Operations are planned to commence on a limited basis during the week of February 10.

AP00046160

FACILITIES (Cont'd)

A pilot plant planning report was issued outlining the research projects to be studied. (Reference 7)

2. Research & Development Building

The laboratory benches are currently being installed in all three laboratories. This work will be completed by mid-February.

Delivery of the explosion-proof motors for the polymerization baths has slipped and is now rescheduled for mid-February. Polymerization bottles have been ordered.

PERSONEL

1. Two technicians joined R&D during January. One has been assigned to the pilot plant where he has made important contributions to the final plant layout. The other, although originally hired for the pilot plant, started working in the Technical Service Laboratory and has indicated a desire to be assigned there on a permanent basis.

2. Two candidates for the position of Technical Service Supervisor visited the plant for interviews. Both were rated favorably for the job, and decisions on offers are currently being made.

FUTURE PLANS

1. Two lots (80,000 pounds) of PVC 9250 will be manufactured using deionized water for the purpose of comparing its metal content with PVC 9250 manufactured with untreated water.

2. Rescreening of PVC 2185 for Armstrong Cork will continue.

3. Two batches of PVC 2170 (R. V. = 1.75) will be prepared following the current 6180 run in order to determine whether a very low-gel 2170 resin can be prepared by having it follow a copolymer run.

4. The next PVC 2185 run will be closely monitored by R&D to insure the manufacture of bottle-grade resin acceptable to Armstrong Cork.

5. Planning studies leading to refinements in the 5-year R&D Plan will be undertaken.

AP00046161

FUTURE PLANS (Cont'd)

6. Pilot plant operations will commence and studies begun on Micro-Pearl process development.
7. Laboratory rearrangements will be completed.

D. J. Mann

D. J. Mann

- Reference 1 Memo to D. J. Mann from F. L. Riddle, Jr. regarding "Production 6180, 12/21/68 - 12/29/68", dated January 6, 1969.
- Reference 2 Memo to D. J. Mann from P. R. Browne, regarding "Armstrong Cork PVC 2185", dated January 22, 1960.
- Reference 3 Memo to D. J. Mann from P. R. Browne, regarding "Elm Coated Fabrics PVC 9250", dated January 24, 1969.
- Reference 4 Memo to D. J. Mann from P. R. Browne, regarding "Wiman Manufacturing Company, Complaint #38, Bulk PVC 2225", dated January 29, 1969.
- Reference 5 Memo to C. L. Wallace from D. J. Mann, regarding "Zapata/ Ohio Sealer Complaint on PVC 2250", dated January 28, 1969.
- Reference 6 Memo to F. G. Mendrey from P. R. Browne, regarding "TSR 817, Improved Tenneco 10-R (Cary)", dated January 10, 1969.
- Reference 7 Memo to D. J. Mann from F. L. Riddle, regarding PVC Pilot Plant", dated January 10, 1969.

AP00046162

Cary

MINI-SAFE

AGRICULTURAL CHEMICALS DIVISION

MONTHLY REPORT

February, 1969

AP00046163

PERSONNEL

AP00046164

ESCAMBIA CHEMICAL CORPORATION

Interoffice Memorandum

To: Mr. T. L. Carey

Date: March 6, 1969

From: E. M. Spurlock

Re: Monthly Report - Personnel Department - February, 1969

PERSONNEL

Activity for the Month

<u>Division</u>	No. of Employees <u>1/31/69</u>	Feb. <u>Addit.</u>	Feb. <u>Separa.</u>	No. of Employees <u>2/28/69</u>	Feb. 1969 <u>Budget</u>
Executive	4	0	0	4	4
Accounting & Credit	48	5	1	52	57
Plant Laboratories	40	0	1	39	50
Plant Admin. & Process	207	6	5	208	219
Plant Engr. & Maint.	125	1	0	126	139
Personnel & Safety	13	0	1	12	13
Purchasing & Traffic	33	4	3	34	34
Sales - Ag. Chemicals	159	11	2	168	201
Sales -Ind.Chem. & PVC	<u>15</u>	<u>1</u>	<u>1</u>	<u>15</u>	<u>18</u>
Total Escambia	644	28	14	658	735

<u>Carroll Construction Company</u>	No. of Employees <u>1/31/69</u>	No. of Employees <u>2/28/69</u>
Office	2	2
Maintenance		
Insulators	3	3
Mechanics	8	8
Yardmen	2	2
Trashmen	2	2
Laborers	5	7
Janitors	6	7
Painters	<u>8</u>	<u>8</u>
Total Maintenance	34	37

AP00046165

Monthly Report

-2-

March 6, 1969

PERSONNEL (Cont'd.)

<u>Carroll Construction Co.</u>	<u>No. of Employees</u> <u>1/31/69</u>	<u>No. of Employees</u> <u>2/28/69</u>
PVC Laborers	8	7
Area B Laborers	31	36
Railroad Crew	<u>1</u>	<u>1</u>
Total Carroll Construction	76	83
	<u>644</u>	<u>658</u>
Grand Total	720	741

We had a total of 85 walk-in applicants, 66 applications were issued and 18 were received by mail. Forty-seven applicants were interviewed and 41 were tested. Two hundred ninety one (291) resumes were received by mail.

SAFETY

The Corporation worked approximately 105,000 man-hours during the month.

The approximate man-hours and the days worked to date without a lost time injury are as follows:

<u>Division</u>	<u>Man-hours</u>	<u>Days</u>
New York Office	446,000	2,765
Sales	117,000	130
Pensacola Plant	91,000	34
Corporation	126,000	34

Following areas established new Safety records:

Amines Area completed one year without a disabling injury.
DNT Plant completed two years without a disabling injury.
Pilot Plant completed three years without a disabling injury.

Medical Section

The Medical Section treated 17 injuries for Escambia and 7 for Carroll, performed 8 pre-employment and 21 annual physicals and gave a total of 12 immunization injections.

TRAINING

We held two Trackmobile classes in which three operators were licensed.

We held one Forklift class in which two operators were licensed.

AP00046166

EMPLOYEE RELATIONS

Two (2) 5-year service awards were presented.

One (1) 10-year service award was presented.

Glaucoma Eye Clinic was held on February 20, 1969 by the Santa Rosa County Health Department for employees over 40 years of age. We had 21 employees whose eyes were tested at this clinic.

Mr. V. T. Gammell, Technician in our Quality Control Laboratory at Pensacola died.

We participated with Monsanto's Pensacola Plant in an area survey of nonexempt wages.

We participated with Armstrong Cork in comparison of employee benefits for nonexempt employees in Pensacola area.

LABOR RELATIONS

The ICWU continues to work at a low key at Monsanto's Plant. Monsanto's Decatur, Alabama Plant has scheduled an election in the near future. If this plant should go union, I am sure the organizers will leave Decatur and return to Pensacola to work on the Pensacola Plant.

INSURANCE

I met with Messrs. Holt, Hendricks and Murphy of Continental Insurance Company on loss which involved two tank cars from our plant and the L & N freight engine.

Mr. Leroy Clinton, a laborer at our Albany Distribution Center, died after leaving work on July 24, 1968. After a thorough investigation of this claim, we could not find any evidence of any accident which contributed to his death but the widow employed an attorney to prosecute the claim. Since there was no evidence of what caused his death and since he was engaged in the mixing of toxic pesticides, the insurance company deemed it advisable to settle this case out of court rather than go to trial. Their attorneys felt that they would lose the case because of lack of evidence. The case was settled for a total payment of \$ 4,500 and it was stipulated that there was no liability on the part of Escambia or the insurance company. This case could have cost us approximately \$ 17,000 if we had gone to trial and if the court had ruled against us.

AP00046167

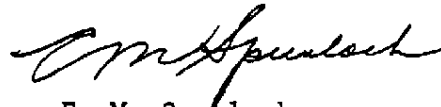
INSURANCE (Cont'd.)

We paid a total of 65 claims under our Group Hospitalization program which amounted to a total of \$ 14,662.36 during the month of February.

We settled the following claims during the month:

One Manufacturers Output Insurance claim covering burglary at Collins, Georgia Farm Service Center in the amount of \$ 2,013.50.

One Manufacturers Output Insurance claim covering burglary at Americus, Georgia Farm Service Center in the amount of \$ 637.31.



E. M. Spurlock

EMS:kc

AP00046168

PLASTICS AND RESINS

MONTHLY REPORT

FEBRUARY 1969

AP00046169

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE MEMORANDUM

To: T. L. Carey

Date: March 5, 1969

Copies:

From: C. L. Wallace

Re: PVC Monthly Summary
February, 1969

SUMMARY

Total shipments for the month were 5,067 M lbs. of prime resin, with substantial shipments being made during the last eight days of the month. This probably resulted from customers anticipating that the industry would raise prices on March 1. Specialties accounted for 1,405 M lbs., of which 930 M lbs. were copolymer PVC 6180. A loss of \$5M was sustained for the month, but an improvement over 1968 of \$49M. Freight costs and selling expense had a combined unfavorable effect of \$13 M.

Competitive price information continued to become available; 15 producers (including Escambia) have committed themselves to the 11¢ (bag)-10.5 (bulk) general purpose resin price and four more state they are going to. Whether or not these prices will stay firm may take 30 - 60 days to determine.

Our inventory situation on VCI monomer continues tight, as does the status of purchased PVC, and it is not estimated by the supplier that conditions will return to normal before late March. The basic problem is stated to be in the co-producer's monomer plant.

In the production area, operations were financially unfavorable by \$4 M, with production of 3,624 M lbs. An increase in the production rate of PVC 6180 was obtained, and production of PVC 4185-SP was again successfully demonstrated.

In the R&D area the problem of continuously making an acceptable bottle resin (PVC 2185) for Armstrong has not yet been solved. Further work is under way in the pilot plant.

AP00046170