ESCAMBIA CHEMICAL CORPORATION

PLASTICS & RESINS

Monthly Report

December - 1969

AP00046458

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE MEMORANDUM

To: T. L. Carey

Date: January 14, 1970

Copies:

From: A. R. Adams/V. J. Grande

Re: PVC Monthly Report
December, 1969

SUMMARY

The Plastics Division generated $10,000 income before taxes in December for a cumulative, fiscal year-to-date loss of $8,000 before taxes as against the budgeted loss of $103,000 - a $95,000 improvement over budget. This is largely attributed to favorable production variances and lower than anticipated R & D costs.

Sales volume for December was 96% of budget and it reflects an excellent selling job in the face of major volume losses of 590M lbs. at normally steady accounts. The bulk of this reduced business was at Nixon-Baldwin due to a labor strike and Robbins because of its inability to meet liberal credit conditions. With either of these pieces of business, sales would have been at or above budget.

The year-to-date average selling price is 11.53 cents per pound versus the budget of 11.68. The effect of the price increase initiated on November fifteenth has not developed sufficiently to identify at present. The prognosis for the price sticking is good on the whole, but we anticipate limited exceptions.

Efforts to fortify the price increase by building inventory coupled with production volumes in excess of budget and a slow-down in automotive and construction have produced a critical inventory situation. Sales will have to achieve volumes in excess of production capability to alleviate the present condition. Off-grade sales nearly doubled in December as projected.

Southbridge Plastics made its first truckload purchase of PVC 6180 and looks very promising. This is in line with sales strategy to broaden the customer list for this and other product types. Also, Goodyear has resumed its purchase of PVC 2185 for bottles and could reach levels comparable to Kerr Glass' purchases. We continue to be stymied in attempts to make bulk shipments to Phillips.

Credit and collections look to be in order with the exception of the Robbins situation which is constantly in view.

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The sales agent agreements for the Midwest and West Coast have been terminated and the product inventory in Los Angeles has been sold on a basis to end the warehouse expense.

Mr. Jack Davidson has joined the Marketing staff as a Project Manager-Market Development for plastisols and saran.

SPECIFIC DETAILS

Marketing

December sales volume was 3,798 M lbs. or 96% of the budgeted 3,960 M lbs., which upon analysis shows an excellent selling job to overcome 590,000 lbs. of outages, most of which were at the normally steady Nixon-Baldwin and Robbins accounts. Detailed below are the major outages and the counterbalancing overages to result in the 96% of budget actual.

Volume Analysis

Reduced Volumes over Normal M Lbs.		Increased Volumes over Normal M lbs.	
Nixon-Baldwin	280	Harte and Company	60
Robbins	180	General Tire	40
Kerr Glass	50	Goodrich	40
Jarrow Products	30	Plastic Calendering	80
Clopay	50	Southbridge	30
		USM	90
		L.A. Whse & Misc. Small Consumers	90
Reductions	590	Increases	430

The major volume accounts appear to be on target thus far in January with the probable exception of Robbins. Sales expects to achieve budgeted volume and price for the upcoming month.

Coincidentally, the fiscal year-to-date volume performance is also 96% of budget - 12,184 M lbs. versus 12,690 M lbs. This outage is expected to be overcome during fiscal 1970.

The price increase initiated in mid-November continues to look promising although it did not manifest itself in December. The impact of this should be seen in January even though very few exceptions to the increase are realistically anticipated.

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Southbridge Plastics' first T/L purchase of PVC 6180 is most encouraging as is Goodyear's accelerated purchases of PVC 2185 for bottles. Goodyear promises to be as important in this application as Kerr Glass which is pressuring Escambia on price and volume - no surprise. Creative Packaging has progressed to plant scale evaluation of PVC 2185 for bottles also. The solution to the Phillips bulk shipment problem continues to elude us.

PVC inventory is at a crucial level because of intentional hedging in the market place for higher prices at a later date and the continued volume overage in the plant. This will be given top priority in the next few weeks.

Production

The favorable Production variance was a reflection of producing 4,573 M lbs. versus the budgeted 4,200 M lbs. January is also expected to be favorable but on a smaller scale.

A used 5,000 gallon glass-lined reactor has been purchased to provide intermediate capability for producing 5-6 million pounds of PVC (or some saran) prior to the new plant installation.

Technical Development

R & D, in cooperation with Production, successfully completed a one-batch plant trial of a candidate micropearl for fusion. Lab evaluations are encouraging and limited field testing will commence in January.

V. J. Grande

VJG/ic

AP00046461

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE MEMORANDUM

To: Mr. T. L. Carey

Date: January 9, 1970

Copies:

From: A. K. McMillan

Re: PVC Monthly Report
December, 1969

The PVC plant continued to operate at the high production rates that have been maintained for the past few months. Minimum maintenance, reactor downtime and off-grade production resulted in a prime production of 4,573 M lbs. as compared to the 4,200 M lb. budget.

Cost variance was $23,650 favorable as compared to the $19,000 predicted because of higher than forecasted production. Year to date variance is $70,650 favorable. Production for January is estimated at 4,500 M lbs. and variance at $18,000 favorable. A small production loss will be incurred in January to install a reglassed reactor.

Production exceeded shipments by 1,168 M lbs. in December and increased plant inventory to 6,741 M lbs. An additional inventory increase of approximately 800,000 lbs. is forecasted for January. At month end off-site storage in the Pensacola area totalled 2,227 M lbs.

Sales forecasts for the next several months will be reviewed during January to determine if production rate cuts will be required to control inventory levels.

The second stainless steel blend tank was installed in January. Automatic sampling installations were also completed on both product lines.

An RFE was prepared requesting $15,830 to conduct a trial cleaning of the reactors using the DuPont solvent cleaning process. If successful, this cleaning method is calculated to yield a 11% return on investment.

A 5,000 gallon used glass-lined reactor was purchased in January. This is the only satisfactory used reactor we were able to locate and we exercised a purchase option before a sale was finalized to another customer.

A. K. McMillan

AP00046462

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE MEMORANDUM

To: Mr. A. K. McMillan

Date: January 2, 1970

Copies:

From: G. B. H. Speed

Re: PVC Production Report
December, 1969

SUMMARY

Production of prime resin was 4,573 M lbs., exceeding budget by 373 M lbs. Tailings and off-grade totaled 197 M lbs. or 4.1% of production.

Storage space for finished product continues to be a problem. Production exceeded shipments by 1,168 M lbs. resulting in an inventory of 6,741 M lbs. Off-site storage in the Pensacola area consists of 1,579 M lbs. at Gulf City and 648 M lbs. at the Port Authority. Inventories are forecasted to increase by 800 M lbs. in January.

Monomer efficiency continues slightly below budget at 94.5%. Reactor availability was 86.3%.

During the month the two new stainless steel blend tanks were installed. Automatic samplers were also installed in each product line under CE 6939. The production of PVC-6180, a co-polymer, was successfully made on the north line with less than normal off-grade. The use of a proven antifoam agent allowed production on the north line which has a smaller stripping vessel than the south line.

A trial batch of PVC-4185M micropearls was produced at the request of Research. The batch processed easily and dropped cleanly.

Productions and variances for December and January are as follows:

	December	January
Production (prime), M lbs.	4,573	4,500
Variance (favorable), $	(23,650)	(18,000)

Production for January will be down by about 75 M lbs. during the replacement of No. 2 reactor with a reglassed vessel.

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STATISTICS

	December		Year to Date	
	Actual	Budget	Actual	Budget
Prime Production, M lbs.	4,573	4,200	13,422	12,470
Off-Grade Product, M lbs.	197	252	546	748
% of Total	4.1	6.0	3.9	6.0
Bulk Production, % of Prime	44.5	42.0	42.9	42.0
VCl Efficiency, %	94.5	95.0	94.5	95.0
Reactor Availability, %	86.3		85.2	
Reactor Downtime, %				
Cleaning	9.2		7.7	
Scheduling Charges	1.9		1.6	
Changing types	0.4		0.7	
Dryer Maintenance	0.1		0.3	
Low Drying Rates	0.2		0.5	
Maintenance	0.6		0.5	
Miscellaneous	1.3		3.5	
Total	13.7		14.8	

OFF-GRADE AND TAILINGS

Off-Grade

Type	Quantity	Reason	% of Total Production
8217	108 M	Too coarse.	2.3
6180	24 M	High sed. No.	0.5
Tailings	45 M		0.9
Floor Sweeps	20 M		0.4
			4.1

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DISCUSSION

Operations for the month were routine with a minimum number of upsets and maintenance problems. A total of 14 different types were made in 24 separate runs.

The only major problem encountered during the month was with the production of PVC 8217. Out of six lots produced only one passed the particle size specifications. The problem has been referred to Research.

An experimental batch of PVC-4185M micropearls was charged at the request of Research. No problems were encountered during production. Agitation was sufficient during the entire cycle.

The production of PVC-6180 was switched to the north line in order to reduce the high sediment off-grade product. This reduction was believed possible since the north line product collector contains less filter bags where cross-contamination can occur. The production was successful with the use of an antifoam agent which reduced the foaming tendency of PVC 6180 that previously prevented use of the small north line stripper.

In the area of process improvement the following major projects were worked on during the month:

1. Automatic product samplers were installed in both the north and south product lines.

2. An RFE was prepared requesting $15, 380 to conduct a trial cleaning of reactors using tetrahydrofuran.

3. An evaluation of centrifuge wash water quantity and temperature was completed. No improvements in capacity or product quality was found over present operations.

4. New PVC-impregnated nylon boots were installed on the rotex screens. The new boots are less expensive, should last longer and eliminate a source of contamination.

G. B. H. Speed

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ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE MEMORANDUM

To: Mr. G. B. H. Speed

Date: January 2, 1970

Copies:

From: D. V. Lowe

Re: PVC Process Improvements
Progress Report - December, 1969

December progress on PVC plant process improvements is reported in the following sections:

REACTION SYSTEM

Solvent Cleaning of PVC Reaction Vessels

An RFE was prepared for funds to conduct a cleaning trial of PVC reactors with tetrahydrofuran (THF). Although such a trial, costing $15,380, would itself realize no immediate return on investment, a future THF solvent cleaning and recovery system would yield 11.1% return on investment in the existing plant or 21.2% return in the expanded (110 MM lbs./yr.) plant.

Automation of Reactor Drop Valves

Yarway was requested late in December to expedite delivery of quotes on pneumatic and manual gear-operated devices for automation of our PVC reactor bottom ram valves. As soon as this information is received (expected January 5) a cost estimate and RFE will be prepared for automation of these valves.

Process Water Charge Pumps

New pump impellers of sufficient diameter to increase charge water flow to PVC reactors by approximately 50% have been received in the plant. They will be installed soon.

Reactor Building Exhaust Fans

A cost estimate has been prepared for connecting all air exhaust and make-up fans in the reactor building electrically so that they may be started simultaneously. In January an RFE will be prepared for funds to accomplish this interconnection.

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Estimation of New 5,000 Gallon PVC Reactor

Preliminary sketches of the expanded process flow and locations of process and utility tie-in points for installation of a new 5,000 gallon PVC reactor were made. The sketches were transmitted to the Drafting Department for finalizing whereby they will be useful in evolution of a firm engineering cost estimate for this project.

Reactor Wash-Out Bag

The new wash-out bag constructed of wool felt was received and is successful in containing loose polymer when hooked to the bottom of a reactor during cleaning operations. A new bag, however, of improved design was put on order.

CEA 6914 - "Additional Monomer Compressor"

The piping drawing for installation and interconnection of major equipment items for this project was checked and revised to allow addition of needed valves. Valving will be such that the Peco filters as well as any of the three future compressors can "spare" one another in service.

FINISHING SECTION

Replacement Collector Bags

Most of the filter bags in the north PVC product collector were changed out for the new dacron style bags prior to a production run of PVC 6180. The bags performed well with the result that only 24,000 pounds of off-grade resin was produced due to high sediment number.

Evaluation of Centrifuge Wash Efficiency

A report was issued during the month which evaluated and summarized the effect of variations in centrifuge wash water temperature and rate upon quality of resins produced. It was shown that, at least under the conditions of the test and with the particular resins evaluated, most physical properties of the resins did not vary significantly under changing wash water conditions. It appeared, however, that oven heat stability of most resins was better when washed at lower temperatures.

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New Rotex Screener Accessories

Shipment of new rotex inspection port covers made of nylon was scheduled for December 31. These new covers will reduce PVC "dusting" to the atmosphere from the rotex units.

New transition boots made of PVC - impregnated nylon were installed above and below the south rotex screener replacing rubber boots. The new boots are performing well and will result in a cost savings via elimination of the older style units.

New Automatic Resin Sampler

One newly purchased "Quality Control" automatic resin sampler has been installed under the south rotex screener and is in continuous service. There were no difficulties in startup of the new equipment and resin samples are now being extracted every three minutes from a cross-section of the transfer duct. The vendor is to supply a set of teflon replacement seals as soon as they become available. The automatic sampler purchased for the north finishing line will be installed in January.

New PVC Holding Bin Fan Switch

A new start-stop switch for the air blower above the PVC holding bins has been installed at the rotex level of the finishing building. The finishing operators have been instructed to use this switch to stop the fan before opening the hatch on any holding bin and manually extracting a resin sample. In this manner, the "dusting" out of the hatch due to air pressure will be eliminated and housekeeping should improve. The fan will be restarted after sampling.

CEA 6917 - "PVC Dryer Modifications and Improvements"

Plans were made to pipe up the 600 psig steam coils included in this project so that their operation may continue in the event of failure of any of the individual coils. Valving will be provided for complete isolation of individual coils when desired. A formal drawing was prepared by the Drafting Department and given approval. Plans were likewise finalized for disposal of the high-temperature condensate from these coils. The condensate will contact 23 gpm of well water in the existing receiver tank and the condensate pumps modified to handle the additional flow. A second drawing of this system has also been prepared.

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Installation of Additional Stainless Steel Blend Tank

Another new 304 s. s. blend tank was installed in the No. 4 position replacing the old epoxy-lined tank. This was the second tank to be replaced and will result in lower maintenance costs as well as higher quality of product.

New Air Grids for Alpine Product Collector

The rusted carbon steel air grid headers in the top of the Alpine product collector were replaced with new stainless steel grids during December. Just as in replacement of old grids in the north and south product collectors as previously reported, this work will result in a reduction of the contamination susceptibility of our resin products and a reduction in future maintenance costs.

GENERAL PROCESS

Replacement Lift Truck in Warehouse

Four separate vendors had been previously requested to quote on a new forklift truck to replace our aging electrically driven model. All vendors have been lax in delivery of their quotes to us. During December, they were requested once again to expedite information and quotes . An RFE for the new model will be prepared as soon as possible.

Study of PVC 3185/4185-SP

Data has been compiled on results of past PVC-3185 production and additional information will be collected in January as time allows. When this study and compilation of data is completed, a report will be issued detailing the history of Escambia's production of this resin. It will include recipes, yields, quality control results, sales, and profitability. It is hoped that such a report will help clarify the needs in optimization of 3185/4185 SP production in the future.

Crawford and Russell - PVC Plant Expansion

Much consideration was given during the month to the continuing design effort by Crawford and Russell Company toward a new PVC plant.

Liaison was extended to them during December concerning specification of the following areas of the new plant:

(a) The purification of recovered monomers. The alternatives seem to be either complete recovery and purification of all monomers (VCM and VAC),

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Crawford and Russell - PVC Plant Expansion (cont'd)

complete recovery but with impure VAC, or no recovery or purification of VAC at all. C&R will advise costs and potential economics of each system.

(b) Solution makeup requirements and procedures. Sizes and types of tanks required as well as heat transfer needs.

(c) Storage of raw materials and use rates. Handling procedures.

(d) Capacities required in storage of in-process PVC resins and VCl liquid.

(e) Operation of PVC rotary drying equipment and product collectors. Drying characteristics of our particular PVC resin types. Specification of a new rotary dryer.

(f) Stripping procedures in the existing plant and requirements in the new plant.

Work with Crawford & Russell along these and other lines will continue.

David V Lowe

David V. Lowe

AP00046470

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE MEMORANDUM

To: Dr. W. M. Smith

From: D. J. Mann

Re: Monthly Summary
PVC Research & Development
December, 1969

Date: January 8, 1970

Copies: A. R. Adams
G. J. Mantell
G. E. Schmauch
F. L. Riddle
W. K. Clark

OPERATIONS

I. Fusion Resins

Objective:

A. Polymerization Laboratory

It was reported last month that the PVP/VA I-535 protective colloid was effective in producing a fusible homopolymer resin with median particle sizes in the range of 70-80 microns and low densities (15-17 lbs./cu.ft.). By copolymerizing 5% vinyl acetate in this recipe, bulk densities were increased to ∿ 20 lbs./cu.ft. This copolymer recipe, designated MP-2, gave a product which exhibited all of the desirable characteristics of a Micro-Pearl^{R}. However, the heat stability properties of this copolymer were somewhat poorer than those of comparable homopolymers.

Considerable effort was devoted this month to the preparations of a Micro-Pearl^{R} polymer with improved heat stability and a bulk density of at least 20 lbs./cu.ft. The results are summarized below:

1. Attempts to reduce the vinyl acetate content to less than 5% while maintaining a bulk density of 20 lbs./cu.ft. were unsuccessful.

2. Lowering the PVP/VA I-535 level in the homopolymer recipe did not affect bulk density.

3. Lowering of the polymerization temperature from 148°F to as low as 138°F did not affect bulk density.

4. PVP K-90/Aerosol OT combinations gave bulk densities of ∿ 25 lbs./cu.ft., but the particle size was too coarse.

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OPERATIONS (Cont'd)

5. Methyl and ethyl acrylate monomers were studied as possible replacements for vinyl acetate. These monomers were more efficient than vinyl acetate at increasing the resin bulk density but did not appear to offer any improvement in heat stability.

6. Calcium chloride was effective in increasing the bulk density ∿ 2 lbs./cu.ft. when used in relatively large amounts (1.5-2.0%).

7. A slight bulk density increase was noted with homopolymers prepared at a pH of 9-10. At pH's above 10, coarse resin was produced.

B. Pilot Plant

Reproducibility studies were continued on the MP-2 recipe with excellent results. The bulk density was ∿ 20 lbs./cu.ft. with ∿ 70% fines in the 50-gallon reactor and ∿ 50% fines in the 10-gallon reactor. Lowering the I-535 level appeared to reduce the fines to about 50% in the 50-gallon reactor.

The PVC homopolymer based on the MP-2 recipe has consistently given bulk densities ∿16 lbs./cu.ft. The process modifications that gave higher bulk densities were:

1. greater pressure drop at end of run (∿ 100# ΔP)
2. low levels of TCE, vinylidene chloride, and acrylic monomers
3. initial pH of 9-10

Attempts were also made with the MP-2 recipe to lower the I-535 level and make a 4185-SP type product. Run #3-972 with 1.0 part I-535 was quite promising, although it had 28% fines (specification = 10% maximum) and a bulk density of 19.3 lbs./cu.ft. (specification = 23-29). Efforts are being continued to make 4185-SP by this approach.

C. Plant Trial

A successful plant trial was conducted using the MP-2 recipe, and approximately 7000 pounds of product was made. Although the volatile and contamination levels were higher than expected, the overall resin properties very closely matched those obtained in the 50-gallon reactor.

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OPERATIONS (Cont'd)

As reported above, although the oven heat stability of MP-2 is somewhat poorer than that of a homopolymer, the effect on process and product performance is, as yet, unknown. In fact, its faster fusion may more than offset its lower heat stability. The adhesion properties of MP-2 are superior to those of homopolymers.

Sampling of MP-2 for customer field trials has been recommended by R&D.

II. Rigid Copolymers (X-130)

Objective:

A. Pilot Plant

Bottle polymerization studies of VCl/IB (94.5/5.5) had indicated that it was possible to prepare a VCl/IB copolymer with an R.V. of ∿ 1.85 and ∿ 4.5% bound isobutylene by using Vazo 52 catalyst at 105°F.

However, when two runs were made in the pilot plant 10-gallon reactor, the highest R.V. obtained was 1.59. It is believed that the actual isobutylene level available in bottle polymerization studies was somewhat lower than that charged due to volatilization losses. This then permitted the R.V. to increase to a level not otherwise possible, had all the isobutylene been retained.

Future work will use isobutylene charges of ∿ 3.5% in order to obtain the R.V.'s being sought.

III. Heat Stable 6180

Objective:

A. Polymerization Laboratory

A series of 6180 copolymers were prepared in bottles in the presence of barium-cadmium stabilizers for added thermal stability properties. The polymerization ran satisfactorily, and resins with good particle size distribution and bulk density were obtained. These resins are being evaluated for heat stability. If the results look promising, polymerization studies will be made with calcium-zinc stabilizer since it has FDA approval for food-grade applications.

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OPERATIONS (Cont'd)

B. Properties Laboratory

The polymers prepared last month were evaluated for their heat stability properties with the following results:

1. Copolymers prepared with caustic-washed vinyl acetate did not provide significant heat stability improvement.

2. The use of Vazo 52 did not give any heat stability improvement over lauroyl peroxide.

3. Lower polymerization temperatures did not offer any heat stability improvement.

4. Calcium acetate in place of monobasic calcium phosphate showed some heat stability improvement. Calcium acetate plus acetic acid was no better than calcium acetate by itself.

5. The use of PVP K-90 as protective colloid gave some improvement and was even better in combination with G-62 stabilizer.

6. Further evaluation of plant 6180 resin that had been dried at higher rotary dryer speeds did not confirm the encouraging results first obtained and indicated that heat stability is not closely related to drying speed over the range studied.

Resin shipped by bulk car (#60311) was monitored for speck content both before shipment from Pensacola and after arrival at the Flexi-Flow Terminal in New Jersey. The results showed an average of three (3) specks per 25 grams before shipping and four (4) specks after arrival. This result is probably best accounted for by the change in seasons, and the real test of product quality will have to await the arrival of summer.

IV. Saran

Objective: To prepare sufficient quantities of both extrusion and solution grades of saran to permit the initiation of selective field sampling and laboratory processing studies.

A. Pilot Plant

A successful run of V1610A resin (solution grade) was made in the 50-gallon reactor.

AP00046474

OPERATIONS (Cont'd)

B. Properties Laboratory

The evaluation of the properties of both the SV1710E extrusion grade and the V1610A solution grade resins (solution viscosity, DTA, chlorine analysis) indicated that satisfactory products had been made.

Samples of this resin are being provided to customers selected by Marketing, and laboratory applications studies have been initiated.

V. Plastisol Extenders

Objective: To develop 8000 series resins which will match Goodyear M-70 and Uniroyal VR-10, respectively.

A. Pilot Plant

Two identical 8200 batches were made in the 50-gallon reactor and terminated at different pressure drops to study the effect on bulk density. The resin prepared with a 30-pound pressure drop had a bulk density of 34.1 lbs./cu.ft., and the other with an 88-pound pressure drop had a bulk density of 35.5 lbs./cu.ft.

B. Grinding Studies

Grinding studies conducted at the Williams Patent C&M Company with material prepared according to the Lightfoot patent (U.S. Patent 2,511,593, now expired) and designated as 1260-X showed promise, according to a letter transmitted by Mr. J. P. Hensel, Regional Sales Manager.

Resin containing 15% moisture was efficiently ground to 90% minus 200 mesh and dried to 0.2% moisture with no apparent heat damage to the material.

Williams Patent C&M Company has requested an additional 300 pounds of resin containing not more than 15% moisture.

VI. General Process/Product Development

Objective: To evaluate new processes, ingredients, equipment, techniques, etc., necessary to remain abreast of advanced polymerization technology.

AP00046475

OPERATIONS (Cont'd)

A. Initiators

It was found that the Liladox initiator evaluated last month contained 50% water, and this could explain the poor results obtained. Correcting for this, the Liladox still did not perform adequately and was much poorer than either IPP or Vazo 52. The 0.03 part Vazo 52 level closely matched the 0.02 part IPP.

An order has been placed with DuPont for sufficient Vazo 52 to run a plant trial. After this has been accomplished, trade-off calculations will be made to compare Vazo 52 and IPP.

B. Suspension System (British Patent 1,150,488)

The above patent teaches the use of a polyvinyl alcohol, sorbitan monolaurate, and hexane suspension system that yields low reactor fouling. The pH of this system is 12. Our present 1230X recipe, which uses PVA and polyoxyethylene sorbitan monolaurate, was modified to include n-hexane with the proper pH adjustment. The 1230X control was considerably finer in particle size and had a higher bulk density (31.3 versus 27.3). Both recipes gave clean drops from the reactor with no visual signs of fouling. Although it is possible that on continued charging the recipe using n-hexane and the high pH might show less polymer build-up, the plant experience indicates that fouling problems with polyvinyl alcohol are negligible. No further studies with the new recipe are planned.

D. J. Mann

/pad

AP00046476

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE MEMORANDUM

To: Dr. W. M. Smith

Date: January 9, 1970

Copies:

From: W. K. Clark

Re: Monthly Summary
December, 1969
Technical Service

I. Customer Service

A. Tenneco Chemicals, Inc - Nixon-Baldwin Division, New Jersey

A. R. Adams requested relative viscosity results for correlation with Nixon's Tinius-Olsen test. (Reference 1)

B. Tenneco Chemicals, Inc. - Nixon-Baldwin Division, Illinois

This customer was furnished information which he requested on formulating practices used in the manufacture of sheeting intended for loose-leaf binder materials. (Reference 2)

C. Elm Coated Fabrics

A special metal analysis on PVC 9250 was supplied to this customer for approval. (Reference 3)

D. Jarrow Products Company

Through the joint efforts of the PVC Product Coordination Committee, we are investigating the quality of our PVC 3225 supplied this customer. (Reference 4)

E. Leeds Travelware (TSR 841)

A service call on customer was made to witness initial trials of a semi-rigid travel bag rotational casting compound. The trial was judged successful by customer. Arrangements are being made to try formulating variants to improve release and low temperature flexibility properties. Further production trials are scheduled for early January. (Reference 5)

F. Harte and Company (Complaint No. 43)

This customer rejected a bulk truckload of PVC 6180. Upon investigation of samples submitted, we determined this

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I. Customer Service (Cont'd)

F. Harte and Company (Complaint No. 43) (Cont'd)

resin was not of our manufacture and that the complaint was unfounded. (Reference 6)

G. General Tire Company, Ohio (Complaint No. 42)

This customer rejected approximately 51,000 pounds of PVC 6180 due to excessive contamination in the resin and pinholes/tears in the finished sheet. This complaint confirmed a similar complaint on the same lot of resin by Nixon-Baldwin. Our steps to eliminate reoccurance are expected to result in better quality of resin for the customer. (Reference 7)

H. Kerr Glass Manufacturing Company

At customer's request, we submitted certain quality control results on sampled/purchased PVC 2185. (Reference 8)

I. American Vinyl Company (TSR 840)

Customer has informed us of his serious difficulties with exterior exposure of webbing for lawn furniture based on our PVC resins. There is not a question as to resin quality, but their difficulties stem from both extreme exposure conditions and formulating deficiencies. As a matter of self interest, we have entered into discussions and are attempting to advise them regarding colors, stabilizers, and other ingredients to help them to improve product quality. (Reference 9)

J. Higher Molding Company

Submitted information to our salesman for comparable resins used by this company. (Reference 10)

K. Clow Corporation (TSR 831)

In Technical Service Report No. 831, the findings from our work indicated that our PVC 1230X and our PVC 2225 both showed important property advantages over Diamond PVC 450. The competitive resin is now being used by customer in his pipe production. It is believed that the advantages found more than justify extensive plant trials by the customer. (Reference 11)

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I. Customer Service (Cont'd)

L. Bottle Resin - Gel Test

We have made appreciable progress in our work to develop an extrusion gel count test suitable for plant quality control or resins intended for sale to customers for rigid dry blend bottle blow molding. The goals set for this test are outlined as follows:

1. test must be simple
2. test must use minimal quantities of material
3. test must be quick and conserving of manpower
4. test must correlate with use conditions

In our work to date we have done the following:

1. Our present formulation uses only resin, stabilizer, processing aid, and carbon black.
2. A small, cold hobart dry blend based on 200-300 grams of resin appears entirely adequate. Blending and weighing should require no more than 10-15 minutes.
3. Our most recent formulation employs a new processing aid which produces the required processibility without altering or contributing to gel formation.
4. As now practiced, the test consists of extruding the hobart blend into a thin wall lay flat tube in our 3/4" Killion extruder. A multiplicity of samples can be extruded at 5-7 minute intervals.

It is anticipated that the test will be ready for monitoring production prior to acceptance during the coming month.

II. Technical Service to APCI

A. Vinylidene Die

Back-up die designs were submitted to Houdry engineers for consideration as a measure of expediting early completion of vinylidene film line installation. (Reference 12)

B. Vinylidene Lubrication Studies

Initial formulating studies on our vinylidene resins have resulted in improvements in heat stability. A number of promising lubricant candidate materials have shown promise. (Reference 13)

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II. Technical Service to APCI (Cont'd)

C. Bulk Polymerized VC-DOP-Vazo Mixture

Comments and suggestions were made to Trexlertown polymer group on their bulk polymerization work. (Reference 14)

D. Pechiney-St. Gobain Resins

Intelligence information on quality of Pechiney bulk resins was forwarded to interested personnel at Trexlertown. (Reference 15)

E. Processing Aids for Rigids

Parameters of value judgments on processing aids being developed at Houdry were discussed in memoranda. (Reference 16)

III. Development Programs

A. Dielectric Heating

Technical Service has agreed to furnish samples for R.F. heating trials at several laboratories. Materials to be furnished will include rigids for battery separator applications, foams, and loss factor variants in plasticizer.

IV. Miscellaneous

A. Test Method 4.4.1

A proposed extruded rod impact test was written up for consideration.

B. Prilling of PVC Compounds

Comments on prilling versus dice for compound form were forwarded to interested personnel at Trexlertown. (Reference 17)

C. P. R. Browne has spent two weeks part-time in the PVC Sales Order Department during vacation of A. R. Donaghy.

V. Samples

A. PVC Resins

A total of 39 PVC samples (290 pounds) was sent to 23 companies including APCI.

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V. Samples (Cont'd)

B. Dry Blend Compounds

A total of eight dry blends (290 pounds) was sent to three companies including APCI.

W. K. Clark

W. K. Clark

/pad

Reference 1 — Memo dated December 1, 1969 from P. R. Browne to W. K. Clark

Reference 2 — Letter dated December 2, 1969 from W. K. Clark to Mr. Marvin H. Burger, Tenneco Chemicals, Inc. - Nixon-Baldwin Division, Illinois

Reference 3 — Letter dated December 1, 1969 from P. R. Browne to Mr. Warren Sechrist, Elm Coated Fabrics

Reference 4 — Memos dated December 3 and December 18, 1969 from P. R. Browne to W. K. Clark

Reference 5 — Memo dated December 8, 1969 from W. K. Clark to W. M. Smith

Reference 6 — Memo dated December 11, 1969 from P. R. Browne to W. K. Clark

Reference 7 — Memo dated December 11, 1969 from P. R. Browne to W. K. Clark

Reference 8 — Letter dated December 11, 1969 from P. R. Browne to Mr. Clarence Rohrer, Kerr Manufacturing Co.

Reference 9 — Letter dated December 12, 1969 from W. K. Clark to Mr. Eric Wiborg, American Vinyl Company
Memo dated December 12, 1969 from W. K. Clark to A. R. Adams

Reference 10 — Memo dated December 18, 1969 from P. R. Browne to W. K. Clark

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Reference 11	Technical Service Report No. 831 dated December 11, 1969 Memo dated December 15, 1969 from W. K. Clark to W. M. Smith
Reference 12	Memo dated December 11, 1969 from W. K. Clark to W. M. Smith
Reference 13	Memo dated December 8, 1969 from W. K. Clark to W. M. Smith
Reference 14	Memo dated December 3, 1969 from W. K. Clark to W. M. Smith
Reference 15	Memo dated December 18, 1969 from W. K. Clark to W. M. Smith
Reference 16	Memo dated December 23, 1969 from W. K. Clark to E. E. Huntzinger
Reference 17	Memo dated December 19, 1969 from W. K. Clark to W. M. Smith

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ESCAMBIA CHEMICAL CORPORATION

Interoffice Memorandum

To: Mr. T. L. Carey Date: Jan. 7, 1970

From: E. M. Spurlock

Re: Monthly Report - Personnel Department - December, 1969

PERSONNEL

Division	Activity for the Month: No. of Employees 11/30/69	Dec. Addit.	Dec. Separa.	No. of Employees 12/31/69	Dec. 1969 Budget Rev.
Executive	2	0	0	2	2
Financial Dept.	53	2	14	41	43
Laboratories, Res. & Dev.	44	1	1	44	59
Plant Admin. & Process	212	4	3	213	215
Plant Engr. & Maint.	132	2	0	134	140
Personnel & Safety	12	0	0	12	13
Purchasing & Traffic	31	1	0	32	32
Ag. Chem. Sales	152	7	142	17	18
Ind. Chem. Sales	7	0	0	7	9
PVC Sales	8	0	0	8	10
Total Escambia	653	17	160	510	541

Carroll Construction Company	No. of Employees 11/30/69	No. of Employees 12/31/69
Office	3	3
Maintenance		
Insulators	2	1
Mechanics	13	9
Yardmen	2	2
Trashmen	2	2
Laborers	7	9
Janitors	9	8
Painters	10	8
Welders	1	1
Pipefitters	1	1
Total Maintenance	47	41

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PERSONNEL (Cont'd.)

Carroll Construction Company	No. of Employees 11/30/69	No. of Employees 12/31/69
PVC Laborers	7	7
Area B Laborers	29	28
Railroad Crew	1	1
Total Carroll Construction Co.	87	80
	653	510
Grand Total	740	590

The difference between the December, 1969 budget and the actual number of employees at the end of December is represented by 31 vacancies. We are presently attempting to fill 15 of these vacancies.

The corporate labor turnover rate on regular employees for the month of December was 26.09. This high rate was caused by the transfer of the Farm Service Center employees to Custom Farm Services, Inc..

We had a total of 57 walk-in applicants, 57 applications were issued, 26 were interviewed and 18 were tested. Of the 18, 4 were females and 2 passed their employment and typing tests and were employed. The balance of 14 were males and 5 qualified for employment. Three were hired and the balance placed in our active files. We received 6 applications and 377 resumes 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 disabling injury are as follows:

Division	Man-hours	Days
New York Office	461,500	3,071
Sales	102,000	107
Pensacola Plant	97,000	40
Corporation	136,000	40

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SAFETY (Cont'd.)

Medical Section

The Medical Section treated 21 injuries for Escambia and 9 for Carroll, performed 8 pre-employment physicals and 5 annual physicals and gave a total of 13 immunization injections.

EMPLOYEE RELATIONS

Seven (7) 5-year service awards were presented.

Annual Children's Christmas Party was held on December 13, 1969 with approximately 470 children and adults in attendance.

Beginning December 12th, we held continuous meetings with our employees on the merger of Escambia's benefit plans into the Air Products' program. Application cards have been completed by all employees.

We met with representatives of Provident Life and Accident Insurance Company on December 22, 1969 relative to the procedures for handling Group Hospitalization and Group Life Insurance under the Air Products' program.

Final arrangements were made for transferring Consumer Sales employees to Custom Farm Services, Inc. on December 31, 1969.

I attended a 3-day AMA Management Training course on Management by Objectives in Dallas, Texas

LABOR RELATIONS

Some of our employees were disturbed by the change in employee benefit plans and we are attempting to resolve these differences by individual discussions. If we are unable to resolve these differences, this could lead to another organizing attempt.

INSURANCE

We paid a total of 62 claims under our Group Hospitalization program which amounted to a total of $ 12,059.97 during the month of December.

We settled 4 automobile collision accidents in the amount of $ 1,070.16

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INSURANCE (Cont'd.)

We settled 1 property damage claim in the amount of $ 1,188.20.

E. M. Spurlock

EMS:kc

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ESCAMBIA CHEMICAL CORPORATION

MONTHLY REPORT

Engineering, Technical & Personnel

January, 1970

AP00046488