

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. C. L. Wallace **DATE** June 5, 1968
FROM: G. B. H. Speed **COPIES**
SUBJECT: Monthly Report - Polyvinyl Chloride
May, 1968

SUMMARY

May was an exceptionally good month in PVC with a favorable production variance of \$10,956. Areas which contributed to the successful month are as follows:

1. Production was 4,619,000 lbs. and 459,000 above budget. This excellent production was achieved in spite of making 15 different type resins in 27 separate runs including 4 experimental runs.

2. Off-grade, tailings, and floor sweeps production was 2.7% versus 3.0% budgeted and is the lowest year to date.

3. Monomer efficiency was 96.0% versus a 94.0% budgeted.

4. Reactor availability was 83% of available hours and the highest since January.

Other areas in which substantial improvements were made are:

1. Increased dryer capacity by installing a larger steam supply line (part of RFE 6774).

2. Installed enclosed chip filter in north line (AFE 6803).

3. Installed temperature controller on hydraulic oil system.

4. Installed revised bearing system on dryer feed screw conveyor.

5. Installed for trial an inflatable filling spout on one of the bagging machines to reduce resin spillage.

6. A trial rescreening of PVC 3185-LG through an 80 mesh screen was successful in upgrading the material to PVC 4185-SP.

AP00045926

7. A 1,000 lb. trial quantity of PVC 4185-2S with unsatisfactory fusion properties was rescreened through a 140 mesh screen. The rescreened product passed the fusion test and did not have the mottled effect that has plagued 2S production.

8. An extensive test run of PVC 3185-LG to determine charging procedures and recipes required to produce the daughter product PVC 4185-SP. General success was achieved; reproducibility was excellent and all recipes using CC catalyst gave the desired particle size distribution. The bulk density was higher than desired but should be adjustable with further work.

The area we have not had success in has been the production of PVC X-6150F flooring grade copolymer. Three trial batches were produced with good particle size control but bulk density was lower than required. Maximum drying rates obtained were at the 25MM lb./year rate or about one-half of normal drying rate.

Production for June is estimated at 4,080 M lbs. and variance at \$2,200 favorable. Mr. Kersi Dandh has been hired as a process engineer in the PVC plant. He is expected to report the latter part of June.

DISCUSSION

Production for the month of May was a near record with 4,619,000 lbs. of prime resin and only 129,600 lbs. or 2.7% off-grade. Production this period included 15 different types of resin in 27 separate runs including 4 experimental runs.

Monomer efficiency was 96.0% versus the budgeted 94.0%.

An extensive PVC 3185-LG trial run was made in which Research and Quality Control personnel assisted. All product made using CC as catalyst met the rigid PVC 4185-SP size distribution but bulk density was higher than desired. Product made with KC as catalyst was too coarse for 4185-SP. Reproducibility was good with the recipes tried.

Reactor utilization was 83.0% of available hours this period and the best achieved since the first of the year. Cleaning and washing the reactors continues to account for the majority of the downtime, about 8%.

AP00045927

During May a new 4" steam line was installed to the dryers increasing the pressure from 185 psig to 215 psig. The resulting temperature increase was 12°F thus increasing dryer capacity. This line was installed under AFE 6774.

The enclosed chip basket made from the old MMA Niagra filter was put in service and is performing satisfactorily. Product losses from overflowing the old open type chip basket have been eliminated and less operator time is required.

A temperature controller installed on the hydraulic oil system has reduced pressure swings in the system and eliminated overloading of the oil pump motors.

Frequent failures of the dryer feed screw conveyor bearing seem to have been licked by installing sealed bearings with an air purge.

Improvement in the bagging operations were made by the trial installation of an inflatable filling spout. The new spout prevents spillage of resin but additional work is required to prevent the spout from stretching the bag valve.

A trial rescreening of 1,000 lbs. of off-spec PVC 4185-2S looks promising as a means for recovering about 150,000 lbs. of off-grade material in storage. This material which failed the fusion test looked exceptionally good after rescreening and may be a key to getting around the mottled effect encountered in the majority of our 4185-2S production.

The rescreening was also successful in upgrading PVC 3185-LG to PVC 4185-SP.

Additional test batches of PVC X6150F flooring grade resin was produced. The correct size distribution was obtained but the bulk density was too low. The maximum drying rates obtained were about 1,500 lbs./hr. or about one-half the normal rate for other resins.

G. B. H. Speed
G. B. H. Speed

AP00045928

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO:	Mr. G. B. H. Speed	DATE	June 3, 1968
FROM:	M. B. Rogers	COPIES	
SUBJECT:	PVC Monthly Report May, 1968		

SUMMARY

May production was 4,619,000 lbs. - 459,000 lbs. above the budget rate of 4,160,000 for the 31 day month. This production rate was obtained while making 15 different resin types in 27 separate runs, including 4 experimental runs.

Off-grade production of 2.7% was better than budget and the best year-to-date. Monomer efficiency of 96% was two percentage points above budget. Reactor availability of 83% of available hours in May compares with 81% total year to date. In general, it was a good production month in PVC.

An extensive PVC 3185 trial run totaling 27 batches was a general success. Reproducibility was excellent, and all recipes using CC catalyst gave the desired PVC 4185-SP special size distribution; KC catalyst produced a coarser product meeting standard PVC 3185 specifications. The bulk density was higher than desired in the recipe variations tried but should be adjustable with further work. The major change for this run was in solution preparation procedures recommended by Research to improve reproducibility of the suspension system. A short PVC 3185 trial run earlier in the month showed no differences in the effects of old and new batches of catalyst and seed latex. A single PVC 4185 micropearl trial did not give the desired product.

Three trial batches of PVC X6150F flooring grade copolymer were close to the pilot plant control in size distribution, but the bulk density is lower than desired. PVC X6150F drying rates in our present equipment are less than 50% of our standard resin types.

The enclosed chip basket between the north stripper and blend tank is performing well. This "homemade" system prevents product loss and saves operator time.

A production rate and cost projection through December indicates the plant will just about be on budget at year's end.

May cost variance was \$10,956, favorable, due primarily to volume variance and monomer efficiency.

AP00045929

STATISTICS

	<u>May</u>		<u>April</u>	
	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>
<u>Prime Production, M lbs.</u>				
Month	4,619	4,080	3,601	4,080
Year to Date	20,043	20,400	15,424	16,320
<u>Off-Grade Production, % of Total</u>				
Month	2.7	3.0	3.1	3.0
Year to Date	3.6	3.0	4.0	3.0
<u>Bulk Production, % of Prime</u>				
Month	56.0	57.5	65.4	57.5
Year to Date	54.8	57.5	54.4	57.5
<u>Shipments, M lbs.</u>				
Month - Prime	4,837	-	3,886	-
Month - Off Grade	143	-	191	-
Year to Date Prime	21,200	-	16,363	-
Year to Date Off Grade	1,240	-	1,097	-
<u>VCI Efficiency, %</u>				
Month	96.0	94	94.0	94
Year to Date	95.5	94	95.4	94
<u>Reactor Availability, % of Available Hours</u>				
Month	83%	-	81.2%	-
Avg. Year to Date	80.8%	-	80.1%	-
<u>Reactor Downtime, % of Available Hours</u>				
Mixing Solutions in Reactors	0.6	-	0.5	-
Cleaning & Washing Reactors	8.0	-	7.3	-
Scheduling Charges	4.0	-	3.0	-
Changing Types	0.8	-	0.5	-
Copolymer Production	0.0	-	0.0	-
Slow Recovery	0.3	-	0.3	-
Low Drying Rates and				
Dryer Line Cleanout	0.0	-	0.7	-
Hydraulic Motor Repairs	0.4	-	0.1	-

AP00045930

June 3, 1968

	May		April	
	Actual	Budget	Actual	Budget
Misc. Reactor Maint.	0.2	-	0.8	-
Dryer Maintenance	0.1	-	0.2	-
Electrical & Instr. Maint.	0.0	-	0.0	-
Miscellaneous	0.0	-	5.0	-
Experimental Batches	2.0	-	0.0	-
Total	16.4	-	18.8	-

Product Mix, M lbs. Prime Resin

Group I	2,387	2,154	2,294	2,154
Group II	1,637	1,010	821	1,010
Group III	271	603	468	603
Group IV	13	23	0	23
Group V	311	262	0	262
Group VI	0	32	18	32
Group VII		0	(24)*	0
Total	4,619	4,084	3,601	4,084

* Ground resin not included in total.

Payroll

Regular	5,685	-	5,528	-
Unscheduled Overtime	432	7.1	292	5.2

PRODUCTION1000 Series

Types produced: 1225, 1200, 1217, and 1230X.

A tabulation of PVC 1250 lot analyses from June 1967 to April 16, 1968 showed that the fisheye level in our product had not increased as claimed by Phillips Films. (3) Apparently the customer was comparing normal production with a previous lot having exceptionally low fisheyes or had received and analyzed a lot of PVC 1250X-2 which characteristically has higher fisheyes at 3 and 4-1/2 minutes than does normal PVC 1250 production.

Production was routine.

AP00045931

2000 Series

Types produced: 2160, 2170, 2200, 2225, and 2250.

Production was routine.

3000 and 4000 Series

Types produced: 3185, 3250, and 4185M.

Two PVC 3185 plant trials were made this month. In the first six-batch trial May 7, old and new CC catalyst and old and new FE seed latex were tried in three combinations to determine the effect of these key raw materials on the particle size variability in previous PVC 3185 runs.⁽⁴⁾ There were no apparent differences among the three combinations tried.

Six lots totaling 27 batches were produced in an extensive PVC 3185 plant trial May 20-24 in which Research and plant Quality Control personnel participated. All the product met PVC 3185 specifications, and 19 of the 27 batches produced met the more rigid PVC 4185 SP size specifications. Size distribution was better with CC catalyst than with KC catalyst. Reproducibility was good for the recipes tried, but bulk density could not be reduced to the desired level in several recipe modifications. Improvements in batch solution makeup recommended by Research apparently improved reproducibility and increased the effectiveness of the suspension system chemicals. The same lots of raw materials were used for the entire run, and all chemicals were analyzed before use. A complete report will be published.

A single trial PVC 4185M micropearl batch at the end of the PVC 3185 run did not give the desired product.

6000 Series

Types produced: X6150F and 6180.

Three trial batches of PVC X6150F flooring grade copolymer were produced in May as individual lots. Particle size control was good, but bulk density remained lower than desired, i.e., 40 versus 50 PCF. The product must be dried below 25 million lbs./year capacity rate to keep the volatiles below 2.0% maximum. Additional trials are in progress at month's end.

A trial batch of PVC 6180 using a latex-seeded recipe produced good particle size distribution but low bulk density.

8000 Series

None produced.

AP00045932

Tailings and Off-Grade

Off-grade production was as follows:

Off-Grade

<u>Type</u>	<u>Lot</u>	<u>Reason Off-Grade</u>	<u>Quantity Lbs.</u>	<u>% of Total Production</u>
2170	3101	Contamination 15	28,150	0.6
6180	3107	Contamination 13	<u>9,700</u>	<u>0.2</u>
Subtotal - Off Grade			37,850	0.8
<u>Tailings</u>			-	-
			83,750	1.7
<u>Floor Sweeps</u>			-	-
			<u>8,000</u>	<u>.2</u>
Total			129,600	2.7%

MAINTENANCE

The west refrigeration machine crystallized twice this month. Air from the temporary purge on the pump motors probably caused the first failure and an instrument malfunction the second. The Trane Company is being pressed for explosion proof motors, and the new instruments are being trimmed.

The water blaster unit has a head crack at the east cylinder which is to be inspected by the factory representative the first week of June. The unit can operate satisfactorily as is for a limited time. The pump cylinders were repacked once this month.

Sealed bearings and an air purge on the internal bearings were installed on the feed screw conveyors on both dryers and are performing well.

Two of four reactor hydraulic motor seal failures were thought to be due to an agitator out of alignment.

One blade on the reglassed agitator in #4 reactor cracked and was replaced with the old agitator. Glascote is to replace the failed agitator with a new one at no cost.

Paint is peeling off the walls in #2 blend tank which was recoated in January 1968. A detailed inspection will be made to determine the cause of failure.

AP00045933

A knock in the new air cylinder was corrected by adjusting the head clearance.

A list of key projects was prepared as part of a maintenance engineering assistance request. (1)(2)

GENERAL

The new 4" steam line to the dryers was put in service May 3. The steam pressure increased from 185 to 215 psig, increased the steam coil temperature 12°F with an obvious improvement in dryer capacity.

The enclosed chip basket made from the old MMA Niagra filter was put in service May 14 and is performing well. Product losses from overflowing the old open chip baskets are eliminated and the operator is not tied up full time.

Installation of an automatic hydraulic oil temperature controller reduced pressure swings with varying oil temperature and overloading the oil pumps from cooling the oil too low.

A trial rescreening produced 25,450 lbs. of PVC 4185 SP grade product through an 80 mesh screen from 36,000 lbs. of PVC 3185 feed at a cost of 3.4¢/lb. This cost includes direct labor and allowances for lost product, downgrading oversize material, and rebagging. The average product rate was 330 lbs./hour. Tailings totaled 24.5% of the feed; and screening efficiency was 72%, i. e., 28% of the tailings should theoretically have been recovered through the 80 mesh screen size used for rescreening. Therefore, rescreening to upgrade the selling price over 3.4¢/lb. is profitable but capacity is limited.

A 1000 lb. trial quantity of PVC 4185-2S with unsatisfactory fusion properties was rescreened through a 140 mesh screen. The screened product fused well and did not have the mottled effect objectionable to our customers. The screened product rate was only 110 lbs./hour for the quantity screened, losses were 10%, product yield was 55%, and screening efficiency was 61%. Approximately 150,000 lbs. of PVC 4185-2S and 3S with unsatisfactory fusion properties may be salvageable by rescreening when the Alpine mill tailings screening system is available.

An inflatable spout was installed for trial on the valve-type bagging machine. The inflated sleeve seals the bag valve and prevents spillage. However, the stretched valves tend to leak in the stacked pallet, and it may be necessary to modify the bag valve, the spout, or both.

AP00045934

June 3, 1968

Production and cost variance were projected to the end of 1968. (5) PVC operations should meet the budgeted production of 49,000 lbs. and end the year with an unfavorable variance of about \$8,000, exclusive of monomer price variance.

PVC manufacturing costs for 1969 were estimated on the basis of a sales projection of 45.5 million lbs. of a product mix which fills the plant to capacity. (6) The average bulk product cost is projected at 8.60¢/lb., allowing for a monomer price reduction and process cost increase.

JUNE, 1968 PROJECTION

Projections for June are as follows:

	<u>Projection</u>	<u>Budget</u>
Production, M lbs.	4,080	4,080
Month-End Inventory, M lbs.	2,400	2,868*
Production Cost Variance, \$	(2,200)	-
	(favorable)	

* Based on 1967 year-end inventory and budgeted sales and production.

VARIANCE ANALYSIS

May variance was as follows:

<u>FAVORABLE</u>		<u>UNFAVORABLE</u>	
Volume Variance	12,727	XA Monomer	2,218
VCI Monomer Efficiency	5,669	By-product Credit	622
Process Costs		Process Chemicals	767
Salaries	559	Process Costs	
Miscellaneous (incl. travel, comm., supplies, employee relations)	912	Maintenance	1,813
		Taxes & Insurance	695
		Laboratory	2,035
		Packaging Process	
		Cost	348
		Packaging Containers	296
		Other	117
Total	19,867		8,911
<u>NET VARIANCE - (\$10,956) FAVORABLE</u>			

AP00045935

REFERENCES

1. Memorandum, M. B. Rogers to F. E. Sommer, "PVC Maintenance Cost Analysis", May 1, 1968.
2. Memorandum, M. B. Rogers to F. E. Sommer, "Maintenance Engineering Assistance Request", May 15, 1968.
3. Memorandum, M. B. Rogers to G. B. H. Speed, "PVC 1250 - Gels or Fisheyes", May 15, 1968.
4. Memorandum, M. B. Rogers to File, "PVC 3185 - The Effect of Raw Material Differences", May 15, 1968.
5. Memorandum, G. B. H. Speed/M. B. Rogers to H. L. Harwell, "PVC Forecast for May Thru December 1968", dated May 21, 1968.
6. Memorandum, G. B. H. Speed to H. L. Harwell, "Estimated 1969 PVC Manufacturing Cost", dated May 21, 1968.


M. B. Rogers

AP00045936

Personnel

AP00045937

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AGRICULTURAL CHEMICALS DIVISION

MONTHLY REPORT

June, 1968

AP00045938

ESCAMBIA CHEMICAL CORPORATION

Interoffice Memorandum

To: Mr. T. L. Carey

Date: July 5, 1968

From: E. M. Spurlock

Re: Monthly Report - Personnel Department - June, 1968

PERSONNEL

Activity for the Month

<u>Division</u>	<u>No. of Employees 5/31/68</u>	<u>June Addit.</u>	<u>June Separa.</u>	<u>No. of Employees 6/30/68</u>	<u>June 1968 Budget</u>
Executive Office	3	2	0	5	5
Accounting & Credit	39	5	2	42	43
Plant & Wilton Labs. & Planning & Dev.	77	1	6	72	86
Plant Admin. & Process	199	3	6	196	201
Plant Eng. & Maint.	126	0	2	124	131
Personnel & Safety	12	0	0	12	12
Purchasing & Traffic	29	0	0	29	29
Sales - Agri. Chem.	164	3	9	158	206
Sales - PVC & Ind.Chem.	16	2	1	17	15
Total Escambia	665	16	26	655	728

<u>Carroll Construction Co.</u>	<u>No. of Employees 5/31/68</u>	<u>No. of Employees 6/30/68</u>
Office	2	2
Maintenance		
Insulators	3	3
Mechanics	9	13
Yardmen	2	2
Trashmen	2	2
Laborers	20	17
Janitors	6	7
Painters	9	7
Carpenters	0	1
Total Maintenance	51	52

AP00045939

PERSONNEL (Cont'd.)

<u>Carroll Construction Co.</u>	<u>No. of Employees</u> <u>5/31/68</u>	<u>No. of Employees</u> <u>6/30/68</u>
PVC Laborers	9	8
Area B Laborers	33	20
Truck Drivers (Traffic)	3	3
Railroad Crew	<u>1</u>	<u>1</u>
Total Carroll	99	86
	<u>665</u>	<u>655</u>
Grand Total	764	741

There were 107 walk-in applicants, 87 applications were issued and 5 were received by mail. Fifty-one applicants were interviewed and 44 were tested.

SAFETY

The Corporation worked approximately 120,000 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	439,000	2,522
Research	1,059,000	4,002
Sales	51,500	47
Pensacola Plant	312,000	116
Corporation	198,000	47

Messrs. G. A. Mayes, Industrial Hygienist and J. Q. Turnage, Loss Control Engineer, American Motorists Insurance Company made an inspection of the plant.

Medical Section

The Medical Section treated 18 injuries for Escambia and 6 for Carroll, performed 11 pre-employment and 11 annual physicals and gave a total of 17 immunization injections.

EMPLOYEE RELATIONS

Three (3) 5-year service awards were presented.

Five (5) 10-year service awards were presented.

AP00045940

EMPLOYEE RELATIONS (Cont'd.)

Mr. E. B. McCormick, General Foreman of Maintenance, died as a result of a heart attack on June 13, 1968.

We have made two trips to the Wilton Laboratory to assist those employees who are transferring to Pensacola and to answer questions from the employees who are not being asked to transfer to Pensacola.

TRAINING

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

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

LABOR RELATIONS

As previously reported, both Monsanto (Chemstrand) and American Cyanamid have held hearings before the National Labor Relations Board and are awaiting decisions before any action can be taken on the unions' petition for elections. In the meantime the unions continue to be active in the area preparing for an election when the petitions are finally approved. Despite the fact that these petitions are on file, both Monsanto and American Cyanamid proceeded to grant general wage increases as has been their custom for the past 8 or 9 years.

Of course, in all of these activities our employees are being contacted at infrequent intervals. We do not have, at the present time, any indication that a strong effort is being made with our employees.

SALARY ADMINISTRATION

We are continuing to work with the various department heads in writing position descriptions on all exempt employees in Level 22 and below.

INSURANCE

We have finally received most of the information necessary to file a claim with our insurance carrier resulting from the damages to tank cars caused by acid from the DNT Plant. At the present time the total loss under this incident amounts to approximately \$ 35,200. This claim should be finalized and filed during the month of July.

AP00045941

INSURANCE (Cont'd.)

We have received several claims for crop damage. These claims are allegedly caused by either inferior product or poor application during the year 1966. When the company filed suit in each of these cases for the nonpayment of goods, the individual filed a counterclaim for not only the amount of money he had paid for fertilizer and insecticides but also claiming damages on poor yields.

We paid a total of 76 claims under our Group Hospitalization program which amounted to a total of \$ 10,898.22 during the month of June.

E. M. Spurlock

EMS:kc

AP00045942

PLASTICS AND RESINS

MONTHLY REPORT

JUNE 1968

Distribution :

Miller
Barber
Brook
Carey
Cobbett
Oliver
Klotz
Kramer
Lynch
Marston
McMillan
Jayne
Rogers
Spind
Wallace

AP00045943

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. T. L. Carey

DATE July 5, 1968

FROM: C. L. Wallace

COPIES

SUBJECT: PVC Monthly Report
June 1968

Sales for the month were below budget for the first time this year. Although disappointing, the low sales volume of 3,376 M lbs. prime resin was expected due to raising prices and subsequent loss of about 600 M lbs. /month to ITT, Blane and Elm Coated Fabrics and customer plant outages for vacations. Sales to Robbins Floor Products were approximately 800 M lbs. below expectations due to vacation shutdown.

Plastisol extender resins sales are steady, although growth is seen at some accounts. Sales to Chemical Sealing were up 10 M lbs. Lakeside Plastics reordered for 5 M lbs. and Plastic Lace for 1 M lbs. Sample shipments were made to Bercko Industries, Kentile Floor, Tepper Fields and Royal Designs. Sales of other specialty resins were essentially non-existent with only 56 M Lbs. PVC-6240 being shipped.

The reduced sales volume has allowed an improvement in the inventory situation. The inventory of prime resin increased by about 900 M lbs. to a total of 2,844 M lbs. During the month a major portion of the experimental and discontinued resins held as prime were sold as off-grade.

Sales for July are estimated at 4,100 M lbs. only slightly above budget. Vacation shutdowns will probably continue to account for some lost business. Prices will be met at ITT, Blane and Elm Coated Fabrics as required to maintain inventory. Sales will also move more strongly into the specialty fusion resin accounts that have previously been handled by Mr. V. Grande.

PVC production for the month was slightly below budget at 4,045 M lbs. of prime resin. Frequent failures of the PVC dryer feed screw bearings was the primary reason for lost production.

An additional test run this month on PVC-3185 was unsuccessful in reducing the bulk density. However, good particle size distribution was maintained.

AP00045944

July 5, 1968

A single batch trial of PVC-4185M (micropearls) was made during the PVC-3185 run. It had excessive coarse and fine material. The batch was charged at 50% capacity to avoid overloading the agitation capacity.

Considerable difficulty was encountered in meeting the bulk density specification on PVC-6180. A difference in a new lot of suspending agent was apparently causing the problem. Adjusting the recipe was successful in correcting the problem, but not until after about 100 M lbs. of off-specification material was produced.

Representatives for Pfaunder and Glascote Products visited the plant to review our reglassing and reactor downtime history. Both parties feel that the existing Escambia reglassing program is about equal or a little behind the industry norm and our downtime runs about in line.

Cost variance for the month was \$633 favorable. Excessive maintenance and lower than budget production were the primary reasons for the less than forecasted favorable variance of \$200. Utilities and overhead variance allocations were \$656 unfavorable as compared to the \$3,000 favorable estimated.

Production for July is estimated at 4,250 M lbs. and cost variance at \$0. Although production is estimated above budget, approximately 150 M lbs. of resin made in June will be down-graded to off-grade in July.

The relocation of the PVC Research, Technical Service and Sales offices to Pensacola is presently on schedule. The new R&D and Technical Service building is scheduled for occupancy on August 15, and the 50 gallon pilot reactor is scheduled for delivery September 1. Messrs. Gabbett, Klohs, Johnson, Donaghy and Browne were in Pensacola the week of June 24 to locate housing.

Polymer research was conducted in the following areas:

1. PVC-3185LG
Pilot test verified that the new charging procedure introduced in production in May was capable of giving excellent particle size distribution control, but made bulk density control very difficult. Additional work indicates that control can be obtained over bulk density.
2. Micropearls (PVC-4185M)
Pilot runs were made to evaluate reactor charging variables. The data has not been evaluated at this time.

AP00045945

July 5, 1968

3. Pearl Mechanism Studies
Pilot runs were made to study the effect of insoluble salts in the presence of surface active agents as an alternative approach to Pearl polymerization.
4. Catalyst Evaluation
Work was continued on the Permis Initiator system. The system was about equivalent to IPP, but reactor fouling was excessive. Lupersol 228 was found to be less efficient than IPP.
5. Plastisol Extender Resins
Pilot work was done in an effort to produce a plastisol extender resin with faster fusion time than our current PVC-8200.
6. Blow Molding - Bottles
A F&DA rigid, clear, high impact PVC bottle compound has been developed. We now have both a non-F&DA and a F&DA formulation that could be submitted to compounders on a contractual basis. "Soundings" will be taken at Continental Can and Armstrong immediately to test the favorability of this marketing strategy. In addition a press release is in process of approval to give visibility to this capability, (and to allay any rumors that we are "withdrawing" from the bottle compounding business).

Assistance was given by the Technical Service Group to sixteen customers during the month. In addition, considerable work was done in evaluating Escambia plastisol extender resins against the industries'. Escambia's PVC-8185 showed superior viscosity stability, heat stability, fast gel and fusion, but poor film surfacing and settling. Escambia PVC-8200 exhibits slower fusion properties. Escambia's PVC-8250 showed poorer viscosity properties than Plivoc M-90.

A trip was made to Robbins Floor Products in Tuscumbia, Alabama and Prescott, Arkansas by Messrs. Speed, Gabbett and Klohs on June 11, 1968, and by Messrs. Carey, Wallace, Gibert and Gibson on June 17, 1968, to observe their manufacturing procedures and discuss some financial matters.

A program for the PVC business is being formulated embracing the balance of 1968, plus 1969. Detailed plans will be submitted with the 1969 budget on July 12, 1968.



C. L. Wallace

AP00045946

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. C. L. Wallace

DATE July 5, 1968

FROM: D. W. Klohs

COPIES

SUBJECT: Monthly Summary
June 1968

I. Dynamics of the Business

	June 1968		Year to Date	
Type	M Lbs. Budget	M Lbs. Sales	M Lbs. Budget	M Lbs. Sales
General Purpose	3300.0	3,165,175*	20,200.0	23,430,362
Off-Grade Resin	122.5	273,900	735.0	1,597,050
4000,6145,9010, 8000,6240	370.0	178,850	1,540.0	1,179,550
Total	3792.5	3,617,925	22,475.0	26,206,962
Pelletized				
Compound (to May 31)			950.0	68,643
Dry Blend				
Compound (to May 31)			240.0	155,192
Total			23,665.0	26,430,797

*In view of the fact that compounding and saran have been shelved, all poundage in these categories sold in June appear in the "General Purpose" type. Also, commencing with this report, we will no longer continue to show the budgeted sales of compound. Under "Year-to-date totals", we show total budget and sales for compound through May only.

As can be seen in the numbers above, June sales were somewhat below the budgeted level. In view of our extraordinary sales volume in May, a June slump was anticipated. However, we did not expect that we would fall so far short of our target. The poorer performance in June can be attributed to four factors:

1. A slow down in PVC-1200 purchases by Robbins. They bought only 414 M lbs, against their projection of 850 M lbs.

AP00045947

Dynamics of the Business (cont'd)

2. Virtually no sales for our 4000 series resins. In June, we sold 1,000 lbs. of 4185-2S, only 50 lbs. of 4185-3S, and 10,000 lbs. of 4185-SP; for a grand (?) total of 11,050 lbs. We should have sold 100 - 150 M lbs. If we had, we would be closer to our budget in the "specialties" category. For many many months now we have been reporting our problems with the 4000 series resins. A customer is not a customer for very long if you cannot supply him with the quality he needs. We may have lost our position in the fluid bed coating trade, and we will have to sell harder to win it back. One bright spot - Congoleum-Nairn may use up to 80 M lbs. /month of 4185-3S, starting in August or September. This will go into a new floor covering development. For the record, I will repeat - the fusion resin growth potential lies mostly in the flooring trade where powders and chips have been handled efficiently for a long time. In order to penetrate this market, we will need a resin which can be sold profitably in the 16¢ - 18¢/lb. range.
3. Our 8000 series resins are not moving as fast as we had budgeted last year. In spite of our slow start, we sold 50 M lbs. of 8200 in June - and a total of almost 160 M lbs. of resins for use in plastisols. (This group includes 6240, 8200, 8185, 8250, and 8217). Again, for the record, let's recognize that we could not place sales effort on the plastisol extenders until after mid-April. All members of the sales staff are now pushing the 8000's; and now that Vince Grande has joined our effort, I am confident that we will make good progress.
4. Last month, we increased prices at Elm Coated Fabrics, Blane, and I. T. T. The prices did not hold, and we suffered a volume loss at all three accounts. This move did, however, improve our inventory situation. For some time now I have maintained that, with our product mix, we need an inventory of 4 MM pounds of Grade A resin. We are still far below this number. Now that we are in the summer vacation period, our inventory might gain again, which should put us in a good supply situation for the normally busy months of August and September.

On the whole, we have made good progress in our efforts to keep the plant totally absorbed, while, at the same time, we have been developing sales of the specialties. If we can resolve our 4000 series problems, next year could be a profitable PVC year for Escambia.

AP00045948

July 5, 1968

II. Account Status

Sales for June were essentially to about 55 accounts. Again, we sold to fewer accounts than I like to see; but I do not feel that we have lost any except Blane and Polymers (Vt.). Volume sales for June were to the following:

<u>Account</u>	<u>Purchases (M lbs.)</u>
American Vinyl	80
Armstrong Cork	221
Cabrera Vulcan	126
Chemical Sealing	50 (8200)
Continental Plastics	129.5
Elm Coated	93.8
Industrial Vinyls	118
Lamcal	120
O'Sullivan	147
Phillips Films	272.9
Robbins	556
Tenneco (Lushan)	156
Tenneco (Nixon)	320
USM Chemical	215

Again this month we did not get an order from Wiman Manufacturing. If we don't get one in July, I'll have to suspect that Ethyl has again dropped the price - although we have had no inkling of such a move.

III. New Orders and Prospects

The following new orders and/or prospects were sold in June:

<u>Account</u>	<u>Product</u>	<u>Est. Volume</u>
Armstrong Cork	PVC 2185	250 M lbs. /month
Bata Shoe	2250	80 M lbs. /month
Lakeside Plastics	8250	100 M lbs. /month
Maclin	6240	40 M lbs. /month
Plastic Lace	8185/8250	10 M lbs. /month
Vogt	2225	80 M lbs. /month

In addition, numerous plastisol extender samples were sent out in June. The prospects at most accounts sampled were good.

AP00045949

July 5, 1968

IV. Price Levels and Trends

A recent article in Chemical and Engineering News pointed out that demand for PVC is at 70% of productive capacity. We have been pointing this out for some time. Productive capacity is in excess of 3 billion pounds, whereas consumption is running at a 2.2 billion pound per year level. This article went on to say that prices would not rise to realistic levels until 1971, and that a price of 12.5¢/lb. is essential for a 10% R.O.I., assuming a 100 MM pound per year company. For the non-integrated PVC producers, these statements are without a doubt, true. They do not hold true for the integrated producer with at least 50% captive, transfer business. We are aware that some of our integrated competitors made a profit in 1967 and are profitable now - hence many have expansion plans.

Indeed, the recent efforts of a few producers to raise prices to the 10 and 10.5¢/lb. area has met with complete failure. Such producers as Stauffer, Ethyl, Allied Chemical and Borden Chemical simply have not gone along with the increases. This can be attributed to either greed, the necessity for 100% absorption of productive capacity, or immature sales management. In the meantime, we have had to meet price everywhere in order to hold what we have. We have recently had to meet a price of 9.5¢/lb. in bags at Lamcal, and 10¢/lb. in bags at Plicoflex. We also get clobbered regularly at our Miami accounts. American Vinyl, for example, picks up truckloads of bags at Allied's plant at 7.83¢/lb., f.o.b. Painesville, Ohio. By giving us an 8¢/lb. bulk price, f.o.b. Painesville, Allied managers are obviously doing us a big favor. We would be paying them .67¢/lb. more than one of our accounts. (We calculate bagging at 0.5¢/lb.).

I am in general agreement with the C&E News article. I do not see an early increase in the price structure of suspension PVC. I think that some firming will occur late this year, and the possibility of increases next year is good. At the moment, we seem to be at the low point in the price of PVC; and the only price attrition that I think we will encounter is at accounts now paying 10¢/lb. or more.

To repeat last month's statement "The solution to our profit problem remains in expansion and the sales development of specialties". To this I also add "integration". Without the pursuit of these three growth areas, Escambia will die in PVC. I am aware that our management has not agreed with this concept in the past. Thus, the managers of our 22 competitors are wrong in their approach to the PVC business. We remain the only small, non-integrated producer of suspension polymers.



D.W. Klohs

AP00045950

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. G.B.H. Speed

DATE July 2, 1968

FROM: M.B. Rogers

COPIES

SUBJECT: PVC Monthly Report
June - 1968

SUMMARY

June production was 4,045,000 prime resin, slightly below the budgeted and projected rate of 4,080,000 lbs. Fifteen different types were produced in 19 separate production runs.

Monomer efficiency of 94.6% was above budget but below recent performance because of vent condenser problems and losses during an experimental run.

A short PVC 3185 run duplicated last month's experimental run results, i. e., good particle size distribution and high bulk density. The bulk density was unaffected by several variations in salt and suspending agent levels. A single batch, half-reactor charge micropearl trial did not produce the desired size distribution.

A rejection at Phillips Films for PVC 1200 fisheyes is unexplained by check analyses at Pensacola. Data is being developed by Quality Control for a correlation between the Phillips and Escambia fisheye tests.

The PVC program and relocation of the PVC Research, Technical Service and Sales functions to Pensacola were discussed in meetings at Pensacola June 25 - 27. Office and laboratory facilities are to be ready by August 15.

June variance was \$633 net favorable, made up of \$944 favorable in bulk production and \$361 unfavorable in packaging.

AP00045951

STATISTICS

	<u>June</u>		<u>May</u>	
	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>
<u>Prime Production, M lbs.</u>				
Month	4,045	4,080	4,619	4,080
Year to Date	24,088	24,480	20,043	20,400
<u>Off-Grade Production, % of Total</u>				
Month	2.3	3.0	2.7	3.0
Year to Date	3.4	3.0	3.6	3.0
<u>Bulk Production, % of Prime</u>				
Month	32.6	57.5	56.0	57.5
Year to Date	51.2	57.5	54.8	57.5
<u>Shipments, M lbs.</u>				
Month - Prime	3,185	-	4,837	-
Month - Off Grade	194	-	143	-
Year to Date Prime	24,385	-	21,200	-
Year to Date Off Grade	1,434	-	1,240	-
<u>VCI Efficiency, %</u>				
Month	94.6	94	96.0	94
Year to Date	95.4	94	95.5	94
<u>Reactor Availability, % of Available Hours</u>				
Month	79%	-	83%	-
Avg. Year to Date	80.5 %	-	80.8 %	-
<u>Reactor Downtime, % of Available Hours</u>				
Mixing Solutions in Reactors	0.5	-	0.6	-
Cleaning & Washing Reactors	8.6	-	8.0	-
Scheduling Charges	5.7	-	4.0	-
Changing Types	1.2	-	0.8	-
Copolymer Production	0.1	-	0.0	-
Slow Recovery	0.2	-	0.3	-
Low Drying Rates and Dryer Line Cleanout	1.7	-	0.0	-

AP00045952

Reactor Downtime, % of
Available Hours (cont'd)

	June		May	
	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>
Hydraulic Motor				
Repairs	0.4	-	0.4	-
Misc. Reactor				
Maintenance	1.5	-	0.2	-
Dryer Maintenance	0.9	-	0.1	-
Electrical & Instr.				
Maintenance	0.1	-	0.0	-
Miscellaneous	0.0	-	0.0	-
Experimental				
Batches	<u>0</u>	<u>-</u>	<u>2.0</u>	<u>-</u>
Total	20.6	-	16.4	-

Product Mix, M lbs. Prime Resin

Group I	1,799	2,154	2,387	2,154
Group II	1,120	1,010	1,637	1,010
Group III	513	603	271	603
Group IV	0	23	13	23
Group V	613	262	311	262
Group VI	0	32	0	32
Group VII	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	4,045	4,084	4,619	4,084

Off -Grade and Tailings

	<u>Quantity</u> <u>Lbs.</u>	<u>% of Total</u> <u>Production</u>
Off-Grade	0	0
Tailings	97,450	2.3
Floor Sweeps	<u>0</u>	<u>0</u>
	97,450	2.3

AP00045953

	<u>June</u>		<u>May</u>	
	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>
<u>Payroll</u>				
Regular	7,815	-	5,685	-
Unscheduled				
Overtime	497	6.0	432	7.1

PRODUCTION

1000 Series

Types produced: 1200, 1225, 1230, & 1250.

One bulk rail car compartment of PVC 1200 was rejected for fisheyes by Phillips Films, although two subsequent shipments from the same silo were accepted. Pensacola analyses of retained production and shipping samples, the rejection samples sent from Phillips, and samples from the silo checked previous analyses in the range acceptable in other shipments. Differences between the Phillips and Escambia fisheyes tests were investigated by our Quality Control Supervisor, N. S. Barranco, during a trip to Phillips to investigate the complaint.

Production was normal.

2000 Series

Types produced: 2160, 2170, 2185, 2200, 2225, & 2250.

Seven lots of PVC 2185 were sampled to Armstrong Cork in a program to establish a fisheye specification for this resin to be used in bottle compounds.

Special attention to reactor cleaning did not significantly reduce fisheyes with the standard PVC 2185 recipe in the first four lots. Fisheyes were reduced in the last three lots by increasing the level of W A wetting agent. Armstrong has not yet completed an evaluation of the seven samples.

Production of other types was normal.

3000 and 4000 Series

Types produced: 3185, 4185 M.

A short PVC 3185 run was made using the revised solution make-up procedure recommended by Research and used in the extensive plant trial in

AP00045954

3000 and 4000 Series (cont'd)

May. The run reproduced the May results, giving good product size distribution and high bulk density. The bulk density was unaffected by several variations in salt and suspending agent levels.

A single batch PVC 4185M Micropearl trial had excessive extremes of coarse and fine material. A 50% reactor charge was used to avoid overloading the agitation capacity.

PVC 3185 scalping through a 60 mesh screen was slow and losses were high. The rate was not increased by putting the fine screen on top of the two-screen pack, by adjusting steam and air flow on the screen or by injecting steam in the dryer exit. Normal rates were resumed with a 40 mesh screen.

Recurring dryer feed screw bearing failures slowed production and contaminated the product. Two of the three lots were satisfactory for routine customers but failed the rigid Phillips Films wet contamination test and could not be shipped as intended.

6000 Series

Types produced: 6180.

A PVC run at the first of the month was routine, but product bulk density is running low in a run at month's end. The product is badly needed for sales, and a program of recipe changes and raw material analyses is in progress to correct the problem in the plant. A difference in a new lot of suspending agent is apparently causing the problem.

The PVC X6150F trial completed at the end of May again gave a bulk density of 40 PCF vs 50 PCF target. Size distribution was good. The product dried at about 40% of normal general purpose rate.

8000 Series

Types produced: 8200 and 8217.

Both the PVC 8200 and PVC 8217 runs went smoothly. The product physical properties compare closely with those of previous production. Evaluation in plastisol extender applications is incomplete.

AP00045955

Ground Resin

The Alpine mill was used for grinding tails this month, and no 2S or 3S material was produced.

MAINTENANCE

The dryer feed screw bearings are a major maintenance problem as a contamination source. PVC mills and discolors in the bearings, and bearing failure generates brass filings. The air purge installed on the inboard bearings last month did not solve the problem, and a sealed ball bearing dripped grease in the product because of the dryer heat. The south dryer conveyor blade was cut off at the product discharge hole to prevent forcing PVC into the bearing, and a bearing cover was installed to force all the purge air out the exposed bearing end. This bearing has not failed after two weeks running time.

The valves in both north and south monomer recovery compressors failed, and the valve seats are badly corroded. This is first inspection since the north compressor was eliminated from copolymer recovery and indicates that corrosion may not be caused by acetic acid from vinyl acetate as was suspected.

The cracked head from the water blaster high pressure pump was replaced and returned to the manufacturer for inspection. We have no report yet.

Check valves were installed to keep PVC out of the bagging machine air blowers.

The step bearing water purge pumps were modified to double their capacity and reduce step bearing failures.

A bad breaker again caused the north hydraulic pump motor to kick out.

The painting program was resumed with one painter and helper two weeks per month.

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July 2, 1968

MAINTENANCE (cont'd)

Routine maintenance included the following:

- Replace south dryer fan bearings
- Clean bulk system rotary valves & replace bearings
- Replace plugged valves in vent condenser piping
- Repair hydraulic motor seals (4)
- Replace step bearings (2)
- Repair timers on north bulk system product collectors
and south product collector
- Replace 4-way valve on air dryer

GENERAL

A process improvement program was outlined for all phases of the PVC operation (1). Quality control must take priority over rate and efficiency improvement for the present manpower availability, especially in fusion resins and other profitable specialty types. Other projects are ranked for action as technical process and engineering help becomes available.

The total PVC program was reviewed in a meeting at Pensacola June 27 among Sales, Research, Technical Service and Production with the general manager, Mr. C.L. Wallace. The PVC research and technical service lab building foundations are about complete, and the first pilot plant reactor has been ordered. The lab building is scheduled to be complete for occupancy by mid August.

Pfaunder representatives visited the plant June 19 to review our reglassing and reactor downtime history and to discuss possible improvements. Escambia's reglassing program was reported to be equal to or a little behind the industry norm, and our downtime and cleaning cycles seem about in line. Improvements possible with new equipment were discussed and are included in a file memo (2).

- (1.) M.B. Rogers to G.B.H. Speed, "PVC Process Improvement Projects", dated June 11, 1968.
- (2.) M.B. Rogers to File, "Pfaunder Representatives Visit", dated June 19, 1968.

AP00045957

July 2, 1968

JULY 1968 PROJECTIONS

July projections are as follows:

	<u>Projection</u>	<u>Budget</u>
Production	4,250	4,080
Month-End Inventory, M/lbs.	3,260	2,928*
Production Cost Variance	0	-

* Based on 1967 year end inventory and budgeted sales and production.

VARIANCE ANALYSIS

June variance was as follows:

<u>FAVORABLE</u>		<u>UNFAVORABLE</u>	
Volume Variance	1,074	XA Monomer	1,222
VCI Monomer Efficiency	2,693	Process Chemicals	1,415
Process Costs		By Product Credit	1,668
Salaries	73		
Miscellaneous		Process Costs	
(incl. travel, comm.,		Utilities	913
supplies, employee		Laboratory	728
relations)	742	Taxes & Ins.	695
		Other	108
		Packaging	361
Subtotal	<u>7,743</u>		<u>7,110</u>

NET VARIANCE - (\$633) FAVORABLE

M.B. Rogers
M. B. Rogers

AP00045958

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. C. L. Wallace **DATE** July 3, 1968
FROM: R. E. Johnson **COPIES**
SUBJECT: Monthly Summary
June 1968

BLOW MOLDING - TSR 675

A F&DA rigid, clear, high impact PVC bottle compound has been developed. We now have both a non-F&DA and a F&DA formulation that could be submitted to compounders on a contractual basis.

GLAMORGAN PLASTICS

The physical properties obtainable on a Type I, Grade 1, rigid pipe compound utilizing PVC-1230X were conducted for Glamorgan. These values will be given to Plastics Pipe Institute in order for Glamorgan to obtain their approval. As soon as approval is received Glamorgan can use PVC-1230X in their standard production items.

KESSLER PRODUCTS

A rigid house siding formulation was developed for Kessler. Fifty pounds of diced compound based on this formulation was sent to Kessler for their evaluation.

AMERICAN VINYL CORPORATION

A grey tubing and white gasketing formulation for use in outdoor furniture was developed for American Vinyl. It is expected that the increased service we have given them lately will develop into additional resin sales.

BARD - PARKER COMPANY

A non-toxic F&DA formulation, 2750-30-A, was developed for use by Bard - Parker in their injection molding trials. Fifty pounds of diced compound, based on this formulation, has been sent to Bard - Parker for their evaluation.

AP00045959

PLASTICS WIRE AND CABLE COMPANY

A seminar was held in order to instruct and familiarize Plastics Wire with the powder fusion concept of PVC resins. Plastics Wire owns two metal coating companies and could utilize PVC fusion resins. They could become a large consumer of our fusion resins.

NEW ENGLAND PLASTICS

One-hundred and fifty pounds of a clear, rigid compound was submitted to New England Plastics for use in the extrusion of tubing. This is for an intended application to replace butyrate in containers. This could be a potential large use for PVC compound.

Other companies serviced with dry blends or other technical data included Robbins Floor Products, Syroco-Division of Rexall, Thomas J. Little Co., Goodyear, Weymouth Art Leather Co., and Stanley Chemical.

PLASTISOL EXTENDER RESIN EVALUATION

The main emphasis during the month was placed on evaluating our extender resins and attempting to find particular applications where they will perform satisfactorily as compared to competitive resins. Specific areas we concentrated on and the conclusions that we obtained are as follows:

Escambia PVC-8185 was comparatively evaluated versus Borden VC-260-C, Uniroyal VR-24-PL, Geon 106 and Geon 202. PVC-8185 appears to be competitive with these large particle size extenders. PVC-8185 exhibits superior viscosity stability, heat stability, fast gel and fusion but shows poor film surfacing and settling.

The long term aging properties of Escambia PVC-8200 versus Borden VC-260-S were evaluated. Aged low shear viscosity properties were essentially identical. Borden VC-260-S shows slightly more sedimentation than Escambia PVC-8200.

The fusion properties of PVC-8200 versus VC-260-S, under extended dwell conditions were evaluated. It takes PVC-8200 thirty-five minutes to develop the tensile properties attained by VC-260-S in ten minutes.

The viscosity depressing affect of Pliovic M-90 versus PVC-8250 was determined. Pliovic M-90 exhibits better viscosity properties at all shear rates. Tensile properties are also developed much faster.

The fusion properties of PVC-8230 were compared to PVC-8200. PVC-8230 fused slightly faster.

AP00045960

PLASTISOL EXTENDER RESIN EVALUATION (cont'd)

Pegospense 200 ML was evaluated as an additive to promote fusion of our extender resins. A slight increase in speed of fusion was noted but the results were not conclusive. A lower molecular weight material should be investigated.

Mr. Scarpellino's work of March '68 was repeated to determine its correlation and validity in light of our most recent results.

Mr. Scarpellino's work was reproducible. The higher tensile values appear to be due to the fact that the stabilizer, Nuostab 1367, promotes faster fusion than Mark 739 used in later work. Both evaluations point out that Escambia resins have slow fusion properties.

Pliovic M-90 was compared to PVC-8250 at various concentrations. It was found that M-90 has superior viscosity properties under all conditions and that tensile development is much faster than formulations containing comparable concentrations of PVC-8250.

Geon 106-F2 was compared to PVC-8200 at various concentrations. PVC-8200 formulations show marginally improved viscosity properties, faster gel and better film surfacing and clarity. Here, again, PVC-8200 exhibits slower fusion properties.

Escambia PVC-8200 was evaluated against Borden VC-260-S at extender resin concentration levels in excess of 50% replacement.

The two resins performed essentially the same with the exception of PVC-8200 showing poorer fusion characteristics. The most important discovery was that the maximum practical limit of extender resin replacement lies between 60 and 70 percent.

Comparative evaluations of PVC-8185, PVC-8200 and PVC-8250 were carried out in foam formulations.

It was found that blow ratios in excess of 5:1 are possible with PVC-8200 while still maintaining good cell structure. Several liquid stabilizer activator systems were tested as replacements for the lead paste (Dyphos). A blend of Mark 282 and Mark 281-A seems to be the most promising possibility.

Plastisol extender resins were evaluated in specific formulations for the following accounts:

AP00045961

July 3, 1968

PLASTISOL EXTENDER RESIN EVALUATION (cont'd)

Robbins Floor Products, Inc.

Escambia extender resins were evaluated in Robbins' formulations.

The merits of adding PVC-8200 extender resin were demonstrated.

An evaluation run is planned at Robbins' plant in the near future.

Enroc Laboratory Development Co.

Samples were constructed which demonstrated the possibilities of our resin in a formulation that would be satisfactory for their use. Enroc has been sampled with our resin.

Plastics Lace

Developed sprayable plastisol foam utilizing Escambia PVC-8250 extender resin for their use.

The concentration of extender resin was increased from 15% of Escambia's extender resin to potentially 50% PVC-8250.

Potential - 1 to 2 million pounds

Granet Corporation

We are working on a dipping formulation utilizing PVC-8250 for use in Granet's glove dipping operation.

Potential - 5 million pounds

Pandel Corporation

PVC-8250 has been approved for Pandel's coated fabric formulation.

We assisted them in obtaining information for development of an electrostatic spray technique to surface glove fabric.

Hampshire Manufacturing Company

Work was completed in attempting to use our extender resins in their formulations. Our present extender resins do not work.

A research decision must be made to develop a faster gelling, faster fusing resin before anything further can be done here.

AP00045962

July 3, 1968

PLASTISOL EXTENDER RESIN EVALUATION (cont'd)

Potential - 5 million pounds.

TRANSFER OF TECHNICAL SERVICE EQUIPMENT

The Technical Service Laboratory is currently being dismantled for shipment of the equipment to Pensacola. Until this equipment is re-installed the out-put of the laboratory will be greatly diminished.

Sales sample shipments to customers will now have to be handled by Pensacola.

Our work for the time being will have to be only in servicing those accounts that have problems by phone or perhaps by visits to their facilities.


R. E. Johnson

AP00045963

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. J. A. Marohn

DATE July 3, 1968

FROM: J. F. Gabbett

COPIES

SUBJECT: Polymer and Applications
Research Activities
June 1968

I. Polymer Research

A. PVC-3185 LG

Ten runs were made in the 50 gallon reactor to study the effect of revised charging procedures and salt-wetting agent variations. The tests verified that the new charging procedure introduced at Pensacola in May was capable of giving product with excellent particle size distribution but that it made bulk density control more difficult.

A further revision in procedure was made by reversing the order of addition of calcium chloride solution and Geon 450X3. An improvement in both bulk density control and reduction in reactor fouling was observed. This procedural modification should be evaluated in Production during the next PVC-3185 run.

B. Micropearls

Three runs were made in pilot equipment to test the effect of addition procedures on particle size. At this time, evaluation of the product has not been completed.

C. Pearl Mechanism Studies

Two pilot runs (50 gallon) and five (8 gallon) were made to study the effect of insoluble calcium salts in the presence of surface active agents as an alternative approach to Pearl polymerization. The products were generally satisfactory Pearls, but reactor fouling was heavy.

D. Catalyst Evaluation

Experiments were continued on the Permis (diethyl chloroformate-hydrogen peroxide) initiator system. Reaction rates were about equivalent to those obtained with IPP on a charged molar basis. Reactor fouling, however, was excessive in each of eight 8 gallon runs attempted.

AP00045964

July 3, 1968

D. Catalyst Evaluation (cont'd)

Successful utilization of this system would make royalty payments to Uniroyal unnecessary.

Another experimental initiator (Lupersol 228 - acetyl cyclohexane sulfonyl peroxide) was evaluated in a typical PVC-1225 recipe and found to be slightly less efficient than IPP.

E. Plastisol Extender Resins

A number of bottle and 8 gallon pilot plant runs were made in an effort to develop a plastisol extender resin with a fusion time faster than that characteristic of the 8000 series resins. Various combinations of polyvinyl alcohol and secondary emulsifiers failed to give product with a sufficiently small particle size to be useful in extender applications.

F. Monomer Evaluation

One pilot plant run was made to evaluate Continental Oil vinyl chloride. The monomer was found to give satisfactory product in a 1225E recipe.

G. Miscellaneous

A trip was made to Robbins Products in Tuscumbia, Alabama, and Prescott, Arkansas to observe their manufacturing procedures.

A trip was made to Pensacola on June 24 to assist in pilot plant construction planning.

II. Applications Research

A. Mr. Birkhead's employment was terminated on June 6. Mr. Roark left on June 19. No further charges will be made to Applications Research.


J. F. Gabbett

AP00045965

Mr. Barry

AGRICULTURAL CHEMICALS DIVISION

MONTHLY REPORT

July, 1968

AP00045966

Personnel

AP00045967

ESCAMBIA CHEMICAL CORPORATION

Interoffice Memorandum

To: Mr. T. L. Carey

Date: August 2, 1968

From: E. M. Spurlock

Re: Monthly Report - Personnel Department - July, 1968

PERSONNEL

<u>Division</u>	<u>Activity for the Month</u>			<u>No. of Employees 7/31/68</u>	<u>July 1968 Budget</u>
	<u>No. of Employees 6/30/68</u>	<u>July Addit.</u>	<u>July Separa.</u>		
Executive Office	5	0	0	5	5
Accounting & Credit	42	5	2	45	44
Plant & Wilton Labs. & Planning & Dev.	72	0	10	62	86
Plant Admin. & Process	196	20*	5	211	201
Plant Engr. & Maint.	124	2	1	125	131
Personnel & Safety	12	0	0	12	12
Purchasing & Traffic	29	0	2	27	29
Sales - Agri. Chem.	158	5	7	156	195
Sales - Ind. Chem. & PVC	<u>17</u>	<u>0</u>	<u>1</u>	<u>16</u>	<u>15</u>
Total Escambia	655	32	28	659	718

* This includes 17 operators and a clerk who were employed to staff the NPK plant and are not included in the 1968 budget figure.

<u>Carroll Construction Co.</u>	<u>No. of Employees 6/30/68</u>	<u>No. of Employees 7/31/68</u>
Office	2	2
Maintenance		
Insulators	3	3
Mechanics	13	12
Yardmen	2	2
Trashmen	2	2
Laborers	17	15
Janitors	7	7
Painters	7	6
Carpenters	<u>1</u>	<u>0</u>
Total Maintenance	<u>52</u>	<u>47</u>

AP00045968

PERSONNEL (Cont'd.)

<u>Carroll Construction Co.</u>	<u>No. of Employees</u> <u>6/30/68</u>	<u>No. of Employees</u> <u>7/31/68</u>
PVC Laborers	8	8
Area B Laborers	20	17
Truck Drivers (Traffic)	3	3
Railroad Crew	<u>1</u>	<u>1</u>
Total Carroll	86	78
	<u>655</u>	<u>659</u>
Grand Total	741	737

There were 171 walk-in applicants, 147 applications were issued and 10 were received by mail. One hundred eighteen applications were interviewed and 103 were tested.

SAFETY

The Corporation worked approximately 116,000 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	441,000	2,553
Research	1,062,000	4,033
Sales	38,000	40
Pensacola Plant	2,500	1
Corporation	3,700	1

A lost time injury was experienced by a member of the electrical group at the Pensacola Plant. The injured stepped into an unguarded excavation, fracturing two bones of the left foot.

The plant elevators were inspected by a member of the Workmen's Compensation Division of the Florida Industrial Commission. Thirteen items were recommended for correction.

The Research Division completed eleven years without a lost time injury.

AP00045969

SAFETY (Cont'd.)

Medical Section

The Medical Section treated 20 injuries for Escambia and 24 for Carroll, performed 26 pre-employment and 7 annual physicals and gave a total of 24 immunization injections.

EMPLOYEE RELATIONS

Three (3) 5-year service awards were presented.

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

Mr. James W. Griffin, Day Supervisor in the PVC Plant died as a result of a brain tumor on July 19, 1968.

We made another trip to Wilton Laboratory for the purpose of discussing the movement of employees to Pensacola and to crystalize our thinking on benefits which could be extended to certain employees.

LABOR RELATIONS

There were no new developments on union activity in this area. The unions continue to contact the employees of Monsanto (Chemstrand), American Cyanamid and Escambia.

INSURANCE

I reported last month that all the information had been received to file a claim on the damages to tank cars caused by acid from the DNT Plant. When we computed the claim we discovered that the figure from General American Tank Car Company was incomplete. We have now secured the necessary information and will file the claim early in August.

During the transfer of equipment from the Wilton Laboratory to Pensacola it was decided to rent a special "air ride" van haul the delicate measuring instruments. We included most of the library in this load. During the trip the "air ride" equipment developed a mechanical failure which caused a fire inside the van. Some of the equipment and books were severely damaged. We are now in the process of evaluating our damage prior to filing a claim on this loss.

AP00045970

INSURANCE (Cont'd.)

On July 24, 1968 one of our temporary employees in the Albany Distribution Center, Mr. LeRoy Clinton died. This employee left work at 5:30 p.m. and was dead by midnight. We do not know the cause of death at the present time, but we feel reasonably sure that it will be alleged that he died from insecticide poisoning. We have made a thorough investigation of the circumstances surrounding the death and we are waiting to receive the autopsy report before proceeding further.

We paid a total of 86 claims under our Group Hospitalization program which amounted to a total of \$ 12,325.09 during the month of July.



E. M. Spurlock

EMS:as

AP00045971

PLASTICS AND RESINS

MONTHLY REPORT

JULY 1968

7
(Camp file)

46

AP00045972

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: T. L. Carey **DATE** August 5, 1968
FROM: C. L. Wallace **COPIES**
SUBJECT: PVC Monthly Summary --
July 1968

Marketing

Sales for the month were again below budget, and preliminary results reflected a loss of \$43 M versus a forecast of \$59 M. The low sales volume of 3,655 M lbs. can be accounted for in part by the less than normal purchases of Robbins Floor Products and a slow comeback (as a result of belatedly meeting competitive price cuts) at ITT, Blane and Elm Coated Fabrics. Although Robbins has been slow for two months, orders at July month-end for August indicate an upswing.

The sales of specialties showed an improvement with 125 M lbs. of fusion and 84 M lbs. of extender resins being sold.

The Sales Order Department was relocated to Pensacola. To date customer reaction has not been negative as was initially feared by some sales personnel.

Sales for August are estimated at 4,100 M lbs. During the month, the sales force will be re-organized to cover the accounts handled by Mr. R. F. Porter who was transferred to Cast Optics. During August it is planned to have data bulletins drafted for all resins and a geographic analysis prepared for all current and potential business. This will be the first step in a planned reallocation of sales territories.

Research and Development

Research and Development work was centered around the production of Saran for Union Carbide Food Products Division and the move to Pensacola. A total of 10,500 Lbs. of Saran was produced and shipped to Carbide, completing the current order. All files, notebooks, etc. relative to R&D work were packed and shipped to Pensacola.

Technical Service

Visits were made to Armstrong Cork and Continental Can with respect to the bottle compound business. Armstrong was loaned our vacuum hopper to assist them around a moisture problem they have encountered with ours as well as competitive resins. Continental Can was supplied with samples of two FDA type dry blend compounds.

AP00045973

Technical Service (cont'd)

Robbins Floor Products was visited to assist them in the use of our plastisol extender resins. Cost savings in our proposed formulations were explained to Robbins' production and R&D executives.

Additional comparisons were made of Escambia plastisol extender resin with competition in plastisol foams. Escambia's PVC-8250 was inferior to Pliovic's M-90 and PVC-8200 was equivalent to Borden's VC-260-S. In a foam formulation using Firestone Exon 605, Escambia PVC-8200 was better than Diamond's 7-44, Pliovic's M-70, and Geon 106-F12. Escambia's large particle size extender resin, PVC-8185 was evaluated in a foam product. It produced a good foam product slightly better than Borden's 260-C, but not quite as good as Firestone's exon 666.

(NOTE: Vinyl foam, or sponge, is of current interest in the flooring trade as a backing for sheet flooring. All the major flooring houses are now marketing such products.)

All files, records and equipment to be moved to Pensacola have been packed for shipment.

Production

PVC production was 4,165 M lbs. of prime resin versus the budgeted 4,250 M lbs. Total production was 4,428 M lbs. Off-grade was exceptionally high this month, 5.9% due to homopolymer contamination of co-polymers and accounting for some off-grade material produced in June. The production run of the co-polymer, PVC-6180, was the first run made after the dust collecting modifications and without being preceded by a PVC-X6150F run. (The PVC-X6150F was not effected by cross-contamination and acted as a clean-up resin; however, this type has been discontinued). Clean-up producers will be expanded to reduce contamination.

Additional test variations were made in the PVC-3185 recipe to reduce the bulk density without effecting other properties. The tests were not successful.

The grinding of resin to produce PVC-41852S and 3S was highly successful this month. Only 7% of its production failed, apparently due to cross-contamination with non-fusion resins (tails) previously ground. None of the product had the mottled appearance that has often plagued production. The data is being reviewed to determine what we did right.

All general purpose resin production was routine and within specifications.

AP00045974

Production (cont'd)

A major maintenance problem was incurred during the month with the electrical curcuit breakers in the main substation. Curcuit breakers failed on six occasions. Two of the breakers are being replaced, and repair parts are being purchased to improve the reliability of the remaining breakers.

The replacement of the brass bearings in the dryer feed screws with nylon and a small water purge for lubrication seems to have reduced problems in this area. A possible alteration to eliminate the feed screw completely is being considered.

Cost variance for the month was \$487 unfavorable compared with the projected cost variance of \$0. Bulk production variance of \$4,160 favorable was offset by \$4,607 unfavorable in nonrecurring packaging costs.

Production for August is estimated at 4,080 M Lbs. and cost variance at \$0 favorable.

General

The relocation of the R&D, Technical Services and Sales functions to Pensacola are proceeding on schedule. Mr. A.R. Donaghy has relocated his Sales Order office. The new R&D and Technical Service building is on schedule for occupancy August 15. Messrs. Gabbett and Johnson have decided to leave Escambia and applicants to fill their vacancy have been interviewed.

Two preliminary interviews were conducted in a search for a commercial development minded R&D director to head the department. Each candidate will be interviewed in Pensacola in early August.

The 1969 PVC Business Component Budget was prepared and presented to management.

Agreement was reached with Allied Chemical in two cost areas: (starting October 1, 1968) for VC monomer, and an agreement to produce general purpose PVC resins for our account FOB Painesville, Ohio. Proposed contracts have been reviewed and, while modifications and clarification is in process, major problems are not presently evident. We were emphatic in stating that this relationship could be mutually beneficial; we intended no inroads

AP00045975

T.L. Carey

-4-

August 5, 1968

General (cont'd)

on their general purpose business and we expected a mutual treatment by them. We also discussed in a very preliminary manner the idea of some sort of trade of their plastisols for our extender resins.


C.L. Wallace

AP00045976

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: C. L. Wallace

DATE August 5, 1968

FROM: D. W. Klohs

COPIES

SUBJECT: Monthly Summary -- Sales
July 1968

I. Dynamics of the Business

<u>Type</u>	<u>July 1968</u>		<u>Year to Date</u>	
	<u>M Lbs.</u> <u>Budget</u>	<u>M Lbs.</u> <u>Sales</u>	<u>M Lbs.</u> <u>Budget</u>	<u>M Lbs.</u> <u>Sales</u>
Prime Resin	3780.0	3,507,300	25,520.0	28,117,312
Off-Grade Resin	<u>122.5</u>	<u>157,750</u>	<u>857.5</u>	<u>1,754,800</u>
Total	3902.5	3,665,150	26,377.5	29,872,112
Compound (To May 31)			<u>1,190.0</u>	<u>223,835</u>
Total			27,567.5	30,095,947

Because of the move of PVC Sales Service to Pace, I am handicapped in writing this month's report. As of this moment, I do not have a sales breakdown by accounts; therefore, I am only partially aware of the outages for the month, which put us below budgeted sales.

In spite of the fact that July, as anticipated, was below budget, we remain about 2.5 MM lbs. ahead of budget for the year to date. Our average month thus far this year has totaled 4.28 MM lbs., which is just about our production level.

The principal outage in July occurred at Robbins. They purchased a mere 347 M lbs. against their projection of 850 M lbs. Naturally, had they taken their expectations, we would have met the budget with ease. Thus, Escambia's history in PVC repeats. When Robbins buys what they project they will buy, we can meet our sales volume. When they fail us, we fall on our faces because it is then too late to take corrective steps. Thus far, they have descended on us rather heavily for August; and we anticipate sales of 4 MM lbs. for the month.

AP00045977

August 5, 1968

Also, we sold nothing to Blane in July; and lost ground at Elm and ITT -- where we have not, as yet, recovered from our attempts to raise the prices. Stan Anton will be working diligently on all three accounts in order to bring them back into the fold with good volume.

As stated above, we anticipated that July would be below budget. July is normally the vacation month in the PVC trade, and many companies in this industry close completely for one to two weeks. In addition, we lost the services of Bob Porter early in the month, and I am certain that this hurt our volume in New England. This hole in our sales force has now been plugged. We have hired Robert Weston, who will concentrate on the specialties; and Stan Anton will handle such accounts as USM, ITT, TAMI and Blane.

Specialties took on a rosier glow in July in spite of the vacation slow down. We sold 125 M lbs. of 4185 and 84 M lbs. of plastisol extenders. The latter will pick up substantially in September. We now have PVC-8200 approved at Pandel, where anticipated volume is around 50 M lbs. per month. Also, I have asked Bill Lyons for a projection on Chemical Sealing's requirements for 8200 and he stated that he expects 80 M lbs. per month starting in August or September. The Chemical Sealing account could buy from us 1-1/2 - 2 MM lbs. of plastisol extender next year.

Further East Coast Chemicals stated that they would need 1 MM lbs. of PVC-6240 in 1969 for sale to Essex Chemical. This will be used in a plastisol for the manufacture of automotive air filters.

During the month, Bob Johnson and I visited Robbins; and we are confident that we got things started there for our plastisol extenders. We had sent the Prescott plant trial quantities of 8200 and 1255. The first two were quoted at 17¢/lb. and the latter at 12¢/lb. in truck loads. PVC-8200 will be used to replace Borden's V-C-260-S in plastisols. (Our 17¢ price may not be competitive, but I'll worry about that after we are approved.) PVC-8285 and 1255 will be used to replace a plastisol resin in a calendered film which Robbins is making for their own use. They should be able to consume 60-80 M lbs. per month of these combined products, if all goes well in the tests.

II. Prices and Trends

Prices continue to soften in spite of our feeling that they can't get worse. Apparently, no one has told Allied Chemical and Ethyl that the prices are now on the floor.

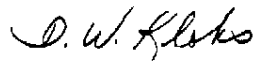
We booked a car of 2225 to Wiman in July, but had to meet a 9.5¢ per pound price in order to do so. Both Allied and Ethyl gave them this price; and we had to meet it or walk away from the business. We found out in May that we can't walk away and keep our plant completely absorbed.

In addition, Paul Baker called last week and advised me that Allied quoted U.S.

AP00045978

August 5, 1968

Stoneware 8.5¢/lb. for general purpose resin in bags. This is unbelievable; but then most of Allied's recent performance in that business has been. I understand from some of my plastisol contacts that they are also softening the plastisol resin price to the 20¢/lb. area from 24¢. It is obvious that Allied can't make all of the resin consumed in the USA, but they don't seem to be interested in letting anyone else make money in this business. Where the general purpose price will end up is now anybody's guess. All we can do is hope that in the near future both Allied and Ethyl totally absorb their production capacity. We can then hope for some reason in this business once again.



D. W. Klohs

AP00045979

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. G. B. H. Speed **DATE** August 2, 1968
FROM: M. B. Rogers **COPIES**
SUBJECT: PVC Monthly Report - July 1968

SUMMARY

July production was 4,164,650 lbs. prime resin and 4,227,800 lbs. total, compared with a projection of 4,250,000 lbs. prime. Off-grade production of 173,000 lbs. included mostly PVC 6180 copolymer contaminated with homopolymer. Fourteen types were produced in 16 separate runs.

Vinyl chloride efficiency remained above budget at 94.9%.

Additional PVC 3185 fusion resin recipe variations did not produce consistent results, although all the resin product was either sold as prime grade or ground to good PVC 4185-2S and 3S material.

Installation of the new controllers on the refrigeration machines has apparently reduced the cycling and improved the reliability of the machines.

Variance for July was \$487 net unfavorable. Bulk production variance of \$4,160 favorable due to monomer efficiency and high volume was offset by \$4,607 unfavorable in packaging due to grinding labor costs and exceptional supplies purchase and bulk car maintenance cost.

STATISTICS

	<u>July</u>		<u>June</u>	
	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>
<u>Prime Production, M lbs.</u>				
Month	4,165	4,080	4,045	4,080
Year to Date	28,253	28,560	24,088	24,480
<u>Off-Grade Production, % of Total</u>				
Month	5.9	3.0	2.3	3.0
Year to Date	3.7	3.0	3.4	3.0
<u>Bulk Production, % of Prime</u>				
Month	54.6	57.5	32.6	57.5
Year to Date	51.6	57.5	51.2	57.5

AP00045980

STATISTICS (continued)

	<u>July</u>		<u>June</u>	
	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>
<u>Shipments, M lbs.</u>				
Month - Prime	3,692	-	3,185	-
Month - Off Grade	158	-	194	-
Year-to-Date Prime	28,077	-	24,385	-
Year-to-Date Off Grade	1,592	-	1,434	-
<u>VCI Efficiency, %</u>				
Month	94.9	94	94.6	94
Year to Date	95.3	94	95.4	94
<u>Reactor Availability, % of Available Hours</u>				
Month	81.8%	-	79%	-
Avg. Year to Date	80.7%	-	80.5%	-
<u>Reactor Downtime, % of Available Hours</u>				
Mixing Solutions in Reactors	0.4	-	0.5	-
Cleaning & Washing Reactors	8.4	-	8.6	-
Scheduling Charges	3.2	-	5.7	-
Changing Types	1.2	-	1.2	-
Copolymer Production	0.0	-	0.1	-
Slow Recovery	0.3	-	0.2	-
Low Drying Rates and Dryer Line Cleanout	0.8	-	1.7	-
Hydraulic Motor Repairs	0.0	-	0.4	-
Misc. Reactor Maintenance	1.0	-	1.5	-
Dryer Maintenance	1.5	-	0.9	-
Electrical & Instr. Maint.	0.4	-	0.1	-
Miscellaneous	1.0	-	0.0	-
Experimental Batches	0.0	-	0.0	-
Total	18.2	-	20.6	-

AP00045981

Product Mix, M lbs. Prime Resin

	July		June	
	<u>Actual</u>	<u>Budget</u>	<u>Actual</u>	<u>Budget</u>
Group I	2,405	2,154	1,799	2,154
Group II	1,165	1,010	1,120	1,010
Group III	229	603	513	603
Group IV	0	23	0	23
Group V	282	262	613	262
Group VI	84	32	0	32
Group VII	0	0	0	0
Total	4,165	4,084	4,045	4,084

Off-Grade and Tailings

<u>Off-Grade</u>		Quantity <u>Lbs.</u>	<u>Reason Off-Grade</u>	<u>% of Total Production</u>
<u>Type</u>	<u>Lot</u>			
3185	3284-1	11,350	Contamination 36	0.3
	3284-2	15,000	Contamination 36	0.3
		<u>26,350</u>		
6180	3310	32,800	Bulk Density 20.1	0.7
	3297	33,600	Sediment No. 100	0.8
	3295	36,000	Sediment No. 120	0.8
	3293	35,800	Sediment No. 150	0.8
	3292	8,550	Sediment No. 150	0.2
		<u>146,750</u>		
Total Off Grade		173,100		
<u>Tailings</u>		80,050		1.8
<u>Floor Sweeps</u>		<u>10,000</u>		<u>0.2</u>
Total		263,150		5.9

AP00045982

Payroll

	<u>July</u>	<u>June</u>
Regular Hours	6,750	7,815
Unscheduled Overtime		
Hours	1,014	497
Percent	13.0	6.0

PRODUCTION1000 Series

Types produced: 1200, 1217, 1225, 1230, and 1250.

All PVC 1000 series production was routine and within specifications.

One bulk rail car compartment of PVC 1250 shipped to Phillips was rejected on the basis of the Phillips wet contamination test. All samples taken during and after loading had checked excellent, but additional samples taken by Phillips were also judged unsatisfactory. The car has not yet returned to Pensacola for determination of the nature of the contamination found by Phillips. A replacement bulk truck shipment was accepted.

2000 Series

Types produced: 2170, 2225, and 2250.

Production was normal.

3000 Series

Types produced: 3185 and 3225.

The PVC 3185 recipe was tested in the following variations:

- (a) Various UY suspending agent and EZ salt buffer levels and ratios.
- (b) EZ in solution versus solid.
- (c) FE seed latex addition before and after the EZ salt addition.

AP00045983

The results were not consistent within each variation, but generally showed the following trends:

- (a) Bulk density was not controllable in any of the salt variations tested, including those when FE was added last and better control was expected. The lowest salt level was apparently too high for the set in which FE was added last.
- (b) Increasing the UY gave more excessive fines and did not reduce the bulk density.
- (c) Liquid solution of EZ salt gave a higher proportion of batches with the desired PVC 4185-SP properties, but the results were erratic. The variation is unexplained.

Most of the PVC 3185 has been ground to satisfactory PVC 4185-2S and 3S material for which a moderately higher fines content increases the grinding rate.

High fisheyes in PVC 3225 was corrected by increasing the UY level.

6000 Series

Types produced: 6180 and 6240.

The first 4 lots of PVC 6180 were off-grade because of high sediment number, a measure of homopolymer contamination. Another coarse copolymer, or at least a coarse homopolymer, must be scheduled before PVC 6180 in future runs; fine homopolymers cannot be adequately removed by physical cleaning to prevent contamination.

A problem with low bulk density and excessive oversize in PVC 6180 was corrected by adjusting the levels and ratio of suspending agent and buffer salt. A difference in a new batch of suspending agent made the standard recipe unsatisfactory.

PVC 6240 relative viscosity was satisfactorily adjusted to a customer's special requirements of 2.40 ± 0.05 .

AP00045984

8000 Series

Types produced: None

Ground Resin

Of 77,250 lbs. of ground 4185-2S and 3S fusion resin, only 5,250 lbs. did not pass the fusion test, and this failure was apparently from contamination with non-fusion types previously ground in the mill. None of the product had the mottled appearance so often a problem in the past.

MAINTENANCE

Both dryer feed screw bearings were changed from brass to nylon with small metered water purge for lubrication. Both nylon bearings appeared in good shape after 1/2 and 2 weeks service, respectively. Both feed scrolls were cut off at the trough discharge port to prevent forcing PVC into the bearings. It was learned that two other PVC manufacturers use gravity feed in place of feed screws to avoid this contamination and maintenance problem source. Measurements were taken for a chute to eliminate the feed screws in both dryers when shutdown time permits installation.

The major maintenance problem in July was six circuit breaker failures in the main substation. Two of the worst breakers are being replaced in conjunction with the PVC Research and Technical Service laboratory building, and repair parts were purchased to make the remaining breakers more reliable.

The refrigerated water strainers were cleaned 7 times this month to remove trash. The new temperature controller was installed on the east machine and is performing well in conjunction with the controller previously installed on the west machine.

The epoxy coating in the Alpine mill failed and was replaced.

The No. 4 reactor removed in January was sent to Glascote for reglazing and nozzle and baffle modifications.

Routine maintenance in July included the following:

Replace shaft seals, change valves, (north unit only)
and repair relief valves on recovery compressors.

Instrument calibrations on No. 4 and No. 7 reactors.

AP00045985

Drop valve repairs on No. 1 and No. 9 reactors.

Cleaning monomer purification still and miscellaneous vapor lines.

GENERAL

A Simco static electricity analyzer was obtained to study this phase of the low and sometimes variable screening capacity with some resin types. Initial readings show surprising variations in the size and sign of charges on the Rotex screens with and without humidifying steam. A non-hazardous Polonium radioactive static eliminator was received for trial in the Rotex screen cover and is to be installed in early August.

A Pfaudler representative recently suggested that the location of the reactor baffle adjacent to the thermowell would increase the fouling tendency at that point. The baffle in No. 10 reactor was moved opposite the thermowell, but there is no apparent effect on fouling.

Installation of a motor operator on the south stripper drop valve was completed this month. The automatic valve will reduce losses from overflowing the blend tank chip baskets and improves operator utilization.

The PVC Tech Service and Research lab building is nearing completion for occupancy August 15. A 50 gallon reactor for the PVC pilot plant is due the end of August, and quotes have been received for a 500 and 1000 gallon reactor to be selected for the pilot plant.

AUGUST 1968 PROJECTIONS

August projections are as follows:

	<u>Projection</u>	<u>Budget</u>
Production, M lbs.	4,080	4,080
Month-End Inventory, M lbs.	2,700	-
Production Cost Variance	(2,200)	-

AP00045986

August 2, 1968

VARIANCE ANALYSIS

July variance was as follows:

<u>FAVORABLE</u>		<u>UNFAVORABLE</u>	
<u>PRODUCTION</u>			
Monomer Efficiency	\$ 2,152	Volume Variance	\$ 156
By-product Credit	9,675	Monomer to Off-Grade	5,856
Process Costs		Process Chemicals*	1,184
Salaries	4,007	XA Monomer *	1,620
Misc., travel, comm.,	1,270	Process Costs	
Rental and training	623	Laboratory	1,494
Other	62	Taxes & Insurance	695
		Utilities	1,249
		Maintenance	1,415
	\$17,789	* Off-set by by-product credit.	\$13,669

NET PRODUCTION - \$4,120 favorablePACKAGING

	Bags to Off-Grade, etc.	\$ 871
	Process Costs	
	Salaries (to Alpine Mill)	1,189
	Mat'ls & Supplies (large glue purchase)	1,186
	Maintenance (mis-charge from rail car repair)	1,203
	Miscellaneous	158
<u>TOTAL, NET PACKAGING</u>		<u>\$ 4,607</u>
<u>TOTAL NET</u>	Unfavorable -----	\$ 487



M. B. Rogers

AP00045987

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: C. L. Wallace **DATE** August 1, 1968
FROM: R. E. Johnson **COPIES**
SUBJECT: Monthly Summary -- Technical Service
July 1968

ARMSTRONG CORK

A Technical Service visit was made to Armstrong to assist them in the blow-molding of PVC bottles. It appears that Armstrong is having a definite moisture problem. They have had difficulty processing PVC-2185 as well as competitive resins and compounds. Armstrong has been loaned our vacuum hopper from the 2-1/2" extruder and has been instructed as to its use. The hopper is currently being installed on their Fischer molding machines. The results of this will be reported as soon as received. They anticipate their consumption of PVC for bottles will be 2 MM lbs. /month in another year or so.

CONTINENTAL CAN

As part of our efforts to supply Continental with resin for bottles on a contractual basis, we have supplied them with approximately 50 lbs. each of two FDA type dry blend compounds for use in their machines. Based on the results of these trials further dry blends will be provided incorporating any suggestions either of us feel should be made.

ROBBINS PRODUCTS, INC.

A Technical Service visit was made to Robbins to review the work that we had been doing for them. Plastisol extender resins and their use in Robbins' applications were discussed and samples using plastisol extender resins were presented. It was recommended that PVC-8250 be used in their foam applications. Robbins' vinyl asbestos program was also discussed. It is expected that this line will be in production by September 1. Unfortunately, at this time, Escambia does not have a copolymer that will meet Robbins' requirements.

PLASTISOL EXTENDER RESIN EVALUATIONS

- A. The main emphasis this month was placed on evaluation of our resins in plastisol foams.

A comparative evaluation of PVC 8200 vs. Borden VC-260-S and PVC 8250 vs. Pliovic M-90 was carried out in a formulation containing medium molecular weight paste resin. The

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experiment was repeated using a high molecular weight paste resin.

It was shown that the extender resin used should closely approximate the molecular weight of the paste resin to get the best results and that M-90 produces superior foam than PVC 8250, while VC-260-S and PVC 8200 are approximately equivalent.

- B. The large particle sized extender resins PVC 8185, Firestone's Exon 666 and Borden 260-C were evaluated in a foam formulation.

Escambia PVC 8185 produced a good foam product, but the Exon 666 formulation was slightly better. The particle size of the extender resin has little affect upon foam quality; the most important thing is the surface tension and melt viscosity of the formulation.

- C. Escambia PVC 8200 extender resin was compared to Daimond 7-44, Pliovic M70, Borden 260-S and Geon 106-F2 in a foam formulation containing Firestone Exon 605 paste resin and D.O.P. as plasticizer.

The best foam qualities were exhibited by the PVC 8200 formulation.

- D. Stabilizers; Nuostab V-1367, Mark 739 and Ferro 12-V-C were evaluated to determine their effect on the fusion of PVC 8200.

Nuostab V-1367 promotes much faster fusion.

- E. The quality of PVC 8200 extender resins lot 3231, 3234, 3236 and 3239 was investigated. All were deemed satisfactory.

- F. The following experiments were worked on but need further investigation in the designated areas because the equipment necessary for their completion was shipped to Florida.

Research Project 2758-51 (Resin Development)

Experimental Resins #5-148, 5-151, 5-153, 5-154, 3-789, 3-780 and 3-800 were evaluated in the standard paste formula vs. 8185.

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Samples were made for the evaluation of tensile properties to be carried out at a later date.

Robbins Floors #2758-52

Evaluation of Properties contributed by various fillers.

The paste properties of a comparative formulation containing the fillers PIG #33 (clay), Surfex-mm, Atomite, Duramite, #1 White, #3 White and 40-40 White were evaluated.

Samples were prepared for comparative stain and tensile properties.

Relocation of Technical Service Laboratory

The equipment in the Technical Service Laboratory is all packed and crated for shipment to Pensacola.


R. E. Johnson

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ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: C. L. Wallace **DATE** August 1, 1968
FROM: V. J. Grande **COPIES**
F. L. Riddle
SUBJECT: Monthly Summary -- Product Development
July 1968

I. PVC Research

A. Saran

The present Saran run being conducted in the pilot plant is due to be concluded on Friday, August 2. The following quantities of Saran will have been prepared and shipped to Union Carbide:

8000 lbs.	VI710E
500 lbs.	SBV 1710E
500 lbs.	SOV 1710E
500 lbs.	SV 1710E

The complete file of Saran technology is being obtained from Mr. Gabbett and sent to Pensacola.

B. Plastisol Extender Resins

Research efforts in this area have been terminated for 6-8 weeks. Prior to this, considerable laboratory and pilot plant activity was conducted which will be resumed in Pensacola. All of this data has been reported and is in our files.

C. Micropearls

Pilot plant runs were recently stopped. Such reaction variables as agitation, order of reagent addition, and temperature profiling were studied. Each variable significantly effected particle size and bulk density. Much information has been learned concerning the mechanism of this reaction. When the Pensacola pilot plant is in operation this effort can be continued.

D. Miscellaneous

Projects with a lower priority such as X-130 (isobutylene/ vinyl chloride co-polymer), solution, grade, flooring grade, and electrical grade resins are also dormant at the present time.

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E. Move to Pensacola

All equipment has been packed and either shipped or waiting to be shipped, as have all notebooks and pertinent data.

II. Technical Service

The Technical Service Monthly Summary describes the customer request status on PVC bottle programs and plastisol extenders. It is apparent that added technical effort will be required in each area.

A. Project Status1. Resin for Bottles Contract

R. E. Johnson is presently reviewing the entire blow molding program and will provide New Product Development with the best available information for a technical presentation including resin specifications, compounding equipment, formulations, physical properties, dry blending and pelletizing procedures, etc. This handwritten information will be available from Technical Service late the week of August 5 for review by New Product Development. All records in this area will be under P. R. Browne subsequent to shipment.

2. Plastisol Extenders

The analytical procedures for evaluating extender resin production have already been transmitted to Pensacola. Quality Control Technical Service has provided its complete file on plastisol extenders to New Product Development for future reference. Generally, the acceptability of each plastisol extender resin depends upon the end use requirements, but these have not been specifically defined as yet.

B. Technical Service Move to Pensacola

All packing will have been completed by July 30, 1968 and awaits shipment to Pensacola. The pelletizing equipment units are waiting to be sold or otherwise disposed of.

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III. New Product Development

- A. New Product Development will vacate the Wilton laboratories on July 30, 1968, after shipping one file cabinet and some relevant books to the New York office.
- B. Two budget related visits were made to Pensacola in July.
- C. Data bulletins will be pursued with Technical Service in August and drafted by late August. "Plan alternatives" will be defined in writing subsequent to review of information and data from Technical Service and Production.
- D. The geographic analysis of sales and territories is being delayed to clean up loose ends with Technical Service and moving. Preliminary analysis of data provided will be ready by late August.

V. J. Grande

V. J. Grande

F. L. Riddle

F. L. Riddle

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PLASTICS AND RESINS
MONTHLY REPORT

JULY 1968

TL Carey 5/1/68 -

RFE to establish PVC at Pace
as presented to CK Rieger -

1969 Results - Pre tax Income

Max 701

Min 410

1969 Prelimin
Budget 100

*All back of pages for
notes also*

RECEIVED

P. E. MILLS

AUG 9 1968

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