ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. H. L. Harwell **DATE** April 2, 1968

FROM: G. B. H. Speed **COPIES**

SUBJECT: March Monthly Report - Amines and PVC

SUMMARY

Amines

Total production in both plants established a new record, 7,659M lbs. of amines.

The number 1 plant was in methylamines service the entire month with exceptionally good operation. Only one day's outage was required for catalyst change. All monomethylamines was on-specification and no leaks developed as was expected in the forward flow exchangers.

A more expensive catalyst is currently being evaluated in the number 1 plant. The catalyst was purchased based on longer life and an expected higher selectivity towards the dimethylamines. At present no increase in di production has been seen, although operating conditions are different due to a higher tri recycle.

The number 2 plant was switched from ethylamine to isopropylamines on March 11. Operations on ethylamines were routine. The isopropylamines run was started up using the recently approved larger cooler on the high pressure scrubber. After lining out with the new cooler production averaged 192M lbs./day which is about 40M lbs./day higher than previous operations in either plant.

The new 30 inch multi-purpose column was used successfully in TEA service this month.

An RFE was submitted to install the necessary equipment to produce IBN in July.

During April, the number 1 plant will continue in methylamines service and the number 2 plant will continue in isopropylamines service.

The production data for March and estimates for April are shown in Exhibit I. Cost variances are as follows:

	Variance, $ (fav.)	
	March	April
Methylamines	(19,319)	(15,000)
Ethylamines	(10,706)	
Isopropylamines	(58,886)	(45,000)
Total	(88,911)	(60,000)

PVC

Prime resin production for March was 4,338,430 lbs. and 254,430 lbs. above budget. Sixteen different types were produced in 21 separate production runs including seven experimental runs.

Variance for March was $26,976 favorable.

Quality control showed marked improvement this period. Of the total 122 lots produced, 21 were out of manufacturing specification. Of these 21, 9 lots were so close to specification they were grade A with Sales approval, 3 lots were off-grade, 5 lots were special experimental runs and 4 were grade SE. The grading of PVC is now under the complete responsibility of the Quality Control Laboratory and the use of the SE (Sales Evaluation) grade discontinued.

Type 1200 was switched from CC to KC catalyst with a 25% reduction in cycle time. Product quality appears unaffected.

As reported last month we have been unable to produce PVC 1250X-2 to meet the customer's low fish-eye specification. A single batch lot was produced employing excess monomer and early blowdown was tried without success.

Recipe variations failed to produce the particle size distribution on PVC 2185 requested by Polymers, Inc.

Type 2170 was produced with a relative viscosity of 1.74 as requested by Sales.

Test work with PVC 3185 indicates that we now have good control over bulk density and oil absorption for fusion resin and Alpine mill feed. Selected lots ground to excellent 2S and 3S fusion resin product.

A second trial batch of PVC X-6150F produced a better size distribution, but the bulk density was still low.

A trial lot of type 6240 with a 2.40 relative viscosity ran slightly above target, but sufficient data was collected to be able to zero-in on the 2.40 relative viscosity.

Monomer efficiency for the month was 96.3%.

The projection for April includes the installation of the equipment for fine particle size resin production and the swap-out of one reactor during the week of April 8. Production for April is estimated at 3,630M lbs. and variance at $11,000 unfavorable.

DISCUSSION

Amines Number 1 Plant

The number 1 plant was on methylamines the entire month. Operations were exceptionally good the entire month with only 12 hours outage to change catalyst. No leak developed in the forward flow exchangers as anticipated and all monomethylamines production was on specification.

The methylamines operations started using plant DME as feed stock near month's end. Although it is still a little early, no problems with using plant DME have been noticed. The use of methanol heads will be delayed until the DME is evaluated.

The plant was switched to a more expensive catalyst on March 21. The new catalyst is expected to last longer and there was some indications that the catalyst was more selective towards dimethylamines production. To date we have seen no increase in the di production although the current operations are with higher tri recycle and lower temperatures to reduce oil make.

Both methanol and ammonia efficiencies were above budget as follows:

	Efficiency, %	
	Actual	Budget
Methanol	91.5	90.0
Ammonia	94.7	90.0

Amines Number 2 Plant

The number 2 plant was switched from ethylamines to isopropylamines on March 11. During the ethylamines run, operations were normal maintaining the high MEA production established in February. The operations of the number 2 plant on isopropylamines using the recently approved cooler on the high pressure scrubber was highly successful. After lining out, production averaged 192M lbs./day; about 40M lbs./day higher than ever achieved in either plant.

Efficiencies were above budget as follows:

	Efficiency, %	
	Actual	Budget
Ethylamines		
Ammonia	93.9	85.0
Ether	81.3	80.0
Isopropylamines		
Ammonia	95.6	85.0
Acetone	93.6	85.0

Polyvinyl Chloride

PVC production for March was 4,338,430 lbs. of prime resin and 140,100 lbs. of off-grade. Monomer efficiency was 96.3% for the month and totals 95.8% year-to-date.

Quality control shows marked improvement this period as discussed in the summary.

A total of 7 experimental runs were made as follows:

PVC 1200 - The recipe was changed to IPP from the standard peroxide catalyst. The cycle was reduced from 8 to 6 hours

without any apparent affect on product quality.

PVC 3185 - A series of recipe changes was successful in producing the desired bulk density and oil absorption properties for 4185SP and Alpine mill feed. Reproducibility was good and selected lots produced excellent 4185-2S and 3S. Additional variations in recipes are underway at month's end to produce the 4185-2S and 3S in the reactors rather than having to grind the resin.

X-6150F - An additional batch of X-6150F, flooring grade copolymer, was made with better size distribution but the bulk density was still too low.

PVC 1250X-2 - A single batch was produced using excess monomer charge and early blowdown in an attempt to reduce the fish-eye level. This procedure had been successful on type 1200, but no significant reduction in fisheyes were seen in 1250X-2.

PVC 2185 - Five recipe variations were made in an unsuccessful attempt to produce a finer particle size product requested by Polymers, Inc.

PVC 2170 - The recipe was varied to increase the relative viscosity to 1.74 as requested by Sales. The variations in chain transfer agent and temperature had no effect on particle size or bulk density.

PVC 6240 - A trial lot was produced with a slightly higher relative viscosity than the 2.40 requested by Sales. However, sufficient information was obtained to zero-in on the target relative viscosity.

The operation of the new refrigeration machines and high pressure water cleaning equipment were routine.

The installation of the equipment to produce fine particle size resin is scheduled for April 8. During the outage a reglassed reactor will be swapped out and a new chip filter will be installed on the north stripper line.

Production for April is estimated at 3,630M lbs.; variance at $11,000 unfavorable due to production loss and excess maintenance during the shutdown.

G. B. H. Speed

EXHIBIT I

AMINES PRODUCTION SUMMARY

	Production, M lbs.				Plant Inventories, M lbs.		
	March Actual	April Estimated	Monthly Budget	Year-to-date Actual	April 1 Actual	April 1 Estimated	May 1 Estimated
Methylamines, total	3,156	2,750	2,249	5,083	4,511	3,848	4,470
MMA	1,339	1,200	750	2,065	546	380	750
DMA	1,533	1,350	1,083	2,591	2,810	2,475	2,820
TMA	284	200	416	427	1,155	973	900
Ethylamines, total	825		1,353	4,676	3,541	3,743	2,010
MEA	776	-	1,083	4,472	2,927	2,925	1,580
DEA	0	-	208	49	491	628	370
TEA	49		62	155	123	190	60
Isopropylamines, total	3,678**	5,350	1,383	7,271		1,402	5,700
MIPA	3,675	5,250	1,333	7,268	2,470	1,349	5,600
DIPA	3	100	50	3	56	53	100
Isobutyronitrile	0	0	150	0	532	605	410
Total	7,659**	8,100	5,135	17,030	11,110	9,598	12,590

GBHS-4/2/68

** All time record.

A W Gantz

Joe Carey

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CONFIDENTIAL

AGRICULTURAL CHEMICALS DIVISION

MONTHLY REPORT

April, 1968

CONFIDENTIAL

Personnel

ESCAMBIA CHEMICAL CORPORATION

Interoffice Memorandum

To: Mr. T. L. Carey Date: May 6, 1968

From: E. M. Spurlock

Re: Monthly Report - Personnel Department - April, 1968

PERSONNEL

Activity for the Month

Division	No. of Employees 3/31/68	Apr. Addit.	Apr. Separa.	No. of Employees 4/30/68	April 1968 Budget
Executive Office	3	0	0	3	5
Accounting & Credit	42	0	0	42	43
Plant & Wilton Labs. & Planning & Dev.	80	0	2	78	86
Plant Admin. & Process	197	0	0	197	201
Plant Eng. & Maint.	125	2	1	126	131
Personnel & Safety	12	0	0	12	12
Purchasing & Traffic	29	0	0	29	29
Sales - Agri. Chem.	167	4	6	165	215
Sales - PVC & Ind.Chem.	16	0	1	15	15
Total Escambia	671	6	10	667	737

Carroll Construction Co.	No. of Employees 3/31/68	No. of Employees 4/30/68
Office	2	2
Maintenance		
Insulators	3	3
Mechanics	3	5
Yardmen	2	2
Trashmen	2	2
Laborers	4	7
Janitors	7	7
Painters	7	7
Total Maintenance	28	33

PERSONNEL (Cont'd.)

Carroll Construction Co.	No. of Employees 3/31/68	No. of Employees 4/30/68
PVC Laborers	7	8
Area B Laborers	24	27
Truck Drivers (Traffic)	3	3
Railroad Crew	1	1
Total Carroll	65	74
	671	667
Grand Total	736	741

There were 73 walk-in applicants, 65 applications were issued and 4 were received by mail. Forty applicants were interviewed and 24 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:

Division	Man-hours	Days
New York Office	433,500	2,461
Research	1,041,000	3,941
Sales	59,000	53
Pensacola Plant	147,000	55
Corporation	221,000	53

Semi-annual inspection for fixed fire equipment was completed.

Annual inspection of all water type fire extinguishers was completed.

Medical Section

The Medical Section treated 9 injuries for Escambia and 13 for Carroll, performed 2 pre-employment and 10 annual physicals and gave a total of 21 immunization injections.

EMPLOYEE RELATIONS

Eight (8) 5-year service awards were presented.

EMPLOYEE RELATIONS (Cont'd.)

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

TRAINING

School was held for the operation of the Forklift and seven operators were licensed.

School was held for the operation of the 100 Ton Diesel Electric Switch Engine and one operator was licensed.

LABOR RELATIONS

I advised last month that the Textile Workers of America had petitioned the American Cyanamid Company's Pace Plant for an election for their Production and Maintenance employees and the International Chemical Workers Union had intervened. The Chemical Workers requested that all nonexempt technical employees (laboratory technicians and analysts) be added to the bargaining unit or that a separate election be held for all of this group. Cyanamid, of course, has objected to the inclusion of these employees in the bargaining unit and they have gone to a formal hearing. The first meeting was held on April 24, 1968 and the next hearing will be held on May 8, 1968. It will take some time for the brief to be filed and for a verdict from the NLRB. Cyanamid feels that this is a "stalling tactic" on the part of the Chemical Workers because they did not have the strength for an election and were stalling for time to obtain more converts.

INSURANCE

We paid a total of 54 claims under our Group Hospitalization program which amounted to a total of $ 6,860.15 during the month of April.

We settled four Auto Physical Damage claims in the amount of $ 1,869.78 during the month of April.

E. M. Spurlock

EMS:kc

MONTHLY REPORT

APRIL 1968

INDUSTRIAL CHEMICALS

& PLASTICS DIVISION

H. L. Harwell

MONTHLY REPORT

APRIL 1968

INDUSTRIAL CHEMICALS & PLASTICS DIVISION

Statistics

$(000)

	Sales	Production*	Inventory** Net Change	Inventory** Ending	Inventory** Planned
Plastics & Compound	$ 393	$ 312	$ - 36	$ 481	$ 426
Methanol	233	204	+ 24	68	149
Methylamines	228	138	+ 17	270	298
Higher Amines	507	352	+ 70	729	631
IBN	18	-	- 12	103	64
DNT	56	88	+ 57	166	64
TOTAL	$1,435	$ 1,094	$ +120	$1,817	$1,630

*Actual Cost
**Standard Cost

Profit of $184,000 was slightly above original budget. We experienced unfavorable sales variances of price volume and product mix principally in Methanol and PVC. To a large extent such was offset by favorable manufacturing variances except in PVC, which was down for modifications to produce specialty resins. The performance year to date is $417,000 over budget (including $208,000 of relief of MMA charges).

Although sales were down somewhat we see no special change in the markets. Business is generally brisk and price the everlasting issue. Geigy will drop about 2.0MM pounds against their first 6 months forecast, a portion of which may be picked up in the latter half of the year. Geigy - Switzerland is interested in Escambia as a partial amine supplier to the extent of 2-4 MM lbs. per annum and we hope for the first order from them late this fall. Meanwhile the European price on methyl amines has declined and it appears that 8¢ F.O.B. Pensacola will be required if we are to stay in the market. Sales of other amines were in reasonably good volume, especially with 100M lbs. of high value triethylamine. Plant problems associated with production of the latter appear to have been corrected. The new methyl amines catalyst is performing excellently, showing about four times the life of the previous. Further utilization of by product di methyl ether and methanol heads as raw material has been resumed with no problems. The next IBN run is scheduled for July and it is anticipated production rates will substantially exceed budget. With approval of the DMF RFE, raw materials have been ordered and the first production of this new product is expected in late June.

Methanol prices have continued to soften. Discussions which will set the last six months price with Reichhold will be held this month with a carry over into the MCA meeting in June. Reichhold reports they expect to consume 10 MM gallons (the contract maximum) during this period and it would appear that we have no volume problem. We know of places in the trade where methanol is currently selling at 13¢. Fortunately the new Borden plant has not yet come on stream.

DNT sales have been having ups and downs as Wyandotte has been struggling to get out of their carbon monoxide supply difficulties due to the Borden explosion. This is reported to be now solved and Wyandotte will be running in excess of 2.0M pounds per month for the next several months. Fortunately due to sales to Olin, finding tank cars and moving DNT by tank truck we have not had to curtail production significantly. In fact, April production was a new all time record of 1.8 MM lbs. The new and proposed RFE's constitute an excellent solution to this very vexing problem and in fact will make the product look fairly attractive.

April was a frustrating month in PVC. Our sales were down because 400 M lbs. shipped didn't get into the April books and because of plant shutdowns, we are back ordered. Sales and profits were hurt also because Escambia has temporarily lost an art it thought it had to make fusion grade resins (our most profitable product) sales of which dropped 100 M lbs. from March. A concentrated effort is being made to effectuate an early solution and hopefully get us back into production now that the demand for these products is beginning to develop. Success was achieved

with the plastisol extender modification which was done on schedule costing about $.10 M in production variance. The resins were subsequently produced at reasonably good rates; they equalled the quality of the control and the first truckload shipment was received with enthusiasm. Additional sales are in various stages of development and we expect to be at the 200M pound per month rate by July. All actually hinges on quality and reproducability, a program for the control of which has been inaugurated.

Preliminary negotiations on vinyl chloride monomer appear to confirm our conviction that lower prices can be obtained. Meanwhile, we heard from Sumitomo that one Escambia PVC line could produce 22 MM lbs per annum of plastisol resins selling at 20-24¢. They estimate conversion investment and royalties at $1.5 MM. This is the best way there is for Escambia to put PVC in a very respectable profit position.

Profits for the first quarter of chemical industry are in showing a mixed pattern. Some companies in synthetic textiles such as DuPont and Celanese look good with price improvement. Allied and Monsanto are down vs 1967 14% and 22% due to troubles in Agricultural chemicals. Carbide is off because of heavy start up expense at Taft. Rohm and Haas is plus 22%. These figures add substance to the prediction that 1968 will be better than 1967, but only modestly so.

H. L. Harwell

HLH/nc

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO:	Mr. H. L. Harwell	**DATE**	May 3, 1968
FROM:	G. B. H. Speed	**COPIES**	
SUBJECT:	April Monthly Report Amines and PVC		

SUMMARY

Amines

The No. 1 plant was in methylamines service the entire month. With the exception of two shutdowns the operation was routine. The plant was down for 18 hours on the 7th due to an electrical power outage and for 12 hours on the 13th due to leaks in the forward flow exchangers. This exchanger now has about 25% of the tubes plugged.

The more expensive catalyst currently being used for methylamines is not giving the higher DMA product hoped for but has given the same conversion for a longer period of time. It is expected to last longer than the cheaper catalyst.

Both purchased and plant produced dimethyl ether were used as feed stock without any adverse side effects. The use of methanol heads was also resumed and has caused some increase in high boiling impurities.

The No. 2 plant was in isopropylamines service until the 30th at which time the plant was switched to ethylamines. The plant was down for 18 hours on the 7th due to loss of electrical power and for 30 hours on the 30th to switch products. Production rates were down considerably during the latter part of the month due to fouling of the vaporizer and catalyst bed. The total MIPA produced with this charge of catalyst in the new converter was 12,157 M lbs. costing about 0.15¢/lb. With the old converter and catalyst the cost was about 0.40¢/lb. This is equivalent to about $40,000/yr. savings.

Request for expenditures to produce DMF and IBN were approved. Current plans are to produce DMF in June and IBN in July.

During May the No. 1 plant will be on methylamines and the No. 2 plant on ethylamines the entire month. The estimated productions are shown in Exhibit I. Cost variances are as follows:

	Variance, $ (fav.)	
	April	May
Methylamines	(2,529)	(15,000)
Ethylamines	(29,173)	(15,000)
Total	(31,702)	(30,000)

PVC

Prime resin production for the month was 3,601M lbs. Production was 30M lbs. below projections and 479M lbs. below budget due to the shutdown to install the fine particle size resin dust collector equipment. Off-grade product was only 18M lbs. or 0.5% of production.

Production variance was $17,935 unfavorable. Production costs are now based on actual monomer cost.

The shutdown for the above mentioned equipment was completed ahead of schedule and was handled very successfully by maintenance and construction. All equipment is working satisfactorily.

Another trial run on PVC-4185M micropearls was only partially successful with only one batch out of eight meeting specifications. An evaluation of Escambia's fusion resins is being made to determine future plans.

A carefully controlled run of PVC 3185 LG this period did not produce the excellent product obtained in March with the same recipe. Analysis of the data is being continued, but the catalyst is the only suspect to date.

During the shutdown, baffles were installed in the blend tank to improve the slurry feed uniformity and subsequently product uniformity. A test program has been started to obtain the data.

Plastisol extender types 8200, 8250, and 8285 were successfully produced in the plant and reproduced the properties of earlier batches.

Modifications to the bulk transfer rotary valves by Escambia personnel has increased bulk handling rates by 50 to 100%.

Monomer efficiency was down to the budgeted 94% this month.

Production for May is estimated at 4, 160M lbs. and no production variance.

DISCUSSION

Amines Number 1 Plant

The number 1 plant was in methylamines service the entire month. Two shutdowns were required during the month. The first, on April 7, was due to the failure of the main electrical supply cable to the No. 2 plant. Due to interconnecting cooling tower water service the No. 1 plant had to be shut down also. A revision made to the electrical system will now permit one pump to operate in the No. 2 plant from the No. 1 plant power supply. The plant was down for the second time on April 13 to plug leaking tubes in one of the forward flow exchangers. This bundle with 304 s.s. tubes has about 25% of the tubes plugged as compared to only 3% plugged tubes in the other forward flow exchanger with high temperature carbon steel tubes (SA-214). Bids are being obtained for replacing the stainless steel bundle with the high temperature carbon steel.

The current charge of methylamines catalyst has not given the increased yield to dimethylamines as expected. However, it has already lasted two weeks longer than previous catalyst with equal conversions. The catalyst must last at least four months to justify the additional cost.

Plant DME was used in plant this month along with purchased DME. No adverse side effects were noticed. Methanol heads were also used but additional high boilers were produced. The accumulation of the high boilers has been controlled taking a side stream purge from the tri-column and dumping when necessary the dehydration column. The additional high boilers have not been excessive to date. Both ammonia and methanol efficiencies were down this period due to the leaking forward flow exchangers.

	Efficiencies, %	
	Actual	Budget
Methanol	85.1	90.0
Ammonia	91.4	90.0

Amines Number 2 Plant

The number 2 plant was in isopropylamines service essentially the entire month. The plant was shut down on April 7 due to an electrical power failure and on April 30 to switch to ethylamines. The electrical failure was believed due to a cut in the insulation made during installation of the line a few months before.

Production rates on MIPA were down considerably over March. The lower rates were due to fouling of the vaporizer and catalyst. The new converter purchased on AFE 6758 has permitted the production of 12,157M lbs. of MIPA using a catalyst that cost only $18,000. With the old converter the maximum production obtained was 5,000M lbs. with catalyst costing $22,000. This is equivalent to a savings of about $40,000/yr. Both ammonia and acetone efficiencies were above budget.

	Efficiencies, %	
	Actual	Budget
Ammonia	97.8	85.0
Acetone	89.0	85.0

Polyvinyl Chloride

April production was 3,601M lbs. of prime resin and 18M lbs. of off-grade. Production was under budget due to the shutdown to install the equipment for the fine particle size resins. The shutdown was completed ahead of schedule and all equipment is operating satisfactorily. Additional work required to complete the modification includes:

1. New steam line to dryer (completed May 3).
2. Install filters in south dryer (about May 15).
3. Install south centrifuge gutter (July).
4. Relocate air compressor and enclose (May 15).

The production of plastisol extender resins, types 8200, 8250, and 8285, were 70% of the design capacity of the revised equipment. With the above listed jobs to be completed, and those completed after the extender resin run it is expected that design capacity can be obtained. The extender quality was essentially equal to previous lots used to sample the trade.

A trial run of PVC 4185M micropearls was made with limited success this period. Only one batch out of eight meet specifications. The reactor charge was reduced to 50% to assure adequate agitation but micropearls were not produced. All previous data are now being evaluated to determine the best possible route to micropearls. The evaluation will also include grinding and other fusion resins.

A carefully controlled PVC 3185 LG run this period did not produce the excellent product obtained with the same recipe in March. The data are being analyzed by Research and Production to determine the cause. To date the only suspect found is the catalyst which was from different lots.

The reglassed reactor was installed during the shutdown. The reglassed agitator and baffle were damaged before delivery but not so severly to delay installation.

Modifications to the bag packer made during the shutdown have improved weighing accuracy. Additional changes are being made to reduce spillage .

G. B. H. Speed

EXHIBIT I

AMINES PRODUCTION SUMMARY

	Production, M lbs.				Plant Inventories, M lbs.		
					May 1		June 1
	April Actual	May Estimated	Monthly Budget	Year to Date Actual	Actual	Estimated	Estimated
Methylamines, total	2,730	2,800	2,250	7,813	5,016	4,470	5,700
MMA	1,190	1,200	750	3,255	1,011	750	1,400
DMA	1,286	1,200	1,083	3,877	2,941	2,820	3,300
TMA	254	400	417	681	1,064	900	1,000
Ethylamines, total	0	2,200	1,353	4,676	1,966	2,010	2,580
MEA	0	2,100	1,083	4,472	1,482	1,580	2,030
DEA	0	0	208	49	462	370	450
TEA	0	100	62	155	22	60	100
Isopropylamines, total	4,571	0	1,383	11,842	5,311	5,700	3,880
MIPA	4,533	0	1,333	11,801	5,277	5,600	4,300
DIPA	38	0	50	41	34	100	34
Isobutyronitrile	0	0	150	0	467	410	347
Total	7,301	5,000	5,136	24,331	12,760	12,590	12,507

GBHS-5-2-68

ESCAMBIA CHEMICAL CORPORATION
INTEROFFICE CORRESPONDENCE

TO: Mr. G. B. H. Speed **DATE** May 2, 1968

FROM: M. B. Rogers **COPIES**

SUBJECT: PVC Monthly Report
April, 1968

SUMMARY

April production of 3,601,290 lbs. prime resin essentially equaled the projected 3,630,000 lbs. Production was below the monthly budgeted rate of 4,080,000 lbs. because of the shutdown to install the fine particle size specialty resin dust collector equipment.

The shutdown and specialties equipment installation was completed ahead of schedule, and the equipment is working well.

A PVC 4185M micropearl trial run April 1-3 was only partially successful. One of eight trial batches was excellent but was not reproducible. Reducing the reactor charge as much as 50% to assure adequate agitation did not improve the product.

A carefully controlled PVC 3185 run April 20-22 did not reproduce the excellent product obtained with the same recipe in March. Different results among the 25 individual batches are unexplained and data analysis is continuing. The catalyst is suspected as the only major variable between the two runs.

Plastisol extender types 8200, 8250, and 8285 ran smoothly in the plant and reproduced the properties of earlier trial batches sampled successfully to the trade.

The bulk loading system transfer capacity was increased 50 to 100% by modifications in our shop to the rotary valves.

April cost variance was $17,935 unfavorable, of which $16,558 was volume variance due to the shutdown to install fine particle size specialties equipment.

STATISTICS

	April		March	
	Actual	Budget	Actual	Budget
Prime Production, M lbs.				
Month	3,601	4,080	4,338	4,080
Year to Date	15,424	16,320	11,823	12,240
Off-Grade Production, % of Total				
Month	3.1	3.0	3.1	3.0
Year to Date	3.8	3.0	4.0	3.0
Bulk Production, % of Prime				
Month	65.4	57.5	51.8	57.5
Year to Date	54.4	57.5	51.1	57.5
Shipments, M lbs.				
Month - Prime	3,886	-	4,560	-
Month - Off Grade	191	-	229	-
Year-to-Date Prime	16,363	-	12,478	-
Year-to-Date Off Grade	1,097	-	907	-
VCl Efficienty, %				
Month	94.0	94	96.3	94
Year to Date	95.4	94	95.8	94
Reactor Availability, % of Available Hours				
Month	81.2*	-	78.2	-
Avg. Year to Date	80.1	-	80.1	-

* Downtime excludes 778 reactor hours shutdown for specialties installation.

Reactor Downtime, % of Available Hours				
Mixing Solutions in Reactors	0.5	-	0.8	-
Cleaning & Washing Reactors	7.3	-	8.0	-
Scheduling Charges	3.0	-	4.0	-
Changing Types	0.5	-	1.1	-
Copolymer Production	0.0	-	0.2	-
Slow Recovery	0.3	-	0.4	-

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

	April		March	
	Actual	Budget	Actual	Budget
Low Drying Rates & Dryer Line Cleanout	0.7	-	4.8	-
Hydraulic Motor Repairs	0.1	-	0.6	-
Misc. Reactor Maint.	0.8	-	0.1	-
Dryer Maintenance	0.2	-	0.5	-
Electrical or Instr. Maintenance	0	-	0	-
Miscellaneous	5.0	-	1.3	-
Experimental Batches	0	-	0	-
Total	18.8*	-	21.8	-

* Excluding 778 reactor hours specialties installation shutdown time.

Product Mix, M Lbs. Prime Resin

Group I	2,294	2,154	2,713	2,154
Group II	821	1,010	831	1,010
Group III	468	603	268	603
Group IV	0	23	9	23
Group V	0	262	511	262
Group VI	18	32	6	32
Group VII	(24)*	0	(62)*	0
Total	3,601	4,084	4,338	4,084

* Ground resin not included in total.

	April		March	
	Hours	%	Hours	%
Payroll				
Regular	5,528	-	7,074	-
Unscheduled Overtime	292	5.2	325	4.5

PRODUCTION

1000 Series

Types produced: 1250, 1225, and 1200.

Replacement of "CC" (peroxide) catalyst with "KC" (IPP) continued to give excellent results in PVC 1200. Reaction cycles were 6 to 7 hours, the product dried well, and lot yields are high.

A lot of PVC 1250X-2 produced by charging excess monomer and stopping the reaction early did not show the hoped-for reduction in fisheyes.

A problem with excessive fines in PVC 1225 was corrected by reducing the suspending agent concentration.

2000 Series

Types produced: 2200, 2225, and 2250.

Production was routine.

3000 and 4000 Series

Types produced: 3185, 4185M and 3250.

A PVC 4185M micropearl run April 1-3 produced only one good batch out of eight trials. The other batches which produced the required fine particle size product all crusted over and gave a mixture of fine and coarse material. Reducing the reaction charge by 10, 25, and 50% to improve agitation did not improve the product size distribution. Four other batches dried in various lot combinations and scalped to remove oversize material gave good quality fusion properties, although the size distribution in the batch slurry samples was not satisfactory.

A 5 lot (25 batch) PVC 3185 run did not give the quality product and excellent reproducibility gotten with the same recipe last month. Of the 25 batches, 11 gave the desired size distribution, 10 had excessive fines, and 4 slurry samples were not analyzed. All the batches got hotter than normal in spite of successive 200 gm. catalyst reductions to 5200 from 5800 gms. CC (lauroyl peroxide). The only known raw material change between the March and April runs is in the CC catalyst, and the possibility of differences is being pursued with the manufacturer. No catalyst

abnormalities were shown in laboratory analyses at Pensacola, and no other leads are apparent from an initial analysis of the data. The same catalyst lot was used in the unsuccessful micropearl trial discussed above, and two PVC 3185 batches during that run gave excessive fines. The investigation is continuing and a report will be issued.

6000 Series

Types produced: 6240.

Production was normal. This fine particle size product was produced before installation of the new dust collectors and the capacity of this type resin with the new equipment could not be tested.

8000 Series

Types produced: 8200, 8250, and 8285.

These plastisol extender resins were produced this month for the first time in multilot quantities. The products ran well in the plant and appear to be very similar to earlier trial batches successfully sampled to the trade. The product did not build up in the drying line and did not create a cleaning or drying problem. Drying rates with the new dust collector equipment were doubled from previous runs to about 70% of design. Additional equipment included in the specialties AFE but not installed at the time of this run should give the design capacity. This extra equipment includes the timers for the Dustex reverse cleaning air and the new air compressor - which are now installed - a new steam line to increase the dryer coil steam pressure, and a centrifuge discharge chute to feed the dryer more uniformly.

Tailings and Off-Grade

Off-grade production was as follows:

Off-Grade

Type	Lot	Reason Off-Grade	Quantity Lbs.	% of Total Production
1250	3004	Fisheyes & Volatiles	11,000	0.3
2250	3006	Cont. and fines	2,950	0.1
3185	2977	Excessive fines	4,000	0.1
Subtotal - Off Grade			17,950	0.5

- continued

Type	Lot	Reason Off-Grade	Quantity Lbs.	% of Total Production
Tailings		-	98,750	2.7
Floor Sweeps		-	22,000	0.6
Total			138,700	3.8

MAINTENANCE AND CONSTRUCTION

The shutdown for installation of the Dustex product collector for small particle size specialty resins was completed ahead of schedule and the equipment is operating smoothly. The air slide conveyors necessary because of elevation problem are trouble-free so far and have recovered from overloading material surges.

The new 515 SCFM vertical Joy air compressor was put in service April 24. A 4 in. steam line to increase steam pressure at the dryer coils will be complete this week. Filters for the dryers are expected by mid May for the frames installed during the shutdown. The centrifuge discharge scroll is expected in mid June.

The reglassed reactor was installed as No. 4 during the shutdown. The baffle and agitator were both damaged before or during delivery, and liability has not yet been established.

An electrical power outage April 25 was caused by a phase-to-phase short between busses in the high-voltage section of the PVC substation. The separator causing the short was removed, insulation repaired, and power was restored in 1-1/2 hours.

Recurring tripouts on the north hydraulic pump were traced to a faulty breaker.

The dryer feed screw bearings were replaced with Olite brass bushings which apparently have not aggravated the contamination problem.

The No. 4 blend tank lining is failing. Temporary patches should hold until general repairs can be made in May or June.

GENERAL

Operation of the new dust collection equipment is discussed under PRODUCTION, 8000 Series, above.

Micropearl and PVC 3185 plant trials were discussed under PRODUCTION, above. Product variability within a given lot compounds the problem of poor reproducibility from lot to lot. A PVC 4185 SP (special PVC 3185) from Texon showed marked differences among the drying composite, samples taken by Texon, and samples taken from the bags at Texon by Escambia personnel. Baffles were installed in the blend tanks to improve the slurry feed uniformity and a test program was started to determine product consistency at the blend tanks, from the dryer, in transferring, and in bagging. There appears to be some classification in the dried material which varies among types and with the type screen distribution. A broad size distribution in PVC 3185 gives the greatest variation of the types studied to date.

Although the PVC 3185 produced was finer than normal specification grade, a selected, low bulk density lot was ground to 4185-3S at a rate of 1200 to 1500 lbs./hr. compared with a normal rate of 300 to 500 lbs./hr.

Reducing the rotary valve blade clearance in the bulk loading and transfer system increased the capacities 100% and 40% on the north and south units, respectively. Increasing the bulk truck loading line to 4 in. from 3 in. gave less than the expected improvement because of the overriding effect of the rotary valve improvement.

The bag packer weighing accuracy was improved by modifying the air system and increasing the feed hopper vent opening.

The Trane Company is trying to renege on its commitment to furnish explosion proof motors for the new refrigeration machines. The background on the problem and definition of the Trane commitment was presented with copies of supporting correspondence in memoranda from M. B. Rogers and W. T. Vance. Purchasing is pursuing the problem with Trane.

MAY, 1968 PROJECTION

Projections for May are as follows:

	Projection	Budget
Production, M lbs.	4,160	4,080
Month End Inventory, M lbs.	2,366	3,095**
Production Cost Variance*	0	-

* Variance excludes monomer price variance. Budget adjusted to 4.85¢/lb. including freight as of the April, 1968 "E" Schedule.

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

VARIANCE ANALYSIS

Variance analysis for April is as follows:

Favorable		Unfavorable	
By-product Credit	$ 607	Volume Variance (bulk)	$16,558
Process Costs			
Salaries & PR Overhead	2,215	Process Chemicals	3,465
Maintenance	1,551	Process Costs	
Utilities	1,564	Lab Expense	1,149
		Taxes & Ins.	695
		Packaging	
		Volume	1,440
		Process Costs	
		Salaries	295
		Materials, containers	323
		Rental	159
		Other	1,228
TOTAL	$5,937		$23,872

NET VARIANCE - $17,935 Unfavorable

M. B. Rogers

Mr Carey

AGRICULTURAL CHEMICALS DIVISION

MONTHLY REPORT

May, 1968

Personnel

ESCAMBIA CHEMICAL CORPORATION

Interoffice Memorandum

To: Mr. T. L. Carey Date: June 6, 1968

From: E. M. Spurlock

Re: Monthly Report - Personnel Department - May, 1968

PERSONNEL

Activity for the Month

Division	No. of Employees 4/30/68	May Addit.	May Separa.	No. of Employees 5/31/68	May 1968 Budget
Executive Office	3	0	0	3	5
Accounting & Credit	42	1	4	39	43
Plant & Wilton Labs. & Planning & Dev.	78	0	1	77	86
Plant Admin. & Process	197	4	2	199	201
Plant Eng. & Maint.	126	0	0	126	131
Personnel & Safety	12	0	0	12	12
Purchasing & Traffic	29	1	1	29	29
Sales - Agri. Chem.	165	4	5	164	214
Sales - PVC & Ind.Chem.	15	2	1	16	15
Total Escambia	667	12	14	665	736

Carroll Construction Co.	No. of Employees 4/30/68	No. of Employees 5/31/68
Office	2	2
Maintenance		
Insulators	3	3
Mechanics	5	9
Yardmen	2	2
Trashmen	2	2
Laborers	7	20
Janitors	7	6
Painters	7	9
Total Maintenance	33	51

PERSONNEL (Cont'd.)

Carroll Construction Co.	No. of Employees 4/30/68	No. of Employees 5/31/68
PVC Laborers	8	9
Area B Laborers	27	33
Truck Drivers (Traffic)	3	3
Railroad Crew	1	1
Total Carroll	74	99
	667	665
Grand Total	741	764

There were 91 walk-in applicants, 77 applications were issued and 21 were received by mail. Fifty-three applicants were interviewed and 41 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:

Division	Man-hours	Days
New York Office	436,000	2,492
Research	1,050,000	3,972
Sales	17,500	17
Pensacola Plant	219,000	86
Corporation	66,000	17

The Sales Division experienced two lost time injuries at the Camilla, Georgia Farm Service Center.

Medical Section

The Medical Section treated 27 injuries for Escambia and 22 for Carroll, performed 4 pre-employment and 11 annual physicals and gave a total of 29 immunization injections.

EMPLOYEE RELATIONS

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

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

TRAINING

We held three (3) Forklift classes in which nine people were licensed to operate forklifts.

LABOR RELATIONS

Relative to the union organizing campaign at American Cyanamid, they have completed their hearings and are awaiting a decision from the National Labor Relations Board for the determination of a proper bargaining unit. Since this will take some time for the Labor Board to decide, some of the employees are petitioning the Labor Board to withdraw the election petition. The reason for this action is due to the fact that while the Labor Board has this hearing under consideration, the company cannot change its wages, working conditions or benefits. This is the time of year that American Cyanamid normally grants a general wage increase to this group of employees.

SALARY ADMINISTRATION

In line with the instructions of the Salary Administration Program adopted by Ebasco Industries for Escambia, I am specifically charged with the responsibility of evaluating and administering the program on Levels 22 and below. In order to properly evaluate these positions, we have requested a position description on each job of exempt employees. We have received approximately 30% of these position descriptions and are proceeding to obtain the balance. As soon as they are all received, we will review the proposed salary level again with each department head. At the conclusion of this procedure, we will then forward the proposed levels and position descriptions to Mr. Sanders with Ebasco for approval.

INSURANCE

You will recall that on January 1, 1967 we changed our insurance carrier for our Workmen's Compensation, Public Liability and Automobile Liability from the Fidelity and Casualty Company to Travelers Insurance Company so that all of the subsidiary companies would be covered under the same policy as the parent company. The Travelers experience in losses under these policies and, specifically, under the Errors and Omissions endorsement has been poor. Therefore, the Travelers cancelled the Errors and Omissions coverage and made certain other limitation to the policy. These changes were not acceptable to Ebasco Industries and they changed carriers effective May 1, 1968 to the Kemper Group or, more specifically, American Motorists Insurance Company.

INSURANCE (Cont'd.)

We have spent a good deal of time with the representatives of this company to set up our procedures and coverages.

We paid a total of 65 claims under our Group Hospitalization program which amounted to a total of $ 11,047.49 during the month of May.

We settled the following claims during the month of May:

Two (2) Auto Physical Damage claims in the amount of $ 302.72.

Two (2) Comprehensive Commercial Bond claims in the amount of $ 292.95.

E. M. Spurlock

EMS:kc

MONTHLY REPORT

MAY 1968

INDUSTRIAL CHEMICALS

& PLASTICS DIVISION

H. L. Harwell

MONTHLY REPORT

MAY 1968

INDUSTRIAL CHEMICALS & PLASTICS DIVISION

Statistics

$(000)

	Sales	Production*	Inventory** Net Change	Inventory** Ending	Inventory** Planned
Plastics & Compound	$ 568	$ 370	$ - 44	$ 438	$ 448
Methanol	279	207	- 39	28	149
Methylamines	124	132	+ 84	354	298
Higher Amines	448	232	+ 79	808	596
IBN	37	-	- 23	79	64
DNT	160	78	- 45	122	62
TOTAL	$1,616	$1,019	$+ 12	$1,829	$1,617

* Actual Cost
** Standard Cost

Good production, combined with the capture of $110 M of accruals (Lamcal and spent acid tank cars) produced an excellent month of $281 M: over budget by $145 M. Sales were lighter than recently in Industrial Chemicals, but were a volume record in PVC. This, combined with the Lamcal adjustment, brought PVC into the black by $ 30 M. Before tax profit year to date of $1,255 M, aided by the absence of $281 M in idle MMA plant expense, exceeds the 1968 annual budget of $1,007 M. This is the result of continued high performance in sales and in the plant operations, the combination of which has generated favorable production variance of $367 M. The outlook for the balance of the year is for generally above monthly budget performance.

As indicated, sales of PVC stimulated by the high rate of automotive production, increased housing starts and good business, were an all time record in excess of 5.0 MM lbs. of prime. Robbins had a good month - 1.1 MM lbs.; Lamcal took 240 M lbs., Phillips Film - 400 M lbs., and U.S.M. - 560 M lbs. This puts Escambia in a completely sold out position, as a consequence of which prices were increased at three marginal accounts where the volume totals 600 M lbs./month. The latest projections show the plant sold out for the balance of the year without this volume. Meanwhile, the price of PVC is ambivalent. Some producers are moving prices up - others are not.

Sales of specialty and/or higher priced resins were also a record - 1,027 M lbs., including 42 M lbs. of the new plastisol extender resins, which favorable product mix increased the average unit price of prime resin 0.3¢ over the previous month.

The PVC plant had a good month with a high rate of production (4.6 MM lbs.). The monomer yield was 96%. Much progress was made with the fusion resin problems with an almost successful run of 3185-LG, which was high on bulk density only and apparently satisfactory to Texon. Screening of 4185-2S resulted in satisfactory fusion resin, thus making potentially saleable 150 M lbs. of doubtful inventory. It appears that until Micro Pearls, closely related to 3185-LG, evolve sales can be supplied with grinding and screening. During the month several minor revisions (increased drier steam line, the installation of the chip filter baskets and hydraulic oil temperature controls) were made, all designed to increase production, reduce losses and improve quality.

Thus, as the expense burden on PVC is reduced, the raw material cost reduced and the product mix improved, the business should turn into the black during the last quarter.

Industrial Chemicals sales were off some in May. This is due more to customer buying pattern than change in demand. Methanol and DNT were above budget in volume. We expect the methanol volume to remain favorable for the balance of the year, although, as previously reported, prices have declined. The long awaited production increase from the new Borden plant is now here as they were reported on-stream last week. Meanwhile, it is rumored that Commercial Solvents have cancelled their expansion. This leaves the number of new centrifugal plants now commited to three: Borden, Hercules and DuPont. We are constantly making efforts to move Methanol in directions other than Reichhold and have had recent discussions with Shell, Hercules, Pfizer and are soliciting resellers in the southeast. Prices, however, are generally no more favorable than the 14.5¢ now in effect with Reichhold. Amine sales were down because of slowness at P & G, Monsanto, Hoffman-Taff and Geigy. This appears to be temporary, as we already have June orders on hand for higher amines totalling 3.8 MM lbs. The Wyandotte position continues to be favorable and we expect them to be at 2.0 MM lbs. per month as projected.

The plants ran excellently in May, although Methanol production was down as anticipated because of the ammonia turn-around. Methylamines were again fed byproduct methanol heads and Dimethyl Ether with no adverse effects. Production of MEA averaged

77 M lbs. per day. Revisions for the DMF run are almost completed and the IBN equipment is expected to be installed in June. A run of n-propylamines is now tentatively scheduled for October, subject to managerial approval of our plans for this product. Spent acid is now required for the bulk blend operation and will be carried at cost, bringing an additional $14 M per month into DNT.

A purchase raw material (ethyl ether) price variance will cause the usual favorable production variance in higher amines to disappear in June. This is because of spot purchases above volume in the basic Enjay contract. Prices will revert to the contract level of 25¢/gallon August 1st.

GENERAL

The industry reports for basic chemical commodity producers show a profit increase of a disappointing 6% for the first quarter, price being the major problem. During the month Reichhold announced two acquisitions:- Chemico, Inc. and Rubber Latex Co.; and Ethyl Corporation bought Imco Container (PVC bottles) for $25 MM.

H. L. Harwell

HLH:mk