

PLAINTIFF'S
EXHIBIT

CEL-26

CELANESE PLASTIC MATERIALS COMPANY
Chemcel Plant
Bishop, Texas

TO: E. Munoz

FROM: R. L. Bunkley

RLB-46-79

August 20, 1979

Quality Control Monthly Report
July, 1979

cc: Dr. R. A. Daniel - Chatham
Mr. J. W. Beltz
Mr. A. R. Kurkowski
Mr. R. W. Murphy
Mr. F. M. O'Neill
Dr. M. L. Druin (6) - Summit
Mr. C. Gottfried

Dr. M. Meisters
Mr. F. B. McAndrew
Mr. W. L. Shearer
Mr. M. M. Wilson
Mr. D. Zimmerman
Summit Data Files

Mr. A. C. Abshier - Bishop
Mr. W. S. Allen
Mr. C. A. Amond
Mr. G. Artripe
Dr. H. L. Davis
Mr. J. C. Doedyns
Mr. D. L. Dotson
Mr. R. D. Fuchs
Mr. C. L. Hammond
Ms. A. R. Hancock
Mr. L. N. Harvey
Mr. H. P. Hohon
Mr. J. L. Merian
Mr. W. H. Meyer

Mr. A. B. Milam
Ms. P. J. Moede
Mr. K. A. Rose
Mr. R. G. Rothenberg
Mr. J. D. Saladino
Mr. A. G. Salinas
Mr. P. N. Thomas
Mr. D. Wallen
Mr. E. D. Wendler
Mr. K. A. Wolf
File: 3.017
301.014
501.009
Central Files (3) - CCCTC

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GENERAL SUMMARY:

Celcon® product waivers totalled 44.3% of the month's production total of 8.3 MM lbs. Natural Finishing product waivers were the result of melt index out of specification, pellet quality problems and out of specification natural color. Quality waivers in Special Products were due mainly to out of specification melt index and tensile strength.

Celanex® quality waivers were low this month, with only 3.1% of the month's total production of 1.98 MM lbs. being out of specification production. Quality waivers were due to pellet contamination and unfilled pellets.

Nylon product waivers amounted to 30.6% of the total production of 3.22 MM lbs. Waivers were due mainly to production out of specification on Relative Viscosity, high volatiles content and off size pellets.

A lost time occurred on July 30 when Mr. John Kirchoff, Sr. Technician in the Color Lab, broke a finger when an extruder screw which he was cleaning slipped and rolled over on his hand. As a result of this accident, stands to hold the 2 1/2" screw will be fabricated and in place before the screw is pulled again.

I. CELCON®

A. Customer Complaints - Dotson/Tijerina/Hernandez

1. Capitol records complained (P-5533) that processing problems were experienced when using Celcon C-143 natural from lot 8122106. The lot of material involved had been released as specification material. Since the complaint also indicated that an RTS visit had resolved the processing problems the complaint was closed. (DLD-127-79)
2. A precautionary complaint (P-5534) was entered by Chicago Molded citing delivery of a shipment of Celcon M270-14 natural (lot 8121604) instead of the requested M270-04 natural. The customer also indicated they experienced parts failure when the product was used.

Plant records showed the indicated lot to be specification M270-04 material and was so labeled prior to shipment. The discrepancy in labeling could not be resolved without additional information. The part failure problem was referred to RTS for further investigation. (DLD-128-79)
3. Hoffer Plastics entered a precautionary complaint P-5535 stating that half a shipment of Celcon color concentrate was labeled M90-07, CC-3063 K20, and half was labeled M90-07 CC-3093 K20. The customer used all the material as both materials produced the desired color match. Resolution of the labeling discrepancy could not be made as no lot number of the materials were indicated. Warehouse personnel, however, were made aware of this complaint and the need for proper care in package labeling. (DLD-129-79)

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4. A complaint (P-5524) indicating excessive formaldehyde odor with a shipment of Celcon C-143 natural from lot 8122851 was entered by Hult Molding Co. The material met all quality parameters upon release. RTS was requested to investigate the customer's molding process and conditions. (DLD-138-79)
5. Nypro Inc. entered complaint P-5530 citing excessive black speck contamination in a shipment of C-155 natural, lot 9010901. An unopened 50 lb. bag was returned for evaluation.

Plant records indicated this particular lot was waiver released due to the presence of black die drips. Examination of the return sample confirmed the presence of the black die drips. The customer's complaint was valid. (DLD-139-79)

6. Westlake United Corporation entered a precautionary complaint (P-5505) citing contamination of two lots (9010401 and 9010301) of U10-11 natural with excessively burnt pellets. A 50 lb. unopened bag of lot 9010301 was returned for evaluation.

Plant records indicated both lots were released as specification material and were free of burnt pellets. Both plant retain samples and the customer's return sample were found to be free of any burnt pellet contamination. (DLD-140-79)

7. Russel Hobbs (Britain) entered a precautionary complaint (P-5531) indicating that a lot of Celcon M90-34 white, lot 8120204 was rejected due to inadequate "heat stabilizers" as determined by the customer's internal methods.

Plant records indicated the lot to be specification material. Further input from Amcel will be requested in an effort to resolve the problem.

B. Manufacturing Support

1. Melt Hydrolysis Support - Guthland

All unit methods have been reviewed and updated. The unit TEA method calculation was found to be in error. Previous analytical results were found to be approximately 35% higher than actual. The method calculations have been corrected and all unit personnel made aware of the procedural change. A new method for determining the wt.% trioxane in the quench tank has been prepared. (DEG-11-79)

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2. SH-1 Kokneader Particle Size - Guthland

Initial results from a modification which increased the particle size exit the grinder in SH-1 have shown a 22% reduction in water carry over at the first centrifuge. Evaluation of the results on Westfalia operation and process methanol control are continuing.

3. Fluid Bed Drying Efficiency - Guthland

A laboratory evaluation of particle size on drying efficiency revealed no significant differences in drying rate as a function of particle size.

4. Trioxane Reaction By-Products - Moede

Increasing residence time and catalyst concentration were previously found to significantly increase total by-product formation. The effects on the conversions and distribution of each major by-product, methyl formate, formic acid and methanol, were further documented in a report (PJM-16-79).

5. Celcon U10-11 Production Problems - Allen

Natural finishing experienced black specks, erratic MI control, and color problems during most of the recent U10-11 run. A check of unit polymer quality and finishing operations revealed the following: (1) U-10 polymer quality was normal but overall average MI was slightly higher than previous runs (1.0 versus 0.85). (2) An initial run of U10-11 on the KKCH had been unsuccessful, producing a large quantity of high color, high black speck count material for rerun. (3) Stabilizer feed addition on the 8" extruders was found to be highly variable (0.06% to 1.73%) as determined from spot samples. Subsequent to this finding, analysis of highly colored pellets revealed them to contain a higher stabilizer content than normal spec color pellets.

The high variability in stabilizer levels and the quality or rerun is suspected to have been the major contributor to the black speck and high color problems. The high MI problem is thought to be the result of the initially higher feed MI.

Work is in progress in Process Engineering and Quality Control to address each of the defined problem areas.

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C. Analytical Development1. Determination of Zn in Water - Saladino

A method for determining the concentration of Zn in water (TO-2 cooling water) was developed. The water sample is diluted and analyzed by Atomic Absorption Spectrophotometer (AA), using a 0.50 ppm Zn standard. A report will be issued.

D. Routine Analytical

Sample count, overtime hours, holiday overtime hours, and formaldehyde feed concentration for July are summarized in Table I. The sample count for July was 6183 compared to 5221 in June. The overtime hours for July were 509 compared to 418 in June. The sample count increase was due to a longer reporting period and a significant increase in sampling from Natural Finishing and SH-2. The overtime hours are as follows:

Technician vacation	- 72
Sick relief	- 8
Nucleant Production	- 74
Safety Training	- 18
Scheduled Overtime	- 120
PBT-IV Testing	- 25
TO-1 & TO-2 Unit	
Support	- 8
Coverage for	
vacancy on "C"	
Shift	- 184

Special Analytical Support was provided to the following projects:

1. K. H. Patel - PBT High IV. Trial Batch Numbers 8, 9, & 10.
2. F. Trevino - Special Nylon Trials - Wollastokup G 1100 Silane treated trial runs.

II. CELANEX®A. Customer Complaints - Dotson/Tijerina/Hernandez

1. A precautionary complaint was entered by ADC claiming feeding problems with Celanex 3310 natural from lot 9042063 due to the erratic size and shapes of the pellets. In addition, problems were experienced in coloring this material with Celanex color concentrates.

The lot in question met all release parameters including pellet quality. Examination of the small return sample and our shipping lot retain revealed the pellet geometry and size to be typical of normal Celanex production material.

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The secondary problem of coloration could not be resolved without additional information. RTS was requested to investigate the problem. (DLD-152-79)

III. NYLON

A. Customer Complaints - Dotson/Tijerina/Hernandez

1. Reynolds Metals Company entered a complaint (P-5507) stating that they could not produce gel free nylon film when using N-186 natural from lots 9012421 and 9011821. RTS confirmed the gel problem and noted that the gel problem did not occur on the equipment when Zytel resin was substituted. The complaint also indicated that the additional lots 9011721, 9011921 and 9012921 of N-186 were also rejected by the customer.

All the lots indicated passed normal quality control tests prior to shipment. Since our standard methods of analysis did not identify any problems with these materials, samples were sent to Summit for gel testing. This complaint will remain open pending the results of Summit's testing.

2. Two complaints P-5545 and P-5515 were entered by Reynolds Metals Company indicating that excessive soft gels occurred when Nylon N-186 natural from lot 9011821 was processed into blown film. This complaint was identical to complaint P-5507 from Reynolds citing the same problem with the same lot of material. As indicated in that complaint reply (DLD-126-79) the lots in question have been sent to Summit for gel testing and resolution of the customer's problem. (DLD-137-79)
3. Reynolds Metals Company complained (P-5551) that they received three gaylords of N-186 natural that were badly damaged. The lot numbers of the damaged material were not provided.

Our records indicated that the shipment left the plant without any damage. There was insufficient information provided in the complaint to resolve the possible source of the damage. Damage could have occurred through rough handling or during transit, or double stacking by the carrier after leaving the plant. The complaint was referred to Distribution and they were requested to notify the carrier of the damages.

4. Reynolds Metals Company complained (P-5552) that they found 11 gaylords out of 30 with poor heat seals on the liners. The material packaged was Nylon N-186 natural from lots 9060521, 9060321 and 9060421.

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Investigation of the complaint indicated no sealing problems were evident during the packaging of these lots. A random check of other gaylord packaged products failed to find any liners with inadequate seals. All warehouse personnel have been made aware of this complaint and the necessity for insuring proper seals during packaging.

5. Plasco Inc. rejected three lots of Nylon 1503-2 natural as they did not meet their internal specifications for color. Complaint P-5539 was entered requesting credit for the shipment. The material met all Bishop quality parameters upon release. Marketing was requested to lot select future shipments to meet the customer's requirements. (DLD-130-79)
6. Borg Warner complained of black speck contamination in Nylon 1503-2 natural from lot 9021092. A 50 lb. bag was returned for evaluation. This lot of material was waiver released due to the presence of black die drips. Examination of the return sample confirmed the original observation. The complaint was valid. (DLD-131-79)
7. A complaint (P-5519) was entered by Plasco Inc. stating that a shipment of 1503-2 natural from lot 9021092 was contaminated with large chunks of glass. A 50 lb. unopened bag was returned for evaluation. Part of the indicated lot was originally found to contain undispersed glass and was to have been reprocessed. Examination of the return sample, however, disclosed the presence of undispersed glass in the pellets. It appears that a portion of the original production was packaged before being reprocessed. The customer's complaint is valid. (DLD-132-79)
8. Nypro Inc. entered complaint P-5543 stating black speck contamination of a shipment of Nylon 1000-4 natural from lot 9042684.

The lot in question was released as specification material. Examination of the returned bag of material supported this conclusion. (DLD-133-79)

9. A complaint (P-5540) was entered by Saginaw Steering Gear stating that they rejected a shipment of Nylon 1503-2 black (lot no. 9030772) due to failure of the lot to meet their internal specifications on ash content and specific gravity.

This particular lot was waiver released for a higher than normal ash content 37.5 wt.% versus a specification maximum of 35.0 wt.%. The customer's specification calls for an ash range of 31 - 35 wt.%. No specification was given for the required specific gravity limit.

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Marketing was requested to lot select future material for this customer to avoid product rejection. (DLD-134-79)

10. Heyman Manufacturing Company complained (P-5550) that gaylords of Nylon 1310-2 natural from various lots bulge on the sides when stacked. Photographs showing two such gaylords accompanied the complaint.

Examination of the photographs indicated that the lids and not the sides were bulging and adjacent gaylords of nylon did not exhibit the problem. Without additional information to preclude the possibility of rough handling or water damage to the boxes in question no further resolution of the complaint was possible. (DLD-135-79)

11. A complaint (P-5510) was entered on Wilde & Son claiming that out of 200 lbs. of Nylon 1000-1 natural one 50 lb. bag was contaminated with "black graphite" on and in the bag. The original shipment consisted of 150 lbs. of lot 8051182 and 50 lbs. of lot 7101104. No indication was given in the complaint as to which lot the contaminated bag originated. Both lots of material were free of contamination when released. Since the contaminated material was opened and no other material involved the plant could not evaluate the contamination problem in more detail.
12. Ark Less Switch Corp. entered a complaint P-5553 stating that black specks were found in a shipment of Nylon N-249 precompounded white from lot 9061131. A small envelope of approximately 12-15 pellets was returned with the complaint.

Plant release records indicate the material was released as specification product. The lot did contain some black specks but these were well within specification release limits.

B. Manufacturing Support

1. High Volatiles in Unfilled Black Nylon - Saladino

Off spec volatiles continues to be a problem with unfilled black Nylon (1310 and 1000). The problem can be related to the Neozapon with EVA carrier used as the black concentrate. Prior work has been done to show that the ethylene-vinyl acetate copolymer (EVA) added to unfilled black nylon as a dye carrier is causing high volatiles (WSA-10-78). Work will continue to further identify and resolve the problem.

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2. Low RV Production Problem - Allen

Use of nylon salt which did not meet pH specifications is thought to be the cause of a short period of low RV production. Changes in unit SOC's and SOP's were recommended to prevent recurrence of this problem. A letter (WSA-22-79) was issued.

3. Nylon Packaging Studies - Allen

Fifty bags of 1000-2 Nylon, packaged in 0.0005 inch foil lined gusseted bags were shipped to Polyplastics. Polyplastics will evaluate the moisture uptake of these bags and compare this information to a previous moisture uptake study on samples sent them in the Export bags - a 0.00035 inch foil lined tube type bag. A potential savings of 21 cents/bag could be realized by switching to the gusseted bags with the thinner foil liner. A letter will be issued.

4. Contamination in Chemtron Nylon Black Concentrate - Allen

Metal contamination in PPG's Chemtron nylon black concentrate remains a problem. A lot of concentrate, initially rejected by Bishop Q.C., was "cleaned up" by Universal Plastics and returned during the month. Metal in most drums of this lot was low. However, the level of contamination varied from drum to drum, causing minor problems in production. The search for an alternate supplier continues.

5. Nylon Nucleant Production - Saladino/Salinas

The inventory status of the nylon nucleant production is summarized below:

Inventory 7/1/79	13 drums
Inventory 7/31/79	11 drums
Nucleant Produced in July	39 drums
Nucleant in Process	14 drums
Inventory 7/31/79 (16% KF)	33 drums
Inventory 7/31/79 (23% CaAc ₂)	21 drums

C. Analytical Development1. Nucleant Analysis - Allen

A revised procedure for the analysis of nucleant (CaF₂) in nylon by AA (CL-3-16) was published (WSA-20-79).

2. Nylon Salt Concentration by RI - Allen

A tentative method for the determination of nylon salt concentration by refractive index (CL 1-97) was published (WSA-21-79). The method is similar to the Nylon Unit Method (UM-7) used for the same purpose.

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3. Calibration Solution for On-Stream Analyzers - Allen

A procedure for preparing the sugar solutions used in calibrating the nylon unit's on-stream salt analyzers was published (WSA-19-79).

4. Evaluation of the Nylon Volatile Test - Salinas

An evaluation of the Bishop Method (CL 1-74) for determining the weight percent volatiles in nylon polymer was completed this month (AGS-6-79). The results of the lab study indicated the precision (2σ) of the method to be $\pm 0.029\%$ at the 0.185% level in unfilled natural and $\pm 0.020\%$ at the 0.190% level in glass filled nylon (AGS-6-79).

IV. INDUSTRIAL HYGIENE - Hancock, PritchardA. Formaldehyde Survey

A formaldehyde survey in the SH1/T01 area has begun. Last year, a formaldehyde survey revealed exposures over the "action level" for the gauger job descriptions. Revisions have been made to the units to reduce these exposures. The summer months prove to be the worst case for exposure (especially in the tank farms). The survey will check formaldehyde exposures for the new process and provide a recheck for the summer months exposure.

B. Dust Surveys

The survey for nuisance dust in the Celanex Unit has been delayed. The survey was to be concentrated around the SEO production run. SEO production has been temporarily discontinued pending modification of the blending system. The survey will be resumed as soon as SEO production begins.

C. Environmental

T-30,000 and T-30,009 scrubber vents in SH1 have been sampled for organic emissions to obtain an operating permit from TACB. A report was issued.

The Century Organic Vapor Analyzer (OVA-128) is being set up to monitor for fugitive emissions in the SH1 unit. TACB requires fugitive emissions monitoring at least monthly for all new processes. Practice samples were taken in SH2 to check the field operation of the unit. Emissions from pump seals, valves, flanges, etc. were less than 10 ppm TOC. (EPA & TACB define a leak as one having a volatile organic compound (VOC) emission of 10,000 ppm.) High TOC concentrations (greater than 1,000 ppm) were found around the Komline Sanderson filter. There were visible leaks (methanol) from the filter. Several area samples (specific for methanol) were taken. Results are not yet available.

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The maximum range of the Century Detector is 1,000 ppm TOC. To analyze for concentrations between 1,000 and 10,000 ppm, a diluter kit has been ordered. When this attachment arrives, it will be checked out and a procedure will be written for monitoring fugitive emissions. At this point the instrument will be turned over to Maintenance to begin the TACB monthly emission point monitoring.

D. Method Development

The NIOSH method of sampling and analyzing for methanol has been developed and is currently in use. Methanol vapors are trapped in silica gel tubes, desorbed with water and analyzed by G.C. A method for monitoring trioxane vapors is also being developed.

E. Analytical Load

The OSHA/Environmental analytical load, to date, is summarized below.

	Month		YTD	
	OSHA	Environmental	OSHA	Environmental
SH1/TO1	37	4	77	10
SH2/TO2	4	10	226	10
MH2	18	0	117	1
Nat. Finishing	0	0	226	2
Spec. Prod.	5	0	317	2
Celanex	7	0	39	1
Nylon	0	0	30	1
Chemical Co.	0	0	0	3
	71	14	1,032	30

V. COLOR SERVICE - Artripe, Rothenberg, Harvey

GENERAL SUMMARY:

Color Service developed 32 color matches this month. The distribution of color match work for each market group was 22 Celcon, 5 Nylon, and 5 Celanex; of this 3 Celcon, 3 Nylon, and 2 Celanex were reworked from existing formulations.

360 pounds of products were extruded and shipped.

A total of 300 chips were sent out in the process of filling 17 sample requests for chips only.

We have scheduled 25 color matches for August, leaving our backlog of unscheduled work at 48. The backlog is for reformulation of existing formulas. Reformulation is necessary due to pigment obsolescence, reformulating Nylon vendor concentrates, and chip replenishment. There are no new marketing requests on backlog.

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Fisher Body Claret WPH 4887 and Blue WPH 7310 have visual approval by Fisher and are under UV testing at Fisher. We now have all colors approved at Chrysler through the 1981 model year.

This month we produced 500 lbs. of white Nylon concentrates and 120 lbs. of Celanex concentrates on rush orders.

Color Service work load remains very high, turnaround time per match was below last month. (24 vs. 34 days).

1. Method Update - Rothenberg

Two physical property test methods were revised and issued during the month. The methods were : Determination of Flexural Properties (CL 2-23) and Determination of Notched Izod Impact (CL 2-19).

2. Celanex Color UL Program - Rothenberg

Celanex color information was provided to A. Serle for the planning of a program with UL to retain our all-color recognition by new UL standards, which takes effect on January 1, 1980.

Color formulations (in Celanex 2000, 2012, 3300 and 3310) with the highest level of organic pigment, inorganic pigment and a combination of organic and inorganic pigments were identified. Information was based on Celanex color formulation tickets cross-referenced with the Bishop active Celanex color file. In all color formulations, each component was identified and the weight % pigment was given.

3. Deactivation of V-0 Celanex Colors - Artripe, Rothenberg

For several months efforts have been made to obtain UL approval for three concentrates used in V-0 Celanex formulations. This approval has not been forthcoming. In order to protect our all color approvals @ 1/32", Color Service has placed the following concentrate formulations on the inactive list:

EL 3143-K20 (yellow)
EN 3148-K20 (orange)
ES 3144-K20 (red)

Requests for these colors will not be filled until approval is given by A. Serle and Marketing (RGR-63-79, RGR-64-79).

4. Nylon Molding Conditions - Rothenberg

A study is underway to define optimum molding procedures for Nylon (all grades). All aspects of injection molding are being evaluated to insure that molded specimens reflect optimum physical test and color data. Results will be published when testing is completed.

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5. Pigment Evaluation - Rothenberg

Seven (7) new pigments have been received during this time period. Final evaluations on these colorants will be completed shortly.

VI. STATUS OF LAB BUILDING CONSTRUCTION - Rose

Initial plans have been made for modification of the exhaust system for the 2-story hood to achieve design flow velocities. Modifications to the system should be complete by mid-September. Recontouring of the hood floor to provide for proper drainage is still out on bid. This job will be scheduled to coincide with the hood duct work to minimize downtime.

Many leaks are present in the lab roof. Significant repair will be necessary to make this tar paper roof watertight. Leakage of water into the color measurement room during rainy weather is jeopardizing critical equipment. Roof repair should be completed as soon as the 2-story hood traffic is off the roof.

Condensate leakage persists above the solution prep room from the A/C air handling unit. This problem creates a safety hazard from having puddles of water on the floor.

Two of the lab rooms have had the epoxy grout in the tile floors repaired, and there are two more rooms that have not been completed. This job needs to be wrapped up.

A broken steam vent pipe above the ASTM room has not been repaired. During periods of high steam usage, condensate leaks into the ASTM room.

Backs for the island bench sink units have not been received or installed.

Addition of a methane gas outlet to the Special Problems lab has not been completed (PER 9680, 4/11/79).

VII. PERSONNEL

David Guthland, Chemist assigned to the Polymer Units resigned July 31, Peggy Moede has temporarily assumed responsibility for the Polymer Units in addition to the Trioxane Production areas.

William Lowe joined Celanese as a Lab Technician assigned to the Color Lab on July 23.

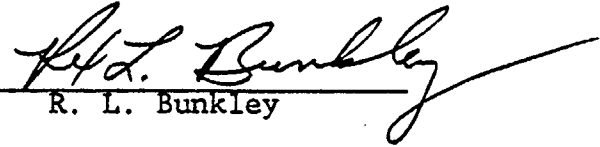
Bille Le Blanc, Color Lab Clerk, was accepted on bid for the Color Lab Technician position, effective August 1.

Richard Rothenberg, Chemist assigned to the Color Lab was promoted to Process Chemist, effective August 1.

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Cinda Alverado, Color Lab Technician was transferred to the
Specification Lab, effective July 20.


R. L. Bunkley

RLB:slh

Attachments

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SAMPLE COUNT TABLE I

MONTH July, 1979

No. Sples. Celcon[®] No. Sples. Celanex[®] No. Sples. Nylon

Area	No. Sples. Celcon [®]		No. Sples. Celanex [®]		No. Sples. Nylon		Total (All Types)	% of Total (All Types)
	Routine	Non- Routine	Routine	Non- Routine	Routine	Non- Routine		
0-1	364	16	380				380	6.1
0-2	544	40	584				584	9.4
11-1	359	185	544				544	8.8
-2	468	3	471				471	7.6
11-2	554	47	601				601	9.7
atural Finishing	960	8	968				968	15.6
pecial Products	718	0	718				718	11.6
celanex				22	261		261	4.2
pilot Plant	0	0	0				0	0.0
aw Materials	190	0	190				190	3.1
ic	127	0	127				127	2.2
nylon					1257	82	1339	21.7
others	0	0	0				0	0.0
TOTALS	4284	299	4583	22	261	82	6183	100.0

HCHO Feed Ave. Conc. 48.76

Hi 52.16
Low 23.82

HCHO Feed Ave. HCOOH 0.068

Hi 0.135
Low 0.022

HCHO Feed Avg. MeOH 0.34

Hi 0.89
Low 0.10

Total Samples
(All Types) 6183

Routine 5780

Non-Routine 403

Total Sples YTD 35,681

Previous YTD 27,353

Overtime: Previous YTD

Regular 509 2301 1234

Holiday 0 304 288

TOTAL 509 2605 1522

Reg. T.M.

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TABLE II
Celcon Quality Summary

	JULY		Year to Date	
	<u>M Lbs</u>	<u>Percentage</u>	<u>M Lbs</u>	<u>Percentage</u>
Gross Production	8319.3	100.0	49164.6	100.0
Total Packaged Off Specification	4423.3	53.2	14684.9	29.9
Quality Waivers	3685.3	44.3	12091.9	24.6

TABLE III
Celcon Experimental Products

<u>Product</u>	<u>Production</u>	<u>Releases</u>
C234A	166800	166800
C243	158650	130400
C244	132250	132250
C251	152400	152400

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TABLE IV

Analysis of Celcon Packaged Off Specification

<u>Natural Finishing</u>	--	<u>JULY</u>	<u>% of</u>	<u>YTD</u>		<u>% of</u>
<u>Defect</u>	<u>Lots</u>	<u>Quantity</u> <u>M Lbs.</u>	<u>Total</u> <u>Natural</u>	<u>Lots</u>	<u>Quantity</u> <u>M Lbs.</u>	<u>Total</u> <u>Natural</u>
Melt Index	25	2,312.0	33.4	69	6,118.0	16.1
Discolored Pellets	9	839.9	12.1	19	1,290.9	3.4
Black Specks	7	917.5	13.3	32	2,779.2	7.2
-Stabilizer Content	2	123.4	1.8	15	863.6	2.2
Ash Content	0	0	0	1	28.3	0.1
Natural Color	12	864.7	12.5	17	1,618.0	4.2
Ext. HCHO	0	0	0	4	108.8	0.3
10X Melt Index	2	37.0	0.5	3	56.1	0.1
Kd	0	0	0	3	362.5	0.9
Volatiles	2	37.6	0.5	6	205.8	0.5
Off Size Pellets	4	588.0	8.5	6	914.6	2.4

<u>Special Products</u>	--	<u>JULY</u>	<u>% of</u>	<u>YTD</u>		<u>% of</u>
<u>Defect</u>	<u>Lots</u>	<u>Quantity</u> <u>M Lbs.</u>	<u>Total</u> <u>S. P.</u>	<u>Lots</u>	<u>Quantity</u> <u>M Lbs.</u>	<u>Total</u> <u>S. P.</u>
Melt Index	14	211.8	15.1	73	1,088.9	10.1
Discolored Pellets	4	67.9	4.8	16	162.3	1.5
Color Match	2	26.5	1.9	16	118.6	1.1
Off Size Pellets	5	87.0	6.2	43	587.8	5.5
Colored Pellets (Contamination)	0	0	0	5	22.4	0.2
volatiles	3	37.9	2.7	10	143.7	1.3
Stabilizer Content	1	40.4	2.9	12	406.9	3.8
Kd	0	0	0	19	119.5	1.1
Black Specks	0	0	0	1	9.4	0.1
Tensile Strength	15	205.8	14.7	20	279.0	2.6
Natural Color (Glass Filled)	2	30.7	2.2	16	208.3	1.9
Ash Content	5	38.4	2.7	5	38.4	0.3

003931

TABLE V

Celcon Releases

Formulation	Releases				Quality Waivers			
	Quantity		Lots		Quantity		Lots	
	(M	Lbs)	JULY	YTD	(M	Lbs)	JULY	YTD
M9000 Flake	0	26.8	0	3				
M9001 Flake	142.6	1005.3	12	84				
M27000 Flake	0	24.9	0	2				
M2501 Natural	207.3	881.1	2	17	97.9	411.1	1	9
M2504 Natural	705.5	1519.7	9	26	565.1	1045.3	5	15
M2514 Natural	0	25.7	0	1				
M9004 Natural	4406.2	21864.6	29	177	2082.6	6361.7	13	47
M9014 Natural	0	2127.9	0	17		750.5		7
M90210 Natural	0	30.2	0	1		30.2		1
M14014 Natural	0	49.6	0	1				
C143 Natural	0	2179.5	0	28		195.2		2
M27004 Natural	0	1795.4	0	14		68.4		1
M27014 Natural	0	1188.3	0	23		225.1		6
U1011 Natural	345.3	489.6	12	18	345.3	412.7	12	15
M2501 Color	0	21.8	0	2				
M2504 Color	56.0	56.0	3	3	35.9	35.9	2	2
M9004 Color	253.7	1559.4	22	141	55.5	269.2	6	26
M9014 Color	0	22.6	0	4		1.9		1
M9008 Color	0	98.3	0	9				
M9008 Natural	17.0	239.2	1	15		14.2		1
M9034 Color	0	256.3	0	14		148.5		8
M14014 Color	0	38.8	0	3				
C143 Color	19.6	100.0	2	14	19.6	25.2	2	4
M27004 Color	0	107.1	0	10		2.6		1
M27008 Color	1.4	226.5	1	32		77.9		
M2504 Black	52.1	159.2	2	15	52.1	92.0	2	3
M9004 Black	137.3	2388.7	4	70	41.8	373.4	1	10
M9014 Black	64.4	468.0	3	24	52.4	253.2	2	11
C143 Black	0	133.4	0	8				
M27004 Black	0	263.4	0	10		16.3		1
U1011 Black	44.3	65.2	1	5				
GC25A Natural	1.2	441.3	1	36	1.2	161.1	1	13
GC25A Black	296.8	1593.0	17	70		12.7		1
M9007 Color	16.5	216.4	10	59				
M9007 Black	92.7	215.3	4	10				
Salt & Peppers	182.6	1039.7	13	75				
C155C	0	124.7	0	5		85.3		3
C234A	166.8	901.9	5	31	43.2	143.0	1	5
C240A	0	502.6	0	4		93.8		1
C241	0	64.7	0	4		18.2		1
C243	130.4	435.4	1	8	130.4	162.2	1	2
C244	132.3	2804.9	4	32	9.9	319.5	1	5
C251	152.4	363.6	1	7	152.4	285.6	1	4
C252	0	176.4	0	2				
C254	0	12.6	0	1				
C255	0	5.0	0	1				
C257	0	12.0	0	1				
C267	0	20.4	0	2				
C300	0	717.4	0	7				
C301	0	417.5	0	4				
TOTALS	7,624.4	49,477.3	159	1,152	3,685.3	12,091.9	51	212

	MONTH	YTD
% COLOR	4.56	5.51
BLACK	6.10	8.88
OTHER	4.26	4.23
GLASS FILLED	3.91	4.11
NATURAL	79.74	76.40
CONCENTRATES	1.43	0.87

QUALITY WAIVERS	
MONTH	YTD
48.3	24.4

003932

TABLE VI
Celanex Quality Summary

	JULY		Year to Date	
	<u>M Lbs</u>	<u>Percentage</u>	<u>M Lbs</u>	<u>Percentage</u>
Gross Production	1985.3	100.0	14180.7	100.0
Total Packaged Off Specification	85.0	4.3	1028.9	7.2
Quality Waivers	62.7	3.1	777.3	5.5

003933

TABLE VII

Analysis of Celanex Packaged Off Specification

<u>Defect</u>	<u>JULY</u>			<u>Year to Date</u>		
	<u>Lots</u>	<u>M Lbs</u>	<u>% of Production</u>	<u>Lots</u>	<u>M Lbs</u>	<u>% of Production</u>
Flammability	0	0	0	9	177.4	1.2
Discolored Pellets	0	0	0	5	52.3	0.4
Ash Content	0	0	0	22	480.5	3.4
Off Size Pellets	0	0	0	2	62.8	0.4
Volatiles	0	0	0	1	39.4	0.3
Contamination	2	22.3	1.1	4	73.5	0.5
Color Match	0	0	0	7	95.3	0.7
Unfilled Pellets	2	62.7	3.2	2	62.7	0.4

003934

TABLE VIII

Celanex Releases

Formulation	Releases				Quality Waivers			
	Quantity		JULY	YTD	Quantity		JULY	YTD
	(M	Lbs)			(M	Lbs)		
	JULY	YTD	JULY	YTD	JULY	YTD	JULY	YTD
2000 Natural	0	25.9	0	2				
2000-2 Natural	0	326.2	0	31				
2002-2 Natural	0	18.4	0	2				
2012 Natural	64.6	150.9	6	13				
2012-2 Natural	57.5	133.6	5	13				
3200-2 Natural	0	38.9	0	1				
3210 Natural	107.6	801.6	3	49		30.4		2
3210-2 Natural	0	217.8	0	13				
3211-2 Natural	0	39.5	0	1				
3300 Natural	625.3	3539.4	18	120	62.7	313.7	2	9
3300-2 Natural	55.4	102.5	2	3				
3310 Natural	389.5	1651.1	11	73		91.3		6
3310-2 Natural	44.2	414.7	2	19				
3311 Natural	0	15.0	0	1				
3311-2 Natural	0	47.0	0	1				
3200 Black	32.7	298.0	1	9				
3210 Black	0	224.5	0	12		19.5		1
3210-2 Black	0	102.2	0	5		25.5		1
3300 Black	235.5	3888.6	3	52		194.2		5
3300-2 Black	0	19.1	0	1				
3310 Black	0	361.4	0	21		34.7		2
3310-2 Black	0	172.8	0	11		20.4		1
3311-2 Black	0	54.4	0	2				
3300 Color	57.1	275.0	5	22		47.6		4
3300-2 Color	41.6	41.6	3	3				
3210-2 Color	0	21.1	0	1				
3310 Color	0	122.7	0	8				
3310-2 Color	74.8	144.6	5	9				
3311-2 Color	0	53.7	0	4				
J225	0	9.7	0	1				
J226	0	7.5	0	1				
J227	0	13.0	0	1				
J228	0	13.0	0	1				
TOTALS	1785.8	13345.4	64	512	62.7	777.3	2	31

QUALITY WAIVERS

3.5	5.8
Month	YTD

003935

TABLE IX
Nylon Quality Summary

	JULY		Year to Date	
	M Lbs	Percentage	M Lbs	Percentage
Gross Production	3215.5	100.0	18289.9	100.0
Total Packaged Off Specification	1346.3	41.9	6492.0	35.5
Quality Waivers	982.9	30.6	5319.7	29.1

TABLE X
Nylon Experimental Products

<u>Product</u>	<u>Production</u>	<u>Releases</u>
N224	376,700	376,700
N243	154,800	154,800
N269	91,200	91,200
N270	44,400	44,400
N355	62,535	62,535
N265	4,950	--
N277 Nat.	5,850	--
N277 Black	9,500	--
N276	4,700	--

003936

TABLE XI

Analysis of Nylon Packaged Off Specification

<u>Defect</u>	<u>JULY</u>			<u>Year to Date</u>		
	<u>Lots</u>	<u>M Lbs</u>	<u>% of Production</u>	<u>Lots</u>	<u>M Lbs</u>	<u>% of Production</u>
Relative Viscosity	26	462.0	14.4	137	3129.7	17.1
Volatiles	26	465.3	14.5	107	2295.8	12.6
Ash Content	0	0	0	12	228.0	1.2
Discolored Pellets	2	32.9	1.0	10	96.2	0.5
Off Size Pellets	25	486.1	15.1	28	567.1	3.1
Natural Color	0	0	0	30	637.6	3.5
Mod Impact	0	0	0	14	316.9	1.7
Nucleant	4	84.6	2.6	15	293.1	1.6
Copper	0	0	0	2	42.5	0.2
Black Specks	0	0	0	5	43.5	0.2
AEG	1	21.6	0.7	1	21.6	0.1

003937

TABLE XII
Nylon Releases

Formulation	Releases				Quality Waivers			
	Quantity		Lots		Quantity		Lots	
	(M	Lbs)	JULY	YTD	(M	Lbs)	JULY	YTD
	JULY	YTD	JULY	YTD	JULY	YTD	JULY	YTD
1000-1 Natural	273.9	628.3	13	31	103.8	145.1	5	7
1000-2 Natural	668.8	2008.8	34	101	122.0	386.8	6	20
1000-4 Natural	120.9	732.0	6	37		116.4		6
1003-1 Natural	0	365.9	0	18				
1003-2 Natural	0	907.0	0	46		142.5		7
1200-1 Natural	168.5	389.9	16	37	62.1	179.8	6	17
1300-1 Natural	0	58.0	0	3				
1310-1 Natural	22.0	33.0	1	2	22.0	22.0	1	1
1310-2 Natural	611.0	1528.3	28	75	149.9	228.2	7	11
1310-4 Natural	285.6	616.9	13	29	109.6	207.0	5	10
1400-2 Natural	0	63.0	0	3				
1403-2 Natural	0	32.9	0	1				
1500-2 Natural	37.6	357.7	1	12		130.7		4
1503-1 Natural	0	284.3	0	9		252.2		7
1503-2 Natural	0	1266.2	0	48		1072.7		38
1600-2 Natural	0	103.0	0	4		74.7		2
1603-2 Natural	0	24.9	0	1				
1000-2 Black	0	195.9	0	6		134.3		4
1003-2 Black	0	348.3	0	14		266.4		9
1003-2 Black	344.1	590.5	24	31	185.2	370.4	14	19
1503-1 Black	0	39.2	0	1		39.2		1
1503-2 Black	549.8	2134.6	17	63	122.6	726.3	5	21
1603-2 Black	0	108.8	0	4		42.9		2
1503-2 Color	0	72.6	0	6				
1603-1 Color	13.4	222.8	1	19				
1603-2 Color	0	12.6	0	1		12.6		1
N181	0	830.8	0	40		21.6		1
N184	0	62.0	0	4				
N186	0	302.0	0	31		61.8		6
N198	0	41.2	0	2				
N224	376.7	1586.1	18	78	21.6	85.3	1	4
N243	154.8	782.4	7	39	21.6	272.3	1	14
N245	0	175.6	0	9				
N249	0	17.0	0	2				
N269	91.2	433.2	4	22				
N270	44.4	192.5	2	9				
N273	0	147.5	0	7				
N355	62.5	867.4	3	45	62.5	290.1	3	15
N357	0	315.6	0	5		38.4		1
TOTALS	3,825.2	18,878.7	189	897	982.9	5,319.7	54	228

QUALITY WAIVERS

25.7 28.2
Month YTD

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