



CELANESE CHEMICAL COMPANY
Chemcel Plant
Bishop, Texas

To: Laboratory Committee Members

From: R. G. Brandt

RGB 122-71

November 22, 1971

Bishop Laboratory Committee Meeting Minutes
October 28-29, 1971

Members Present: R. G. Brandt
J. W. Corley
R. M. Guedin
J. M. Ramey
J. E. Sanborn
F. T. Talbert
W. H. Tuke

Visitors: A. J. Diglio
E. J. Heinz
W. T. McNair
I. J. Miller
L. L. Schweers
R. H. Wile

I. Administration

A. Company-Wide Priorities on Development Projects

Mr. Ramey discussed the possibilities for establishing a Company-wide priority system to ensure Company-wide utilization of chemists on the most important projects. While most felt the idea was good, the group generally felt that the administrative problems made the proposal unmanageable. It was agreed that the Supporting Research Program at the Technical Center was flexible enough to ensure adequate support of high potential projects for which the plants have neither manpower nor facilities. Mr. Diglio agreed to work with the plant chemists and up-date the CCCTC Supporting Research Program. Plant Chemists will complete their reviews by December 1 and Mr. Diglio will complete his review by January 1.

B. Division Request for Technical Work/Priority System - CCCTC Aid

Mr. Brandt pointed out that technical service requests

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received from field salesmen are not documented in such a way that plant laboratories can properly assess priority. Mr. Ramey agreed to develop a Technical Service Request Form which will be distributed to Sales personnel for their use in requesting plant services. The form will require some basic information about the account which will permit plant chemists to rank priority of the request with that of competing work.

I. C. Line of Responsibility of Export Shipments

Mr. Ramey discussed generally the quality problems being experienced with export shipments. He indicated that export quality failures were 10 - 15 times those of domestic shipments. Mr. Ramey said that we will need to beef-up quality surveillance if we are to compete effectively in the European market. He said he is studying the problem and will offer some specific recommendations in the near future.

II. Quality Control

A. Scientific Methods for Establishing Process Control Sample Points and Frequency

Mr. Miller pointed out that the Chemical Company presently spends about \$16 MM annually for fuel gas to produce steam. He suggested that the Company should be able to reduce this cost by at least 10% by improving control of the steam consuming equipment. He recommended that the plants adopt a philosophy of treating each piece of steam consuming equipment as a cost center, rank the equipment on a cost basis, and develop programs to effect a reduction in steam usage. Mr. Miller briefly described a technique employing control charts to identify and monitor distillation columns where reflux could be reduced. He also proposed the use of feed-forward controllers to maintain minimum reflux where savings potential can justify.

B. Government Contracts - Primary and Secondary Responsibility

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- II. B. Mr. Tuke pointed out that the Pampa Plant sells MEK to a customer who in turn produces a product for the U. S. Government. As a result, Pampa is forced to submit to Government inspections. Mr. Ramey agreed to seek a legal opinion in this matter.

C. Special Customer Specifications - "Fail Safe" System

Mr. Ramey mentioned that Mr. Jeffries is in the process of weeding out special customer specs, which no longer apply. To assist in this effort plant chemists are requested to forward copies of their special customer spec. cards to Mr. Jeffries. Mr. Ramey further advised that his staff is working with the Order Department to institute a system which will provide for special customer specification flagging on all teletype orders.

D. Cost Reduction in Quality Control

Mr. Ramey asked each of the plant chemists to review product specifications (both regular sales specs. and special customer specs.) and identify those specifications which are costing us money (rates, efficiencies, etc.). He asked that this information be reported to him by January 1, 1972.

E. Protection of Quality at Terminals

Mr. Ramey pointed out several areas where quality problems develop after the product leaves the plant. He cited color build-up in DAA and water build-up in urethane grade solvents as examples of products whose internal specs. need to be tighter than sales specs. to ensure delivery of specification material through terminals. Plant chemists agreed to review internal specifications and submit proposed revisions to the Houston Quality Control Office.

F. New Sales Specifications

Mr. Brandt asked if the new sales specs. issued in June were now in effect. Mr. Ramey stated that all sales specs.

II. F. now contained in our Sales Specification Book are in effect.

G. Competitive Product Samples - Status

Mr. Brandt asked if any additional competitive product samples were enroute to the plants for inclusion in the 1971 review. Mr. Ramey requested that we conclude the 1971 review with samples now in hand and proceed to finish evaluations and submit reports. Mr. Ramey also asked that more emphasis be placed on using whatever techniques are required to define real differences among competitive samples as opposed to only those analyses defined by specifications.

III. Environmental Maintenance

A. OSHA Air Contamination Standards

As a part of the Occupational Safety and Health Act (OSHA) a list of chemicals with maximum exposure limits has been published in the Federal Register. As a result, each of the plants is compelled by law to avoid employee exposures which exceed the published levels. Unfortunately, no guidelines have been developed to date for establishing sampling techniques, sampling frequency, or methods of analysis. In the absence of such guidelines each plant is proceeding to identify those chemicals and areas where compliance with OSHA is questionable. The respective laboratories are devoting time to developing methods for key analyses and gathering data in obvious areas. Mr. Ramey relayed Mr. Charlesworth's recommendation that the Lab Committee meet more frequently if necessary to coordinate laboratory programs between plants. The area of methods development is probably the most important area at this time where duplication of efforts should be avoided. Plant chemists agreed to keep each other abreast of related efforts in the respective laboratories and meet again in February to review progress.

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III. B. Hydrocarbon Levels in the Plant Laboratories

Each of the plant laboratories has made measurements of hydrocarbon levels within the laboratory work areas. Hydrocarbon levels in the various laboratories range from <1 ppm to several hundred ppm depending upon the amount of fresh air make-up, time of day, and specific work being carried out. We are not aware of any federal or state law which regulates employee exposure to hydrocarbons as a class. However, the higher readings recorded gives rise to the obvious questions "What is the chemical?" and "Are we in compliance with OSHA?" Mr. Guedin described a unique method which his laboratory is using to collect acrylate vapors discharged from a lab hood. The discharged air is being passed through a charcoal bed to absorb the vapors.

C. Reuse of Domestic Sewage Effluent

Mr. Corley reviewed CLP plans to use treated sewage as raw plant water. He stated that the concept of water reuse is not new and some cities have used it for years.

D. Biological Effluent Treatment Studies

Mr. Talbert reported that all of Bay City effluent ponds are dry and their aerated lagoons are working very well. Fish have been noted in the outfall of the lagoons to the river. Mr. Brandt reviewed Bishop's program and what our approved RFA is buying. The total program will be implemented in stages to ensure that the latest developments can be used in the BOD process.

IV. SMA Topics

A. Format of Precision Statements

Mr. Brandt pointed out that each plant was using a different format in reporting precision data for SMA methods. The group agreed to adopt the format employed in the new computer

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- IV. A. printout for precision statements but exclude the raw data and analysis of variances. It was also agreed that the Precision statement would be required on both tentative and permanent SMA methods submitted in the future.
- B. PACE Tuning Parameters
- Mr. Guedin agreed to develop a format for including G.C. method tuning parameters in the appendix of future SMA methods.
- C. Standardization of Chemical Nomenclature
- Mr. Tuke pointed out that numerous SMA methods submitted in the past use several different forms of chemical nomenclature (i.e. n-propanol, n-propyl alcohol, propanol-1) within the same method. It was agreed that whichever nomenclature is used should be left to the initiating plant but once selected for a given method it should be used consistently throughout that method. Mr. Guedin agreed to circulate a list of common names and abbreviations used at the Technical Center.
- V. Analytical
- A. Mass Spec - G.C.
- Mr. Guedin discussed the Mass Spec - Gas Chromatograph and how the molecular weight of unknown compounds up to 250 can be calculated using this system. The Technical Center is evaluating this instrument and will issue a letter when the evaluation is complete.
- B. PACE Computer - Discs vs. Core
- Mr. Tuke inquired about CCCTC and Bishop experience with the EAI disc storage system. Mr. Guedin reported that CCCTC is buying another 8K of core for their system. Both Bishop and CCCTC have had trouble with the disc

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- V. B. systems. Both Mr. Guedin and Mr. Brandt recommended that system expansions with core would be preferred over the disc. The advantages of quick program re-loading offered by the disc can be overcome by purchasing a high speed reader.

C. G.C. Computers - EAI Problems

All the Labs reported that their G.C. computers are performing well. Mr. Guedin stated that CCCTC is going to line printers as their teletypes wear out. He feels they will be more reliable long term.

D. Gas Permeation Standardization Equipment

Mr. Corley reported that they have bought a Phillips system (\$2.7M). This system will blend three gases together at once for standards. The standards blends can be made fast, fresh, and accurate. This system overcomes the problem of blend instability at very low concentrations. Mr. Guedin said that they have bought a one component system and it is working well.

E. Modified Karl Fischer vs. G.C. for Water in Urethane Grade Solvents

Mr. Tuke reported having problems determining low water values (<0.05%) in MEK using Karl Fischer and would like to convert to a G.C. procedure. Mr. Tuke will set up a round robin of urethane solvents for water analysis by January 1972 with the other Laboratories.

VI. Miscellaneous

A. ACS Reagent Chemicals

Mr. Corley reported that ACS is considering requiring vendors to supply a complete analysis of any product to be used as an ACS chemical. This could present some problems in that proprietary information (such as stabilizer identities) would have to be revealed to satisfy ACS accounts.

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- VI. A. Plant Chemists suggested that Mr. Corley use his influence on the ACS Reagent Committee to resist this proposal.

B. In-House Maintenance People

Mr. Talbert commented that their use of an in-house technician for doing all Lab maintenance and standardization is working very well. Mr. Corley is investigating using outside contract (Honeywell) to do instrument maintenance.

C. Material Safety Data Sheets

Mr. Ramey will contact Mr. Coy Hood to obtain Safety Data Sheets on our incoming chemicals to the plants. He will also send data sheets on our chemicals to each of the plants for filing or posting as required.

D. Wage - Price Freeze

Mr. Corley inquired about morale effects at other plants. Most agreed that the freeze was not unduly influencing work output at this time.

E. Consolidation of Plant Lab Functions

Mr. Talbert reviewed Bay City Lab centralization and said it is working very well. Mr. Brandt stated that he will review Lab centralization again at Bishop in light of VPO phaseout.

The next Lab Committee meeting will be held at Pampa on February 17 and 18, 1972.

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March 7, 1962

PLANT		CELANESE CORPORATION OF AMERICA			REF. DWG(S).		MATER. ORL.	
EST		ENGINEERING DEPT.			VN3-0046		NO.	
REQ. NO.					VN3-0046		VM3-0045	
NO. REQD.	MARK	SIZE	NAME	DESCRIPTION	REQ. NO.	ORDER NO.	STORE	
80 sq. ft.	3" thick		Insulation	Foamglas blocks, preformed to fit dished bottom of 8'-6" O.D. vessel (1st layer). Radius of dished head 8'-0".			REMARKS	
100 sq. ft.	3" thick		Insulation	Foamglas blocks, preformed to fit over above insulation (2nd layer).				
150 sq. ft.	12" x 18" x 3"		Insulation	Foamglas blocks, preformed to fit 8'-6" O.D. (1st layer on sides of vessel).				
200 sq. ft.	12" x 18" x 3"		Insulation	Foamglas blocks, preformed to fit 9'-0" O.D. (2nd layer over above insulation and also used for top flange).				
40 sq. ft.	12" x 18" x 3"		Insulation	Foamglas blocks, preformed to fit 2'-6" O.D. (1st layer on discharge chutes).				
60 sq. ft.	12" x 18" x 3"		Insulation	Foamglas blocks, preformed to fit 3'-0" O.D. (2nd layer over above insulation).				
50 sq. ft.	18" x 24" x 3"		Insulation	Foamglas blocks, flat, (1st layer - top).				
50 sq. ft.	18" x 24" x 1 1/2"		Insulation	Foamglas blocks, flat, (2nd layer - top).				
120 sq. ft.	18" x 24" x 2"		Insulation	Foamglas blocks, flat, (2nd & 4th layer - top).				
35 gals.			Insul Adhesive	Foster C.I. mastic 60-25 trowelling grade.				
4 gals.			Anti-sweat coat	Pittsburg Chemical and Coke Co. Gilsonite			40388-424	
600 ft.	3/4" wide		Strapping	S/S			42560-119	
200	3/4"		Buckles	S/S			42561-070	
15 ft.	1 1/2 x 1 1/2 x 1/2		Angle	S/S			42500-176	
75 ft.	3/8" dia.		Rod	S/S			42510-309	
				TITLE				
				Acetylyzer Insulation - Material for One Vessel				
DEPT. 8	USE	LISTED	CH'K'D	APPR	APPR	SHEET	OF	

26-1 NOT 2-1-42

(21)

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Appendix B

March 7, 1962

Maintenance Department Procedure

VM3-0047

III. Protective Coating for crystallizers and acetylizers insulation.

1. Material requirements - See B.M., Page 8.

2. Application procedure (both vessels).

a. Insul-Mastic (Gilsonite)

Trowel on directly over smooth Foamglas approximately 1/16" to 1/8" thick and thick as required to fill in holes, cracks, and cover metal bands. Allow to dry thoroughly. Hot air, infra-red lights, etc., will reduce drying time.

b. Carboline Hardtop #3

Mix according to instructions (reduce amount of water if sand is wet) and trowel on top of vessel. Thickness should vary from about 1/2" in center of vessel to 1/8" at outer perimeter. This will provide a slight slope which will drain off water or acid spilled on top. Pea gravel can be used as an aggregate to fill and strengthen mix. Allow to dry at least 8 hours.

c. Carboline X2200-21 Mastic

Mix equal parts of Component A and Component B to make one part ($\frac{1}{2}$ qt. A and $\frac{1}{2}$ qt. B = 1 qt. mixture), 3 to 3 $\frac{1}{2}$ parts special silica sand, and 1/2 to 1 part ground asbestos. It is extremely important that Components A and B be mixed properly. Due to the fast set-up time and unless more than two men are working, not more than 1 qt. of each component plus 8 parts of sand and asbestos should be mixed at a time. Mixing can best be done using a slow speed 1/4" drill motor and 1/2" rod about 3 ft. long with blades welded on the end. Two men applying and a third mixing gives most efficient procedure.

This material is not easy to apply and some experience is required to do a smooth, good-looking job. Upward strokes should be used on vertical surfaces and minimum number of strokes should be used as the material will tend to stick to the trowel. A good, heavy pressure on the trowel on each stroke will minimize this sticking and provide a smoother finish. Tools can be kept clean and moist with special trowelling solvent or MEK. The trowelling solvent is used with a brush and trowel to provide the final smooth slick finish. Allow to dry 12 to 24 hours.

d. Carboline X1301-2 (Gray 724) Polyurethane build coat

Wipe down surface of mastic coat with Solox (denatured alcohol) and brush one coat X1301-2 build coat. This helps to seal pores of mastic and provides a still smoother surface for the final coat. (This step is more for appearance and can be eliminated if desired.)

e. Carboline X1301-66 Polyurethane (any color) finish coat

This coat should be applied 8 to 48 hours after build coat. If more than four days elapse, surface of build coat should be washed down with Solox before applying final coat.

Appendix B

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JRS
BCK

VM3-0048

PLANT Celriver		CELANESE CORPORATION OF AMERICA ENGINEERING DEPT.			REF. Dwg(S).		MATERIAL BILL NO. VM3-0048	
EST								
REQ. NO.								
NO. REQ.	MARK	SIZE	NAME	DESCRIPTION	REQ. NO.	ORDER NO.	STORE REMARKS	
				PROTECTIVE COATING MATERIAL FOR ONE CRYST.				
10 gals.			Mastic	Pittsburg-Chemical Coke-Gilsonite.				
2 gals.			Mastic	Carboline Hardtop #3.				
10 gals.			Mastic	Carboline X2200-21 Epoxy.				
500 lbs.			Sand	Silica				
25 lbs.			Asbestos	Johns Mansville Shorts #352.				
2 gals.			Solvent	Carboline trowelling solvent.				
1/2 gal.			Paint	Carboline XL301-2 Polyurethane build coat (gray 724 standard).				
1/2 gal.			Paint	Carboline XL301-66 Polyurethane finish coat.				
				PROTECTIVE COATING MATERIAL FOR ONE ACETY.				
15 gals.			Mastic	Pittsburg-Chemical Coke Gilsonite.				
3 gals.			Mastic	Carboline Hardtop #3.				
20 gals.			Mastic	Carboline X2200-21 Epoxy.				
750 lbs.			Sand	Silica				
10 lbs.			Asbestos	Johns Mansville Shorts #352.				
5 gals.			Solvent	Carboline trowelling solvent.				
1 gal.			Paint	Carboline XL301-2 Polyurethane build coat (gray 724 standard).				
1 gal.			Paint	Carboline XL301-66 Polyurethane finish coat.				
TITLE								
DEPT. 8 BLDG C.A.		USE	LISTED DATE	CH'K'D DATE	APPR DATE	APPR DATE	SHEET OF SHEET(S) -	

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