

Check Sheet

Company Name:
Permit Number:
PSD Number:
Permit Engineer:

Olin Corporation
AC 65-115861

Cross References:

-
-
-

Application:

- Initial Application
- Incompleteness Letters
- Responses
- Waiver of Department Action
- Department Response
- Other

KL
KL

DER incompleteness letter 03/10/86

Intent:

- Intent to Issue
- Notice of Intent to Issue
- Technical Evaluation
- BACT or LAER Determination
- Unsigned Permit

Correspondence with:

- EPA
- Park Services
- Other
- Proof of Publication
- Petitions - (Related to extensions, hearings, etc.)
- Waiver of Department Action
- Other

Final

Determination:

- Final Determination
- Signed Permit
- BACT or LAER Determination
- Other

Post Permit Correspondence:

- Extensions/Amendments/Modifications
- Other



● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
 Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. Show to whom delivered, date, and addressee's address. (Extra charge) 2. Restricted Delivery (Extra charge)

3. Article Addressed to: Mr. D. E. Findley Director St. Marks Operations Olin Corporation P.O. Box 222 St. Marks, Florida 32355	4. Article Number P 832 539 824 Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
5. Signature - Addressee X <i>[Signature]</i>	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature - Agent X	
7. Date of Delivery 7/24/91	

Always obtain signature of addressee or agent and DATE DELIVERED.

PS Form 3811, Apr. 1989

★ U.S.G.P.O. 1989-238-815

DOMESTIC RETURN RECEIPT

P 832 539 824



Certified Mail Receipt

No Insurance Coverage Provided
 Do not use for International Mail
 (See Reverse)

Sent to D. E. Findley Dir.-St. Marks Operations Olin Corp. P.O. Box 222 St. Marks, FL 32355	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	\$
Postmark or Date mailed: 7/23/91 AC 65-115861	

PS Form 3800, June 1990

File Copy



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

July 19, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. D. E. Findley, Director
St. Marks Operations
Olin Corporation
P. O. Box 222
St. Marks, Florida 32355

Dear Mr. Findley::

Re: Amendment of Construction Permit AC 65-115861

The Department is in receipt of your June 10 letter, requesting Specific Conditions of the construction permit referenced above be amended. The request is acceptable and the following is changed:

Specific Condition No. 1

FROM: The process at this facility will be limited to four (4) batches a day (350 days/yr).

TO: The process at this facility will be limited to a total process input rate of 45.1 pounds an hour of volatile organic compounds.

Specific Condition No. 2

FROM: Total volatile organic emissions (VOC) from this source shall not exceed 17.47 lbs/hr, 69.88 lbs/day and 12.23 tons/yr.

TO: Total volatile organic emissions (VOC) from this source shall not exceed 17.47 lbs/hr and 12.23 tons/yr. The permittee shall maintain records of the chemical compounds used for the most recent two year period.

Unless the Department has determined other concentrations are required to protect public health and safety, predicted ambient air impact of any toxic pollutant (as listed in the information submitted with the application) shall not exceed the concentration calculated by the following formula:

$$AAC = \frac{(OEL)}{\text{safety factor}}$$

Mr. D. E. Findley
Page 2 of 2

where,

AAC = acceptable ambient concentration

Safety Factor = 100 for category A substances (8 hrs/day)
420 for category A substances (24 hrs/day)

OEL = Occupational exposure level such as ACGIH, OSHA,
and NIOSH published standards for toxic materials.

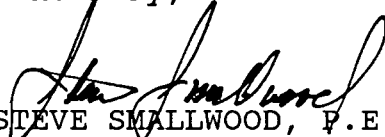
This information shall be made available upon request.

Attachment to be Incorporated:

Mr. D. E. Findley's letter dated June 10, 1991.

A copy of this letter must be attached to the above construction permit and shall become a part of that permit.

Sincerely,


STEVE SMALLWOOD, P.E.
Director
Division of Air Resources
Management

SS/TH/plm

Reading File }
Teresa Nixon } 7-22-91 an

Attachment



ST. MARKS OPERATIONS

June 10, 1991

RECEIVED

JUN 11 1991

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
State of Florida
Department of Environmental Regulation
2600 Blairstone Road
Tallahassee, FL 32301-8241

Division of Air
Resources Management

RE: Construction Permit AC 65-115861
Operation Permit AO 65-136176

Dear Mr. Fancy:

The referenced permits do not allow Olin the operational flexibility to meet its current and future military contracts. The changes in production scheduling required under the current permit framework causes frequent tooling changeovers that result in inordinate downtime and excessive rework thereby limiting production capacity. We do not ask that our permitted emissions be increased, but that the Specific Conditions of these permits be clarified to allow us the operational flexibility to satisfy our business needs.

On May 21/22 we contacted Mr. Jack Priest of the Northwest District of the FDER about this matter. Mr. Priest found no reason to deny this request, but stated that EPA recognizes FDER's Construction Permit and that the request should be made to the Central Air Group in Tallahassee. On June 5 Ms. Theresa Heron of the Tallahassee office reviewed our situation and recommended that a formal request be sent to FDER in the form of a letter.

Clarification of the Construction Permit will eliminate ambiguities and operational restrictions as related to the number of batches and pounds per day of emissions. The emission limits in pounds per hour and tons per year will remain the same. Likewise, the volatile organic input will remain the same. Clarification of the Specific Conditions is as follows:

SPECIFIC CONDITIONS (Present):

1. The process at this facility will be limited to four (4) batches a day (350 days/yr).
2. Total volatile organic emissions (VOC) from this source shall not exceed 17.47 lbs/hr, 69.88 lbs/day and 12.23 tons/yr.

SPECIFIC CONDITIONS (Clarification):

1. The process at this facility will be limited to a total process input rate of 45.1 pounds an hour of volatile organics.
2. Total volatile organic emissions (VOC) from this source shall not exceed 17.47 pounds/hour and 12.23 tons/year.

Corresponding clarification of the Operation Permit is as follows:

SPECIFIC CONDITIONS (Present):

15. Total volatile organic emissions (VOC) from this source shall not exceed 17.47 pounds/hour, 69.88 pounds/day and 12.23 tons/year.
16. Compliance with emission limits are assured if the batch sizes and frequencies do not exceed the values proposed in the application for this permit, and the operating parameters of the condenser system conform to the following limits:
 - A. The purge rate shall be a minimum of 7 minutes (85 standard cubic feet/minute - maximum).
 - B. The temperature of the exhaust shall not exceed 75°F.

SPECIFIC CONDITIONS (Clarification):

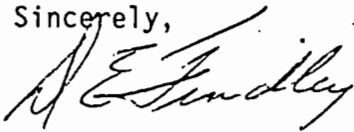
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16. Compliance with emission limits are assured if total process input of volatile organics is limited to 45.1 pounds an hour and the operating parameters of the condenser system conform to the following limits:
 - A. The purge rate shall be a minimum of 7 minutes (85 standard cubic feet/minute - maximum).
 - B. The temperature of the exhaust shall not exceed 75°F.

Page 3
June 10, 1991
Construction Permit AC 65-115861
Operation Permit AO 65-136176

Attached are a copy of sheet 4 of the Construction Permit Application and a copy of the Certificate of Completion of Construction confirming the 45.1 pounds an hour input limit.

As a corporation, Olin is participating in EPA's voluntary industrial toxics reduction project (ITP). This commitment has been confirmed in a letter to William K. Reilly and a corporate press release. While this commitment pertains to the corporation as a whole, each individual facility is being encouraged to reduce emissions through source reduction, recycling/reuse, and improved treatment. The St. Marks facility is currently conducting an engineering study to define improvements in the vapor recovery system that will substantially reduce xylene emissions. The referenced operating permit expires August 1, 1992, and we intend to request a permit modification, as soon as engineering is complete and capital funding is approved, that will reflect emission reductions well in advance of the current expiration date.

Sincerely,



D. E. Findley, Director
St. Marks Operations

DEF/WGC/jb
WBC

cc: Susan Oron
Ed Middlewert

AC 65-115861 APPLICATION

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
See Attached	None			

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 45.1
2. Product Weight (lbs/hr): 32.52

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission ¹		Allowed Emission Rate per Rule 17-2	Allowable Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	* Actual T/yr			lbs/hr	T/yr	
Butyl Acetate	73.8	2.58			10	3.5	
Ethyl Acetate	150	5.25			15	5.25	
Cellosolve Acetate	29	1.015			13	4.55	
Toluene	60	2.1			6	2.1	
Xylene	30.4	1.064			106	37.1	
Baysilon	0.6	0.021			0.06	0.021	
Solvesso	5.6	0.196			0.56	0.196	

¹See Section V, Item 2. * Instantaneous rate for 3 minutes.

²Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

⁴Emission, if source operated without control (See Section V, Item 3).



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
AIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

PERMIT NO. AC65-115861 DATE: June 25, 1987

Company Name: Olin Corporation County: Wakulla

Source Identification(s): Curing Oven Exhaust

Actual costs of serving pollution control purpose: \$ 30,000

Operating Rates: 45.1 lbs/hr Design Capacity: 45.1 lbs/hr

Expected Normal 29.89 lbs/hr During Compliance Test 29.89 lbs/hr

Date of Compliance Test: May 7, 1987 (Attach detailed test report)

Test Results:	Pollutant	Actual Discharge	Allowed Discharge
	<u>Total VOC Emissions</u>	<u>12.5 lbs/hr</u>	<u>17.47 lbs/hr</u>

Date plant placed in operation: September 1, 1986

This is to certify that, with the exception of deviations noted**, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. AC65-115861 dated July 14, 1986.

A. Applicant:

D. E. Findley, Director, St. Marks Operations
Name of Person Signing (Type) D. E. Findley Signature of Owner or Authorized Representative and Title

Date: 7/27/87 Telephone: (904)925-6111

B. Professional Engineer:

Charles P. Nichols
Name of Person Signing (Type) Charles P. Nichols Signature of Professional Engineer

Lockwood Greene Engineers, Inc. Florida Registration No. 30845
Company Name

Date: 7/21/87

(Seal)

1330 West Peachtree St., NW, Atlanta, GA 30367
Mailing Address

(404) 873-3261
Telephone Number

Charles P. Nichols

*This form, satisfactorily completed, submitted in conjunction with an existing application to construct permit and payment of application processing fee will be accepted in lieu of an application to operate.

**If not built as indicated include process flow sketch, plot plan sketch, and updates of applicable pages of application form.

SECTION III

A. Raw Materials and Chemicals

<u>TABLE V</u> <u>Description</u>	<u>Comtaminants</u>	<u>Utilization Rate</u> <u>(lbs/hr)</u>	<u>Input Location</u> <u>on Flowsheet</u>
Kraft	None	6.10	Batch Prep Tank
Nitrocellulose	None	13.56	Batch Prep Tank
N'-Methyl-N, N-Diphenyl-Urea	None	0.18	Batch Prep Tank
Polyurethane Resin	None	<u>2.50</u>	Impregnation
	Sub-Total	<u>22.34</u>	
Volatiles			
- Xylene		5.34	Impregnation-
- Butyl Acetate		0.50	Impregnation
- Ethyl Acetate		0.76	Impregnation
- Cellosolve Acetate		0.65	Impregnation
- Toluene		<u>0.30</u>	Impregnation
	TOTAL	<u>29.89</u> ^o	

^o This utilization rate is based on 87 batches of: case bodies, caps and discs per month. The design capacity, listed as 45.1 lbs/hr on the certificate of construction, is based on all case body production, as was the permit to construct.



State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To: _____	Location: _____
To: _____	Location: _____
To: _____	Location: _____
From: _____	Date: _____

Interoffice Memorandum

TO: Steve Smallwood
FROM: Clair Fancy *CSY*
DATE: June 28, 1991
SUBJ: Amendment to Construction Permit AC 65-115861
Olin Corporation

Attached for your approval and signature is a letter amending Specific Condition Nos. 1 and 2 of the above referenced construction permit.

The Bureau recommends approval of this amendment.

CF/TH/plm

Attachment



ST. MARKS OPERATIONS

June 10, 1991

RECEIVED

JUN 11 1991

C. H. Fancy, P.E., Chief
Bureau of Air Regulation
State of Florida
Department of Environmental Regulation
2600 Blairstone Road
Tallahassee, FL 32301-8241

Division of Air
Resources Management

RE: Construction Permit AC 65-115861
Operation Permit AO 65-136176

Dear Mr. Fancy:

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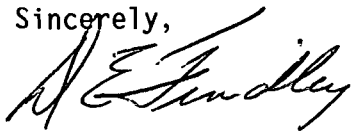
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Page 3
June 10, 1991
Construction Permit AC 65-115861
Operation Permit AO 65-136176

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As a corporation, Olin is participating in EPA's voluntary industrial toxics reduction project (ITP). This commitment has been confirmed in a letter to William K. Reilly and a corporate press release. While this commitment pertains to the corporation as a whole, each individual facility is being encouraged to reduce emissions through source reduction, recycling/reuse, and improved treatment. The St. Marks facility is currently conducting an engineering study to define improvements in the vapor recovery system that will substantially reduce xylene emissions. The referenced operating permit expires August 1, 1992, and we intend to request a permit modification, as soon as engineering is complete and capital funding is approved, that will reflect emission reductions well in advance of the current expiration date.

Sincerely,



D. E. Findley, Director
St. Marks Operations

DEF/WGC/jb

WGC

*cc: Teresa DeLeon
Ed Middlewart*

AC 65-115861 APPLICATION

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

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B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 45.1

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Baysilon	0.6	0.021			0.05	0.021	
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¹See Section V, Item 2. * Instantaneous rate for 3 minutes.

²Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

⁴Emission, if source operated without control (See Section V, Item 3).



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

AIR POLLUTION SOURCES
CERTIFICATE OF COMPLETION OF CONSTRUCTION*

PERMIT NO. AC65-115861 DATE: June 25, 1987

Company Name: Olin Corporation County: Wakulla

Source Identification(s): Curing Oven Exhaust

Actual costs of serving pollution control purpose: \$ 30,000

Operating Rates: 45.1 lbs/hr Design Capacity: 45.1 lbs/hr

Expected Normal 29.89 lbs/hr During Compliance Test 29.89 lbs/hr

Date of Compliance Test: May 7, 1987 (Attach detailed test report)

Test Results:	Pollutant	Actual Discharge	Allowed Discharge
	<u>Total VOC Emissions</u>	<u>12.5 lbs/hr</u>	<u>17.47 lbs/hr</u>
	_____	_____	_____
	_____	_____	_____

Date plant placed in operation: September 1, 1986

This is to certify that, with the exception of deviations noted**, the construction of the project has been completed in accordance with the application to construct and Construction Permit No. AC65-115861 dated July 14, 1986.

A. Applicant:

D. E. Findley, Director, St. Marks Operations
Name of Person Signing (Type) D. E. Findley Signature of Owner or Authorized Representative and Title

Date: 7/27/87 Telephone: (904)925-6111

B. Professional Engineer:

Charles P. Nichols
Name of Person Signing (Type) Charles P. Nichols Signature of Professional Engineer

Lockwood Greene Engineers, Inc.
Company Name Florida Registration No. 30845

Date: 7/21/87

(Seal)

1330 West Peachtree St., NW, Atlanta, GA 30367
Mailing Address

(404) 873-3261
Telephone Number

Charles P. Nichols

*This form, satisfactorily completed, submitted in conjunction with an existing application to construct permit and payment of application processing fee will be accepted in lieu of an application to operate.

**If not built as indicated include process flow sketch, plot plan sketch, and updates of applicable pages of application form.

SECTION III

A. Raw Materials and Chemicals

<u>TABLE V</u> <u>Description</u>	<u>Comtaminants</u>	<u>Utilization Rate</u> <u>(lbs/hr)</u>	<u>Input Location</u> <u>on Flowsheet</u>
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Polyurethane Resin	None	<u>2.50</u>	Impregnation
	Sub-Total	<u>22.34</u>	
Volatiles			
- Xylene		5.34	Impregnation
- Butyl Acetate		0.50	Impregnation
- Ethyl Acetate		0.76	Impregnation
- Cellosolve Acetate		0.65	Impregnation
- Toluene		<u>0.30</u>	Impregnation
	TOTAL	<u>29.89</u> °	

° This utilization rate is based on 87 batches of: case bodies, caps and discs per month. The design capacity, listed as 45.1 lbs/hr on the certificate of construction, is based on all case body production, as was the permit to construct.

P 408 531 151

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. D. E. Findley	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date 1/28/87	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. <u>The return receipt fee will provide you the name of the person delivered to and the date of delivery.</u> For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.	
1. <input type="checkbox"/> Show to whom, date and address of delivery.	
2. <input type="checkbox"/> Restricted Delivery.	
3. Article Addressed to: Mr. D. E. Kindley Dir. of Powder Operations Olin Corporation St. Marks, FL 32355	
4. Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	Article Number P 408 531 151
Always obtain signature of addressee or agent and DATE DELIVERED.	
5. Signature - Addressee X <i>Johnson</i>	
6. Signature - Agent X	
7. Date of Delivery 1/29/87	
8. Addressee's Address (ONLY if requested and fee paid)	

DOMESTIC RETURN RECEIPT

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400



BOB MARTINEZ
GOVERNOR

DALE TWACHTMANN
SECRETARY

January 21, 1987

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. D. E. Findley
Director of Powder Operations
Olin Corporation
St. Marks, Florida 32355

Dear Mr. Findley:

Re: Modification of Conditions
Permit No. AC 65-115861
Permit No. AC 65-109412

The department received your letter, dated November 24, 1986, which requested an extension of the expiration date of the above referenced permits to construct a solvent dryer with condenser and a salt coating and glazing facility at your chemical complex. This request is acceptable and the expiration date is changed as follows:

From: March 31, 1987
To: September 30, 1987

A copy of this letter must be attached to the referenced construction permits and shall become a part of the permits.

Attachment to be Incorporated:

Mr. D. E. Findley's letter of November 24, 1986.

Sincerely,

Howard L. Rhodes, P.E.
Director, Division of
Environmental Programs

HLR/ks

cc: J. Preece

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION



Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: _____ Locn: _____
To: _____ Locn: _____
To: _____ Locn: _____
From: _____ Date: _____

TO: Howard L. Rhodes, Director
FROM: C. H. Fancy, Deputy Chief, BAQM
DATE: January 22, 1987
SUBJ: Modifications of Conditions

C. H. Fancy
RECEIVED
JAN 22 1987

DIRECTOR - PROGRAMS

Attached for your approval and signature are five letters that will extend the expiration dates of the following air construction permits:

- AC 48-118328, Cirtus Central, Inc.
- AC 16-100644, USG Corporation
- AC 05-103832, Kennedy Space Center
- AC 65-115861 and AC 65-109412, Olin Corporation
- AC 17-098127 and AC 17-104265, Reichhold Chemicals Inc.

The bureau recommends these extensions be approved.

CHF/s

attachments

DER

JAN 23 1987

BAQM

PM
11-25-86
St. Marks, FL



St. Marks, Florida 32355
AC 904 925-6111

DER

NOV 26 1986

BAQM

November 24, 1986

C. H. Fancy, P.E., Deputy Chief
Bureau of Air Quality Management
State of Florida
Dept. of Environmental Regulation
2600 Blirstone Road
Tallahassee, FL 32301-8241

RE: Permit Nos. AC-65-115861 and AC-65-109412

Dear Mr. Fancy:

Compliance testing for the two (2) facilities has been delayed because of late equipment deliveries, construction delays and start-up problems. In addition, the 1987 production schedules do not provide material for salt-coating and glazing facility until the second quarter of 1987. Because of these unanticipated problems, we request the expiration date for both permits be extended from March 31, 1987 to September 30, 1986. This extension will provide ample time to solve all the problems and make applications for Operating Permits by June 30, 1987.

Your consideration of this request will be appreciated.

Sincerely,

A handwritten signature in cursive script that reads "D. E. Findley".

D. E. Findley, Director
Powder Operations

DEF/RLM/kaj

RLM

P 408 532 080

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. D. E. Findley	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date 10/6/86	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983 447-845

DOMESTIC RETURN RECEIPT

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
Mr. D. E. Findley
Olin Corporation
St. Marks, FL 32355

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P 408 532 080

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X *M. E. Findley*

6. Signature - Agent
X

7. Date of Delivery
10/8/86

8. Addressee's Address (ONLY if requested and fee paid)

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

October 2, 1986

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. D. E. Findley, Director
Powder Operations
Olin Corporation
St. Marks, Florida 32355

Dear Mr. Findley:

Re: Modification of Condition Permit No. AC 65-115861

The department received your letter, dated September 4, 1986, which requested an extension of the expiration date of the referenced permit to construct a solvent dryer with condenser facility at the Olin Corporation complex in St. Marks, Florida.

This request is acceptable and the expiration date is changed as follows:


From: December 31, 1986
To: March 31, 1987

A copy of this letter must be attached to the referenced construction permit and shall become a part of this permit.

Attachment to be Incorporated

Mr. D. E. Findley's letter dated September 4, 1986.

Sincerely,



Victoria J. Tschinkel
Secretary

VJT/ks

cc: Jack Preece, NW District Office

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION



Interoffice Memorandum

TO: Victoria J. Tschinkel
FROM: Clair Fancy *CF*
DATE: October 2, 1986
SUBJ: Extension of Permit No. AC 65-115861
Olin Corporation

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: _____ Loc: _____
To: _____
To: _____
From: _____

RECEIVED

OCT 2 1986

Office of the Secretary

Attached for your approval and signature is a letter extending the expiration date of the above referenced permit.

CF/pa

Attachment



St. Marks, Florida 32355
AC 904 925-6111

September 4, 1986

DER
SEP 5 1986
BAQM

C. H. Fancy, P.E., Deputy Chief
Bureau of Air Quality Management
State of Florida
Dept. of Environmental Regulation
2600 Blairstone Road
Tallahassee, Florida 32301-8241

Re: Permit Number AC 65-115861

Dear Mr. Fancy:

We request an extension of the December 31, 1986 expiration date of the subject permit to March 31, 1987. The extension is required because construction of the permitted facility has been delayed from July 1, 1986 to September 30, 1986, which prevents us from being able to meet the requirements of Specific Condition No. 7.

Your consideration of this request will be appreciated.

Sincerely,

A handwritten signature in cursive script, appearing to read "D. E. Findley".

D. E. Findley
Director, Powder Operations

DEF/RLM/jah

RLM

P 408 532 109

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to <i>D.E. Findley</i>	
Street and No. <i>Olin Corp</i>	
P.O., State and ZIP Code <i>P.O. Box 222, St. Marks, FL</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

PS Form 3800, Feb. 1978

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. <u>The return receipt fee will provide you the name of the person delivered to and the date of delivery.</u> For additional fees the following services are available. Consult postmaster for fees and check box (X) for service(s) requested.	
1. <input checked="" type="checkbox"/> Show to whom, date and address of delivery.	
2. <input type="checkbox"/> Restricted Delivery.	
3. Article Addressed to: <i>Mr. D. E. Findley</i> <i>Olin Corp.</i> <i>P. O. Box 222</i> <i>St. Marks, FL 32355</i>	
4. Type of Service: <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail	Article Number <i>P408532109</i>
Always obtain signature of addressee or agent and DATE DELIVERED.	
5. Signature of Addressee <i>X</i> <i>Heber C. Poy</i>	
6. Signature - Agent <i>X</i>	
7. Date of Delivery <i>7/16/85</i>	
8. Addressee's Address (ONLY if requested and fee paid)	

DOMESTIC RETURN RECEIPT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Mr. D. E. Findley
Director of Powder Operations
Olin Corporation
Post Office Box 222
St. Marks, Florida 32355

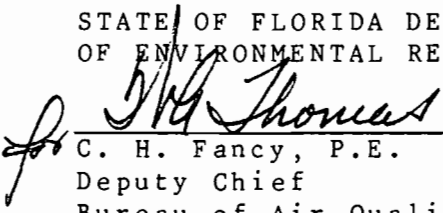
July 14, 1986

Enclosed is Permit Number AC 65-115861 to Olin Corporation which authorizes the construction of a solvent dryer with condenser facility at the Olin Corporation complex in St. Marks, Wakulla County, Florida. This permit is issued pursuant to Section 403, Florida Statutes.

Any Party to this permit has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this permit is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Charles P. Nichols, P.E.
Jack Preece

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on _____ to the listed persons.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Keri Sholan
Clerk

7-15-86
Date

Final Determination

Olin Corporation's application for a permit to construct a solvent dryer with condenser facility at the Olin Corporation complex in St. Marks, Wakulla County, Florida, has been reviewed by the Bureau of Air Quality Management.

Public Notice of the Department's Intent to Issue the construction permit was published in the Wakulla News on May 29, 1986.

Copies of the preliminary determination have been available for public inspection at the Department's District office in Pensacola and the Bureau of Air Quality Management office in Tallahassee.

No comments were received as a result of the public notice period.

The final action of the Department will be to issue the permit as noticed during the public notice period.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Olin Corporation
P. O. Box 222
St. Marks, Florida 32355

Permit Number: AC 65-115861
Expiration Date: December 31, 1986
County: Wakulla
Latitude/Longitude: 30° 11' 07"N/
84° 13' 30" W
Project: 120mm Combustible Cartridge
Case Production Facility

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 120mm combustible cartridge case production facility (solvent dryer with condenser) to be located at the Olin Corporation Complex, in St. Marks, Wakulla County, Florida.

Attachments:

1. Application to construct Air Pollution Sources, DER Form 17-1.122(16).
2. Incompleteness letter of March 12, 1986.
3. Olin's letter of March 24, 1986 (response to technical discrepancies).

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- () Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The process at this facility will be limited to four (4) batches a day (350 days/yr).
2. Total volatile organic emissions (VOC) from this source shall not exceed 17.47 lbs/hr, 69.88 lbs/day and 12.23 tons/yr.
3. Compliance with VOC emission standard will be determined by Method 25 or other methods approved by the Department. Concentration data and calculated mass emission rate will be reported. Thereafter, compliance with the VOC emission limitations will be maintained based on the VOC inventory. The District office shall be notified 15 days prior to test.

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

SPECIFIC CONDITIONS:

4. No objectionable odors are allowed from this facility.
5. Reasonable precautions to prevent fugitive particulate emissions during construction such as coating or spraying road and construction sites will be taken by the permittee.
6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration date of the construction permit and submit a new schedule and request for an extension of the construction permit. (Rule 17-4.09 Florida Administrative Code)
7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with compliance test results and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate. (Rule 17-4.22 and 17-4.23, Florida Administrative Code.)
8. Upon obtaining an operating permit, the permittee will be required to submit annual reports on the actual operation and emissions of the facility. Annual material balance reports (24-hour) shall be required and sent to the Department's district office to assess emissions and maintain VOC inventory. Visible emissions test shall be performed on an annual basis.
9. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application. (Rule 17-4.10 Florida Administrative Code)

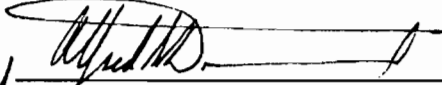
PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

SPECIFIC CONDITIONS:

Issued this 19th day of July,
1986.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION


h VICTORIA J. TSCHINKEL, Secretary

 pages attached.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION



Interoffice Memorandum

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: _____ LOCTN: _____
To: _____ LOCTN: _____
To: _____ LOCTN: _____
FROM: _____ DATE: _____

TO: Victoria J. Tschinkel
FROM: Clair Fancy *Clair Fancy*
DATE: July 9, 1986
SUBJ: Approval of Air Construction Permit

RECEIVED
JUL 10 1986

Office of the Secretary

Attached for your approval and signature is one air construction permit to Olin Corporation to construct a solvent dryer with condenser facility at the Olin Corporation complex in St. Marks, Wakulla County, Florida.

Day 90, after which the permit would be issued by default, is July 17, 1986.

The Bureau recommends your approval and signature.

CF/pa

Attachment

THE WAKULLA NEWS
Crawfordville, Wakulla County, Florida

STATE OF FLORIDA

COUNTY OF WAKULLA

ss

Before the undersigned authority personally appeared Marjorie Phillips, who on oath says she is publisher of The Wakulla News, a newspaper published at Crawfordville in Wakulla County, Florida; the attached copy of advertisement, in the matter of

Department of Environmental Regulation
Notice of Intent to Issue a Permit to
Olin Corporation

was published in the said newspaper in the issues of

May 29, 1986

Affiant further says said Wakulla News is a newspaper published at Crawfordville, in said Wakulla County, Florida, and the said newspaper has heretofore been continuously published in said Wakulla County, Florida, each Thursday and has been entered as second class mail matter at the post office in Crawfordville in said Wakulla County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says he has neither paid nor promised any person, firm or corporation any discount, in securing this advertisement for publication in the said newspaper.

Sworn to and subscribed before me this 29 day of May, 1986

Marjorie H. Phillips
Shannon P. Turnbull
Notary Public, State of Florida at Large

Notary Public, State of Florida
My Commission Expires Feb. 10, 1989
Bonded Thru Troy Fain - Insurance, Inc.

Legal Notice

STATE OF FLORIDA
DEPARTMENT OF
ENVIRONMENTAL REGULATION
NOTICE OF INTENT

The Department gives notice of its intent to issue a permit to Olin Corporation for the construction of a 120mm combustible cartridge case production facility to be located at the Olin Corporation Complex in St. Marks, Wakulla County, Florida. A determination of best available control technology (BACT) was not required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009 Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Dept. of Environmental Regulation
Northwest District
106 Governmental Center
Pensacola, Florida 32501

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

DER

JUN 2 1986

BAQM

P 408 532 127

RECEIPT FOR CERTIFIED MAIL

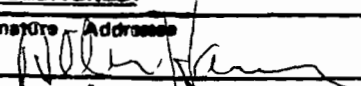
NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Mr. D. E. Findley	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date 5/21/86	

PS Form 3800, Feb. 1982

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. <u>The return receipt fee will provide you the name of the person delivered to and the date of delivery.</u> For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.	
1. <input type="checkbox"/> Show to whom, date and address of delivery.	
2. <input type="checkbox"/> Restricted Delivery.	
3. Article Addressed to: Mr. D. E. Findley Olin Corporation Post Office Box 222 St. Marks, FL 32355	
4. Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	Article Number P 408 532 127
Always obtain signature of addressee <u>or</u> agent and DATE DELIVERED.	
5. Signature - Addressee X 	
6. Signature - Agent X	
7. Date of Delivery 5/22/86	
8. Addressee's Address (ONLY if requested and fee paid)	

DOMESTIC RETURN RECEIPT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

May 19, 1986

CERTIFIED MAIL-RETURN RECEIPT REQUESTED


Mr. D. E. Findley
Director of Powder Operations
Olin Corporation
Post Office Box 222
St. Marks, Florida 32355

Dear Mr. Findley:

Attached is one copy of the Technical Evaluation and Preliminary Determination, and proposed permit to construct a 120mm combustible cartridge case production facility at the Olin Complex in St. Marks, Wakulla County, Florida.

Please submit, in writing, any comments which you wish to have considered concerning the department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,


C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/pa

Attachments

cc: Charles P. Nichols, P.E.
Jack Preece

State of Florida
Department of Environmental Regulation
Notice of Intent

The Department gives notice of its intent to issue a permit to Olin Corporation for the construction of a 120mm combustible cartridge case production facility to be located at the Olin Corporation Complex in St. Marks, Wakulla County, Florida. A determination of best available control technology (BACT) was not required.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative determination (hearing) in accordance with Section 120.57, Florida Statutes. The petition must conform to the requirements of Chapters 17-103 and 28-5, Florida Administrative Code, and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a petition within this time period constitutes a waiver of any right such person has to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the proposed agency action. Therefore, persons who may not wish to file a petition may wish to intervene in the proceeding. A petition for intervention must be filed pursuant to Rule 28-5.207, Florida Administrative Code, at least five (5) days before the final hearing and be filed with the hearing officer if one has been assigned at the Division of Administrative Hearings, Department of Administration, 2009, Apalachee Parkway, Tallahassee, Florida 32301. If no hearing officer has been assigned, the petition is to be filed with the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Dept. of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Dept. of Environmental Regulation
Northwest District
106 Governmental Center
Pensacola, Florida 32501

Any person may send written comments on the proposed action to Mr. Bill Thomas at the department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the department's final determination.

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Olin Corporation
Post Office Box 222
St. Marks, Florida 32355

DER File No. AC 65-115861

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit (copy attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Olin Corporation, applied on February 10, 1986, to the Department of Environmental Regulation for a permit to construct a 120mm combustible cartridge case production facility to be located at the Olin Corporation Complex in St. Marks, Wakulla County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit was needed for the proposed work.

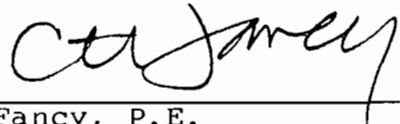
Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, FAC, you (the applicant) are required to publish at your own expense the enclosed Notice of Proposed Agency Action on permit application. The notice must be published one time only in a section of a major local newspaper of general circulation in the county in which the project is located and within thirty (30) days from receipt of this intent. Proof of publication must be provided to the Department within seven days of publication of

the notice. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S. A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. Petitions must comply with the requirement of Florida Administrative Code Rules 17-103.155 and 28-5.201 (copies enclosed) and be filed with (received by) the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32301-8241. Petitions filed by the permit applicant must be filed within fourteen (14) days of receipt of this intent. Petitions filed by other persons must be filed within fourteen (14) days of publication of the public notice or within fourteen (14) days of receipt of this intent, whichever first occurs. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions will be dismissed.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

D. E. Findley
Charles P. Nichols
Jack Preece

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on May 21, 1946.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to
§120.52(9), Florida Statutes, with
the designated Department Clerk,
receipt of which is hereby
acknowledged.

Patricia G. Adams May 21, 1946
Clerk Date

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISIONS DETERMINING SUBSTANTIAL INTERESTS

28-5.15 Requests for Formal and Informal Proceedings

- (1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.
- (2) All petitions filed under these rules should contain:
 - (a) The name and address of each agency affected and each agency's file or identification number, if known;
 - (b) The name and address of the petitioner or petitioners;
 - (c) All disputed issues of material fact. If there are none, the petition must so indicate;
 - (d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;
 - (e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;
 - (f) A demand for the relief to which the petitioner deems himself entitled; and
 - (g) Such other information which the petitioner contends is material.

DER1985 RULES OF ADMINISTRATIVE PROCEDURE - NON-RULEMAKING 17-103

of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32301. Failure to petition to intervene within the allowed time frame constitutes a waiver of any right such person has to an administrative determination (hearing) under Section 120.57, F.S.

(4) Notice to substantially affected persons concerning applications for Department permits is an essential and integral part of the state environmental licensing process. Therefore, no application for a permit for which publication of notice is required shall be granted until and unless proof of publication of Notice is furnished to the appropriate Department permitting office.

(5)(a) Any applicant or person benefiting from the Department's action may elect to publish notice of proposed agency action in the manner provided by subsection (2) or (3). Any person who elects to publish notice of proposed agency action, upon presentation of proof of publication to the Department, prior to final agency action, shall be entitled to the same benefits under this rule as a person who is required to publish notice of proposed agency action. Since persons whose substantial interests are affected by a Department decision on a permit application may petition for an administrative proceeding within fourteen (14) days after receipt of notice and since, unless notice is given or published as prescribed in this rule, receipt of notice can occur at any time, the applicant or persons benefiting from the Department's action cannot justifiably rely on the finality of

the Department's decision without the notice having been duly given or published.

(b) The notices required by this rule may be combined with other notices required by the Department pursuant to Chapter 403, 376, or 253, F.S., or Chapter 17, FAC.

(c) The provisions of this section shall also apply to the permitting of hazardous waste facilities, but only to the extent it is consistent with Chapter 17-30, Part IV, FAC. Whenever Chapter 17-30, Part IV, FAC, provides for a different time or notice procedure than that set forth in this section the time and notice provisions of Chapter 17-30 shall govern.

(6) Failure to publish any notice of application, notice of proposed agency action, or notice of agency action required by the Department shall be an independent basis for the denial of a permit.

Specific Authority: 120.53, 403.0876, 403.815, F.S. Law Implemented: 120.53, F.S. History: New 9-20-79, Amended 4-28-81, Transferred from 17-1.62 and Amended 6-1-84.

17-103.155 Petition for Administrative Hearing; Waiver of Right to Administrative Proceeding.

(1)(a) Any person whose substantial interests may be affected by proposed or final agency action may file a petition for administrative proceeding. A petition shall be in the form required by this Chapter and Chapter 28-5, FAC, and shall be filed (received) in the Office of General Counsel of the Department within fourteen (14) days of receipt of notice of proposed agency action or within fourteen (14) days of receipt of notice of

DER1985 RULES OF ADMINISTRATIVE PROCEDURE - NON-RULEMAKING 17-103

agency action whenever there is no public notice of proposed agency action. In addition to the requirements of Rule 28-5.201, FAC, the Petition must specify the county in which the project is or will be located.

(b) Failure to file a petition within fourteen (14) days of receipt of notice of agency action or fourteen (14) days of receipt of notice of proposed agency action, whichever notice first occurs, shall constitute a waiver of any right to request an administrative proceeding under Chapter 120, F.S.

(c) When there has been no publication of notice of agency action or notice of proposed agency action as prescribed in Rule 17-103.150, FAC, a person who has actual knowledge of the agency action or has knowledge which would lead a reasonable person to conclude that the Department has taken final agency action, has a duty to make further inquiry within fourteen (14) days of obtaining such knowledge by contacting the Department to ascertain whether action has occurred. The Department shall upon receipt of such an inquiry, if agency action has occurred, promptly provide the person with notice as prescribed by Rule 17-103.150, FAC. Failure of the person to make inquiry with the Department within fourteen (14) days after obtaining such knowledge may estop the person from obtaining an administrative proceeding on the agency action.

(2)(a) "Receipt of notice of agency action" means receipt of written notice of final agency action, as prescribed by Department rule, or the publication, pursuant to Department rule, of notice of final agency action, whichever first

occurs.

(b) "Receipt of notice of proposed agency action" means receipt of written notice (such as a letter of intent) that the Department proposes to take certain action, or the publication pursuant to Department rule of notice of proposed agency action, whichever first occurs.

(3) Notwithstanding any other provision in this Chapter, should a substantially affected person who fails to timely request a hearing under Section 120.57, F.S., administratively appeal the final Department action or order, the record on appeal should be limited to:

(a) the application, and accompanying documentation submitted by the applicant prior to the issuance of the agency's intent to issue or deny the requested permit.

(b) the materials and information relied upon by the agency in determining the final agency action or order;

(c) any notices issued or published; and

(d) the final agency action or order entered concerning the permit application.

(4) In such cases where persons do not timely exercise their rights accorded by Section 120.57(1), Florida Statutes, the allegations of fact contained in or incorporated by the final agency action shall be deemed uncontested and true, and appellants may not dispute the truth of such allegations upon subsequent appeal.

(5) Any applicant may challenge the Department's request for additional information by filing with the Office of General Counsel an appropriate petition for administrative proceeding pursuant to Section 120.60, F.S., following receipt by

the applicant of the Department's notification, pursuant to Section 403.0876, F.S., that additional information is required.

Specific Authority: 120.53, 403.0876, 403.815, F.S. Law

Implemented: 120.53, F.S.

History: New 9-20-79, Amended 4-28-81, Transferred from 17-1.62 and Amended 6-1-84.

17-103.160 Uniformity in Approval and Denial of Applications for Department Permits and Certifications.

To the extent possible and consistent with the public interest, the Department approves and denies applications for permits and certifications on a uniform and consistent basis. Final Department actions on applications for permits and certifications shall be consistent with prior Department actions, unless deviation therefrom is explained by the Department in writing or the hearing officer who submits a recommended order to the Department for final agency action in accordance with Section 120.57, Florida Statutes.

Specific Authority: 120.53(1), F.S. Law Implemented: 120.53(1), 120.68(12), F.S. History: New 2-6-78, Transferred from 17-1.63, 6-1-84.

17-103.170 Designation, Preparation and Transmittal of Record for Administrative Appeals.

When any Department action or order is the subject of an administrative appeal under Chapter 17-103, Part II, FAC, the following requirements shall apply:

(1) Designation of Record. Within fifteen (15) days of rendition of the Department's final order, the appellant shall designate

to the Department, in writing, with copies to other parties, those documents or things under the control of or in the possession of the Department which the appellant desires to have included in the record, and which were received or considered in the Department proceeding below. If a proceeding was reported by mechanical recording devices, the appellant shall designate those portions of the proceeding for which it requires written transcription or tapes for transcription. Any other party may designate other portions of the record in the manner provided herein. Such cross-designation shall be filed with the Department, with copies provided other parties, within seven (7) days after receipt of the designation by the appellant.

(2) Original Record. The Department shall thereupon include in the record all of the designated portions of the original papers and exhibits in the proceedings or matter from which administrative appeal is taken, together with a copy of any such parts of the proceedings as were stenographically reported or transcribed from tapes, and as have been designated by the parties and certified by a notary public, the reporter, or other officer for inclusion in the record on appeal or review, and certified copies of the order, if any, of which review is sought. The Department may, at its discretion, substitute certified copies for original papers or documents in its possession.

(3) Preparation of Record. Upon tender or deposit by appellant of the estimated cost of preparation, the Department shall prepare the record in accordance with the designations of the parties. The cost of preparation, and reproduction,

Technical Evaluation
and
Preliminary Determination

Olin Corporation
St. Marks, Wakulla County, Florida

Production Facility
120 MM Combustible Cartridge Case
AC 65-115861

Florida Department of Environmental Regulation
Bureau of Air Quality Management
Central Air Permitting

May 19, 1986

I. NAME AND ADDRESS OF APPLICANT

Olin Corporation
P. O. Box 222
St. Marks, Florida 32355

II. REVIEWING AND PROCESS SCHEDULE

Date of receipt of application: February 10, 1986.

Completeness Review (30 days):

Request for additional information: Incompleteness letter of March 12, 1986.

Response to incompleteness letter: March 24, 1986.

Application's completeness date: March 24, 1986.

III. FACILITY INFORMATION

Facility Location

The proposed facility will be located at U.S. 98 and S.R. 363 (Olin Corporation) in St. Marks, Wakulla County, Florida. The latitude and longitude of this site are 30°, 11', 07" North and 84°, 13', 30" West respectively.

Standard Industrial Classification

This new facility will be classified as follows:

Major Group 28: Chemicals and Allied Products
Group 289: Miscellaneous Chemical Products
Industry No. 2892: Explosives

Facility Category

Olin Corporation is classified as a major emitting facility for sulfur dioxide (SO₂). Permitted SO₂ emissions are 245 tons per year. The proposed project, to produce 120mm combustible case components in an initial production facility, will increase the overall VOC emissions at Olin Corporation's complex by 12.23 tons per year.

IV. PROCESS DESCRIPTION

Batch Preparation - Kraft is added to water in the batch preparation tank and agitated until a homogeneous slurry is achieved. Nitrocellulose is added to the slurry in drum lots, and a stabilizer, akradit II, is added prior to a final dilution

with water to a 1% slurry. The contents of the batch preparation tank are transferred to a slurry storage tank where water is added to dilute to .2%.

Felting - The combustible case parts; cap, 2 discs and a case, are formed by drawing a vacuum on a felting die, after it is lowered into the felting tank. The fibers and akardit are deposited on the screen of the die, and the white water passes through the die to be recycled through a white water tank to a slurry storage tank. The felting die is raised from the felting tank after a predetermined time. The form is then weighed and transferred to the pre-squeeze operation if it is a case, or directly to final molding if not.

Molding - The felted part contains 70% water, the pre-squeeze press reduces the water content of the case to 15%. The final mold is a set of matched metal dies that perform three elements necessary to achieve a final moisture content of less than 1%:

- a. Pressure - squeezes out additional water and establishes wall thickness.
- b. Heat - evaporates residual water.
- c. Vacuum - removes water vapor resulting from evaporation.

Drying - The molded parts are stored in unsealed polyethylene bags for protection prior to drying. The parts are dried in an oven for approximately 100 minutes at 40-80 degrees centigrade to remove moisture to below .5% in order to ensure that there is no reaction between the water and polyurethane resin.

Impregnation - Immediately following drying, parts are immersed in the resin impregnation tank containing previously well mixed polyurethane resin and solvent xylene. Immersion time is a function of the measured density of the part. Parts, placed in a wire basket, are dipped in the impregnation solution for 1 to 3 minutes to allow the proper resin weight to be absorbed. The basket is then raised and drained for 2 minutes. Parts are then placed on wheeled racks to be moved to curing.

Curing - The impregnated parts are placed in an oven. The air inside the oven compartment is displaced by nitrogen. The solvent is evaporated with heat up to 80° centigrade, where the temperature is held constant for 20 to 50 minutes. The temperature is then raised to 120° centigrade and held for 10 to 20 minute intervals to cure the resin. The oven will be vented for 3 minutes at 100 CFM. After curing is complete, the temperature is lowered and air introduced to oven to allow cured

parts removal to the conditioning room. Parts are allowed to reach chemical and dimensional equilibrium before mechanical finishing in this closely controlled environment.

V. RULE APPLICABILITY

The proposed project is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Rule 17-2, Florida Administrative Code.

The proposed facility, is located at the Olin Corporation complex in an area (Wakulla County) currently designated attainment for all criteria pollutants in accordance with Florida Administrative Code Rule 17-2.420. This facility site is close to the St. Marks National Wildlife Refuge (Class I area).

The proposed project is exempt from provisions of Rule 12-2.500, Prevention of Significant Deterioration because the increase emissions do not exceed the significant emission rate (Table 500-2).

The proposed project shall be permitted under Rule 17.2.520, Sources not Subject to Prevention of Significant Deterioration or Nonattainment Requirements.

The proposed facility shall comply with rule 17-2.620(1) and (2) General Pollutant Emission Limiting Standard.

For a future modification, this facility (Olin Corporation) may be subject to a PSD review if the net emissions increase of any criteria pollutant is equal to or greater than the significant emissions rate listed Table 500-2.

VI. SOURCE IMPACT ANALYSIS

VI.1. Emissions Summary

The operation of this facility will produce emissions of Butyl Acetate, Ethyl Acetate, Cellosolve Acetate, Toluene, Xylene, Baysilon, and Solvesso to the atmosphere.

The amount of solvents used during the process and its emissions is limited by permit conditions. These permitted emissions are in compliance with all applicable requirements of Chapter 17-2, Florida Administrative Code.

Table 1 summarizes potential to emit of all pollutants used in this process.

VI.2. Air Quality Analysis

From a technical review of the application, the Department has determined that the construction and operation of this source will not have a detrimental impact on Florida's ambient air quality standards.

VI.3. Air Toxics Information

Currently, the Department is developing acceptable air emissions levels for toxic substances. Specifically, sources classified as Category A (carcinogens and highly toxic) and Category B (moderately toxic substances).

In the event toxics emission limits are set during the term of this permit or any subsequent permit which are different than the permitted emissions, the department may seek modification pursuant to 17-4.08, Florida Administrative Code.

VII. CONCLUSION

Based on a review of the data submitted by Olin, the Florida Department of Environmental Regulation (FDER) concludes that compliance with all applicable state air quality regulations will be achieved, provided certain specific conditions are met. The impact of constructing and operating this production facility (manufacture of 120mm combustible cartridge case) at the Olin Corporation plant will not cause or contribute to a violation of any ambient air quality standards.

Table 1

ALLOWABLE EMISSIONS

Chemicals	VOC Emissions*		
	lbs/hr	lbs/day	ton/yr
Butyl Acetate	3.69	14.76	2.6
Ethyl Acetate	7.50	30.00	5.25
Cellosolve Acetate	1.45	5.8	1.02
Xylene	1.52	6.8	1.07
Baysilon	0.03	0.12	0.021
Solvesso	0.28	1.12	0.196
Toluene	3.00	12.00	2.1
Total	17.47	69.88	12.23

*These emission rates are based on 4 batches per day (350 days/yr). The emissions from this facility shall not exceed the values given above.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:
Olin Corporation
P. O. Box 222
St. Marks, Florida 32355

Permit Number: AC 65-115861
Expiration Date: December 31, 1986
County: Wakulla
Latitude/Longitude: 30° 11' 07"N/
84° 13' 30" W
Project: 120mm Combustible Cartridge
Case Production Facility

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of a 120mm combustible cartridge case production facility (solvent dryer with condenser) to be located at the Olin Corporation Complex, in St. Marks, Wakulla County, Florida.

Attachments:

1. Application to construct Air Pollution Sources, DER Form 17-1.122(16).
2. Incompleteness letter of March 12, 1986.
3. Olin's letter of March 24, 1986 (response to technical discrepancies).

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

- () Determination of Best Available Control Technology (BACT)
- () Determination of Prevention of Significant Deterioration (PSD).
- () Compliance with New Source Performance Standards.

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

- 1. The process at this facility will be limited to four (4) batches a day (350 days/yr).
- 2. Total volatile organic emissions (VOC) from this source shall not exceed 17.47 lbs/hr, 69.88 lbs/day and 12.23 tons/yr.
- 3. Compliance with VOC emission standard will be determined by Method 25 or other methods approved by the Department. Concentration data and calculated mass emission rate will be reported. Thereafter, compliance with the VOC emission limitations will be maintained based on the VOC inventory. The District office shall be notified 15 days prior to test.

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

SPECIFIC CONDITIONS:

4. No objectionable odors are allowed from this facility.
5. Reasonable precautions to prevent fugitive particulate emissions during construction such as coating or spraying road and construction sites will be taken by the permittee.
6. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the Department in writing 60 days prior to the expiration date of the construction permit and submit a new schedule and request for an extension of the construction permit. (Rule 17-4.09 Florida Administrative Code)
7. To obtain a permit to operate, the permittee must demonstrate compliance with the conditions of the construction permit and submit a complete application for an operating permit, including the application fee, along with compliance test results and Certificate of Completion, to the Department's District office 90 days prior to the expiration date of the construction permit. The permittee may continue to operate in compliance with all terms of the construction permit until its expiration date. Operation beyond the construction permit expiration date requires a valid permit to operate. (Rule 17-4.22 and 17-4.23, Florida Administrative Code.)
8. Upon obtaining an operating permit, the permittee will be required to submit annual reports on the actual operation and emissions of the facility. Annual material balance reports (24-hour) shall be required and sent to the Department's district office to assess emissions and maintain VOC inventory. Visible emissions test shall be performed on an annual basis.
9. If the construction permit expires prior to the permittee requesting an extension or obtaining a permit to operate, then all activities at the project must cease and the permittee must apply for a new permit to construct which can take up to 90 days to process a complete application. (Rule 17-4.10 Florida Administrative Code)

PERMITTEE:
Olin Corporation

Permit Number: AC 65-115861
Expiration Date: December 31, 1986

SPECIFIC CONDITIONS:

Issued this _____ day of _____,
19__.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

VICTORIA J. TSCHINKEL, Secretary

_____ pages attached.



St. Marks, Florida 32355
AC 904 925-6111

March 20, 1986

DER

MAR 24 1986

BAQM

C. H. Fancy, P.E.
Deputy Chief, Bureau of Air Quality Mgmt.
State of Florida
Department of Environmental Regulation
2600 Blainstone Road
Tallahassee, Florida 32301-8241

Dear Mr. Fancy:

The following information is offered in response to your letter to Olin March 12, 1986 requesting additional information for our construction permit application:

Q. Are any pollutants released (VOC evaporation losses) from any process tank prior to curing?

A. All "volatile" raw materials are stored in drums prior to mixing in a 30-gallon impregnation tank. Any minimal evaporative losses from this tank are picked up and discharged by the room ventilation system.

Q. What are the chemical constituents of the solvents Baysilon, Solvesso and Akardit II?

A. Baysilon is polymethylphenylsiloxane. An MSDS is attached.

Solvesso was listed as a constituent of the oven vent stream by the company providing the process to us. Further inquiries indicate that solvesso will not be present in the air emissions.

Akardit II stabilizer is N'-Methyl-N, N Diphenyl Urea. An MSDS is attached.

Q. Are the spent solvents burned in an incinerator? Does your company possess an open burning permit?

A. The spent solvent will most likely be open-burned as explosive scrap. Olin is currently permitted to operate a hazardous waste liquid incinerator and an explosive scrap open burning ground under FDER Permit #HT65-68391. After initiation of production, tests will be conducted to see if incineration of the spent solvent is a viable solution.

Q. What is the source of heat for the oven? What type of fuel is being used? Does the equipment have a permit?

A. The source of heat is steam supplied by two existing steam boilers fired with No. 6 fuel oil. The boilers are covered by FDER Permit #A065 113388.

C. H. Fancy, P.E.
March 20, 1986
Page Two

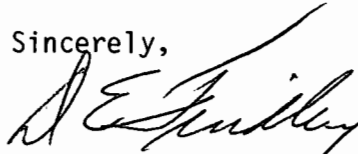
- Q. Estimate the maximum ambient concentration levels that will result from the emissions of non-criteria pollutants used in the process. Provide a Material Safety Data Sheet (MSDS) for the chemical compounds used in this process. Please identify each chemical with a CAS #.
- A. Per discussion between D. Myers of Olin and Teresa Heron, Teresa has completed the estimation of maximum ambient concentration level of non-criteria pollutants.

Material Safety Data Sheets are attached for the following chemical compounds:

<u>Compound</u>	<u>CAS No.</u>
Akardit II	13114-72-2
Butyl Acetate	105-46-4
Ethyl Acetate	141-78-6
Cellosolve Acetate	111-15-9
Toluene	108-88-3
Xylene	1330-20-7
Baysilon Fluid	63148-52-7

We feel these answers satisfy your need for additional information and allow you to resume processing our application. If any additional information is needed, however, please contact Dick Myers at (904)925-6111, Ext. 221 or the writer.

Sincerely,


D. E. Findley
Director, Powder Operations

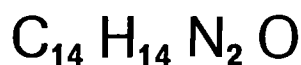
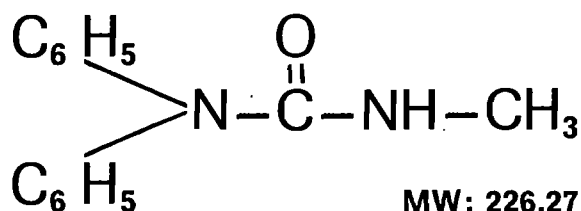
DEF/RLM/jah
RLM
Attachments

SPECIALTY CHEMICALS

Girindus

AKARDIT II

N' - Methyl - N, N - Diphenyl - Urea



SPECIFICATION

Appearance:	white to off-white (yellowish) powder
Melting Point:	min. 170° C
Water:	max. 0,1 wt-%
Ash:	max. 0,1 wt-%
Insolubles in Acetone:	max. 0,1 wt-%
Chlorine:	max. 100 ppm
pH-Value:	neutral
U.S. Specification:	DOD-M-64040 (AR), latest revision

<u>SOLUBILITY:</u>	insoluble in water soluble in ethanol and acetone
--------------------	--

PHYSIOLOGICAL PROPERTIES

Acute Oral Toxicity, LD ₅₀ (mouse):	2000 mg/kg
---	------------

<u>PACKING:</u>	fibre drums with inner PE bags containing 50 kg net each
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<u>STORAGE:</u>	when kept away from heat and frost in tightly closed containers, storage life will be about indefinite
-----------------	--

CLASSIFICATION

CAS-No.:	13114-72-2
UN-No.:	not applicable
Customs Tariff Code No.:	29.25.199.90

Subject to change without prior notice. The information presented reflects experience.
Liability cannot be accepted however. Contingent patent situations were not evaluated.

Girindus

CHEMICAL NAME: BUTYL ACETATE

SYNONYMS: n-Butyl Acetate; Acetic Acid
Butyl Ester; Butyl Ethanoate.

CHEMICAL FAMILY: Esters

FORMULA: CH₃COOC₄H₉

MOLECULAR WEIGHT: 116.16

TRADE NAME AND SYNONYMS: Butyl Acetate; n-Butyl Acetate

II. PHYSICAL DATA

BOILING POINT, 760 mm. Hg	126.0 °C. (258.8 °F.)	FREEZING POINT	-73.5 °C.
SPECIFIC GRAVITY (H ₂ O = 1)	0.8826 at 20/20 °C.	VAPOR PRESSURE AT 20 °C.	8 mm. Hg
VAPOR DENSITY (air = 1)	4.0	SOLUBILITY IN WATER, % by wt.	0.68
PER CENT VOLATILES BY VOLUME	100	EVAPORATION RATE (Butyl Acetate = 1)	1
APPEARANCE AND ODOR	Water-white liquid; nonresidual odor.		

III. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Unit)
Butyl Acetate		150 ppm
(See Sections III through VIII)		

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	78 °F. Closed cup	AUTOIGNITION TEMPERATURE	790 °F.
FLAMMABLE LIMITS IN AIR, % by volume	LOWER	1.7	UPPER 7.8

EXTINGUISHING MEDIA	Use carbon dioxide or dry chemical for small fires. Use "alcohol"-type foam or wetting-agent foam for large fires.
SPECIAL FIRE FIGHTING PROCEDURES	Water spray can be used but may be ineffective.
UNUSUAL FIRE AND EXPLOSION HAZARDS	None

EMERGENCY PHONE NUMBER

304/744-3487

This number is available days, nights, weekends, and holidays.

While Union Carbide Corporation believes that the data contained herein are factual and the opinions expressed are those of qualified experts regarding the results of the tests conducted, the data are not to be taken as a warranty or representation for which Union Carbide Corporation assumes legal responsibility. They are offered solely for your consideration, investigation, and verification.

IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	150 ppm.
EFFECTS OF OVEREXPOSURE	Headache, nausea, vomiting, and irritation of nose and throat.
EMERGENCY AND FIRST AID PROCEDURES	Remove to fresh air. Call a physician. If swallowed, induce vomiting and call a physician. Flush skin and eye contact with water.

V. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	None
UNSTABLE	STABLE		
—	✓		
INCOMPATIBILITY (materials to avoid)		Alkali contamination	
HAZARDOUS DECOMPOSITION PRODUCTS		Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide.	
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	None
May Occur	Will not Occur		
—	✓		

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Eliminate all sources of ignition. Flush heavily with water.
WASTE DISPOSAL METHOD	Atomize into an incinerator.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)	All-purpose canister mask. Chemical cartridge respirator.			
VENTILATION	LOCAL EXHAUST	Preferable	SPECIAL	None
	MECHANICAL (general)	Acceptable	OTHER	None
PROTECTIVE GLOVES	Rubber gloves	EYE PROTECTION	Face shield	
OTHER PROTECTIVE EQUIPMENT	Eye bath and safety shower.			

VIII. SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING

BUTYL ACETATE

WARNING! HARMFUL IF INHALED
FLAMMABLE
CAUSES EYE IRRITATION

Avoid breathing vapor.
Keep away from heat, sparks, and open flame.
Avoid contact with eyes.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

FOR INDUSTRY USE ONLY

OTHER HANDLING AND STORAGE CONDITIONS

None

MATERIAL SAFETY DATA SHEET

(Approved by U.S. Department of Labor "Essentially Similar" to Form LSH-005-4)



CHEMICAL NAME: ETHYL ACETATE, 99.5%

SYNONYMS: --

CHEMICAL FAMILY: Esters

FORMULA: $\text{CH}_3\text{COOC}_2\text{H}_5$

MOLECULAR WEIGHT: 88.11

TRADE NAME AND SYNONYMS: Ethyl Acetate, 99.5%

PHYSICAL DATA

BOILING POINT, 760 mm. Hg	77.2 °C. (171 °F.)	FREEZING POINT	-83.6 °C.
SPECIFIC GRAVITY (H ₂ O = 1)	0.9018 at 20/20 °C.	VAPOR PRESSURE AT 20 °C.	76 mm. Hg
VAPOR DENSITY (air = 1)	3.04	SOLUBILITY IN WATER, % by wt.	8.7
PER CENT VOLATILES BY VOLUME	100	EVAPORATION RATE (Butyl Acetate = 1)	6.15
APPEARANCE AND ODOR	Water-white liquid; esoteric, fruity and nonresidual odor.		

IV. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Units)
Ethyl Acetate	~ 99.5	400 ppm. ACGIH OSHA
(See Sections III through VIII)		

III. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	30 °F., Tag closed cup ASTM D 58		
(test method(s))	31 °F., Tag open cup ASTM D 1310		
FLAMMABLE LIMITS IN AIR, % by volume	LOWER	2.2	UPPER
			11.0

EXTINGUISHING MEDIA

Use carbon dioxide or dry-chemical for small fires.
Use alcohol foam or water fog for large fires.

SPECIAL FIRE FIGHTING PROCEDURES

None

UNUSUAL FIRE AND EXPLOSION HAZARDS

None

EMERGENCY PHONE NUMBER

304/744-3487

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IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 400 ppm. ACGIH (1976)—OSHA CFR 29 § 1000 Table G 1.

EFFECTS OF OVEREXPOSURE Headache, nausea, vomiting and narcosis.

EMERGENCY AND FIRST AID PROCEDURES Move to fresh air and call a physician.
If swallowed, induce vomiting and call a physician.
Flush skin and eye contact with water.

V. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	None
UNSTABLE	STABLE		
--	✓		

INCOMPATIBILITY (materials to avoid) Alkali contamination

HAZARDOUS DECOMPOSITION PRODUCTS Burning can produce carbon monoxide and/or carbon dioxide.

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	None
May Occur	Will not Occur		
--	✓		

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED Eliminate all sources of ignition.
Wear suitable protective equipment.
Collect in a suitable container for disposal.
Avoid discharge to sewers or natural waters.

WASTE DISPOSAL METHOD Incinerate in a furnace where permitted under appropriate Federal, State and local regulations.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)	Air-supplied mask in confined areas		
VENTILATION	LOCAL EXHAUST	May be needed	SPECIAL --
	MECHANICAL (general)	✓	OTHER --
PROTECTIVE GLOVES	Rubber	EYE PROTECTION	Safety glasses
OTHER PROTECTIVE EQUIPMENT	Eye bath and safety shower		

VIII. SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING	<p style="text-align: center;">ETHYL ACETATE 99.5%</p> <p>WARNING: FLAMMABLE HARMFUL IF INHALED</p> <p style="margin-left: 40px;">Keep away from heat, sparks, and open flame. Keep container closed. Use with adequate ventilation. Avoid breathing vapor. Avoid prolonged or repeated contact with skin.</p> <p>FIRST AID: If inhaled, remove to fresh air. Give oxygen if breathing is difficult. Call a physician.</p> <p style="text-align: center;">FOR INDUSTRY USE ONLY</p>
OTHER HANDLING AND STORAGE CONDITIONS	<p><i>Biodegradability</i>—Ethyl Acetate is readily biodegradable in wastewater treatment systems at very low concentrations in the wastewater.</p> <p><i>Aquatic toxicity</i>—Tests with fathead minnows indicate an LD₅₀ of about 300 milligrams per liter.</p>

MATERIAL SAFETY DATA SHEET

(Approved by U.S. Department of Labor "Essentially Similar" to Form L58-005-4)

CHEMICAL NAME: **CELLOSOLVE® ACETATE**SYNONYMS: Ethylene Glycol Monoethyl Ether Acetate;
2-Ethoxyethyl Acetate; 2-Ethoxyethanol Acetate

CHEMICAL FAMILY: Esters

FORMULA: $\text{CH}_3\text{COOC}_2\text{H}_4\text{OC}_2\text{H}_5$

MOLECULAR WEIGHT: 132.16

TRADE NAME AND SYNONYMS: **CELLOSOLVE Acetate, 99%, Urethane Grade****I. PHYSICAL DATA**

BOILING POINT, 760 mm. Hg	156.3°C. (313.3°F.)	FREEZING POINT	-61.7°C.
SPECIFIC GRAVITY (H ₂ O = 1)	0.9748 at 20/20°C.	VAPOR PRESSURE AT 20°C.	2 mm. Hg
VAPOR DENSITY (air = 1)	4.7	SOLUBILITY IN WATER, % by wt. at 20°C.	22.9
PER CENT VOLATILES BY VOLUME	100	EVAPORATION RATE (Butyl Acetate = 1)	0.21
APPEARANCE AND ODOR	Water-white liquid; mild odor.		

II. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Units)
2-Ethoxyethylacetate	100	100 ppm.
(See Sections III through VIII)		

III. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	126 °F., Tag closed cup	AUTOIGNITION TEMPERATURE	715°F.		
FLAMMABLE LIMITS IN AIR, % by volume	LOWER	1.8	UPPER	6.7	
EXTINGUISHING MEDIA	Use carbon dioxide or dry chemical for small fires. Use alcohol foam for large fires.				
SPECIAL FIRE FIGHTING PROCEDURES	Application of water to burning liquid will decrease intensity of flame				
UNUSUAL FIRE AND EXPLOSION HAZARDS	None				

EMERGENCY PHONE NUMBER

304/744-3487

This number is available days, nights, weekends, and holidays.

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IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	100 ppm. (Skin) - ACGIH (1975) 100 ppm. (Skin) - (OSHA) CFR 29 § 1000 Table G 1
EFFECTS OF OVEREXPOSURE	Breathing vapor will be irritating to nose and throat. May cause nausea and vomiting. Contact with skin or eyes may be irritating.
EMERGENCY AND FIRST AID PROCEDURES	Remove to fresh air. Wash affected skin areas with water. Flush eyes with water. Get medical care if discomfort persists.

V. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	None
UNSTABLE	STABLE		
—	✓		
INCOMPATIBILITY (materials to avoid)		Avoid contamination with strong alkalis.	
HAZARDOUS DECOMPOSITION PRODUCTS		Thermal decomposition or burning may produce carbon dioxide and/or carbon monoxide.	
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	None
May Occur	Will not Occur		
—	✓		

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Small spills should be flushed with large quantities of water. Larger spills should be collected for disposal.
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WASTE DISPOSAL METHOD	Incinerate in a furnace where permitted under appropriate Federal, State, and local regulations.
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VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)		Air-supplied mask for high concentrations.	
VENTILATION	LOCAL EXHAUST	Preferable	SPECIAL —
	MECHANICAL (general)	Acceptable	OTHER —
PROTECTIVE GLOVES	Rubber gloves	EYE PROTECTION	Goggles
OTHER PROTECTIVE EQUIPMENT	Safety shower and eye bath		

VIII. SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING	<p style="text-align: center;">CELLOSOLVE ACETATE, 99% URETHANE GRADE Ethylene Glycol Monoethyl Ether Acetate</p> <p>CAUTION! COMBUSTIBLE BREATHING OF VAPOR MAY CAUSE IRRITATION Keep away from heat and open flame. Keep container closed. Use with adequate ventilation. Avoid prolonged or repeated breathing of vapor.</p> <p style="text-align: center;">FOR INDUSTRY USE ONLY</p>
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OTHER HANDLING AND STORAGE CONDITIONS



Shell

97002 (1-81)

MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶ 7.750-3

PAGE 1

SECTION I		NAME		24 HOUR EMERGENCY ASSISTANCE			
PRODUCT ▶	Shell Toluene			SHELL	713-473-9461		
CHEMICAL/ SYNONYMS ▶	Toluol; Methyl Benzene			CHEMTREC	800-424-9300		
CHEMICAL FAMILY ▶	Aromatic Hydrocarbon			HAZARD RATING			
SHELL CODE ▶	83380	C.A.S. NUMBER ▶	108-88-3	LEAST	0	SLIGHT	1
				MODERATE	2	HIGH	3
						EXTREME	4
				HEALTH FIRE REACTIVITY			

SECTION II		INGREDIENTS		TOXICITY DATA	
		COMPOSITION	%		
Toluene			100	Oral LD ₅₀ : (rat) ~ 7.0 g/kg	
				Dermal LD ₅₀ : (rbc) = 14 g/kg	
Benzene		50 ppm		Inh LC ₅₀ : (rat) = 5,320 ppm (4 hr)	

SECTION III		HEALTH INFORMATION	
<u>Acute Toxicity:</u> Overexposure can lead to central nervous system depression producing such effects as headache, dizziness, nausea, and loss of consciousness.			
<u>Eye Contact:</u> Short-term liquid or vapor contact may result in slight eye irritation. Prolonged and repeated contact may be more irritating.			
<u>Skin Contact:</u> Prolonged and repeated liquid contact can cause defatting and drying of the skin which may result in skin irritation and dermatitis.			
<u>Inhalation:</u> High concentrations or prolonged exposure to lower concentrations may be slightly irritating to mucous membranes.			
<u>Ingestion:</u> Liquid ingestion may result in vomiting; aspiration (breathing) of vomitus into the lungs <u>must be avoided</u> as even small quantities in the lungs may result in chemical pneumonitis and pulmonary edema/hemorrhage.			

SECTION IV		OCCUPATIONAL EXPOSURE LIMITS	
ACGIH-TLV/TWA = 100 ppm (skin)			
-TLV/STEL = 150 ppm (skin)			
OSHA-PEL/TWA = 200 ppm			
-PEL/Ceiling = 300 ppm			



MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶

7,750-3,
PAGE 2 OF 4

97003 (11-81)

SECTION V

EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush with water for 15 minutes while holding eyelids open. Get medical attention.

SKIN CONTACT: Flush with water while removing contaminated clothing and shoes. Follow by washing with soap and water. Do not reuse clothing or shoes until cleaned. If irritation persists, get medical attention.

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

INGESTION: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.*

***NOTE TO THE PHYSICIAN:** If more than 2.0 ml per kg has been ingested and vomiting has not occurred, emesis should be induced with supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

SECTION VI

PHYSICAL DATA

BOILING POINT (°F) ▶ 231	MELTING POINT (°F) ▶ --	VAPOR PRESSURE (mmHg) 22@68°F
SPECIFIC GRAVITY (H ₂ O=1) ▶ 0.87	% VOLATILE BY VOLUME ▶ 100	VAPOR DENSITY (AIR=1) ▶ 3.2
SOLUBILITY IN WATER ▶ Negligible	EVAPORATION RATE (BUTYL ACETATE=1) ▶ 2.0	

APPEARANCE AND ODOR

Colorless, mobile liquid. Aromatic, benzene-like odor.

SECTION VII

FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD USED	FLAMMABLE LIMITS/% VOLUME IN AIR	
	LOWER	UPPER
10°F (TCC)	1	7

EXTINGUISHING MEDIA

Use water fog, foam, dry chemical or CO₂. Do not use a direct stream of water. Product will float and can be reignited on surface of water.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

Evacuate hazard area of unprotected personnel. Wear proper protective clothing including a NIOSH approved self-contained breathing apparatus. Cool fire-exposed containers with water.

In the case of large fires, also cool surrounding equipment and structures with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS

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MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶

7,750-3
PAGE 3 C

97004 (10-79)

SECTION VIII

REACTIVITY

STABILITY ▶ UNSTABLE STABLEHAZARDOUS POLYMERIZATION ▶ MAY OCCUR WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID

Avoid heat, sparks, open flames and contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide and unidentified organic compounds may be formed during combustion.

SECTION IX

EMPLOYEE PROTECTION

RESPIRATORY PROTECTION

Use a NIOSH-approved respirator as required to prevent overexposure. In accord with 29 CFR 1910.134, use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

PROTECTIVE CLOTHING

Wear impervious gloves and protective clothing as required to prevent skin contact. Wear chemical goggles to prevent eye contact.

ADDITIONAL PROTECTIVE MEASURES

Use explosion-proof ventilation as required to control vapor concentrations.

SECTION X

ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES

WARNING. Flammable. Eliminate all ignition sources. Handling equipment must be grounded to prevent sparking.Large spills: Evacuate the hazard area of unprotected personnel. Wear appropriate respirator and protective clothing. Shut off source of leak only if safe to do so. Dike and contain. If vapor cloud forms, ~~water~~ may be used to suppress; contain run-off. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material; place in non-leaking containers for proper disposal. Flush area with water to remove trace residue; dispose of flush solutions as above.Small spills: take up with an absorbent material and place in non-leaking containers; seal tightly for proper disposal.

WASTE DISPOSAL

Place in a disposal facility approved under RCRA regulations for hazardous waste (See Sec. XIII). Use non-leaking containers, seal tightly and label properly.

ENVIRONMENTAL HAZARDS

This product is designated as a hazardous substance under the Clean Water Act. KEEP OUT OF SURFACE WATERS OR SEWERS ENTERING OR LEADING TO SURFACE WATERS. (See Section XIII).



MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶

7,750-3
PAGE 4 OF 4

97005 (REV. 7-82)

SECTION XI**SPECIAL PRECAUTIONS****WARNING. Flammable Liquid.**

Keep away from heat, sparks and open flames. Keep containers tightly closed. Store away from strong oxidizing agents in a cool, dry place with adequate explosion-proof ventilation. Ground equipment to prevent accumulation of static charge. If pouring or transferring materials, containers must be bonded and grounded.

Do NOT weld, heat or drill on or near container; even emptied containers can contain explosive vapors.

Minimize skin contact. Wash with soap and water before eating, drinking, smoking or using toilet facilities. Launder contaminated clothing before reuse. Properly dispose of contaminated leather articles, including shoes, that cannot be decontaminated.

SECTION XII**TRANSPORTATION REQUIREMENTS**

DEPARTMENT OF TRANSPORTATION CLASSIFICATION	<input checked="" type="checkbox"/> FLAMMABLE LIQUID	<input type="checkbox"/> COMBUSTIBLE LIQUID	<input type="checkbox"/> OXIDIZING MATERIAL	<input type="checkbox"/> NON-FLAMMABLE GAS
	<input type="checkbox"/> FLAMMABLE SOLID	<input type="checkbox"/> POISON, CLASS A	<input type="checkbox"/> CORROSIVE MATERIAL	<input type="checkbox"/> NOT HAZARDOUS BY D.O.T. REGULATIONS
	<input type="checkbox"/> FLAMMABLE GAS	<input type="checkbox"/> POISON, CLASS B	<input type="checkbox"/> IRRITATING MATERIAL	<input type="checkbox"/> OTHER—Specify below

D.O.T. PROPER SHIPPING NAME

Toluene

OTHER REQUIREMENTS

D.O.T. ID.# = UN1294. Guide Sheet 27. RQ Toluene (1000 lb). Also see Sec. XIII, Clean Water Act.

SECTION XIII**OTHER REGULATORY CONTROLS**

EPA, FDA, OSHA, USDA, CPSC, etc.

EPA - Clean Water Act (CWA)

This product is designated as a hazardous substance under Section 311 of the Clean Water Act. Spills entering (a) surface waters or (b) any water-courses or sewers entering/leading to surface waters **MUST** be reported immediately to the National Response Center, 800-424-8802. The reportable quantity for toluene is 1000 lb (137 gal).

EPA - Resource Conservation and Recovery Act (RCRA) Regulations

This product has been designated by the EPA (RCRA 40 CFR 261.33) as a hazardous waste if it is spilled, discarded or intended to be discarded as is. The EPA hazardous waste number for toluene is U220.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

BE SAFE

READ OUR PRODUCT
SAFETY INFORMATION
... AND
PASS IT ON

(PRODUCT LIABILITY LAW
REQUIRES IT)

John P. Pepesi
Manager

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
OIL AND CHEMICAL PRODUCTS
P.O. BOX 4320
HOUSTON, TEXAS 77210

DATE PREPARED

February 10, 1982



MATERIAL SAFETY DATA SHEET

(Approved by U.S. Department of Labor "Essentially Similar" to Form LSB-00S-4)

6-1-77

Section I

MANUFACTURER'S NAME

McKesson Chemical Company

STREET ADDRESS

Crocker Plaza, One Post Street

CITY, STATE, AND ZIP CODE

San Francisco, California

EMERGENCY TELEPHONE NO.

CHEMICAL NAME AND SYNONYMS

TRADE NAME

XYLENE

CHEMICAL FAMILY

Aromatic Hydrocarbon

FORMULA

Section II — HAZARDOUS INGREDIENTS

SOLVENTS

Paraffins

Aromatics; Total

C₈ plus aromatics excluding ethyl benzene

ADDITIVES

OTHERS

Section III — PHYSICAL DATA

BOILING POINT (°F)	281° - 284° F	SPECIFIC GRAVITY (H ₂ O=1)	0.871
VAPOR PRESSURE (mm Hg.) @ 68° F	6	PERCENT VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)	3.7	EVAPORATION RATE (nBuAC=1)	0.59
SOLUBILITY IN WATER	Negligible		
APPEARANCE AND ODOR	Light colored liquid with aromatic odor.		

Section IV — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED)	TCC 80° F	FLAMMABLE LIMITS	Let	Uet
EXTINGUISHING MEDIA	Exclude air - use foam, CO ₂ , steam, water-fog, dry chemicals			
SPECIAL FIRE FIGHTING PROCEDURES	Do not use water, exclude air. Consult local fire marshal.			
UNUSUAL FIRE AND EXPLOSION HAZARDS	Vapor forms explosive mixture with air between upper and lower explosive limits			

Section V — HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 100 ppm

EFFECTS OF OVEREXPOSURE Anesthesia - headache, nausea, dizziness, etc. Liquid moderately irritating to skin and eyes.

EMERGENCY AND FIRST AID PROCEDURES Remove victim and restore breathing if required. Remove from skin with soap and water. Flush eyes with water.

Section VI — REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATIBILITY (Materials to avoid) Not applicable

HAZARDOUS DECOMPOSITION PRODUCTS CO, CO₂ when combusted

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

Section VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Avoid open flame or spark sources. Provide adequate ventilation.

WASTE DISPOSAL METHOD Evaporate or flush with water to an open, well-ventilated area. Use oil sewer if available. Remove to container.

Section VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) Organic canister mask or air pack

VENTILATION	LOCAL EXHAUST Desirable	SPECIAL
	MECHANICAL (General) With approved Class D explosion-proof motors and switches.	OTHER

PROTECTIVE GLOVES Not normally required

OTHER PROTECTIVE EQUIPMENT EYE PROTECTION Conventional eye cover to guard against unexpected splashing.

Section IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Avoid open flames and spark sources. Avoid splash-filling. Provide adequate ventilation. Avoid excessive heat.

OTHER PRECAUTIONS If swallowed, do not induce vomiting.

LABELING INSTRUCTIONS **FLAMMABLE LIQUID**

DANGER : HARMFUL OR FATAL IF SWALLOWED. FLAMMABLE. VAPOR HARMFUL. MAY CAUSE EYE AND SKIN IRRITATION.

Contains Petroleum Distillate. Keep away from heat, sparks or open flame. Use only in well ventilated area. Avoid prolonged or repeated breathing of vapor or contact with skin or eyes.

If swallowed, DO NOT INDUCE VOMITING. CALL A PHYSICIAN IMMEDIATELY. FIRST AID TREATMENT: MOVE THE PATIENT TO FRESH AIR. APPLY ARTIFICIAL RESPIRATION IF NOT BREATHING.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. THRESHOLD VALUE LIMITS ARE FROM THE AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS LATEST ADDITIONAL VENDOR ASSUMES NO RESPONSIBILITY FOR INJURY TO VENDOR OR THEIR EMPLOYEES FROM THE USE OF THIS INFORMATION.



MATERIAL SAFETY DATA SHEET

MOBAY CHEMICAL CORPORATION - PITTSBURGH, PA. 15205

MANUFACTURING DIV. ADDRESS

Mobay Chemical Corporation Penn Lincoln Parkway West
Industrial Chemicals Division Pittsburgh, PA 15205

CHEMTREC CHEMICAL TRANSPORTATION EMERGENCY TELEPHONE NO: 800-424-9300; DISTRICT OF COLUMBIA: 202-462-7616		MOBAY NON-TRANSPORTATION EMERGENCY NO. 412-923-1800	
PRODUCT NAME BAYSILONE FLUID PL		PRODUCT CODE NUMBER S-150	
CHEMICAL FAMILY Siloxane <i>Siloxane</i>		CHEMICAL NAME & SYNONYMS POLYMETHYLPHENYLSILOXANE	
CHEMICAL FORMULA		TRADE NAME & SYNONYMS BAYSILONE FLUID PL	

HAZARDOUS INGREDIENTS

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES	%	CURRENT TLV

PHYSICAL DATA

APPEARANCE (SOLID, LIQUID, GAS) Liquid	MOLECULAR WEIGHT N.A.	MELT POINT N.A.	SPECIFIC GRAVITY 1.06 g/cm ³
VAPOR DENSITY (AIR=1) N.E.	COLOR clear, colorless	BULK DENSITY 8.8 lbs./gal.	BOILING POINT N.E.
OR PRESSURE L/ATM @ 122°F (50°C)	SOLUBILITY Insoluble in water	ODOR odorless	% VOLATILE BY VOLUME N.E.

FIRE & EXPLOSION DATA

FLASH POINT °F (METHOD USED) 320°F (160°C) Closed Cup	FLAMMABLE LIMIT Lel ----- Uel -----	EXTINGUISHING MEDIA Sand, Foam, CO ₂ , Dry Chemical
--	--	---

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters should wear Full-Protective clothing including a self-contained breathing apparatus.

UNUSUAL FIRE OR EXPLOSION HAZARDS

During a fire irritating and/or toxic gases and aerosols from the decomposition/combustion products may be present.

TOXICITY DATA

LD50, ORAL (INGESTION) N.E.	LD50, DERMAL (SKIN CONTACT) N.E.	INHALATION Irritating to the Upper Respiratory tract
FISH, LC50 (LETHAL CONCENTRATION) N.E.	TLV (UNITS) (THRESHOLD LIMIT VALUE) N.E.	SKIN IRRITATION Irritating
EFFECTS TO EYE Irritating	EFFECTS TO LUNG N.E.	OTHER N.A.

EMERGENCY AND FIRST AID PROCEDURES, EFFECTS OF OVER EXPOSURE

Eye Contact: Flush eyes with large amounts of water. Consult a physician

Skin Contact: Wash thoroughly with soap and water. Consult a physician

Ingestion: Consult a physician immediately.

REACTIVITY DATA

STABILITY Stable	CONDITIONS TO AVOID Iron
POLYMERIZATION	CONDITIONS TO AVOID
Will not occur N.E.	
COMPATIBILITY (MATERIALS TO AVOID)	
HAZARDOUS DECOMPOSITION PRODUCTS	
N.E.	

SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Wear recommended Respiratory Protection. Cover with an absorbent material such as Sawdust or Sand; scoop up and place in an appropriately marked container.

WASTE DISPOSAL METHOD
Waste material may be incinerated under conditons according to Federal, State, and Local environmental control regulations.

SPECIAL PROTECTION DATA

RESPIRATOR TYPE Organic vapor cartridge respirator	Caution: Do Not Exceed Capabilities of Respirator.
EYE PROTECTION Protective Goggles	GLOVES Rubber Gloves
OTHER PROTECTIVE EQUIPMENT Rubber Apron Local exhaust at processing equipment.	

SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE Min. Ambient Max. 122°F (50°C)	AVERAGE SHELF LIFE 12 Months in Closed Container
SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE) None	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Store away from food and beverages.	
When transferring liquids make sure the metal container is electrostatically grounded.	

SHIPPING DATA

O.T. SHIPPING NAME N.A.	TECHNICAL SHIPPING NAME POLYMETHYLPHENYLSILOXANE
O.T. HAZARD CLASSIFICATION Primary: Non-Regulated	Secondary:
O.T. LABELS REQUIRED N.A.	FREIGHT CLASSIFICATION Oils, Lubricating, O/T Petm., N.O.I.

REASON FOR ISSUE Revision	S-150
INITIATED BY <i>William Schreiber</i> 4/7/80 William Schreiber Product Co ordinator	APPROVED BY <i>J. Gerulis</i> J. Gerulis TITLE Administrator Regulatory Affairs
DATE INITIATED 4/2/80	DATE APPROVED 4/3/80

N.E. - NOT ESTABLISHED N.A. - NOT APPLICABLE

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Mobay Chemical Corporation. The data on this sheet relates only to the specific material designated herein. Mobay Chemical Corporation assumes no legal responsibility for use or reliance upon these data.

Arr-tech

MANUFACTURER ADDRESS

International Service Laboratory
23755 Madison Street, Torrance, CA 90505

CHEMTREC CHEMICAL TRANSPORTATION EMERGENCY TELEPHONE NO: 800-374-4300		NON-TRANSPORTATION EMERGENCY NO. (213) 373-7200	
PRODUCT NAME ISL Impregnation Catalyst B		PRODUCT CODE NUMBER .658/359 B	
CHEMICAL FAMILY Aromatic Isocyanate		CHEMICAL NAME & SYNONYMS Toluene Diisocyanate	
CHEMICAL FORMULA		Polyisocyanate Adduct of	

HAZARDOUS INGREDIENTS

HAZARDOUS MIXTURES (OF OTHER LIQUID, SOLIDS OR GASES)	%	CURRENT TLV
Ethyl-Acetate	25	400 ppm
Toluene-Diisocyanate (TDI) free monomer content maximum of 0.7% based on resins solids.		0.02 ppm

PHYSICAL DATA

APPEARANCE (SOLID, LIQUID, GAS)	MOLECULAR WEIGHT	MELT POINT	SPECIFIC GRAVITY
Liquid	N.E.	N.A.	1.19 @ 25°C
VAPOR DENSITY (AIR=1)	COLOR	WATER DENSITY	BOILING POINT
N.E.	Clear Yellow	N.A.	N.E.
VAPOR PRESSURE	SOLUBILITY	ODOR	% VOLATILE BY VOLUME
N.E.	N.E.	Solvent	25%

FIRE & EXPLOSION DATA

FLASH POINT °F (METHOD USED)	FLAMMABLE LIMIT	EXTINGUISHING MEDIA
40°F = 4°C (4°C)	LeI N.E. UeI N.E.	Dry Chemical, CO ₂ , Foam

SPECIAL FIRE FIGHTING PROCEDURES
Full emergency equipment should be worn. Spray drums of material involved in fire but not themselves on fire with water to minimize risk of rupture.

UNUSUAL FIRE OR EXPLOSION HAZARDS
During a fire irritating and/or toxic gases and aerosols from the decomposition/combustion product may be present.

TOXICITY DATA

LD50, ORAL (INGESTION)	LD50 DERMAL (SKIN CONTACT)	IRITATION
N.E.	N.E.	N.E.
LD50 (LETHAL CONCENTRATION)	LD50 (LETHAL CONCENTRATION)	IRITATION
N.E.	As shown above	Possible/Slight
EFFECTS TO EYE	EFFECTS TO RESPIRATORY TRACT	EFFECTS TO RESPIRATORY TRACT
Irritating	irritation to mucous membranes of respiratory tract	N.A.

EMERGENCY AND FIRST AID PROCEDURES (SEE SECTION OVERHUNG)
Respiratory contaminated clothing.

Skin: Wash thoroughly with water and soap; Eyes: Flush with copious amounts of water for at least 15 minutes and obtain medical attention; Inhalation: Move to an area free from risk of further exposure. Irritation of the membrane of the nose, throat, lungs and eyes can be experienced. Variety of symptoms can be experienced which include watering of eyes, dryness of throat, tightness of chest, shortness of breath and headaches. Allergic sensitivity may occur in susceptible subjects; results may be similar to symptoms on subsequent exposure.

REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
Stable	
POLYMERIZATION	CONDITIONS TO AVOID
Will not occur	Contact with moisture and other materials which react with isocyanates. Temperatures above the maximum storage temperature.
INCOMPATIBILITY (MATERIALS TO AVOID)	Avoid contact with water, alcohols, amines and other materials which react with isocyanates. This product contains trimethylol propane and should not be combined with phosphorous containing materials.
HAZARDOUS DECOMPOSITION PRODUCTS	By fire - CO ₂ , CO, oxides of nitrogen, trace of HCN, TDI, others not determined.

SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	Cover the spill with absorbent material, such as sand, sweeping compound or diatomaceous earth; collect material in open top drum and take to isolated area, out of doors preferred; Fill drum with water or a solution of isopropanol-ammonia water. Do not seal drum. Flush spill area with water or neutralize with isopropanol-ammonia water mixture.
WASTE DISPOSAL METHOD	Waste material can be incinerated or disposed of in accordance with federal, state or local regulations regarding environmental control regulations. Small quantities remaining in containers can be reacted with isopropanol-ammonia-water mixture. Do not close or seal drum.

SPECIAL PROTECTION DATA

RESPIRATOR TYPE	Use respirator that is approved or recommended for use in isocyanate containing environments (air purifying or fresh air supplied).
EYE PROTECTION	GLOVES
Glasses or goggles	Chemically resistant
OTHER PROTECTIVE EQUIPMENT	Ventilation is required to maintain air concentrations below TLV. If material is spray applied, ventilation should be provided and a respirator worn. Safety showers and eye wash stations should be available.

SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE	AVERAGE SHELF LIFE
Min. 0°C (32°F) Max. 50°C (122°F)	6 months at 25°C (77°F)
SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE)	If container of material is exposed to heat, pressure can build up; if moisture enters drum, pressure can build up due to reaction.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	Keep away from heat, sparks and open flame. Store in tightly closed container and protect from moisture and foreign materials. At max. storage temperature noted, material may slowly polymerize without hazard. Ideal storage temperature range is 10°C-27°C (50°F-81°F).

SHIPPING DATA

D.O.T. SHIPPING NAME	TECHNICAL SHIPPING NAME
Flammable Liquid NOS	Polyisocyanate
D.O.T. HAZARD CLASSIFICATION	
Primary: Flammable Liquid	Secondary:
D.O.T. LABELS REQUIRED	FREIGHT CLASSIFICATION
Flammable Liquid	Chemicals, NOI



MATERIAL SAFETY DATA SHEET

MANUFACTURING DIV. ADDRESS

Mobay Chemical Corporation, Plastics & Coatings Div.
Penn Lincoln Parkway West
Pittsburgh, PA 15205

CHEMTREC CHEMICAL TRANSPORTATION EMERGENCY TELEPHONE NO: 800-424-9300; DISTRICT OF COLUMBIA: 202-462-7818		MOBAY NON-TRANSPORTATION EMERGENCY NO.: 412-923-1800	
PRODUCT NAME Mondur CB-75		PRODUCT CODE NUMBER D-065	
CHEMICAL FAMILY Aromatic Polyisocyanate		CHEMICAL NAME & SYNONYMS Polyisocyanate Adduct of Toluene Diisocyanate	
CHEMICAL FORMULA		TRADE NAME & SYNONYMS Mondur CB-75	

HAZARDOUS INGREDIENTS

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES	%	CURRENT TLV
Ethyl Acetate	25	400 ppm
Toluene Diisocyanate (TDI) free monomer content maximum of 0.7%		0.02 ppm
based on resin solids.		

PHYSICAL DATA

APPEARANCE (SOLID, LIQUID, GAS) Liquid	MOLECULAR WEIGHT N.E.	MELT POINT N.A.	SPECIFIC GRAVITY 1.19 @ 25°C
VAPOR DENSITY (AIR=1) N.E.	COLOR Clear Yellow	BULK DENSITY 9.9 lbs/gal	BOILING POINT Ethyl Acetate: 77°C
VAPOR PRESSURE N.E.	SOLUBILITY (WATER) Reacts with water	ODOR Solvent	% VOLATILE BY VOLUME 34

FIRE & EXPLOSION DATA

FLASH POINT °F (METHOD USED) 40°F T.C.C. (4°C)	FLAMMABLE LIMIT Lel 2.2% Uel 9%	Ethyl Acetate	EXTINGUISHING MEDIA Dry chemical, CO ₂ , Foam
SPECIAL FIRE FIGHTING PROCEDURES, UNUSUAL FIRE OR EXPLOSION HAZARDS			
Full emergency equipment with self-contained breathing apparatus should be worn. During a fire irritating and/or toxic gases and aerosols from the decomposition/combustion products may be present. Isolate from heat, electrical equipment, sparks and open flames. Closed container may explode when exposed to extreme heat.			

TOXICITY DATA

LD50, ORAL (INGESTION) N.E.	LD50, DERMAL (SKIN CONTACT) N.E.	INHALATION (LC50) N.E.
FISH, LC50 (LETHAL CONCENTRATION) N.E.	TLV (UNITS) (THRESHOLD LIMIT VALUE) As shown above	SKIN IRRITATION Possible/Slight
EFFECTS TO EYE Irritating, may cause tearing and burning sensation in high concentrations.	EFFECTS TO LUNG Irritation to mucous membranes of respiratory tract	Over exposure may result in allergic respiratory sensitivity.
EMERGENCY AND FIRST AID PROCEDURES, EFFECTS OF OVER EXPOSURE		
Remove contaminated clothing. Skin: Wash thoroughly with water and soap. Eyes: Flush with copious amounts of water for at least 15 min. and obtain medical attention. Inhalation: Move to an area free from risk of further exposure. Irritation of the membrane of the nose, throat, lungs and eyes can be experienced. Variety of symptoms can be experienced on overexposure which include watering of eyes, dryness of throat, tightness of chest, shortness of breath and headache. Allergic sensitivity may occur in susceptible subjects; resulting in asthma-like symptoms on subsequent exposure below TLV. Ingestion: Have patient rest quietly and obtain medical attention.		

REACTIVITY DATA

STABILITY	Stable under normal conditions	CONDITIONS TO AVOID	Contact with moisture and other materials which react with isocyanates. Temperatures above the maximum storage temperature.
POLYMERIZATION	None under normal conditions	CONDITIONS TO AVOID	Contact with moisture and other materials which react with isocyanates. Temperatures above the maximum storage temperature.
INCOMPATIBILITY (MATERIALS TO AVOID)	Avoid contact with water, alcohols, amines, strong bases, metal compounds or surface active materials. This product contains trimethylol propane and should not be combined with phosphorus-containing materials.		
HAZARDOUS DECOMPOSITION PRODUCTS	By fire: CO ₂ , CO, oxides of nitrogen, traces of HCN, TDI.		

SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition. Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent materials; pour liquid decontaminant over spillage - allow to react at least 10 min.; collect material in open containers - add further amounts of decontamination solution. Remove containers to safe place - cover loosely. Wash down area with liquid decontaminant. Decontamination solutions: Solution of surfactant (Tergitol 20%) and water (80%) or solution of ammonium hydroxide (4-8%), water (90-94%) and detergent (2%).

WASTE DISPOSAL METHOD: Waste material can be incinerated or disposed of in accordance with federal, state or local regulations regarding environmental control regulations.

SPECIAL PROTECTION DATA

RESPIRATOR TYPE: Use respirator that is approved or recommended for use in isocyanate containing environments (air purifying or fresh air supplied). Consider the type of application, the environment and airborne concentrations to ensure proper selection of appropriate respirator.

EYE PROTECTION: Safety glasses or goggles. (GLOVES) Chemically resistant.

OTHER PROTECTIVE EQUIPMENT: Ventilation is required to maintain air concentrations below TLV. If material is spray applied, ventilation should be provided and a respirator worn. Safety showers and eye-wash stations should be available. Educate and train employees in safe use of product.

SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE (OPTIMUM)	AVERAGE SHELF LIFE
Min. 0°C (32°F) Max. 50°C (122°F)	6 months at 25°C (77°F)

SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE): If container of material is exposed to heat, pressure can build up. If moisture enters drum pressure can build up due to reaction.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep away from heat, sparks and open flame. Store in tightly closed container and protect from moisture and foreign materials. At max storage temperature noted, material may slowly polymerize without hazard. Ideal storage temperature range is 10-27°C (50-81°F). For additional information, refer to label and product information sheet.

SHIPPING DATA

Q.T. SHIPPING NAME		TECHNICAL SHIPPING NAME	
Flammable Liquid, NOS		Polyisocyanate	
Q.T. HAZARD CLASSIFICATION	UNNA NO.	RQ	
Flammable Liquid	UN 1993		
Q.T. LABELS REQUIRED	LABEL	T.S.G.A. STATUS	
Flammable Liquid	Dated 1-7-80	OK	D-065
REASON FOR ISSUE	FRT. CLASS BULK		
	FRT. CLASS PKG.	Chemicals, NOI (Isocyanate) NMFC 60000	
PREPARED BY:	TITLE	APPROVED BY:	TITLE
		<i>[Signature]</i>	Industrial Hygiene &
DATE INITIATED:		DATE APPROVED:	
		<i>[Signature]</i>	

N.E. - NOT ESTABLISHED N.A. - NOT APPROVED AS SET BY THE GOVERNMENT

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		XB		83-07-22	
		-	JECP 630134 C01 R-C ERR A3T2513 PRODUCTION RELEASE	83-08-11	<i>JRP</i> <i>DJS</i>

NOTES: (CONTINUED)

4. COMPONENT B PROPERTIES:

NCO, PCT ISOCYANATE	13 + 0.5 PCT
DENSITY AT 20°C	1.17 + 0.03 g/ml
VISCOSITY AT 20°C	2000 + 500 CENTIPOISE
FREE ISOCYANATE	0.7 PCT
SHELF LIFE	1 YEAR MAX

5. APPROVED SOURCE OF SUPPLY:

MOBAY CHEMICAL CORP.
 PENN LINCOLN PARKWAY WEST
 PITTSBURGH, PA 15205
 FSCM O. 19511
 PART NO. MONDUR CB-75, PRODUCT CODE D-065, (DESMODUR L (75%)).

SIZE	CODE IDENT NO.	
A	19200	12526670
SCALE	NONE	UNIT WT
		SHEET 2

MATERIAL SAFETY DATA SHEET

MANUFACTURING ADDRESS:

International Service Laboratory
23755 Madison Street, Torrance, CA 90505

CHEMTREC CHEMICAL TRANSPORTATION EMERGENCY
TELEPHONE NO: 1-800-424-9300

NON-TRANSPORTATION EMERGENCY NO:
(213) 373-7200

PRODUCT NAME
ISL Impregnation Resin A

PRODUCT CODE NUMBER
658/359 A

CHEMICAL FAMILY
Saturated Polyester Solution

CHEMICAL NAME & SYNONYMS

CHEMICAL FORMULA

TRADE NAME & SYNONYMS

HAZARDOUS INGREDIENTS

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLID OR GASES

2-Ethoxy Ethyl Acetate, other solvents and additives

25

CURRENT TLV

100 p.p.m.

PHYSICAL DATA

APPEARANCE (SOLID, LIQUID, GAS) Liquid	MOLECULAR WEIGHT N.E.	MELT POINT N.A.	SPECIFIC GRAVITY
VAPOR DENSITY (AIR = 1) N.E.	COLOR Light yellow	BULK DENSITY N.A.	BOILING POINT
VAPOR PRESSURE N.E.	SOLUBILITY N.E.	ODOR Solvent	% VOLATILE BY VOLUME

FIRE & EXPLOSION DATA

FLASH POINT °F (METHOD USED) 130°C	FLAMMABLE LIMIT Lel N.E. Uel N.E.	EXTINGUISHING MEDIA Foam, Dry Chemical, CO ₂
SPECIAL FIRE FIGHTING PROCEDURES Full emergency equipment should be worn. Spray drums of material involved in fire but not themselves on fire with water to minimize risk of rupture.		
UNUSUAL FIRE OR EXPLOSION HAZARDS During fire irritating and/or toxic gases and aerosols from the decomposition/combustion products may be present.		

TOXICITY DATA

LD50 ORAL (INGESTION) N.E.	LD50 DERMAL (SKIN CONTACT) N.E.	INHALATION Irritating to upper respiratory tract
FISH LC50 (LETHAL CONCENTRATION) N.E.	TLV (LIMIT) (THRESHOLD LIMIT VALUE) N.E. FOR product: 100 p.p.m. for 2-ethoxy ethyl acetate	SKIN IRRITATION Possible/Slight
EFFECTS TO EYE Irritation	EFFECTS TO LUNG Irritation	OTHER N.A.

EMERGENCY AND FIRST AID PROCEDURES, EFFECTS OF OVER EXPOSURE

Remove contaminated clothing. Skin: Wash thoroughly with water and soap; lubricate skin
Eyes: Flush with copious amounts of water for at least 15 minutes and consult eye physician. Inhalation or ingestion: Consult physician.

REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
Stable	
POLYMERIZATION	CONDITIONS TO AVOID
Will not occur	
INCOMPATIBILITY (MATERIALS TO AVOID)	This product contains trimethylol propane and should not be combined with phosphorous containing materials.
HAZARDOUS DECOMPOSITION PRODUCTS	By Fire, CO ₂ , CO, others not determined.

SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Spills may be removed with hot water; cover with absorbent material, such as sand, sweeping compound or diatomaceous earth; collect and handle as normal solid waste.
WASTE DISPOSAL METHOD
Waste may be incinerated or disposed of in compliance with Federal, State or local environmental control regulations.

SPECIAL PROTECTION DATA

RESPIRATOR TYPE	Respirator approved for use with organic solvents.
EYE PROTECTION	Liquid goggles or safety glasses
GLOVES	Chemically resistant
OTHER PROTECTIVE EQUIPMENT	Ventilation is required to maintain air concentrations below the TLV. Safety showers and eye wash stations should be available.

SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE	AVERAGE SHELF LIFE
Min. 0°C (32°F) Max. 50°C (122°F)	12 months at 25°C (77°F)
SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE)	Material is hygroscopic
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	Keep material away from heat, sparks and open flame. Material is hygroscopic and containers should be tightly closed to prevent contamination with foreign materials and moisture. Containers must be grounded when filling or emptying. Employee education and training is important.

SHIPPING DATA

DOT SHIPPING NAME	TECHNICAL SHIPPING NAME
Combustible Liquid NOS	Saturated Polyester
DOT HAZARD CLASSIFICATION	Secondary:
Primary: Combustible Liquid	
DOT LABELS REQUIRED	FREIGHT CLASSIFICATION
None	Resin, Coal Tar or Petroleum

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		XA	_____	83-07-22	_____
		-	JECP 630134 C01 R-C ERR A3T2513 PRODUCTION RELEASE	83-08-11	<i>JPP</i> <i>DJS</i> ✓

COMPONENT A		
INGREDIENT	NUMBER	PCT BY WT.
DESMOPHEN 1100	12526667	9.75 ± 0.10
MULTRON R-221-75	12526668	39.00 ± 1.00
BUTYL ACETATE	ASTM D-3126	14.83 ± 0.15
ETHYL ACETATE	ASTM D-3727	14.83 ± 0.15
ETHYL GLYCOL ACETATE	ASTM D-343	11.51 ± 0.12
TOLUENE	ASTM D-841	9.10 ± 0.10
BAYSILONE FLUID PL	12526669	0.10 ± 0.00
NAPHTHA	ASTM D-3734	0.88 ± 0.01

SIZE	CODE IDENT NO.	
A	19200	12527140
SCALE NONE	UNIT WT	SHEET 2



Best Available Copy

MATERIAL SAFETY DATA SHEET

MOBAY CHEMICAL CORPORATION - PITTSBURGH, PA. 15205

MANUFACTURING DIV. ADDRESS

Plastics and Coatings Division, Mobay Chemical Corporation
Penn Lincoln Parkway West, Pittsburgh, PA 15205

RECEIVED -
JUN 6 1993
ARTEC DEFENSE PRODUCTS INC.

CHEMTREC CHEMICAL TRANSPORTATION EMERGENCY TELEPHONE NO: 800-424-9300; DISTRICT OF COLUMBIA: 202-462-7818		MOBAY NON-TRANSPORTATION EMERGENCY NO.: (412) 923-1800	
PRODUCT NAME Desmophen 1100		PRODUCT CODE NUMBER D-503	
CHEMICAL FAMILY Polyester	CHEMICAL NAME & SYNONYMS Hydroxyl terminated polyester		
CHEMICAL FORMULA	TRADE NAME & SYNONYMS Desmophen 1100		

HAZARDOUS INGREDIENTS

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES	%	CURRENT TLV

PHYSICAL DATA

APPEARANCE (SOLID, LIQUID, GAS) Liquid	MOLECULAR WEIGHT N.E.	MELT POINT N.A.	SPECIFIC GRAVITY 1.12 @ 20°C
VAPOR DENSITY (AIR=1) N.E.	COLOR Light brown	BULK DENSITY N.A.	BOILING POINT N.E.
VAPOR PRESSURE 10 mbar @ 20°C	SOLUBILITY Insoluble in water	ODOR Weak	% VOLATILE BY VOLUME N.E.

FIRE & EXPLOSION DATA

FLASH POINT °F (METHOD USED) 275°F (135°C) P.M.C.C.	FLAMMABLE LIMIT Lel N.E. Uel N.E.	EXTINGUISHING MEDIA Foam, CO ₂ , Dry Chemical
SPECIAL FIRE FIGHTING PROCEDURES Full emergency equipment should be worn. Spray drums of material involved in fire but not themselves on fire with water to minimize risk of rupture.		
UNUSUAL FIRE OR EXPLOSION HAZARDS During a fire irritating and/or toxic gases and aerosols from the decomposition/ combustion products may be present.		

TOXICITY DATA

LD50, ORAL (INGESTION) 15g/kg rat	LD50, DERMAL (SKIN CONTACT) N.E.	INHALATION Irritating to upper respiratory tract
FISH, LC50 (LETHAL CONCENTRATION) N.E.	TLV (LIMITS) (THRESHOLD LIMIT VALUE) N.E. for product	SKIN IRRITATION Possible/Slight
EFFECTS TO EYE Irritating/inflammation	EFFECTS TO LUNG Irritating	OTHER N.A.

EMERGENCY AND FIRST AID PROCEDURES, EFFECTS OF OVER EXPOSURE		
Remove contaminated clothing. Skin: Wash thoroughly with soap and water; lubricate skin.		
Eyes: Flush with copious amounts of water for at least 15 minutes and consult eye physician.		
Inhalation and ingestion: Consult physician.		
No adverse health effects have been noted with this material.		

REACTIVITY DATA

STABILITY Stable	CONDITIONS TO AVOID
POLYMERIZATION Will not occur	CONDITIONS TO AVOID
INCOMPATIBILITY (MATERIALS TO AVOID) This product contains trimethylol propane and should not be combined with phosphorous containing materials.	
HAZARDOUS DECOMPOSITION PRODUCTS By fire, CO, CO ₂ , others not determined.	

SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Cover with absorbent material and collect. Flush area with water.
WASTE DISPOSAL METHOD Waste material may be incinerated or disposed of in compliance with Federal, State or local environmental control regulations.

SPECIAL PROTECTION DATA

RESPIRATOR TYPE None required	GLOVES Chemically resistant
EYE PROTECTION Liquid goggles or safety glasses	
OTHER PROTECTIVE EQUIPMENT No special requirements. Safety showers and eye wash units should be available.	

SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE Min. 0°C (32°F) Max. 50°C (122°F)	AVERAGE SHELF LIFE Unlimited — original sealed container under appropriate conditions 25°C 77°F
SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE) Material is hygroscopic	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Material is hygroscopic and containers should be tightly closed to prevent contamination which foreign materials and moisture. Employee education and training is important.	

SHIPPING DATA

D.O.T. SHIPPING NAME N.A.	TECHNICAL SHIPPING NAME Polyester Resin
D.O.T. HAZARD CLASSIFICATION Primary: Non-Regulated	Secondary:
D.O.T. LABELS REQUIRED N.A.	FREIGHT CLASSIFICATION Resin, Coal Tar or Petroleum

REASON FOR ISSUE Revision of old Material Safety Data Sheet		D-503	
INITIATED BY Jurgen Metz	TITLE Prod. Rep.	APPROVED BY P. D. Ziegler/jae	TITLE Supervisor Industrial Hygiene Corporate
DATE INITIATED: 1-4-79		DATE APPROVED: K. S. Booth/jae	Industrial Hygiene

N.E. - NOT ESTABLISHED N.A. - NOT APPLICABLE

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Mobay Chemical Corporation. The data on this sheet relates only to the specific material designated herein. Mobay Chemical Corporation assumes no legal responsibility for use or reliance upon these data.



MATERIAL SAFETY DATA SHEET

MANUFACTURING DIV. ADDRESS

Mobay Chemical Corporation, Plastics & Coatings Div.
Penn Lincoln Parkway West
Pittsburgh, PA 15205

CHEMTREC CHEMICAL TRANSPORTATION EMERGENCY TELEPHONE NO: 800-424-9308; DISTRICT OF COLUMBIA: 202-462-7818		MOBAY NON-TRANSPORTATION EMERGENCY NO.: 412-923-1800	
PRODUCT NAME Multron R-221-75		PRODUCT CODE NUMBER D-025	
CHEMICAL FAMILY Saturated Polyester		CHEMICAL NAME & SYNONYMS	
CHEMICAL FORMULA		TRADE NAME & SYNONYMS Multron R-221-75	

HAZARDOUS INGREDIENTS

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES	%	CURRENT TLV
2-Ethoxy ethyl acetate - Recent information has shown 2-Ethoxy ethyl acetate to cause reproductive effects when inhaled by rats at levels as low as 130 ppm. Manufacturers of this solvent have established a company industrial hygiene guideline of 5ppm - TWA.	25	50ppm - skin

PHYSICAL DATA

APPEARANCE (SOLID, LIQUID, GAS) Liquid	MOLECULAR WEIGHT N.E.	MELT POINT N.A.	SPECIFIC GRAVITY 1.11 @ 25°C
VAPOR DENSITY (AIR=1) N.E.	COLOR Light yellow	BULK DENSITY N.A.	BOILING POINT 311°F (155°C)
VAPOR PRESSURE N.E.	SOLUBILITY (WATER) Insoluble	ODOR Solvent	% VOLATILE BY VOLUME 25%

FIRE & EXPLOSION DATA

FLASH POINT °F (METHOD USED) 153°F (67°C) T.O.C.	FLAMMABLE LIMIT Lel N.E. Uel N.E.	EXTINGUISHING MEDIA Foam, dry chemical, CO ₂
SPECIAL FIRE FIGHTING PROCEDURES, UNUSUAL FIRE OR EXPLOSION HAZARDS Full emergency equipment including self-contained breathing apparatus should be worn by firefighters. Use cold water spray to cool fire-exposed containers to minimize risk of rupture. During a fire irritating and/or toxic gases and aerosols can be generated by thermal decomposition or combustion.		

TOXICITY DATA

LD50 ORAL (INGESTION) Solvent: 5.1 gm/kg (rat) Resin: 2.5 gm/kg (rat)	DERMAL (SKIN CONTACT) N.E.	INHALATION (LC50) Irritating to upper respiratory tract
FSM, LC50 (LETHAL CONCENTRATION) N.E.	TLV (UNITS) (THRESHOLD LIMIT VALUE) N.E. for product	SKIN IRRITATION Slight
EFFECTS TO EYE Irritation	EFFECTS TO LUNG Irritation	OTHER N.A.
EMERGENCY AND FIRST AID PROCEDURES, EFFECTS OF OVER EXPOSURE Remove contaminated clothing. Skin: Wash thoroughly with water and soap; lubricate skin. Eyes: Flush with copious amounts of lukewarm water for at least 15 minutes and consult eye physician. Inhalation or ingestion: Consult physician.		

REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
Stable	
POLYMERIZATION	CONDITIONS TO AVOID
Will not occur	
INCOMPATIBILITY (MATERIALS TO AVOID) This product contains trimethylol propane and should not be combined with phosphorus-containing materials.	
HAZARDOUS DECOMPOSITION PRODUCTS	
By fire: CO, CO ₂ , others not determined.	

SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Avoid ignition sources. Cover with absorbent material, such as sand, sweeping compound or diatomaceous earth; collect and handle as combustible waste.
WASTE DISPOSAL METHOD
Waste may be incinerated or disposed of in compliance with federal, state or local environmental control regulations.

SPECIAL PROTECTION DATA

RESPIRATOR TYPE	
Respirator approved for use with organic solvents if TLV is exceeded.	
EYE PROTECTION	GLOVES
Liquid goggles or safety glasses	Chemically resistant
OTHER PROTECTIVE EQUIPMENT	
Ventilation as required to maintain air concentrations below the TLV. Safety showers and eye wash stations should be available.	

SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE (OPTIMUM)	AVERAGE SHELF LIFE
Min. 0°C (32°F) Max. 50°C (122°F)	12 months at 25°C (77°F)
SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE)	
Material is hygroscopic	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE	
Keep material away from heat, sparks and open flame. Material is hygroscopic and containers should be tightly closed to prevent contamination with foreign materials and moisture. Containers must be grounded when filling or emptying. Employee education and training is important.	

SHIPPING DATA

D.O.T. SHIPPING NAME		TECHNICAL SHIPPING NAME	
Combustible Liquid N.O.S.		Saturated Polyester	
D.O.T. HAZARD CLASSIFICATION	UNNA NO.	R.Q.	
Combustible Liquid	NA 1993		
D.O.T. LABELS REQUIRED	LABEL dated	TSCA STATUS	
None	2-11-81	OK	D-025
REASON FOR ISSUE	FRT. CLASS BULK:		
Revision	FRT. CLASS PKG: Resin, Coal Tar or Petroleum		
INITIATED BY:	TITLE:	APPROVED BY:	TITLE:
		Eric C. Weren	Industrial Hygienist
DATE INITIATED:		DATE APPROVED:	Industrial Hygiene & Product Safety Dept.
		8-16-82	

N.E. - NOT ESTABLISHED N.A. - NOT APPLICABLE A.I. - ACTIVE INGREDIENT

PS Form 3811, July 1983

SENDER: Complete items 1, 2, 3 and 4.

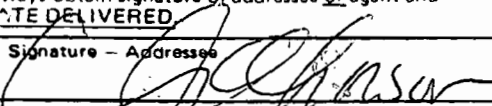
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

1. Show to whom, date and address of delivery.
 2. Restricted Delivery.

3. Article Addressed to: *D. E. Findley
 Director of Powder Operations
 Olin Corp
 P.O. Box 222
 St. Marks, FL 32355*

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	<i>P408 533213</i>

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X 

6. Signature - Agent
X

7. Date of Delivery
3/12/86

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

R. File

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

March 12, 1986

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. D. E. Findley
Director of Powder Operations
Olin Corporation
P. O. Box 222
St. Marks, Florida 32355

Dear Mr. Findley:

The Bureau of Air Quality Management has received your application for a permit to construct a solvent dryer with condenser at Olin Corporation complex in St. Marks.

Based in our initial review of your proposal, it has been determined that additional information is needed before we can continue processing your application.

Application information - DER Form 17-1.202 submitted on February 10, 1986.

Are any pollutants released (VOC evaporation losses) from any process tank prior to curing?

What are the chemicals constituents of the solvents: Baysilon, Solvesso and the Akradit II stabilizer?

Are the spent solvents burned in an incinerator? Does your company possess an open burning permit?

What is the source of heat for the oven? What type of fuel is being used? Does this equipment have a permit?

Estimate the maximum ambient concentration levels that will result from the emissions of non-criteria pollutants used in the process. Provide a Material Safety Data Sheet (MSDS) for the chemical compounds used in this process. Please identify each chemical with the CAS #.

Mr. D. E. Findley
Page Two
March 12, 1986

As soon as the above information is received, we will resume processing your applications. If you have any questions, on this request, please call Teresa M. Heron at (904)488-1344, or write to me at the above address.

Sincerely,



C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/TH/s

OLIN WINCHESTER CASHIER ACCOUNT

3516

PH 925-6111
P. O. BOX 222
SAINT MARKS, FL 32355

February 6, 1986

63-970
631

PAY TO THE ORDER OF Florida Department of Environmental Regulations \$100.00

One Hundred and NO/100-----DOLLARS

WAKULLA COUNTY STATE BANK
Crawfordville, Florida 32327

FOR _____

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

Nº 76109

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from Olin Corporation Date Feb. 10, 1986

Address P.O. Box 222 St. Marks, FL 32355 Dollars \$ 100.00

Applicant Name & Address same as above

Source of Revenue _____

Revenue Code 001031 Application Number AC 65-115861

By Patricia B. Adams



St. Marks, Florida 32355
AC 904 925-6111

Bill -

*F-11 - I gave Shloda
a copy + sent one
to NW Dist -*

February 4, 1986

Mr. Clair Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blainstone Road
Tallahassee, Florida 32301

*Please return
for file.
Patty*

Dear Mr. Fancy:

Olin has signed a contract with Honeywell to produce 120mm combustible case components in an Initial Production Facility (IPF) in 1986. The process, as explained in the attached air permit application, requires a new emission source. Attached are:

- Four copies of the application and supplemental information.
- \$100 check for the application fee.

Please advise if any additional information is required to facilitate approval of the attached application.

Sincerely,

D. E. Findley, Director
Powder Operations
OLIN CORPORATION

DEF/RLM/krf
Rkm
Attachments

DER

FEB 10 1986

BAQM

AC 65-115861

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



DER

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

FEB 10 1986

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCE **BAQM**

SOURCE TYPE: Curing Oven Exhaust [*] New¹ [] Existing¹

APPLICATION TYPE: [*] Construction [] Operation [] Modification

COMPANY NAME: Olin Corporation COUNTY: Wakulla

Identify the specific emission point source(s) addressed in this application (i.e. Line Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Solvent Dryer with Condenser

SOURCE LOCATION: Street Intersection of U.S. 98 & S.R. 363 City St. Marks

UTM: East 767594 North 3342308

Latitude 30° 11' 7" N Longitude 84° 13' 30" W

APPLICANT NAME AND TITLE: D. E. Findley, Director of Powder Operations

APPLICANT ADDRESS: P.O. Box 222, St. Marks, Florida 32355

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Olin Corporation

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: *D. E. Findley*

D. E. Findley, Director of Powder Operations
Name and Title (Please Type)

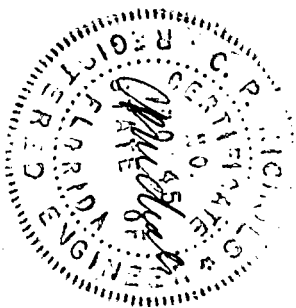
Date: 2/4/86 Telephone No. (904) 925-6111

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

¹ See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.



Signed Charles P. Nichols

Charles P. Nichols
Name (Please Type)

Lockwood Greene Engineers, Inc.
Company Name (Please Type)

1330 West Peachtree Street, NW, Atlanta, GA. 30367
Mailing Address (Please Type)

Florida Registration No. 36845 Date: February 3, 1986 Telephone No. (404) 873-3261

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

See Attached Supplementary Information

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction May 1, 1986 Completion of Construction July 1, 1986

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Exchangers	6,000	Installation	7,000
Electrical & Instrumentation	12,000		
Concrete and Steel	3,000		
Piping	2,000	TOTAL	30,000

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

none

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 50 ;
if power plant, hrs/yr _____ ; if seasonal, describe: _____

Operating time shown is maximum. We expect the oven to be operated as a curing
oven for four batches/day with a 30 minute cycle time per batch.

F. If this is a new source or major modification, answer the following questions.
(Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? no
a. If yes, has "offset" been applied? _____
b. If yes, has "Lowest Achievable Emission Rate" been applied? _____
c. If yes, list non-attainment pollutants. _____

2. Does best available control technology (BACT) apply to this source?
If yes, see Section VI. no

3. Does the State "Prevention of Significant Deterioration" (PSD)
requirement apply to this source? If yes, see Sections VI and VII. no

4. Do "Standards of Performance for New Stationary Sources" (NSPS)
apply to this source? no

5. Do "National Emission Standards for Hazardous Air Pollutants"
(NESHAP) apply to this source? no

H. Do "Reasonably Available Control Technology" (RACT) requirements apply
to this source? no

a. If yes, for what pollutants? _____
b. If yes, in addition to the information required in this form,
any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-
cation for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
See Attached	None			

B. Process Rate, if applicable: (See Section V, Item 1)

- Total Process Input Rate (lbs/hr): 45.1
- Product Weight (lbs/hr): 32.52

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission ¹		Allowed Emission Rate per Rule 17-2	Allowable ³ Emission lbs/hr	Potential ⁴ Emission		Relate to Flow Diagram
	Maximum lbs/hr	* Actual T/yr			lbs/hr	T/yr	
Butyl Acetate	73.8	2.58			10	3.5	
Ethyl Acetate	150	5.25			15	5.25	
Cellosolve Acetate	29	1.015			13	4.55	
Toluene	60	2.1			8	2.1	
Xylene	30.4	1.084			108	37.1	
Baysilon	0.6	0.021			0.06	0.021	
Solvesso	5.6	0.196			0.56	0.196	

¹See Section V, Item 2. * Instantaneous rate for 3 minutes.

²Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

³Calculated from operating rate and applicable standard.

⁴Emission, if source operated without control (See Section V, Item 3).

J. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
See Attachments	Butyl Acetate	28.2	N/A	See Attachments
	Ethyl Acetate	0	N/A	
	Cellosolve Acetate	77.7	N/A	
	Toluene	0	N/A	
	Xylene	97.1	N/A	
	Baysilon	0	N/A	
	Solvesso	0	N/A	

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

All of the recovered solvent will be in liquid form and will be open burned if
 it contains N.C. If the solvent contains no N.C., it will be sent off site for
 recovery or incineration.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 20 ft. Stack Diameter: 0.67 ft.
 Gas Flow Rate: 100 ACFM 100 DSCFM Gas Exit Temperature: 90 °F.
 Water Vapor Content: 0 % Velocity: 4.8 FPS

SECTION IV: INCINERATOR INFORMATION

NOT APPLICABLE

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste: _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer: _____

Date Constructed _____ Model No. _____

	Volume (ft) ³	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: Cyclone Wet Scrubber Afterburner
 Other (specify) _____

Brief description of operating characteristics of control devices: _____

N/A

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

N/A

NOTE: Items 2, 3, 4, 6, 7, 9, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

- | | |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:* | 4. Capital Costs: |

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

- a. Height: ft.
- b. Diameter: ft.
- c. Flow Rate: ACFM
- d. Temperature: °F.
- e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:¹
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:²
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:¹
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:²
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:¹

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:²

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:¹

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:²

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

¹Explain method of determining efficiency.

²Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:¹

Contaminant

Rate or Concentration

(8) Process Rate:¹

10. Reason for selection and description of systems:

¹Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

A. Company Monitored Data

1. _____ no. sites _____ TSP _____ () SO₂⁺ _____ Wind spd/dir

Period of Monitoring _____ / _____ / _____ to _____ / _____ / _____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).

120MM COMBUSTIBLE CARTRIDGE CASE

PROCESS DESCRIPTION

Batch Preparation - Kraft is added to water in the batch preparation tank and agitated until a homogeneous slurry is achieved. Nitrocellulose is added to the slurry in drum lots, and a stabilizer, akradit II, is added prior to a final dilution with water to a 1% slurry. The contents of the batch preparation tank are transferred to a slurry storage tank where water is added to dilute to .2%.

Felting - The combustible case parts; cap, 2 discs and a case, are formed by drawing a vacuum on a felting die, after it is lowered into the felting tank. The fibers and akradit are deposited on the screen of the die, and the white water passes through the die to be recycled through a white water tank to a slurry storage tank. The felting die is raised from the felting tank after a predetermined time. The form is then weighed and transferred to the pre-squeeze operation if it is a case, or directly to final molding if not.

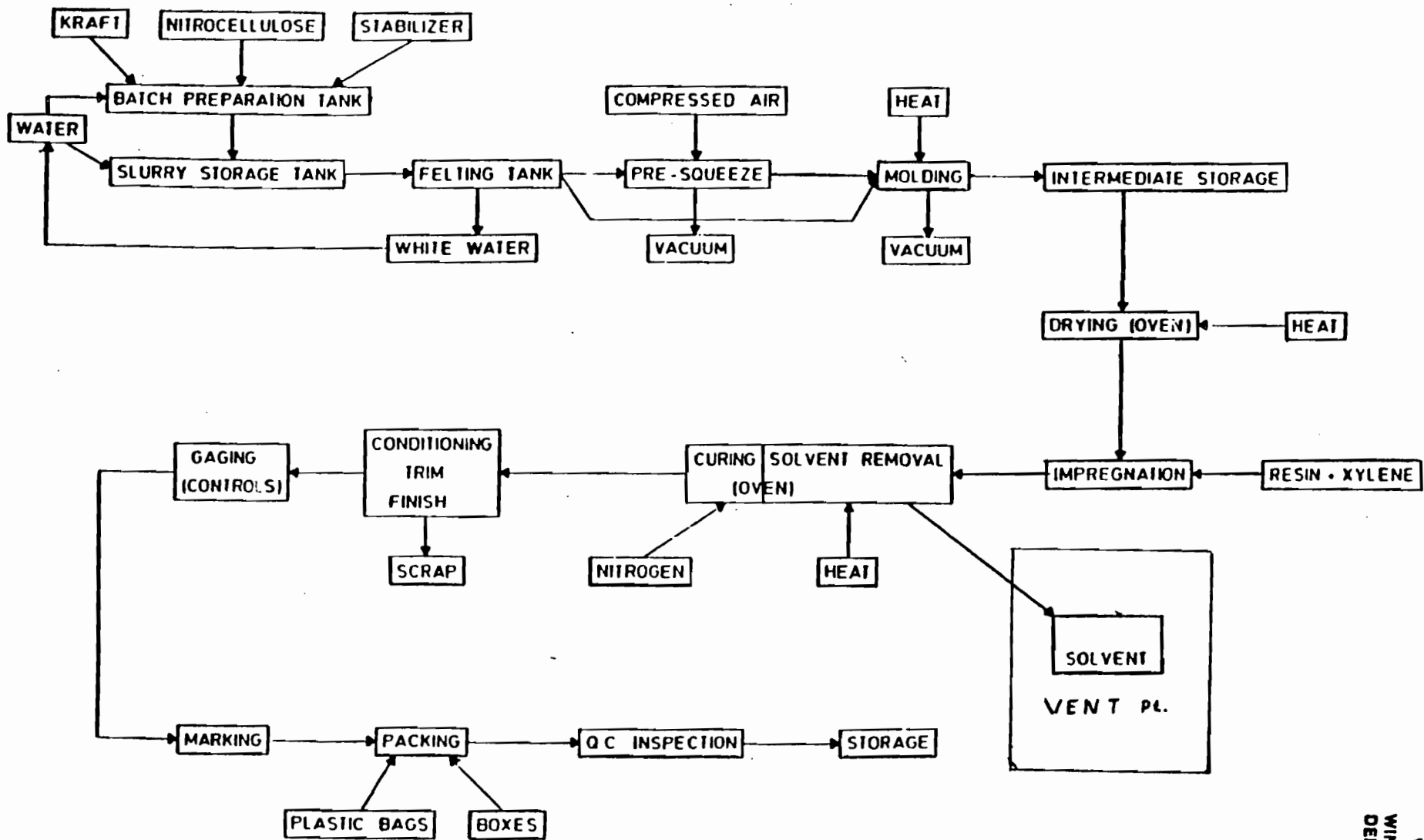
Molding - The felted part contains 70% water, the pre-squeeze press reduces the water content of the case to 15%. The final mold is a set of matched metal dies that perform three elements necessary to achieve a final moisture content of less than 1%:

- a. **Pressure** - squeezes out additional water and establishes wall thickness.
- b. **Heat** - evaporates residual water.
- c. **Vacuum** - removes water vapor resulting from evaporation.

Drying - The molded parts are stored in unsealed polyethylene bags for protection prior to drying. The parts are dried in an oven for approximately 100 minutes at 40-80 degrees centigrade to remove moisture to below .5% in order to ensure that there is no reaction between the water and polyurethane resin.

Impregnation - Immediately following drying, parts are immersed in the resin impregnation tank containing previously well mixed polyurethane resin (A + B) and solvent xylene. Immersion time is a function of the measured density of the part. Parts, placed in a wire basket, are dipped in the impregnation solution for 1 to 3 minutes to allow the proper resin weight to be absorbed. The basket is then raised and drained for 2 minutes. Parts are then placed on wheeled racks to be moved to curing.

Curing - The impregnated parts are placed in an oven. The air inside the oven compartment is displaced by nitrogen. The solvent is evaporated with heat up to 80° centigrade, where the temperature is held constant for 20 to 50 minutes. The temperature is then raised to 120° centigrade and held for 10 to 20 minutes to cure the resin. After curing is complete, the temperature is lowered and air introduced to oven to allow cured parts removal to the conditioning room. Parts are allowed to reach chemical and dimensional equilibrium before mechanical finishing in this closely controlled environment.



120mm Combustible Cartridge Case Flow Sheet # 1

SUPPLEMENTARY INFORMATION

SECTION II: A

Reference: Drawing #1 Flow Diagram

A cellulose base, formed product is immersed in a resin impregnation tank containing polyurethane resin and a xylene solvent. The impregnated parts are then placed in an oven for solvent removal and curing of the polyurethane. The oven is purged with nitrogen to remove air to less than 1%. The nitrogen atmosphere is circulated thru a heat exchanger at 2714 CFM, where it is heated prior to its introduction to the oven.

A 120 CFM (at 80° C) side stream of nitrogen and solvents are directed through a condenser which condenses a portion of the solvents. The gas from the condensing system is returned to the oven. The liquid solvents are drummed out for disposal.

The oven is vented prior to start up of the solvent removal to purge all the air from the system. The vent remains closed until the end of the solvent removal/curing process when the Nitrogen and uncondensed solvents are vented at 90° F.

SECTION III: C Potential Emissions

°Assume 100% of all five solvents used in the process are removed from the product by the solvent removal oven.

°Assume operation of solvent removal oven at maximum operating rate and maximum load.

Solvent load per batch:	Solvent Load Per Day	Average Solvent Load/Hr.
Butyl acetate 5 lbs.	20	0.83
Ethyl acetate 7.5 lbs.	30	1.25
Cellosolve acetate 6.5 lbs.	26	1.08
Toluene 3 lbs.	12	0.5
Xylene 53 lbs.	212	8.83
Baysilon .03 lbs.	0.12	0.005
Solvesso 0.28 lbs.	1.12	0.047

Cycle time: 2 hours, solvent removal during 30 minute time frame
4 batches/day.
Venting during 3 minute time frame.

Butyl acetate

5 lbs./batch

ERP (emission rate potential) = 5 lbs./1/2 hr. = 10 lbs./hr.

Average rate (daily) = 5 lbs. x 4 batches/day = 20 lbs./day

Average rate (hourly) = 20 lbs./day x 1 day/24 hours = .83 lbs./hr.

Annual Loss = 20 lbs./day x 350 days/yr. x 1 ton/2000 lbs. = 3.5 tons/yr.

Ethyl acetate

7.5 lbs./batch

ERP = 7.5 lbs./1/2 hr. = 15 lbs./hr.

Average rate (daily) = 7.5 lbs. x 4 batches/day = 30 lbs./day

Average rate (hourly) = 30 lbs./day x 1 day/24 hours = 1.25 lbs./hr.

Annual Loss = 30 lbs./day x 350 days/yr. x 1 ton/2000 lbs. = 5.25 tons/yr.

Cellosolve acetate

6.5 lbs./batch

ERP = 6.5 lbs./1/2 hr. = 13 lbs./hr.

Average rate (daily) = 6.5 lbs. x 4 batches/day = 26 lbs./day

Average rate (hourly) = 26 lbs./day x 1 day/24 hours = 1.08 lbs./hr

Annual Loss = 26 lbs./day x 350 days/yr. x 1 ton/2000 lbs. = 4.55 tons/yr.

Toluene

3 lbs./batch

ERP = 3 lbs./1/2 hr. = 6 lbs./hr.

Average rate (daily) = 3 lbs. x 4 batches/day = 12 lbs./day

Average rate (hourly) = 12 lbs./day x 1 day/24 hours = .5 lbs./hr.

Annual Loss = 12 lbs./day x 350 days/yr. x 1 ton/2000 lbs. = 2.1 tons/yr.

Xylene

53 lbs./batch

ERP = 53 lbs./1/2 hr. = 106 lbs./hr.

Average rate (daily) = 53 lbs. x 4 batches/day = 212 lbs./day

Average rate (hourly) = 212 lbs./day x 1 day/24 hours = 8.83 lbs./hr.

Annual Loss = 212 lbs./day x 350 days/yr. x 1 ton/2000 lbs. = 37.1 tons/yr.

Baysilon

.03 lbs./batch

ERP = .03 lbs./1/2 hr. = .06 lbs./hr.

Average rate (daily) = .03 lbs. x 4 batches/day = 0.12 lbs./day

Average rate (hourly) = 0.12 lbs./day x 1 day/24 hours = 0.005 lbs./hr.

Annual Loss = 0.12 lbs./day x 350 days/yr. x 1 ton/2000 lbs. = 0.021 tons/yr.

Solvesso

0.28 lbs./batch

ERP = .28 lbs./1/2 hr. = 0.56 lbs./hr.

Average rate (daily) = 0.28 lbs. x 4 batches/day = 1.12 lbs./day

Average rate (hourly) = 1.12 lbs./day x 1 day/24 hours = 0.047 lbs./hr.

Annual Loss = 1.12 lbs./day x 350 days/yr. x 1 ton/2000 lbs. = 0.196 tons/yr.

SECTION III

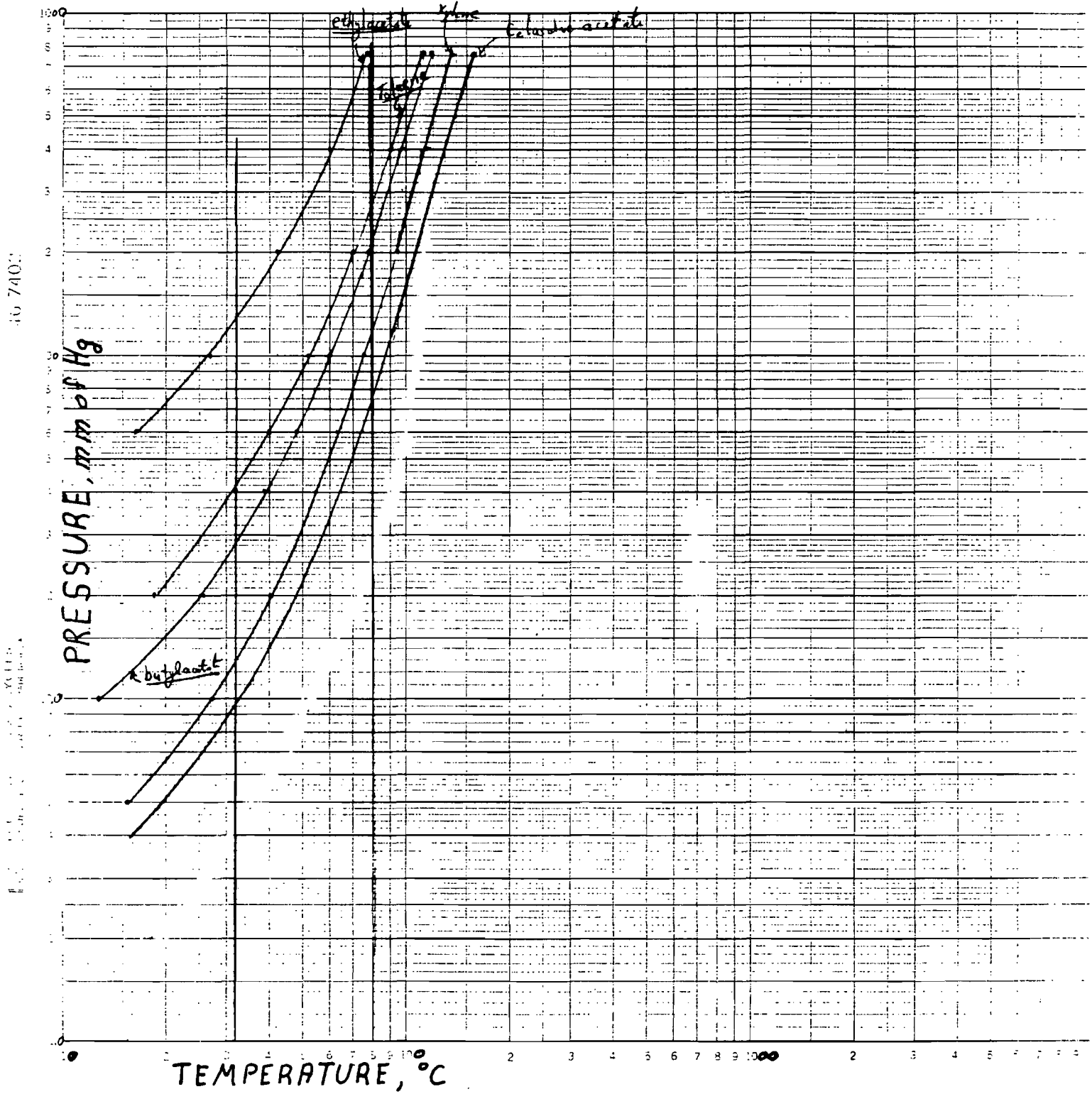
A. Raw Materials and Chemicals

<u>Description</u>	<u>Contaminants</u>	<u>Utilization Rate (lbs./hr.)</u>	<u>Input Location on Flowsheet</u>
Kraft	none	8.44	Batch Prep Tank
Nitrocellulose	none	18.75	Batch Prep Tank
N'-Methyl-N, N-Diphenyl-Urea	none	0.25	Batch Prep Tank
Xylene	none	8.83	Impregnation
Polyurethane Resin		8.83	Impregnation

Contains the following Volatiles

- Butyl Acetate	0.83	Impregnation
- Ethyl Acetate	1.25	Impregnation
- Cellosolve Acetate	1.08	Impregnation
- Toluene	0.5	Impregnation
- Baysilon	0.01	Impregnation
- Solvesso	0.08	Impregnation

VAPOR PRESSURE CHART



SECTION III: C Calculation of Actual Emissions:

Operation:

The solvent removal cycle operation will consist of a heat up of the oven by circulating nitrogen through a heat exchanger up to 80°C and holding the temperature until the solvents have been removed from the product. A side stream of nitrogen and solvent vapor is directed through a condenser where the solvent content of the nitrogen stream is reduced by reducing the vapor pressures. The nitrogen stream is then returned to the oven with additional nitrogen makeup as required.

At the end of the solvent removal cycle the side stream is shut off and the oven continues through the curing cycle. Upon completion of the curing cycle the oven is cooled to 90°F and the nitrogen/solvent atmosphere is vented through an 8" vent line.

Calculation:

Total solvent remaining in oven:

$$[\text{Volume of Oven (Cubic ft.)}] \frac{1 \text{ lb-mole}}{359 \text{ Cubic ft.}} (\text{mole of vapor})(\text{Molecule wt. of vapor})$$

Where: Volume of oven and ductwork = 300 ft³

$$\text{Mole Fraction Vapor} = \frac{\text{Vapor Pressure of Vapor at 90°F}}{\text{Total Pressure of System}}$$

Total Pressure = 760 mm Hg

Vapor Pressure at 90°F: See Supplementary Information - Section III : C

The oven will be vented in 3 minutes at 100 CFM. The emission rate for each solvent will be calculated by dividing total weight of solvent in oven by 3 minutes.

Example

Contaminant

Butyl Acetate: 3.69 lbs./3 min. = 1.23 lbs./min. = 73.8 lbs./hr.
Actual emissions are 3.69 lbs. x 4 batch/day x 1 day/24 hr.
= 14.76 lbs./day x 350 day/yr. x 1
ton/2000 lbs. = 2.58 ton/yr.

Ethyl Acetate: 7.5 lbs./3 min. = 150 lbs./hr. = 7.5 x 4 x 350 x 1/2000 lb.
= 5.25 ton/yr.

Cellosolve Acetate: 1.45 lbs./3 min. = 29 lbs./hr. 1.45 lbs. x 4
batch/day x 350 day/yr. x 1/2000 = 1.015 ton/yr.

Xylene: 1.52 lbs./3 min. = 30.4 lbs./hr. 1.52 lbs./batch x 4
batch x 350 day/yr. x 1/2000 = 1.065 ton/yr.

Total Lbs. Left in Oven

Butyl Acetate:

$$(300 \text{ CF}) \frac{1 \text{ lb.-mole}}{359 \text{ CF}} \frac{29 \text{ mm}}{760 \text{ mm}} 116 \frac{\text{lbs.}}{\text{lb.-mole}} = 3.69$$

Ethyl Acetate:

$$(300 \text{ CF}) \frac{1 \text{ lb.-mole}}{359 \text{ CF}} \frac{130 \text{ mm}}{760 \text{ mm}} 88.11 \frac{\text{lbs.}}{\text{lb.-mole}} = 7.5$$

(Only 7.5 lbs. of Ethyl Acetate were put into the oven)

Toluene:

$$(300 \text{ CF}) \frac{1 \text{ lb.-mole}}{359 \text{ CF}} \frac{42 \text{ mm}}{760 \text{ mm}} 92.13 \frac{\text{lbs.}}{\text{lb.-mole}} = 3$$

(Only 3 lbs. of Toluene were put into the oven)

Xylene:

$$(300 \text{ CF}) \frac{1 \text{ lb.-mole}}{359 \text{ CF}} \frac{13 \text{ mm}}{760 \text{ mm}} 106.16 \frac{\text{lbs.}}{\text{lb.-mole}} = 1.52$$

Cellosolve Acetate:

$$(300 \text{ CF}) \frac{1 \text{ lb.-mole}}{359 \text{ CF}} \frac{10 \text{ mm}}{760 \text{ mm}} 132.17 \frac{\text{lbs.}}{\text{lb.-mole}} = 1.45$$

Baysilon 0.03

Solvesso: 0.28

TOTAL 17.47 lbs./batch

<u>SECTION III D:</u>	<u>Efficiency:</u>		
	<u>Total lb. into oven</u>	<u>Total lbs. returned to atmosphere per batch</u>	<u>% Reduction</u>
Butyl Acetate	5	3.69	26.2
Ethyl Acetate	7.5	7.5	0
Cellosolve Acetate	6.5	1.45	77.7
Toluene	3	3	0
Xylene	53	1.52	97.1
Baysilon	.03	.03	0
Solvesso	<u>.28</u>	<u>.28</u>	<u>0</u>
TOTAL	75.31	17.47	76.8

CONDENSER DESIGN

Standard equation of heat transfer:

$$q = \dot{m}c_p \Delta T + \lambda$$

$$q = \dot{m}c_p \Delta T$$

$$q = UA(T) \frac{\Delta T_2 - \Delta T_1}{\ln \Delta T_2 / \Delta T_1}$$

q	Heat flow rate, Btu/hr.
\dot{m}	Mass flow rate, lb/hr.
C_p	Specific heat at constant pressure, Btu/(lb) (°F)
ΔT	$T_2 - T_1$ Where T_1 = Temperature of fluid entering exchanger, T_2 = Temperature of fluid leaving exchanger
U	Over-all heat-transfer coefficient, Btu/(ft ²) (hr) (°F) = 200 for organic condenser
$\Delta T_2, \Delta T_1$	Temperature difference between hot stream and cool stream at each end of the exchanger
λ	Latent heat of condensation, Btu/lb.
$A(T)$	Total heat transfer area of exchanger

	C_p	λ
Butyl acetate	~ .45	132.9
Ethyl acetate	0.45	183.6
Toluene	0.404	156
Xylene	0.407	146.1
Cellosolve acetate	~ .4	150

NOTE: Specific heat and latent heat values for baysilon, and solvesso are not available.

Calculation of: "q" condensing and cooling of solvent vapors.

$$T_1(H) = 176^\circ F = 80^\circ C$$

$$T_2(H) = 90^\circ F = 32.2^\circ C$$

- A) Butyl acetate: $q = (10 \text{ lb./hr.}) [(.45 \text{ Btu/lb}^\circ F) (86^\circ F) + (132.9 \text{ Btu/lb.})]$
 $= 1716 \text{ Btu/hr.}$
-
- B) Ethyl acetate: $q = 15 \text{ lb./hr.} [(.45 \text{ Btu/lb}^\circ F) (86^\circ F) + (183.6 \text{ Btu/lb.})]$
 $= 3334 \text{ Btu/hr.}$
-
- C) Toluene: $q = 6 \text{ lb./hr.} [(.404 \text{ Btu/lb}^\circ F) (86^\circ F) + (156 \text{ Btu/lb.})]$
 $= 1144 \text{ Btu/hr.}$
-

D) Xylene: $q = 106 \text{ lb./hr.} [(0.407 \text{ Btu/lb}^\circ\text{F}) (86^\circ\text{F}) + (146.1 \text{ Btu/lb.})]$
 $= 19196 \text{ Btu/hr.}$

E) N₂: $m = 120 \text{ CFM} \frac{(1 \text{ lb. mole}) (28 \text{ lb.})}{(359 \text{ CF}) (1 \text{ lb.-mole})} = 9.36 \text{ lbs./min.}$
 $= 562 \text{ lbs./hr.}$
 $C_p = .25 \text{ Btu/lb}^\circ\text{F}$
 $q = 562 (.25) (86) = 12,083 \text{ Btu/hr.}$

F) Cellusolve acetate: $= 13 \text{ lb./hr.} [(0.4 \text{ Btu/lb}^\circ\text{F}) (86^\circ\text{F}) + (150 \text{ Btu/hr.})]$
 $= 2398 \text{ Btu/hr.}$

CONDENSER DESIGN (CONTINUED)

Total Heat Load:

$$A + B + C + D + E + F = 28,350 \text{ Btu/hr.}$$

Using the formula $q = UA_T \frac{(\Delta T_2 - \Delta T_1)}{(\ln \Delta T_2 / \Delta T_1)}$

** Refer to exchanger sketch for ΔT_1 and ΔT_2 .

$$T_2 = 176^\circ\text{F} - 160^\circ\text{F} = 16^\circ\text{F}$$

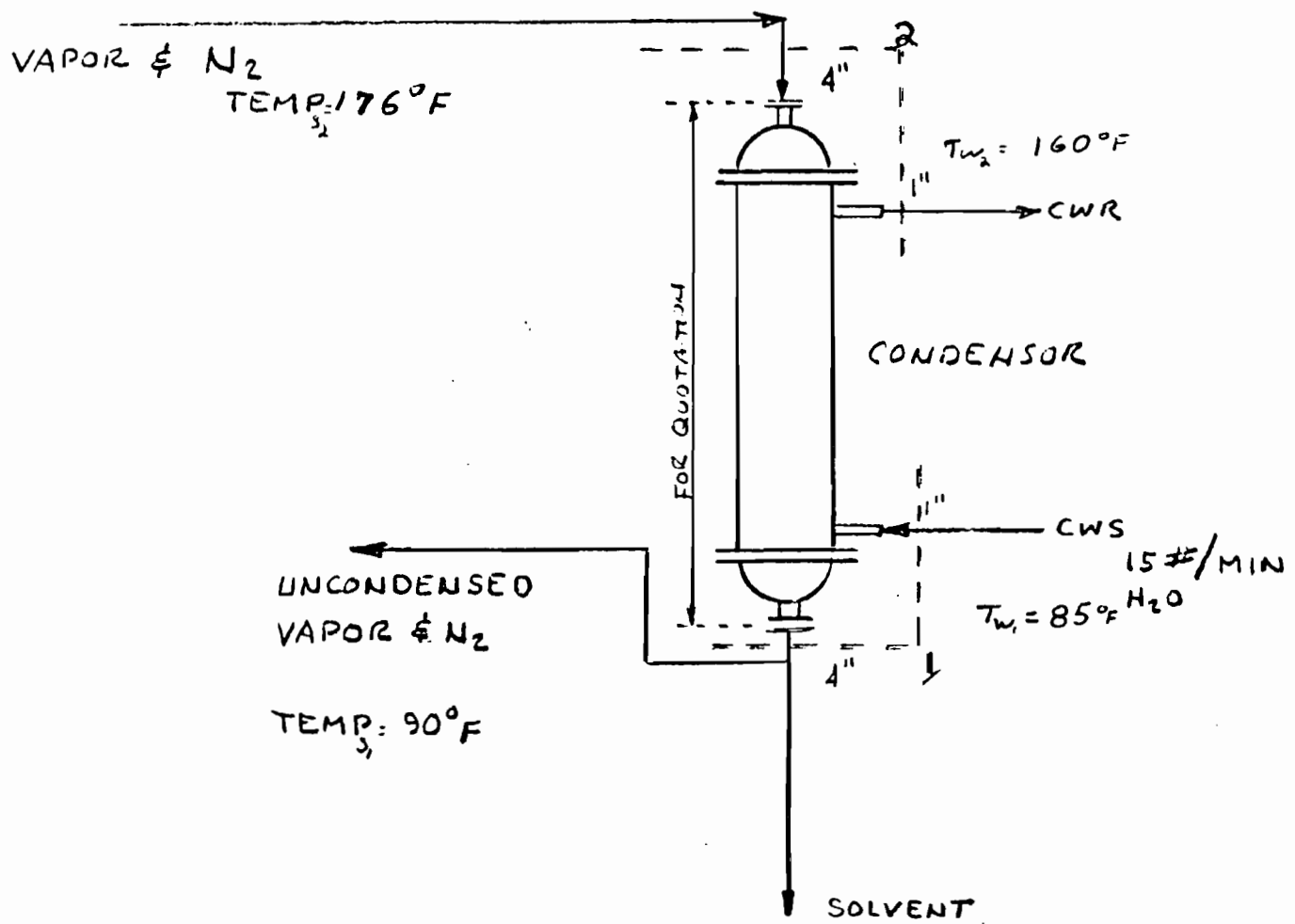
$$T_1 = 90^\circ\text{F} - 85^\circ\text{F} = 5^\circ\text{F}$$

Solving for area of the condenser: $A = q/U \frac{(\Delta T_2 - \Delta T_1)}{(\ln \Delta T_2 / \Delta T_1)}$

$$A = \frac{28,350}{(200) (9.46)}$$
$$= 15 \text{ ft.}^2$$

The condenser will be sized at least 50% larger than design (after verification of design by exchanger vendor.) The actual design of the condenser will be completed by a vendor. It is anticipated that a standard sized/design heat exchanger will be installed.

The cooling water system is presently being designed by a vendor to use liquid nitrogen to cool the cooling water stream for the solvent condenser. The vaporized nitrogen will be supplied to the oven as make up.

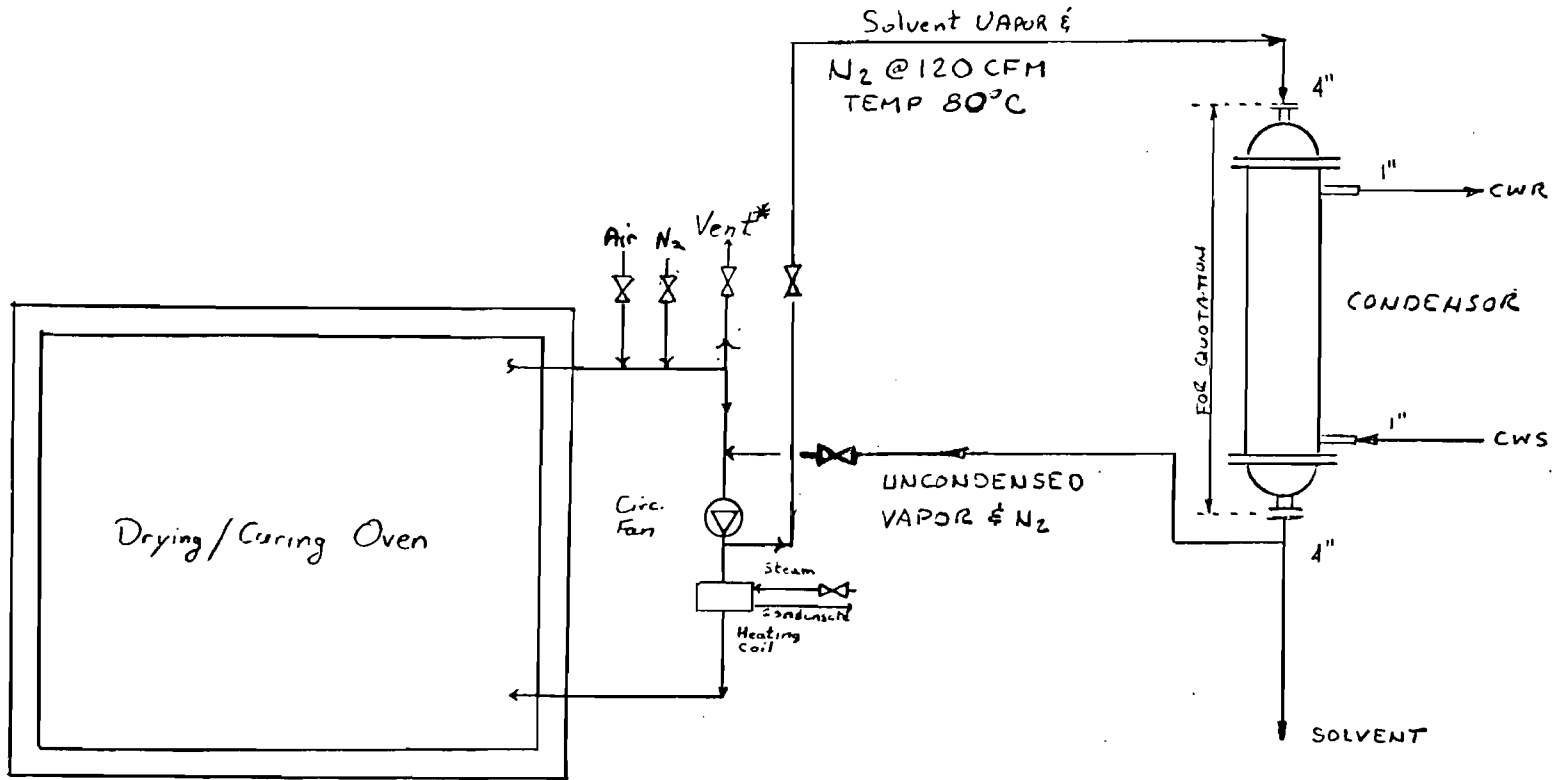


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EDF 1740

SOLVENT RECOVERY CONDENSOR		DF
SPEC S-489-128 SHEET 2		REV A

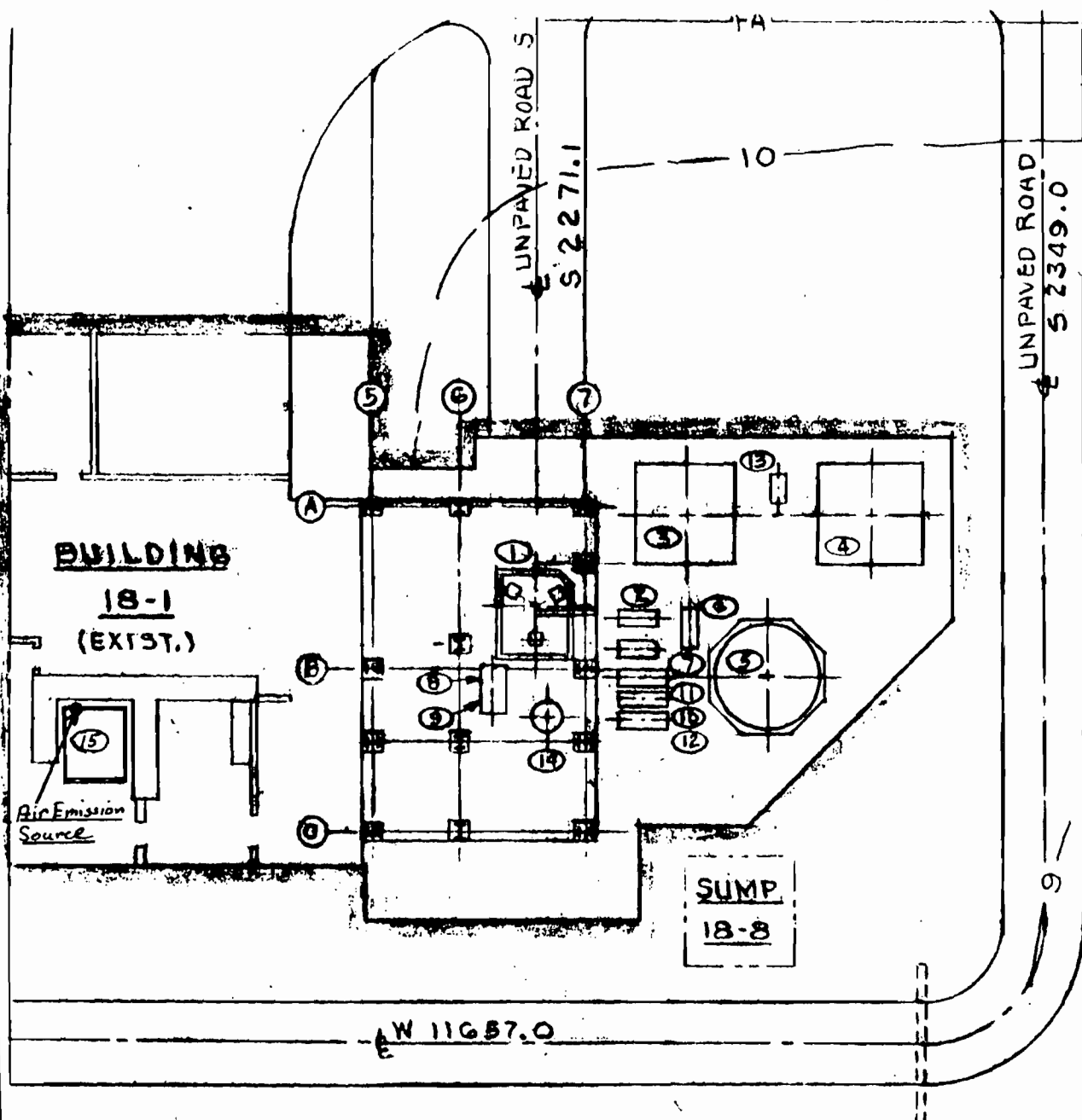
DATE	PURPOSE	BY	CHKD	APP
1-9-86	INQUIRY	DF	P.S.W.	<i>[Signature]</i>



*note: Emission Source Point

EDI 1740

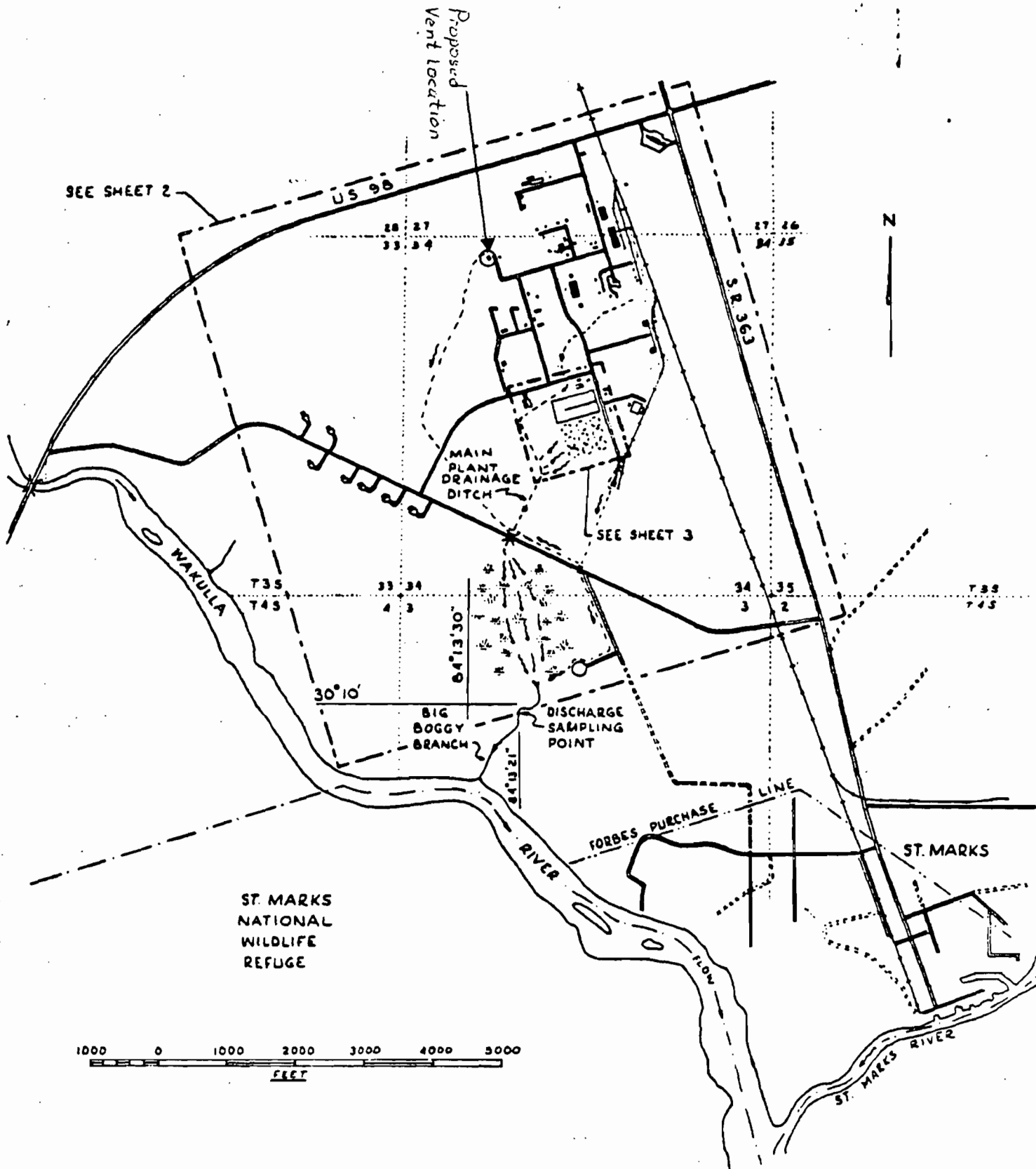
<p>SOLVENT RECOVERY CONDENSOR</p>					DF
DATE	PURPOSE	BY	CHKD	APP	
1-9-86	INSURV	DF	P.S.W.	1/27	
<p>SPEC S-489-123 SHEET 2 -</p>					REV A



EXIST. 6" F.W.

LEGEND

- ① SLURRY BATCH TANK (489-70)
- ② 1% SLURRY TRANSFER PUMP
- ③ #1 SLURRY STORAGE TANK
- ④ #2 SLURRY STORAGE TANK
- ⑤ WHITE WATER STORAGE TANK
- ⑥ WHITE WATER PUMP (489-70)
- ⑦ FELTING WHITE WATER PUMP
- ⑧ FELTING VACUUM SEPARATOR
- ⑨ FELTING WHITE WATER CH
- ⑩ VACUUM SEAL WATER CHE
- ⑪ FELTING VACUUM PUMP
- ⑫ MOLDING VACUUM PUMP
- ⑬ FELTING FEED PUMP (489-70)
- ⑭ FELTING TANK (489-70)



**OLIN SMOKELESS POWDER PLANT
LOCATION MAP**
 County of Wakulla, State of Florida
 Olin Corporation, P. O. Box 222
 St. Marks, Florida 32355