

P 256 395 052

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

U.S.G.P.O. 1985-234-555

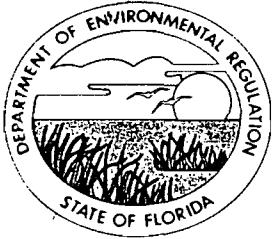
PS Form 3800, June 1985

Send to	Robert DiMarco
Street and No.	FIA Prod. Eng.
P.O., State, and ZIP Code	440 Fentress Blvd Daytona Bch, FL
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	12-26-90 AC 64-185169

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. Robert DiMarco Fla. Production Eng. 440 Fentress Blvd. Daytona Bch, FL 32114	4. Article Number P256 395 052
	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
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature - Addressee X	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature - Agent X L. Howe	
7. Date of Delivery 12/23/90	



Florida Department of Environmental Regulation

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

Bob Martínez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION NOTICE OF PERMIT

Mr. Robert DiMarco
Florida Production Engineering
440 Fentress Boulevard
Daytona Beach, Florida 32114

December 26, 1990

Enclosed is construction permit No. AC 64-185169 to construct a plastic wheel cover manufacturing facility in Daytona Beach, Volusia 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 32399-2400; 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.
Chief
Bureau of Air Regulation

Copy furnished to:

C. Collins, Central Dist.
W. Kinell, FPE

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of buisness on 12-26-90.

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.

Kyri Jaber
Clerk

12-26-90
Date

Final Determination

Florida Production Engineering
Daytona Beach, Volusia County, Florida

Manufacturing Cell No. 2
Permit Number:
AC 64-185169

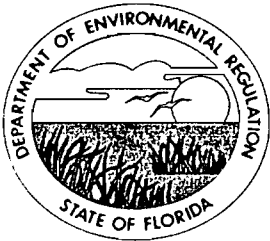
Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

December 17, 1990

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to construct a plastic wheel cover manufacturing facility at Florida Production Engineering in Daytona Beach, Volusia County, Florida, was distributed on October 26, 1990. The Notice of Intent to Issue was published in The News-Journal on November 10, 1990. Copies of the evaluation were available for public inspection at the Department's Tallahassee and Orlando offices.

No comments were submitted on the Department's Intent to Issue the permit. The final action of the Department will be to issue construction permit No. AC 64-185169 as proposed in the Technical Evaluation and Preliminary Determination.



Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

PERMITTEE:

Florida Production Engineering
440 Fentress Boulevard
Daytona Beach, Florida 32114

Permit Number: AC 64-185169

Expiration Date: Dec. 31, 1991

County: Volusia

Latitude/Longitude: 29°11'51"N
81°04'58"W

Project: Manufacturing Cell
No. 2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 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 drawings, 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 an automobile wheel cover manufacturing plant. This project will be located in Daytona Beach, Volusia County, Florida. The UTM coordinates of this site are Zone 17, 492.3 km E and 3,229.7 km N.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application to Operate/Construct Air Pollution Sources, DER Form 17-1.202(1) received on August 15, 1990.

PERMITTEE:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

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. Neither 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 is not 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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; 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:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

GENERAL CONDITIONS:

6. The permittee shall 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 and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sample or monitor 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 provide the Department with the following information:

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

PERMITTEE:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

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 for 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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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 17-4.120 and 17-30.300, F.A.C., 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 or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold 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) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement,

PERMITTEE:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

GENERAL CONDITIONS:

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 dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. 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 corrected promptly.

SPECIFIC CONDITIONS:

1. The construction and operation of this source shall be in accordance with the capacities and specifications stated in the application.

2. The manufacturing cell No. 2 shall be allowed to operate for a maximum of 6,000 hours per year.

3. Visible emissions from manufacturing cell No. 2 shall not exceed 5 percent opacity and compliance shall be demonstrated at 90-100 percent of permitted capacity using DER Method 9 in accordance with F.A.C. Rule 17-2.700.

4. Hydrocarbon emissions (VOC) shall not exceed the following calculated values and total VOC emissions from the source shall not exceed 85.0 lbs/day (20.4 hrs/day) and 10.6 tons/year. Compliance shall be demonstrated by applying the following maximum raw material utilization rates and VOC content factors:

PERMITTEE: Permit Number: AC 64-185169
 Florida Production Engineering Expiration Date: December 31, 1991

SPECIFIC CONDITIONS:

Material	Utilization Rate (gals/day)	VOC Content (lbs/gal)	Emissions (lbs/day)
Coating 91142-Q106 (B1)	3.12	5.02	15.66
Diluent T335 (B1)	3.12	7.00	21.84
Zap Base SP (B2)	3.04	6.15	18.70
Diluent Zap W (B2)	0.61	7.40	4.51
Saglan 99 (B3)	3.14	4.73	14.85
Diluent 5000TS (B3)	1.27	7.40	9.40

5. Until the Department determines other concentrations are required to protect public health and safety, the predicted ambient air concentration of any non-criteria pollutant listed in the Material Safety Data Sheets submitted with the application, shall not exceed that calculated by the following formula:

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

where,

AAC = acceptable ambient concentration

Safety Factor = 50 for category B substances (8 hrs/day)
 100 for category A substances (8 hrs/day)
 210 for category B substances (24 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.

6. Compliance with the acceptable ambient concentrations shall be demonstrated based on calculations done by a professional engineer using actual operating conditions. Determination of the ambient concentration for these compounds shall be made with Department approved dispersion model calculations or ambient monitoring.

7. Compliance with the VOC limits in Specific Condition No. 4 shall be determined by EPA Method 24, Determination of Volatile Matter Content, 40 CFR 60, Appendix A (July 1, 1988), adopted by reference in F.A.C. Rule 17-2.700.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

PERMITTEE:

Permit Number: AC 64-185169

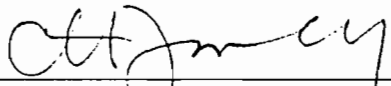
Florida Production Engineering Expiration Date: December 31, 1991

SPECIFIC CONDITIONS:

9. An application for an operation permit must be submitted to the Central District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this 21 day
of December, 1990

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



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



6828

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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

Interoffice Memorandum

CHF → URGENT ACTION NEEDED!!!

TO: Steve Smallwood
 FROM: Clair Fancy *CHF*
 DATE: December 17, 1990
 SUBJ: Approval of Construction Permit AC 64-185169
 Florida Production Engineering

Attached for your approval and signature is a permit prepared by the Bureau of Air Regulation for the above mentioned company to construct a plastic wheel cover manufacturing facility in Daytona Beach, Volusia County, Florida.

No comments were received during the public notice period.

Day 90, after which this permit will be issued by default, is December 23, 1990.

I recommend your approval and signature.

CF/JR/plm

Attachments

NO.

Researched,
corrected,
and signed
12/21/90
CHF

CHF - you need to issue the corrected version of this today

I don't understand S.C. # 2
 Are they allowed 6000
 Please clarify the condition?
 rework the condition.
 12-21-90

Check Sheet

Company Name: *F1. Prod. Engineering*
Permit Number: *AC 624-185169*
PSD Number:
County:
Permit Engineer:
Others involved:

Application:

- Initial Application
- Incompleteness Letters
- Responses
- Final Application (if applicable)
- Waiver of Department Action
- Department Response
- Other

Intent:

- Intent to Issue
- Notice to Public
- Technical Evaluation
- BACT Determination
- Unsigned Permit
- Correspondence with:
 - EPA
 - Park Services
 - County
 - Other
- Proof of Publication
- Petitions - (Related to extensions, hearings, etc.)
- Other

Final Determination:

- Final Determination
- Signed Permit
- BACT Determination
- Other

Post Permit Correspondence:

- Extensions
- Amendments/Modifications
- Response from EPA
- Response from County
- Response from Park Services
- Other

In the folder labeled as follows there are documents, listed below, which were not reproduced in this electronic file. That folder can be found in the supplementary documents file drawer. Folders in that drawer are arranged alphabetically, then by permit number.

Folder Name: Florida Production Engineering

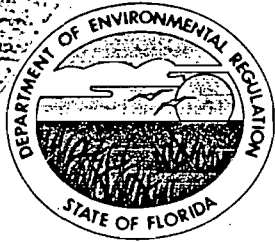
Permit(s) Numbered:

AC 64 -185169

Documents:

<u>Period during which document was received</u>	<u>Detailed Description</u>
--	-----------------------------

Application 22 Oct 1982	1. 24"×36"Blueprint: FLORIDA PRODUCTION ENGINEERING INC. BUILDING 4 AIR EMISSION SOURCES (Drawing Number: DO 0988)
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Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

PERMITTEE:
Florida Production Engineering
440 Fentress Boulevard
Daytona Beach, Florida 32114

Permit Number: AC 64-185169
Expiration Date: Dec. 31, 1991
County: Volusia
Latitude/Longitude: 29°11'51"N
81°04'58"W
Project: Manufacturing Cell
No. 2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 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 drawings, 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 an automobile wheel cover manufacturing plant. This project will be located in Daytona Beach, Volusia County, Florida. The UTM coordinates of this site are Zone 17, 492.3 km E and 3,229.7 km N.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application to Operate/Construct Air Pollution Sources, DER Form 17-1.202(1) received on August 15, 1990.

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION)

Tallahassee

Initial

Date

2.

Air Resources Section

Initial

Date

3.

Initial

Date

4.

Initial

Date

REMARKS:

This Proof of Publication should have been sent to you

RECEIVED
NOV 27 1990
DER-BAQM

INFORMATION

Review & Return

Review & File

Initial & Forward

DISPOSITION

Review & Respond

Prepare Response

For My Signature

For Your Signature

Let's Discuss

Set Up Meeting

Investigate & Report

Initial & Forward

Distribute

Concurrence

For Processing

Initial & Return

FROM:

Alan Zahn

DATE

11/24/90

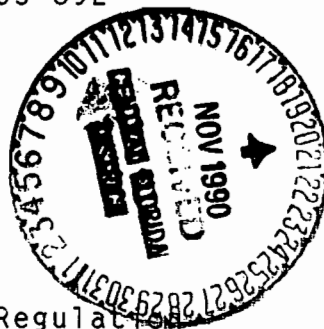
PHONE

Russell Engineering Associates, Inc.

2800 North Atlantic Avenue • Suite 15 • Daytona Beach, Florida 32118

904/672-1446

CERTIFIED LETTER NO. P 493 053 092



November 16, 1990

RECEIVED

NOV 27 1990

DER-BAQM

Air Section
Central Florida District
Department of Environmental Regulation
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767

Re: Proof of Publication
Florida Production Engineering
Manufacturing Cell No. 2
Permit No. AC64-185169

Dear Sir:

Enclosed please find Proof of Publication of Notice of Intent to Issue Permit for the above referenced facility.

This notice appeared in the November 10, 1990 issue of the News Journal, as indicated.

Should you have any questions regarding the enclosed document, please do not hesitate to contact us.

Sincerely,

RUSSELL ENGINEERING ASSOCIATES, INC.

William Kinell

William Kinell, CHMM
Project Manager

WK/rc/20-99

Enclosure

cc: Bob DiMarco - FPE

The News-Journal

Published Daily and Sunday
Daytona Beach, Volusia County, Florida



State of Florida,
County of Volusia:

Before the undersigned authority personally appeared
C. Morgan Miller

who, on oath says that he is.....
Classified Manager

of The News-Journal, a daily and Sunday newspaper, published
at Daytona Beach in Volusia County, Florida; that the
attached copy of advertisement, being a.....

Notice of Intent to Issue

in the matter of.....
Florida Production Engineering

in theCourt, was published

in said newspaper in the issues.....
November 10, 1990

Affiant further says that The News-Journal is a newspaper
published at Daytona Beach, in said Volusia County, Florida,
and that the said newspaper has heretofore been continuously
published in said Volusia County, Florida, each day and
Sunday and has been entered as second-class mail matter at the
post office in Daytona Beach, in said Volusia County, Florida,
for a period of one year next preceding the first publication of
the attached copy of advertisement; and affiant further says
that he has neither paid nor promised any person, firm or
corporation any discount, rebate, commission or refund for the
purpose of securing this advertisement for publication in the
said newspaper.

C. Morgan Miller

Sworn to and subscribed before me
this **12th** day of **November**

A.D. 19**90**

Marsha Q. Nichols

NOTARY PUBLIC, State of Florida at Large
My Commission Expires August 20, 1994
BONDED BY BROWN & BROWN, INC.



RECEIVED

NOV 27 1990

DER-BAQM

PROOF OF PUBLICATION

IN RE

NEWS-JOURNAL CORPORATION
Daytona Beach, Florida
Publication Fee, \$

LEGAL ADVERTISEMENT

State of Florida
Department of
Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Florida Production Engineering, 440 Fentress Boulevard, Daytona Beach, Florida 32114, to construct an automobile wheel cover manufacturing plant at their facility in Daytona Beach, Volusia County, Florida. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative pro-

ceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. 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.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed

action.

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 position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207 F.A.C.

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

Department of Environmental
Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental
Regulation
Central District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Legal 343, Nov. 10, 1990. 11.

P 256 936 248

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

U.S.G.P.O. 1989-234-555

Sent to Mr. Robert DiMarco, FL	
Street and No. Production Eng. 440 Fentress Blvd.	
P.O., State and ZIP Code Daytona Beach, FL 32114	
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 Mailed: 11-1-90 Permit: AC 64-185169	

PS Form 3800, June 1985

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. Robert DiMarco Florida Production Engineering 440 Fentress Blvd. Daytona Beach, FL 32114	4. Article Number P 256 936 248
	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
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature - Addressee X <i>Frank Stenzel</i>	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature - Agent X	
7. Date of Delivery <i>11-6-90</i>	



Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

October 26, 1990

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Robert DiMarco
Florida Production Engineering
440 Fentress Boulevard
Daytona Beach, Florida 32114

Dear Mr. DiMarco:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit to construct Manufacturing Cell No. 2 at your Daytona Beach facility.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Barry Andrews of the Bureau of Air Regulation.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/JR/plm

Attachments

c: C. Collins, Central Dist.
W. Kinell, FPE

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Florida Production Engineering
440 Fentress Boulevard
Daytona Beach, Florida 32114

DER File No. AC 64-185169

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue an air construction 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, Florida Production Engineering, applied on August 15, 1990, to the Department of Environmental Regulation for a permit to construct an automobile wheel covering manufacturing plant at their facility in Daytona Beach, Volusia County, Florida.

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

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department, at the address specified within seven days of publication. 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 a 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. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. 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.

The Petition shall contain the following information;

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application(s) have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office in General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such

person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION



C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

Copies furnished to:

C. Collins, Central Dist.

W. Kinell, FPE

BEST AVAILABLE COPY

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were filed before the close of business on 11-1-90.

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 J. Baker
Clerk

11-1-90
Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Florida Production Engineering, 440 Fentress Boulevard, Daytona Beach, Florida 32114, to construct an automobile wheel cover manufacturing plant at their facility in Daytona Beach, Volusia County, Florida. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

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. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. 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.

The Petition shall contain the following information:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

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 position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

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

Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Environmental Regulation
Central District
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

Any person may send written comments on the proposed action to Mr. Barry Andrews at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

Florida Production Engineering
Daytona Beach, Volusia County, Florida

Manufacturing Cell No. 2
Permit Number:
AC 64-185169

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Regulation

October 26, 1990

I. Application Information

A. Applicant

Florida Production Engineering
440 Fentress Boulevard
Daytona Beach, Florida 32114

B. Request

The Department received a complete application on August 16, 1990, for a permit to construct a plastic wheel cover manufacturing facility at the applicant's site in Daytona Beach, Florida.

C. Location/Classification

The applicant's facility (SIC Code 3714) is located off Fentress Boulevard between Volusia Avenue and Mason Avenue. Latitude and longitude are 29°11'51"N and 81°04'58"W, respectively. The UTM coordinates of the site are: Zone 17, 492.3 km E and 3,229.7 km N.

II. Project Description/Emissions

The applicant proposes to construct a 2,500 ft² manufacturing cell to produce plastic wheel covers with an aluminum overlay. The automobile wheel covers will be made by molding plastic resins in an injection molding press. Aluminum center caps for the wheels will be stamped from sheet aluminum.

The aluminum caps are coated in a proprietary immersion chromate process to prevent oxidation, then painted and dried in an automated system. Imperfections in the assembled wheel caps are removed by a lathe. The assembly is then washed and conversion coated again before going through two clear coating spray booths and a curing oven.

Particulate matter emissions will be controlled by dry filter pads mounted horizontally in the spray booths below the work areas. Combustion products from burning natural gas in the heaters and ovens will be vented to the atmosphere through stacks. Combustion emissions are primarily nitrogen oxides estimated at less than 0.5 tons/yr. Particulate matter and VOC emissions are tabulated below:

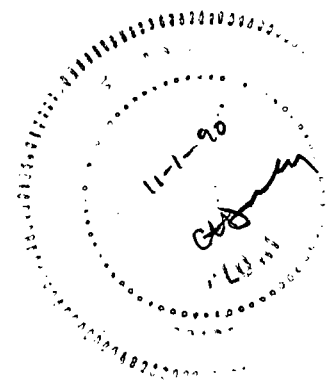
	PM		VOC	
	lbs/hr	tons/yr	lbs/hr	tons/yr
Color Coat Booth (B1)	0.01	0.03	1.40	3.57
Prime Clear Booth (B2)	0.005	0.015	0.87	2.21
Top Clear Booth (B3)	0.015	0.045	0.90	2.30
Flash-Off Oven (O1)	0	0	0.44	1.13
Convection Oven (O2)	0	0	0.56	1.42
Four-Stage Washer (W4)	0.01	0.02	0	0
Total	0.04	0.11	4.17	10.63

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The applicant's facility is located in an area classified as attainment for ozone. The facility is minor for VOC emissions (F.A.C. Rule 17-2.500(2)(d)) since they are less than 250 tons per year. Therefore, this project is not subject to the new source review requirements of F.A.C. Rule 17-2.500. Applicable rules are F.A.C. Rule 17-2.520, Sources Not Subject to Prevention of Significant Deterioration or Nonattainment Requirements, and F.A.C. Rule 17-2.620, General Pollutant Emission Limiting Standards.

IV. Conclusion

Based on the information provided by Florida Production Engineering, the Department has reasonable assurance that the proposed project, as described in this evaluation, and subject to the conditions proposed herein, will not cause or contribute to a violation of any air quality standard, PSD increment, or any other technical provision of Chapter 17-2 of the Florida Administrative Code.





Florida Department of Environmental Regulation

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

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

PERMITTEE:

Florida Production Engineering
440 Fentress Boulevard
Daytona Beach, Florida 32114

Permit Number: AC 64-185169

Expiration Date: Dec. 31, 1991

County: Volusia

Latitude/Longitude: 29°11'51"N

81°04'58"W

Project: Manufacturing Cell
No. 2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 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 drawings, 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 an automobile wheel cover manufacturing plant. This project will be located in Daytona Beach, Volusia County, Florida. The UTM coordinates of this site are Zone 17, 492.3 km E and 3,229.7 km N.

The source shall be constructed in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application to Operate/Construct Air Pollution Sources, DER Form 17-1.202(1) received on August 15, 1990.

PERMITTEE:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

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. Neither 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 is not 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, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; 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:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

GENERAL CONDITIONS:

6. The permittee shall 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 and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

- a. Have access to and copy any records that must be kept under the conditions of the permit;
- b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sample or monitor 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 provide the Department with the following information:

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

PERMITTEE:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

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 for 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 involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

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 17-4.120 and 17-30.300, F.A.C., 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 or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

b. The permittee shall hold 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) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement,

PERMITTEE:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

GENERAL CONDITIONS:

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 dates analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. 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 corrected promptly.

SPECIFIC CONDITIONS:

1. The construction and operation of this source shall be in accordance with the capacities and specifications stated in the application.
2. The manufacturing cell No. 2 shall be allowed to operate for a maximum of 6,000 hours per year. Actual operation time shall be 5,100 hours per year (85 percent operation factor).
3. Visible emissions from manufacturing cell No. 2 shall not exceed 5 percent opacity and compliance shall be demonstrated at 90-100 percent of permitted capacity using DER Method 9 in accordance with F.A.C. Rule 17-2.700.
4. Hydrocarbon emissions (VOC) shall not exceed the following calculated values and total VOC emissions from the source shall not exceed 85.0 lbs/day (20.4 hrs day) and 10.63 tons/year. Compliance shall be demonstrated by applying the following maximum raw material utilization rates and VOC content factors:

PERMITTEE:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

SPECIFIC CONDITIONS:

Material	Utilization Rate (gals/day)	VOC Content (lbs/gal)	Emissions (lbs/day)
Coating 91142-Q106 (B1)	3.12	5.02	15.66
Diluent T335 (B1)	3.12	7.00	21.84
Zap Base SP (B2)	3.04	6.15	18.70
Diluent Zap W (B2)	0.61	7.40	4.51
Saglan 99 (B3)	3.14	4.73	14.85
Diluent 5000TS (B3)	1.27	7.40	9.40

5. Until the Department determines other concentrations are required to protect public health and safety, the predicted ambient air concentration of any non-criteria pollutant listed in the Material Safety Data Sheets submitted with the application, shall not exceed that calculated by the following formula:

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

where,

AAC = acceptable ambient concentration

Safety Factor = 50 for category B substances (8 hrs/day)
100 for category A substances (8 hrs/day)
210 for category B substances (24 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.

6. Compliance with the acceptable ambient concentrations shall be demonstrated based on calculations done by a professional engineer using actual operating conditions. Determination of the ambient concentration for these compounds shall be made with Department approved dispersion model calculations or ambient monitoring.

7. Compliance with the VOC limits in Specific Condition No. 4 shall be determined by EPA Method 24, Determination of Volatile Matter Content, 40 CFR 60, Appendix A (July 1, 1988), adopted by reference in F.A.C. Rule 17-2.700.

8. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Bureau of Air Regulation prior to 60 days before the expiration of the permit (F.A.C. Rule 17-4.090).

PERMITTEE:

Permit Number: AC 64-185169

Florida Production Engineering Expiration Date: December 31, 1991

SPECIFIC CONDITIONS:

9. An application for an operation permit must be submitted to the Central District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviations from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. Rule 17-4.220).

Issued this _____ day
of _____, 1990

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

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

APPLICATION TRACKING SYSTEM

08/17/90

APPL NO:185169

APPL RECVD:08/17/90 TYPE CODE:AC SUBCODE:1E LAST UPDATE:08/17/90

DER OFFICE RECVD:ORL DER OFFICE TRANSFER TO:___ APPLICATION COMPLETE:___/___/___

DER PROCESSOR:A. ZAHM

APPL STATUS:AC DATE:08/17/90 (ACTIVE/DENIED/WITHDRAWN/EXEMPT/ISSUED/GENERAL)

RELIEF:___ (SSAC/EXEMPTIONS/VARIANCE)

(Y/N) N MANUAL TRACKING DISTRICT:30 COUNTY:64
(Y/N) N OGC HEARING REQUESTED LAT/LONG:29.11.51/81.04.58
(Y/N) N PUBLIC NOTICE REQD? BASIN-SEGMENT:___
(Y/N) N GOV BODY LOCAL APPROVAL REQD? COE #:___
(Y/N) Y LETTER OF INTENT REQD? (I/ISSUE D/DENY) ALT#:-F

PROJECT SOURCE NAME:FLORIDA PRODUCTION ENG/MANF.CELL #2
STREET:440 FENTRESS BLVD. CITY:DAYTONA BEACH
STATE:FL ZIP:___ PHONE:___
APPLICATION NAME:FLORIDA PRODUCTION ENG/DIMARCO, R.
STREET:440 FENTRESS BOULEVARD CITY:DAYTONA BEACH
STATE:FL ZIP:32114 PHONE:904-255-2566
AGENT NAME:RUSSELL ENGINEERING, INC.
STREET:2800 N. ATLANTIC AVENUE STE 15 CITY:DAYTONA BEACH
STATE:FL ZIP:32118 PHONE:904-672-1446
FEE #1 DATE PAID:08/17/90 AMOUNT PAID:00200 RECEIPT NUMBER:00160281

B DATE APPLICANT INFORMED OF NEED FOR PUBLIC NOTICE - - - - - / /
C DATE DER SENT DNR APPLICATION/SENT DNR INTENT - - - - - / /
D DATE DER REQ. COMMENTS FROM GOV. BODY FOR LOCAL APP. - - - - - / /
E DATE #1 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - - / /
E DATE #2 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - - / /
E DATE #3 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - - / /
E DATE #4 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - - / /
E DATE #5 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - - / /
E DATE #6 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - - / /
F DATE LAST 45 DAY LETTER WAS SENT - - - - - / /
G DATE FIELD REPORT WAS REQ--REC - - - - - / /
H DATE DNR REVIEW WAS COMPLETED - - - - - / /
I DATE APPLICATION WAS COMPLETE - - - - - / /
J DATE GOVERNING BODY PROVIDED COMMENTS OR OBJECTIONS - - - - - / /
K DATE NOTICE OF INTENT WAS SENT--REC TO APPLICANT - - - - - / /
L DATE PUBLIC NOTICE WAS SENT TO APPLICANT - - - - - / /
M DATE PROOF OF PUBLICATION OF PUBLIC NOTICE RECEIVED - - - - - / /
N WAIVER DATE BEGIN--END (DAY 90) - - - - - / /

COMMENTS:

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP		ACTION NO	
		ACTION DUE DATE	
1. TO: (NAME, OFFICE, LOCATION)	Barry Andrews	Initial	
		Date	
2.	Bureau of Air Permitting	Initial	
		Date	
3.	Tally - Twin Towers	Initial	
		Date	AUG 21 1990
4.		Initial	
		Date	DER - BACM

REMARKS:

Florida Production Engineering is now a major facility. This construction application arrived in our office, so we're sending it to Tally. Discussed its arrival with Bruce

INFORMATION

- Review & Return
- Review & File
- Initial & Forward

DISPOSITION

- Review & Respond
- Prepare Response
- For My Signature
- For Your Signature
- Let's Discuss
- Set Up Meeting
- Investigate & Report
- Initial & Forward
- Distribute
- Concurrence
- For Processing
- Initial & Return

FROM:

Alan D Zahn

DATE

8/20/90

PHONE

325-1011



Florida Department of Environmental Regulation

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

Permit Data Form

Project Source Name FLA Production Enj/Manufacturing Cell #2

Type Code: AK Subcode IE Check if: GP Exempt Correct Fee \$ 200.

Amount Received \$ 200.

Permit Processor's Initial ADZ Data Entry Operator's Initial _____ Amount Refund -0-

Comments: This facility is a Major based upon existing VOC rate of ~120 tons/yr. Permitting should now be done by Barry Andrews in Tally.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

160281

RECEIPT FOR APPLICATION FEES AND MISCELLANEOUS REVENUE

Received from FLORIDA PRODUCTION ENG. Date 8/17/90

Address 225 FORT WALKER BLVD. DAYTONA BEACH 32114 Dollars \$ 200.00

Applicant Name & Address _____

Source of Revenue MANUFACTURING CELL #2

Revenue Code 001031 CK 008871 Application Number AC64-185169

By Anje

Russell Engineering Associates, Inc.

2800 North Atlantic Avenue • Suite 15 • Daytona Beach, Florida 32118

904/672-1446

CERTIFIED LETTER NO. P 492 560 135

August 9, 1990

Air Section
Department of Environmental Regulation
3310 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767



Re: Florida Production Engineering, Inc.
Manufacturing Cell No. 2
REA File No. 01690

Dear Sir:

Enclosed you will find four copies of a construction permit application for air pollution sources at the above-referenced facility.

Also enclosed is a check for the application fee (\$200.00).

Should you have any questions, please do not hesitate to contact us.

Sincerely,

RUSSELL ENGINEERING ASSOCIATES, INC.

A handwritten signature in cursive script that reads "William Kinell".

William Kinell, CHMM
Project Manager

WK/ms/17-18
enclosures

cc: Mr. Bob DiMarco, Florida Production Engineering, Inc.



FLORIDA PRODUCTION ENGINEERING, INC.
225 Fentress Blvd.
Daytona Beach, FL 32114
(904) 255-2566



BANK ONE, DAYTON, N.A.
KETTERING TOWER
DAYTON, OHIO 45401

008871

MO | DAY | YR
07 | 16 | 90

*****Two hundred dollars and no/100*****

\$
*****200.00*****

PAY TO THE ORDER OF
Florida Department of
Environmental Regulation

Charles A. Doughty



Florida Department of Environmental Regulation

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

FALL ID 200.00 AUG 16 1990

DER Form # _____
Form Title _____
Effective Date _____
DER Application No. 17-32425-26273899-31-123456789010



APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCE
CENTRAL FLORIDA DISTRICT

SOURCE TYPE: Manufacturing Cell/District [X] New1 [] Existing1
APPLICATION TYPE: [X] Construction [] Operation [] Modification
COMPANY NAME: Florida Production Engineering COUNTY: Volusia

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

SOURCE LOCATION: Street 440 Fentress Boulevard City Daytona Beach
UTM: East 492300 North 3229700
Latitude 29° 11' 51" N Longitude 81° 04' 58" W

APPLICANT NAME AND TITLE: Robert DiMarco, Process Engineer
APPLICANT ADDRESS: 440 Fentress Boulevard, Daytona Beach, Florida 32114

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of FPE, Inc.

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: [Signature]
Robert DiMarco, Process Engineer
Name and Title (Please Type)
Date: 07/09/90 Telephone No. (904) 255-2566

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 

Brad L. Russell, P.E.
Name (Please Type)

Russell Engineering, Inc.
Company Name (Please Type)
2800 North Atlantic Avenue, Suite 15
Daytona Beach, Florida 32118
Mailing Address (Please Type)

Florida Registration No. 32041 Date: 8/10/90 Telephone No. (904) 672-1446

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.

This process involves the manufacture and spray coating of automobile wheel covers within a 50' x 50' manufacturing cell, which incorporates a clean room environment containing drying ovens and spray booths, with high efficiency particulate filters. Full compliance is expected.

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

Start of Construction July 1, 1990 Completion of Construction October 1, 1990

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.)

It is estimated, by the applicant, that approximately 10% of the project's cost is associated with pollution control. The project's cost is estimated to be in excess of \$375,000.

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 5 ; wks/yr 50 ;
if power plant, hrs/yr _____; if seasonal, describe: _____

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? No
 - b. If yes, has "Lowest Achievable Emission Rate" been applied? No
 - 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)				

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

1. Total Process Input Rate (lbs/hr): 110.2

2. Product Weight (lbs/hr): 102.4

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 ² 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/yr	T/yr	
(See Attached)							

¹See Section V, Item 2.

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).

D. 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 Attached)				

E. Fuels (Total)

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Natural gas	-----	1.618 x 10 ³	1.7

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

Fuel Analysis: N/A

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.

Liquid paint waste is transported to an out of state hazardous waste treatment facility in accordance with applicable RCRA regulations. Dry filter pads are disposed of in a sanitary landfill. Rinse waters from the 4-stage washer are treated in existing wastewater treatment system, prior to discharge to POTW.

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

Stack Height: (See Attached) ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION N/A

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: _____

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

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS (See Attached)

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 N/A

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

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 N/A

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).

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent? [] Yes [] No
- b. Was instrumentation calibrated in accordance with Department procedures?
[] Yes [] No [] Unknown

B. Meteorological Data Used for Air Quality Modeling

- 1. _____ Year(s) of data from _____ / _____ / _____ to _____ / _____ / _____
month day year month day year
- 2. Surface data obtained from (location) _____
- 3. Upper air (mixing height) data obtained from (location) _____
- 4. Stability wind rose (STAR) data obtained from (location) _____

C. Computer Models Used

- 1. _____ Modified? If yes, attach description.
- 2. _____ Modified? If yes, attach description.
- 3. _____ Modified? If yes, attach description.
- 4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO ²	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

FLORIDA PRODUCTION ENGINEERING, INC.

MANUFACTURING CELL #2



This facility will manufacture plastic wheel covers with an aluminum overlay from raw materials to packaged item within a 50'x 50' manufacturing cell. Plastic resins are molded to the desired wheel cover configuration by a 165-ton injection molding press. An aluminum center cap is stamped from sheet aluminum stock by a 500-ton press. The aluminum center cap is hand loaded onto a continuous conveyor that carries the aluminum center cap through an automated 4-stage washer system (W4) for cleaning and conversion coating. The conversion coating is a proprietary, immersion chromate coating to prevent oxidation of the aluminum, resulting in improved spray coating adhesion. Cleaned aluminum center caps are then hand loaded onto a continuous conveyor through the Deco paint booth (B1), for color coating, and the associated flash-off oven (O1), for drying. The aluminum center cap is then attached to the plastic wheel cover. The assembled wheel cover and aluminum center cap are then machined in a lathe to remove unwanted highlighted surfaces from the aluminum center cap. The assembly is then washed and conversion coated again, prior to being manually loaded onto a continuous conveyor that carries the assembly through two clear coating spray booths (B2 and B3) and through the convection oven (O2) for curing. The completed part is then inspected and packaged for shipping.

Raw Materials

Plastic Parts

A PPO/nylon alloy plastic is molded in a press, using mild heat and pressure to form the specific wheel cover component. No point source emissions are associated with molding operations.

An aluminum center cap is extruded in a press to match the specific plastic wheel cover component. The plastic and aluminum parts are connected to form one assembly.

Coatings

Several coatings are proposed for use as a color coat. Other color coatings may be applied in the future. Composition of future color coatings is not expected to significantly vary from that listed below.

<u>Manufacturer</u>	<u>Color</u>	<u>Identification</u>
Bee Chemical	dark silver	91142-Q106

A clear base coat is applied over the color coat. This coating is identified as follows.

<u>Manufacturer</u>	<u>Color</u>	<u>Identification</u>
Asahi Company, LTD	clear	Zap Base SP

A clear top coat is then applied over the previously applied coatings. This final coating is identified as follows.

<u>Manufacturer</u>	<u>Color</u>	<u>Identification</u>
Asahi Company, LTD	clear	Saglan 99

Coating Diluents

The following diluents are proposed for use to thin the previously described coatings.

<u>Manufacturer</u>	<u>Identification</u>	<u>Diluent for</u>
Bee Chemical	T-335	Color coat
Asahi Co., LTD	Zap W	Prime clear coat
Asahi Co., LTD	5000TS	Top clear coat

(Material Safety Data Sheets attached)

Pollutant Source Identities

<u>Source</u>	<u>ID</u>
4-Stage washer	W4
Color coat spray booth	B1
Electric flash-off oven	01
Clear primer spray booth	B2
Clear top coat spray booth	B3
Convection curing oven	02

Source Descriptions

Paint Spray Booths (B1, B2, B3)

Spray booths are custom manufactured, enclosed downdraft type, with a single fixed spray gun. Parts travel through the booths on conveyORIZED rotating fixtures. The booths specific application and custom manufacture allow for minimum booth dimensions. The working area dimensions are 48" wide x 39" deep x 26" high.

Dry filter pads, with a stated efficiency of greater than 99%, are incorporated for particulate removal resulting from overspray. (Emission calculations are based on 95% efficiency.) A 36" x 36" dry filter pad is placed horizontally in the booth below the work area, by means of a metal frame drawer, which pulls out from the front of the booth. The filter pad area is stated as 8.8 ft.². Since the exhaust fan rating of each booth is 1350 CFM, the filter face velocity is calculated to be 153.4 FPM.

$$\text{FF Velocity} = \frac{1350 \text{ CFM}}{8.8 \text{ ft}^2} = 153.4$$

Convection Oven (O2)

Consists of a conveyORIZED, gas fired oven with approximate inside dimensions being 5 ft. wide x 2 ft. 10 in. high x 22 ft. 6 in. long. The effective conveyor length is 60 ft. Coated parts are subject to 300^oF maximum, for a period of 20 minutes. This oven is rated at 0.8 MBTU and is exhausted to the atmosphere by a 450 CFM blower through a 6 in. diameter stack.

4 Stage Washer (W4)

Consists of a self-contained, automated, spray wash and conversion coating system, to prepare the aluminum surface for spray coating. System consists of two 270-gallon solution tanks, two 270-gallon rinse tanks, a gas fired dryer and a cooling tunnel. Tank 1 contains a proprietary alkaline cleaner (Ridoline 336) and Tank 3 contains a proprietary immersion chromate coating solution (Alodine 1500). Tanks 1 and 3 are heated to 140^oF by gas fired submerged heating tubes. Tanks 2 and 4 are rinse tanks. Tanks are ventilated to the atmosphere by a 4200 CFM exhaust blower, via a 14 in. diameter exhaust stack. (Material Safety Data Sheets attached)

Flash-off Oven (OV1)

Consists of a conveyORIZED, electric oven with approximate inside dimensions being 2 feet wide x 1.5 feet high x 10 feet long. This oven operates at 150^oF and is heated by electric elements. The power rating is 12 KW. The oven is exhausted to the atmosphere by a 1500 CFM exhaust blower through a 12 inch diameter stack.

Production Rates

The applicant has determined that the maximum production rate is three parts per minute. Since an assembled part weighs 0.565 pounds, it can be calculated that 101.7 pounds of uncoated parts can be manufactured hourly.

$$0.565 \text{ lb} \times 3 \times 60 = 101.7 \text{ lbs/hr (180 pcs)}$$

The average painted surface area of each part has been calculated to be 25.1 in² (0.17 ft²). The specified thickness of the color coating is 0.0008 inches; therefore, the volume of solids applied during color coating is calculated to be 0.0201 cubic inches. Since the color coating contains 26% solids by volume, and the coating is diluted 1:1 with thinner T-335, assuming 100% transfer efficiency, it can be calculated that 0.00067 gallon of diluted color coating would be sprayed for each part to achieve the stated thickness.

$$\frac{0.0201 \text{ in}^3}{231 \text{ in}^3 \times 0.26 \times 0.5} = 0.00067 \text{ gal/pc}$$

Since the transfer efficiency is stated to be 40%, then 0.0017 gallon of diluted color coating would be sprayed for each part to achieve a coating thickness of 0.0008 inches.

$$\frac{0.00067}{0.40} = 0.0017 \text{ gal/pc}$$

This equates to an hourly consumption of diluted color coating of 0.306 gallon.

$$0.0017 \text{ gal/pc} \times 180 \text{ pcs/hr} = 0.306 \text{ gph}$$

or

$$0.153 \text{ gph of color coating 91142 Q106}$$

and

$$0.153 \text{ gph of thinner T335}$$

The specified thickness of the prime clear coating is 0.0004 inches; therefore, the volume of solids applied is calculated to be:

$$25.1 \text{ in}^2 \times 0.0004 \text{ in} = 0.01 \text{ in}^3$$

Since the prime clear coating contains 13.1% solids by volume, and the coating is diluted 5:1 with Zap W, assuming 100% transfer efficiency, the volume of prime clear coating sprayed for each part can be calculated as follows.

$$\frac{0.01 \text{ in}^3}{231 \text{ in}^3 \times 0.131 \times 0.833} = 0.0004 \text{ gal/pc}$$

Since the transfer efficiency is stated to be 40%, the volume of prime clear coating sprayed for each part is then equal to:

$$\frac{0.0004}{0.40} = 0.001 \text{ gal/pc}$$

This equates to an hourly consumption of diluted prime clear coating as follows:

$$0.001 \text{ gal/pc} \times 180 \text{ pcs/hr} = 0.18 \text{ gph}$$

or

0.149 gph of prime clear coating Zap base SP

and

0.03 gph of Zap W

The specified thickness of the top clear coating is 0.0012 inches; therefore, the volume of solids applied is calculated to be:

$$25.1 \text{ in}^2 \times 0.0012 \text{ in} = 0.0301 \text{ in}^3$$

Since the top clear coating contains 37.9% solids by volume, and the coating is diluted 2.5:1 with 5000 TS, assuming 100% transfer efficiency, the volume of top clear coating sprayed for each part can be calculated as follows.

$$\frac{0.0301 \text{ in}^3}{231 \text{ in}^3 \times 0.379 \times 0.714} = 0.00048 \text{ gal/pc}$$

Since the transfer efficiency is stated to be 40%, the volume of top clear coating sprayed for each part is then equal to:

$$\frac{0.00048}{0.40} = 0.0012 \text{ gal/pc}$$

This equates to an hourly consumption of diluted top clear coating as follows:

$$0.0012 \text{ gal/pc} \times 180 \text{ pcs/hr} = 0.216 \text{ gph}$$

or

$$0.154 \text{ gph of top clear coating Saglan 99}$$

and

$$0.062 \text{ gph of 5000 TS}$$

Process Input Weight

The calculated hourly paint consumption equates to the following process input weight.

<u>Coating</u>	<u>Hourly Consumption</u>	<u>Coating Weight</u>	<u>Input Weight</u>
91142 Q106	0.153 gal	7.90 lbs/gal	1.21 lbs
Zap Base SP	0.149 gal	7.47 lbs/gal	1.12 lbs
Saglan 99	0.154 gal	8.43 lbs/gal	1.30 lbs
T335	0.153 gal	7.00 lbs/gal	1.07 lbs
Zap W	0.030 gal	7.40 lbs/gal	0.22 lbs
5000 TS	0.062 gal	7.40 lbs/gal	0.46 lbs
		Coating Total:	----- 5.34 lbs =====

The total process input weight is equal to the sum of the weight of the assembled, uncoated part and the weight of the coatings applied.

$$101.7 \text{ lbs} + 5.34 \text{ lbs} = 107.1 \text{ lbs/hr}$$

The product weight is equal to the sum of the weight of the assembled uncoated parts and the weight of the solids adhering to the part. Since the transfer efficiency is stated as 40%, the adhering solids may be calculated as follows:

$$\text{coating input weight} \times \text{weight \% solids} \times \text{transfer efficiency}$$

<u>Coating</u>	<u>Input Weight</u>	<u>Weight % Solids</u>	<u>Solids Weight</u>
91142 Q106	1.21 lbs	36.3	0.439 lbs
Zap Base SP	1.12 lbs	11.7	0.131 lbs
Saglan 99	1.30 lbs	38.3	0.498 lbs
		Solids Total:	1.07 lbs
			=====

$$1.07 \text{ lbs solid/hr} \times 0.40 = 0.43 \text{ lbs}$$

Thus, the product weight is equal to:

$$101.7 \text{ lbs} + 0.43 \text{ lbs} = 102.1 \text{ lbs/hr}$$

Coating Consumption Summary

<u>Material</u>	<u>Description</u>	<u>Gal/Hr</u>	<u>Gal/Day</u>
91142 Q106	color coating	0.153	3.12
Zap Base SP	prime clear	0.149	3.04
Saglan 99	top clear	0.154	3.14
T-335	thinner	0.153	1.56
Zap W	thinner	0.030	0.61
5000 TS	thinner	0.062	1.27

Coating and Diluent Characteristics

<u>Identification</u>	<u>Density (lbs/gal)</u>	<u>VOC (Weight %)</u>	<u>Solids (Weight %)</u>
91142-Q106	7.90	63.7	36.3
Zap Base SP	7.47	82.3	17.7
Saglan 99	8.43	56.1	43.9
T335	7.00	100	0
Zap W	7.40	100	0
5000TS	7.40	100	0

Natural Gas Consumption

The following heating devices utilize natural gas as fuel.

<u>Source ID</u>	<u>Heating Device</u>	<u>Operating Temperature</u>	<u>Fuel * Consumption</u>	<u>Heating Capacity</u>
W4	Dry-off oven	250°	476 ft ³ /hr	0.5 MBTU/hr
W4	Tank heater #1	140°	190 ft ³ /hr	0.2 MBTU/hr
W4	Tank heater #3	140°	190 ft ³ /hr	0.2 MBTU/hr
02	Convection oven	300°	762 ft ³ /hr	0.8 MBTU/hr
		Total:	1,618 ft ³ /hr	1.7 MBTU/hr
			-----	-----
			=====	=====

* Maximum, assuming 1,050 BTU/ft³

Emission Distribution

VOC

Since all of the VOC components of the coatings and diluents are emitted from the manufacturing cell, emission calculations assume the following distribution scenario.

Color Coat Spray Booth (B1)

60% of the VOC present in the sprayed coating (1-transfer efficiency), plus 40% of the VOC transferred to the part are emitted from this source. In other terms, 76% of the sprayed VOC are emitted at this point.

$$(\text{VOC} \times 0.6) + (\text{VOC} \times 0.4 \times 0.4) = 0.76$$

Flash-off Oven (O1)

Since 76% of the sprayed VOC is emitted at booth B1, the remaining VOC, transferred to the part in booth B1, is expected to be driven off in this oven, or, 24%.

$$100\% - 76\% = 24\%$$

Prime Clear Booth (B-2)

60% of the VOC present in the sprayed coating (1-transfer efficiency), plus 40% of the VOC transferred to the part are emitted from this source. In other terms, 76% of the sprayed VOC are emitted at this point.

$$(VOC \times 0.6) + (VOC \times 0.4 \times 0.4) = 0.76$$

Top Clear Booth (B3)

VOC emissions from this source can be determined by the same methodology applied to booths B1 and B2, or, 76% of the VOC sprayed in this booth are emitted at this point.

Convection Oven (O2)

Since 24% of the VOC sprayed in booth B2 and 24% of the VOC sprayed in booth B3 may be remaining on the coated parts. This oven is expected to emit the amount of VOC calculated as follows.

$$(B2 \text{ VOC} + B3 \text{ VOC}) \times 0.24$$

Emission Calculations

VOC

Emission Factors

As discussed on the previous page, the emission factor for each source is stated to be as follows:

<u>Source</u>	<u>Emission Factor</u>
B1	76%
O1	24% of B1
B2	76%
B3	76%
O2	24% of B2 + B3

Potential Paint Use

Since these sources are expected to operate 85% of the available time (20.4 hrs/day), the potential paint use may be calculated as:

$$\frac{\text{Actual Paint Use (gpd)}}{0.85} = \text{Potential Paint Use (gpd)}$$

Formulas

$$\text{Potential Emission (lbs/yr)} = \text{Potential Paint Use (gpd)} \times \text{Emission Factor (\%)} \times \text{Weight VOC (lbs/gal)} \times \text{Operating Days (days/yr)}$$

$$\text{Actual Emission (T/yr)} = \frac{\text{Actual Paint Use (gpd)} \times \text{Emission Factor (\%)} \times \text{Weight VOC (lbs/gal)} \times \text{Operating Days (days/yr)}}{2000 \text{ (lbs/T)}}$$

$$\text{Maximum Emission (lbs/hr)} = \frac{\text{Potential Paint Use (gpd)} \times \text{Emission Factor (\%)} \times \text{Weight VOC (lbs/gal)}}{24 \text{ hrs/day}}$$

Calculations

Color Coat Booth (B1)

3.12 gpd of coating 91142-Q106

7.90 lbs/gal

63.60 % VOC

3.12 gpd of diluent T335

7.00 lbs/gal

100.00 % VOC

6.24 gpd of mixed coating

$$\text{VOC} = \frac{(3.12 \times 7.90 \times 0.637) + (3.12 \times 7.00 \times 1.00)}{6.24} = 6.02 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{6.24}{0.85} = 7.34 \text{ gpd}$$

$$\text{Potential Emission} = 7.34 \times 0.76 \times 6.02 \times 250 = 8,391 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{6.24 \times 6.02 \times 0.76 \times 250}{2000} = 3.57 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{7.34 \times 0.76 \times 6.02}{24} = 1.40 \text{ lbs/hr}$$

Prime Clear Coat Booth (B2)

3.04 gpd of coating Zap Base SP

7.47 lbs/gal

82.30 % VOC

0.61 gpd of diluent Zap W

7.40 lbs/gal

100.00 % VOC

3.65 gpd of mixed coating

$$\text{VOC} = \frac{(3.04 \times 7.47 \times 0.823) + (0.61 \times 7.40 \times 1.00)}{3.65} = 6.36 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{3.65}{0.85} = 4.3 \text{ gpd}$$

$$\text{Potential Emission} = 4.3 \times 0.76 \times 6.36 \times 250 = 5,187 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{3.65 \times 6.36 \times 0.76 \times 250}{2000} = 2.21 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{4.3 \times 0.76 \times 6.36}{24} = 0.865 \text{ lbs/hr}$$

Top Clear Coat Booth (B3)

3.14 gpd of coating Saglan 99

8.43 lbs/gal

56.10 % VOC

1.27 gpd of diluent 5000 TS

7.40 lbs/gal

100.00 % VOC

4.41 gpd of mixed coating

$$\text{VOC} = \frac{(3.14 \times 8.43 \times 0.561) + (1.27 \times 7.40 \times 1.00)}{4.41} = 5.50 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{4.41}{0.85} = 5.18 \text{ gpd}$$

$$\text{Potential Emission} = 5.18 \times 0.76 \times 5.50 \times 250 = 5,412 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{4.41 \times 5.50 \times 0.76 \times 250}{2000} = 2.30 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{5.18 \times 0.76 \times 5.50}{24} = 0.90 \text{ lbs/hr}$$

Flash-off Oven (01)

Twenty-four percent of the VOC sprayed in Booth B1 is emitted from this oven. Calculations assume an emission factor of 24%.

3.12 gpd of coating

7.90 lbs/gal

63.70% VOC

3.12 gpd of diluent

7.00 lbs/gal

100.00 % VOC

6.24 gpd of mixed coating

$$\text{VOC} = \frac{(3.12 \times 7.90 \times 0.637) + (3.12 \times 7.00 \times 1.00)}{6.24} = 6.02 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{6.24}{0.85} = 7.34 \text{ gpd}$$

$$\text{Potential Emission} = 7.34 \times 0.24 \times 6.02 \times 250 = 2,650 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{6.24 \times 6.02 \times 0.24 \times 250}{2000} = 1.13 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{7.34 \times 0.24 \times 6.02}{24} = 0.44 \text{ lbs/hr}$$

Convection Oven (02)

Twenty-four percent of the VOC sprayed in Booths B2 and B3 is emitted from this oven. Calculations assume an emission factor of 24% for the VOC from each booth. The two figures are added together, resulting in the oven emission.

The contribution from Booth B2 is as follows:

3.04 gpd of coating

7.47 lbs/gal

0.61 gpd of diluent

7.40 lbs/gal

100% VOC

3.65 gpd of mixed coating

$$\text{VOC} = \frac{(3.04 \times 7.47 \times 0.823) + (0.61 \times 7.40 \times 1.00)}{3.65} = 6.36 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{3.65}{0.85} = 4.3 \text{ gpd}$$

$$\text{Potential Emission} = 4.3 \times 0.24 \times 6.36 \times 250 = 1,638 \text{ lbs/yr}$$

$$\text{Maximum Emission} = \frac{4.3 \times 0.24 \times 6.36}{24} = 0.275 \text{ lbs/hr}$$

$$\text{Actual Emission} = \frac{3.65 \times 6.36 \times 0.24 \times 250}{2000} = 0.70 \text{ T/yr}$$

The contribution from Booth B3 is as follows:

3.14 gpd of coating

8.43 lbs/gal

56.10 % VOC

1.27 gpd of diluent

7.40 lbs/gal

100.00 % VOC

4.41 gpd of mixed coating

$$\text{VOC} = \frac{(3.14 \times 8.43 \times 0.561) + (1.27 \times 7.40 \times 1.00)}{4.41} = 2.75 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{4.41}{0.85} = 5.18 \text{ gpd}$$

$$\text{Potential Emission} = 5.18 \times 0.24 \times 5.50 \times 250 = 1,709 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{4.41 \times 5.50 \times 0.24 \times 250}{2000} = 0.73 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{5.18 \times 0.24 \times 5.50}{24} = 0.285 \text{ lbs/hr}$$

The oven emission can then be determined as follows:

$$\text{Potential Emission} = 1,638 + 1,709 = 3,347 \text{ lbs/yr}$$

$$\text{Actual Emission} = 0.70 + 0.73 = 1.42 \text{ T/yr}$$

$$\text{Maximum Emission} = 0.275 + 0.285 = 0.56 \text{ lbs/hr}$$

VOC Emission Summary

Source	Emission		Potential Emission		Relate To
	Maximum (lbs/hr)	Actual (T/yr)	lbs/yr	T/yr	
Color Coat Booth	1.40	3.57	8,391	4.20	B1
Prime Clear Booth	0.87	2.21	5,187	2.59	B2
Top Clear Booth	0.90	2.30	5,412	2.71	B3
Flash-off Oven	0.44	1.13	2,650	1.33	01
Convection Oven	0.56	1.42	3,347	1.67	02
Total	4.17	10.63	24,987	12.5	N/A

17-2.620 (1) General Pollutant Emission Limiting Standards apply to these sources.

Compliance may be demonstrated by mass balance calculations.

Emission Calculations

Particulates

Formulas

The following formulas were used to determine particulate emissions from spray booths B1, B2 and B3. No particulate emissions are anticipated from the flash-off oven (01), or the convection oven (02).

$$\text{Transfer Efficiency (TE)} = 40\%$$

$$\text{Particulate Removal Efficiency} = 95\%$$

$$\text{Potential Emission (lbs/yr)} = \frac{\text{Potential Paint Use (gpd)} \times (1 - \text{TE} (\%)) \times \text{Weight Solids (lbs/gal)} \times \text{Operating Days (days/yr)}}{2000 \text{ (lbs/T)}}$$

$$\text{Actual Emission (T/yr)} = \frac{\text{Actual Paint Use (gpd)} \times (1 - \text{TE} (\%)) \times \text{Weight Solids (lbs/gal)} \times \text{Operating Days (days/yr)} \times (1 - \text{Removal Efficiency} (\%))}{2000 \text{ (lbs/T)}}$$

$$\text{Maximum Emission (lbs/hr)} = \frac{\text{Potential Paint Use (gpd)} \times (1 - \text{TE} (\%)) \times \text{Weight Solids (lbs/gal)} \times (1 - \text{Removal Efficiency} (\%))}{24 \text{ (hrs/day)}}$$

Color Coat Spray Booth (B1)

3.12 gpd of coating 91142-Q106

7.90 lbs/gal

36.30 % solids

3.12 gpd of diluent T335

7.00 lbs/gal

0.00 % solids

6.24 gpd of mixed coating

$$\text{Solids} = \frac{(3.12 \times 7.90 \times 0.363) + (3.12 \times 7.00 \times 0.00)}{6.24} = 1.43 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{6.24}{0.85} = 7.34 \text{ gpd}$$

$$\text{Potential Emission} = 7.34 \times 0.60 \times 1.43 \times 250 = 1,579 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{6.24 \times 0.60 \times 1.43 \times 250 \times 0.05}{2000} = 0.03 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{7.34 \times 0.60 \times 1.43 \times 0.50}{24} = 0.01 \text{ lbs/hr}$$

Prime Clear Coat Booth (B2)

3.04 gpd of coating Zap Base SP

7.47 lbs/gal

17.70 % solids

0.61 gpd of diluent Zap W

7.40 lbs/gal

0.00% solids

3.65 gpd of mixed coating

$$\text{Solids} = \frac{(3.04 \times 7.47 \times 0.177) + (0.61 \times 7.40 \times 0.00)}{3.65} = 1.10 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{3.65}{0.85} = 4.3 \text{ gpd}$$

$$\text{Potential Emission} = 4.3 \times 0.60 \times 1.10 \times 250 = 710 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{3.65 \times 0.60 \times 1.10 \times 250 \times 0.05}{2000} = 0.015 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{4.3 \times 0.60 \times 1.10 \times 0.05}{24} = 0.005 \text{ lbs/hr}$$

Top Clear Coat Booth (B3)

3.14 gpd of coating Saglan 99

8.43 lbs/gal

43.90% solids

1.27 gpd of diluent 5000 TS

7.40 lbs/gal

0.00% solids

4.41 gpd of mixed coating

$$\text{Solids} = \frac{(3.14 \times 8.43 \times 0.439) + (1.27 \times 7.40 \times 0.00)}{4.41} = 2.64 \text{ lbs/gal}$$

$$\text{Potential Mix Use} = \frac{4.41}{0.85} = 5.18 \text{ gpd}$$

$$\text{Potential Emission} = 5.18 \times 0.60 \times 2.64 \times 250 = 2,051 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{4.41 \times 0.60 \times 2.64 \times 250 \times 0.05}{2000} = 0.045 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{5.18 \times 0.60 \times 2.64 \times 0.05}{24} = 0.015 \text{ lbs/hr}$$

Four Stage Washer (W4)

Tank No. 1

This tank contains 200 gallons of a proprietary alkaline cleaner, identified as Ridoline 336. The MSDS for this material indicates that it contains 30%, by weight, of sodium tetraborate. The applicant states that the initial make-up of this bath contains 4 ounces of Ridoline 336 per gallon of water. It is estimated that daily make-up additions of Ridoline 336, to maintain bath concentration, will not exceed 10 lbs/day. The make-up addition of sodium tetraborate may then be calculated as follows:

$$10 \text{ lbs/day Ridoline 336} \times 0.30 = 3 \text{ lbs/day sodium tetraborate}$$

Since the gassing rate of this type of bath is considered to be medium-high, the loss of sodium tetraborate may be calculated as 4% of the make-up addition. *

Since there are no control devices associated with the four-stage washer, the emissions from this device may be calculated as follows:

$$\begin{array}{l} \text{Potential} \\ \text{Make-up} \\ \text{Addition} \\ \text{(lbs/days)} \end{array} = \frac{\text{Actual Make-up Addition}}{0.85 \text{ (85\% up-time)}}$$

$$\text{Potential Emission (lbs/yr)} = \text{Potential Make-up (lb/day)} \times \text{Percent* loss (\%)} \times \text{Operating days (days/yr)}$$

$$\text{Actual Emission (T/yr)} = \frac{\text{Actual Make-up (lbs/day)} \times \text{Percent* loss (\%)}}{2000 \text{ (lbs/T)}} \times \text{Operating days (days/yr)}$$

$$\text{Maximum Emission (lbs/hr)} = \frac{\text{Potential Make-up (lbs/day)} \times \text{Percent* loss (\%)}}{24 \text{ (hrs/day)}}$$

Sodium Tetraborate

$$\text{Potential Make-up} = \frac{3}{0.85} = 3.53 \text{ lbs/day}$$

$$\text{Potential Emission} = 3.53 \times 0.04 \times 250 = 35.3 \text{ lbs/yr}$$

$$\text{Actual Emission} = \frac{3 \times 0.04 \times 250}{2000} = 0.015 \text{ T/yr}$$

$$\text{Maximum Emission} = \frac{3.53 \times 0.04}{24} = 0.00588 \text{ lb/hr}$$

* "Modern Pollution Control Technology, Vol. I", pg 7-24.

Tank No. 3

This tank contains 200 gallons of a proprietary chromate immersion coating, identified as Alodine 1500. The MSDS for this material indicates that it contains:

<u>Compound</u>	<u>Weight (%)</u>
Chromic Acid	3 - 5
Ammonium Fluozirconate	2 - 4
Fluozirconic Acid	1 - 3

Since the gassing rate of this type of bath is considered to be low, the loss of each compound may be calculated as 2% of the make-up addition. **

Alodine 1500 is supplied as a liquid with a specific gravity of 1.08. Thus, the weight of one gallon of Alodine 1500 is:

$$8.34 \times 1.08 = 9.01 \text{ lbs/gal}$$

The applicant states that the initial make-up concentration of Alodine 1500 is 1 gallon/100 gallons of water. The maximum daily make-up additions of Alodine 1500 are expected to be 0.5 gal/day.

$$\text{Make-up Addition} = 0.5 \times 9.01 = 4.51 \text{ lbs/day} \\ (\text{Alodine 1500})$$

The potential daily make-up addition of Alodine 1500 may be calculated as follows:

$$\text{Potential} \\ \text{Make-up} \\ \text{Addition} = \frac{4.51}{0.85} = 5.31 \text{ lbs/day}$$

$$\text{Potential} \\ \text{Emission} = 5.31 \times 0.02^{**} \times 250 = 26.55 \text{ lbs/yr (Alodine 1500)}$$

$$\text{Actual} \\ \text{Emission} = \frac{4.51 \times 0.02^{**} \times 250}{2000} = 0.0113 \text{ T/yr (Alodine 1500)}$$

$$\text{Maximum} \\ \text{Emission} = \frac{5.31 \times 0.02^{**}}{24} = 0.0044 \text{ lb/hr (Alodine 1500)}$$

Since the weight % of the chemical components is known, the emissions of the components may be determined by multiplying the calculated Alodine 1500 emissions by the weight % of the chemical components.

Chromic Acid (5%)

$$\text{Potential Emission} = 26.55 \times 0.05 = 1.33 \text{ lb/yr}$$

$$\text{Actual Emission} = 0.0113 \times 0.05 = 0.00057 \text{ T/yr}$$

$$\text{Maximum Emission} = 0.0044 \times 0.05 = 0.00022 \text{ lb/hr}$$

Ammonium Fluozirconate

$$\text{Potential Emission} = 22.55 \times 0.04 = 0.902 \text{ lb/yr}$$

$$\text{Actual Emission} = 0.0113 \times 0.04 = 0.00045 \text{ T/yr}$$

$$\text{Maximum Emission} = 0.0044 \times 0.04 = 0.00018 \text{ lb/hr}$$

Fluozirconic Acid

$$\text{Potential Emission} = 22.55 \times 0.03 = 0.677 \text{ lb/yr}$$

$$\text{Actual Emission} = 0.0133 \times 0.03 = 0.00034 \text{ T/yr}$$

$$\text{Maximum Emission} = 0.0044 \times 0.03 = 0.00013 \text{ lb/hr}$$

** "Modern Pollution Control Technology, Vol. I", pg. 7-23.

Emission Summary
Four-Stage Washer (W4)

Chemical Component	Emissions		Potential Emission	
	Maximum lbs/hr	Actual T/yr	lbs/yr	T/yr
Sodium Tetraborate	0.00588	0.0150	35.30	0.01765
Chromic Acid	0.00022	0.0006	1.33	0.00067
Ammonium Fluozirconate	0.00018	0.0005	0.90	0.00045
Fluozirconic Acid	0.00013	0.0003	0.68	0.00034
Total	0.00641	0.0164	38.21	0.01911

No VOC emissions are expected from the Four-Stage Washer.

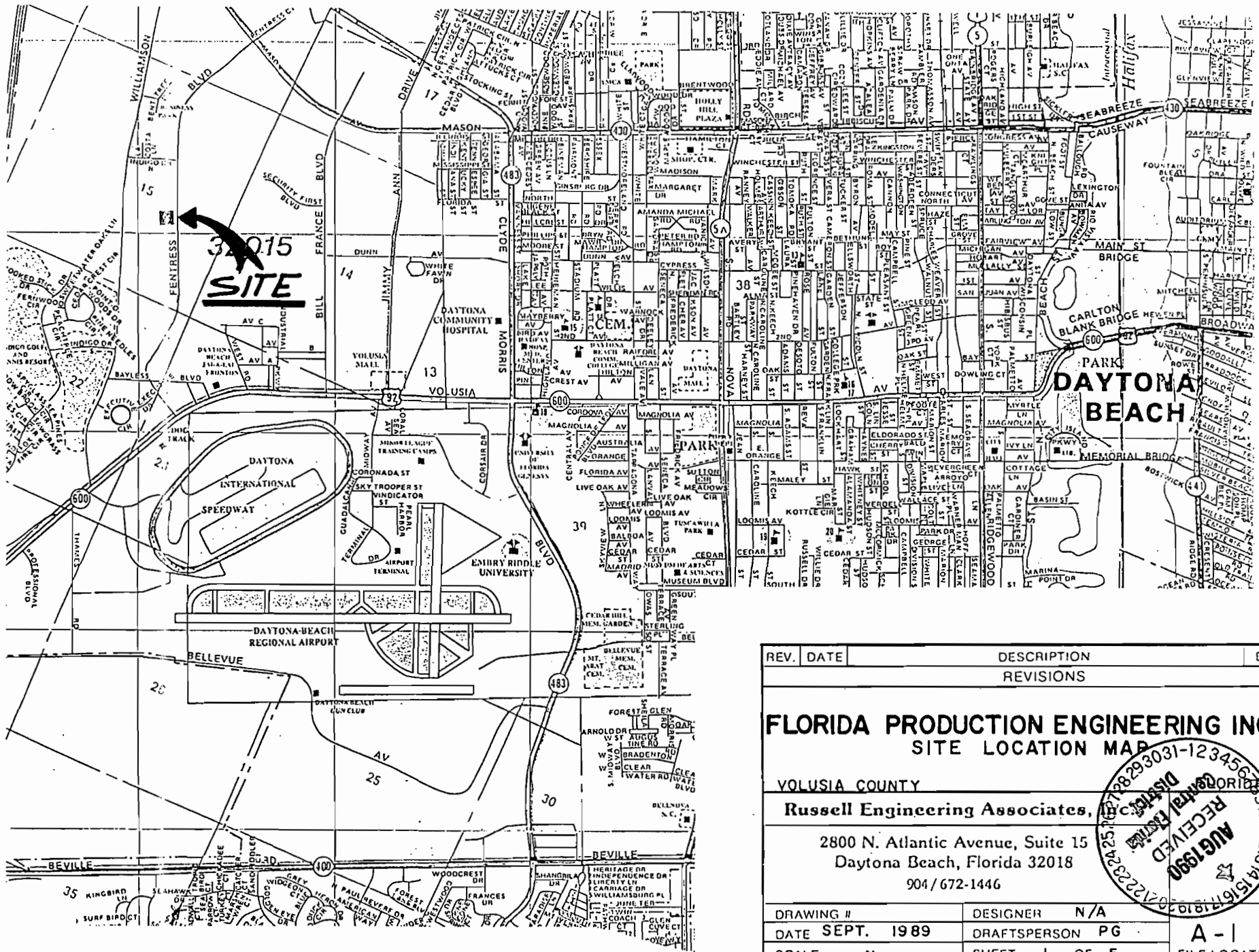
Particulate Emission Summary

Source	Emission		Potential Emission		Relate To
	Maximum	Actual	lbs/yr	T/yr	
	lbs/hr	T/yr			
Color Coat Booth	0.01	0.03	1,579	0.79	B1
Prime Clear Booth	0.005	0.015	710	0.36	B2
Top Clear Booth	0.015	0.045	2,051	1.03	B3
Flash-Off Oven	0	0	0	0	01
Convection Oven	0	0	0	0	02
Four-Stage Washer	0.01	0.02	38	0.02	W4
Total	0.04	0.11	4,378	2.20	N/A

17-2.610 (2) (a) General Particulate Emission Limiting Standards apply to these sources.

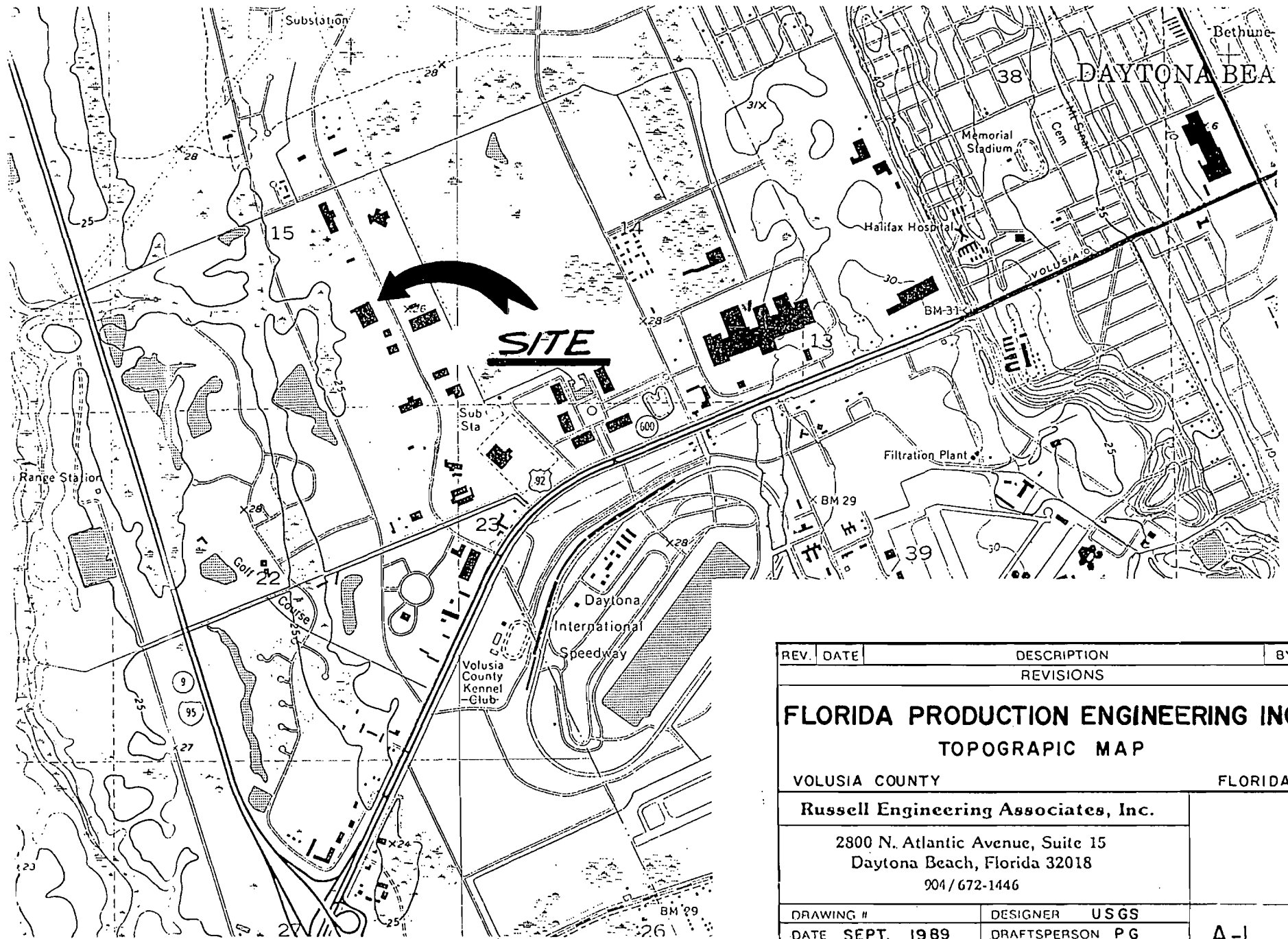
Compliance may be demonstrated by Visible Emissions Observations (DER Method 9).

FPECEL2

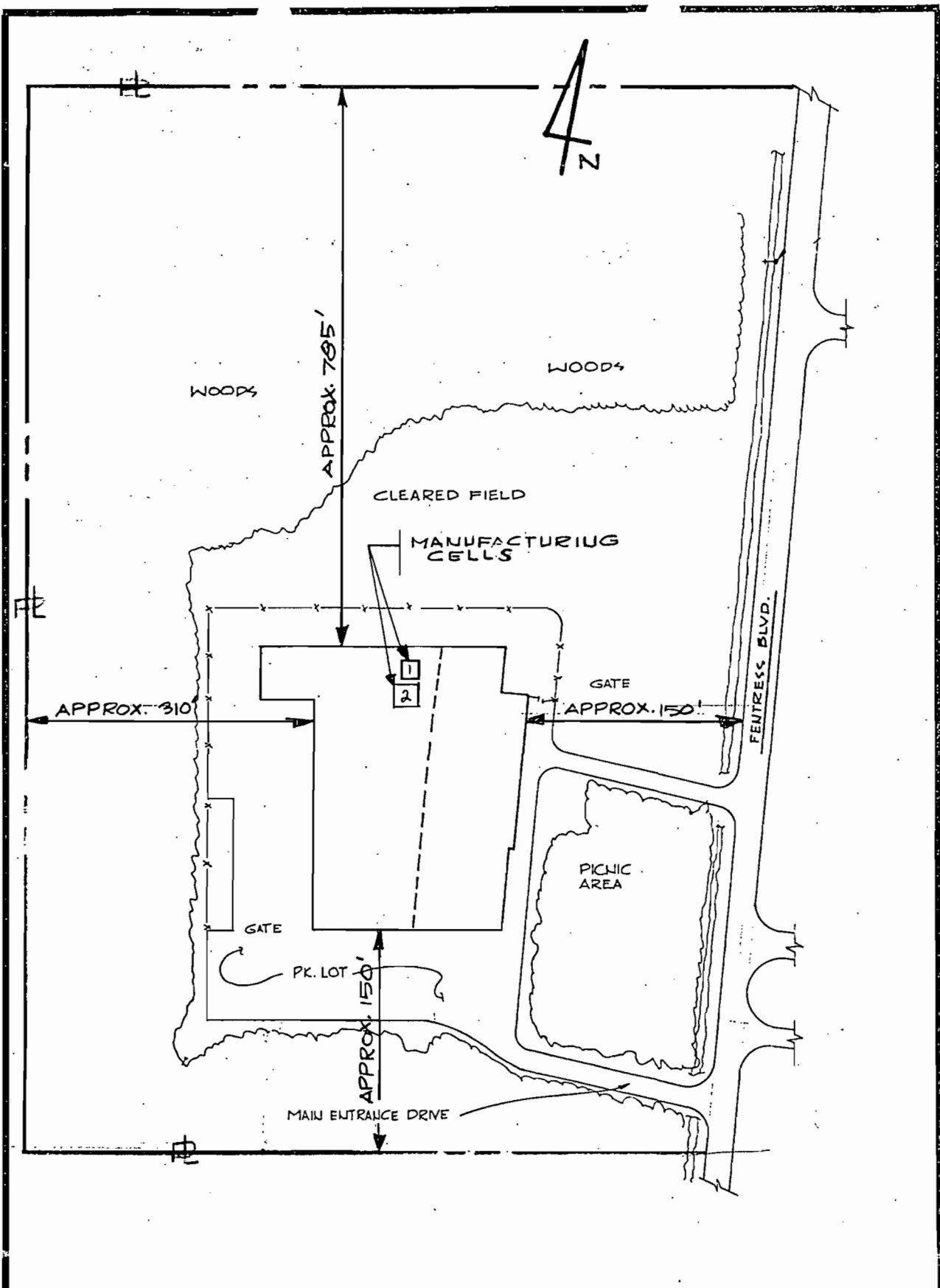


REV.	DATE	DESCRIPTION	BY
		REVISIONS	
FLORIDA PRODUCTION ENGINEERING INC.			
SITE LOCATION MAP			
VOLUSIA COUNTY			
Russell Engineering Associates, Inc.			
2800 N. Atlantic Avenue, Suite 15 Daytona Beach, Florida 32018 904 / 672-1446			
DRAWING #	DESIGNER	N/A	
DATE SEPT. 1989	DRAFTSPERSON	PG	
SCALE None	SHEET	1 OF 5	FILE LOCATION



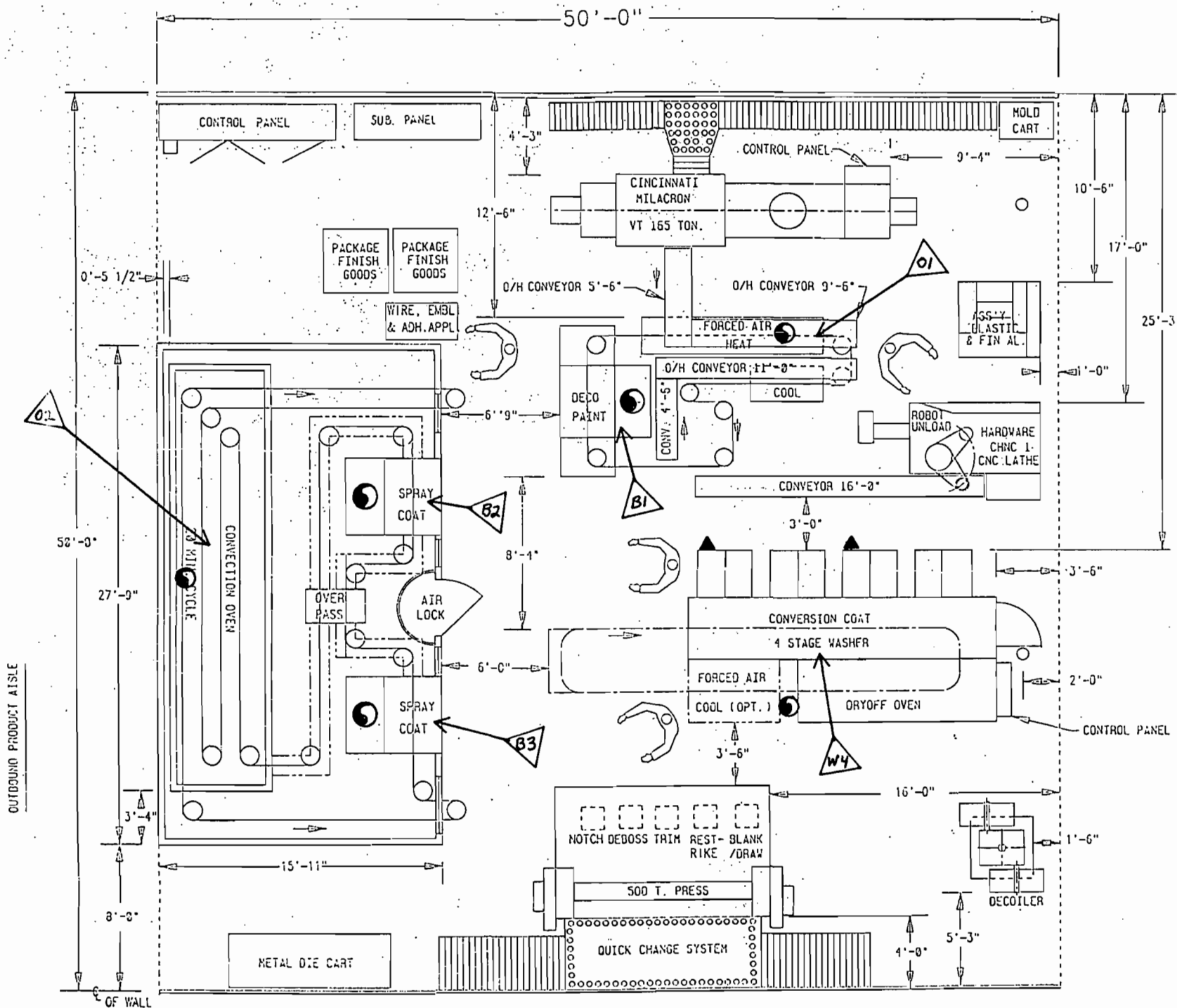


REV.	DATE	DESCRIPTION	BY
REVISIONS			
FLORIDA PRODUCTION ENGINEERING INC.			
TOPOGRAPHIC MAP			
VOLUSIA COUNTY		FLORIDA	
Russell Engineering Associates, Inc.			
2800 N. Atlantic Avenue, Suite 15 Daytona Beach, Florida 32018 904/672-1446			
DRAWING #		DESIGNER USGS	
DATE SEPT. 1989		DRAFTSPERSON PG	
SCALE None		SHEET 2 OF 5	
			A-1 FILE LOCATION

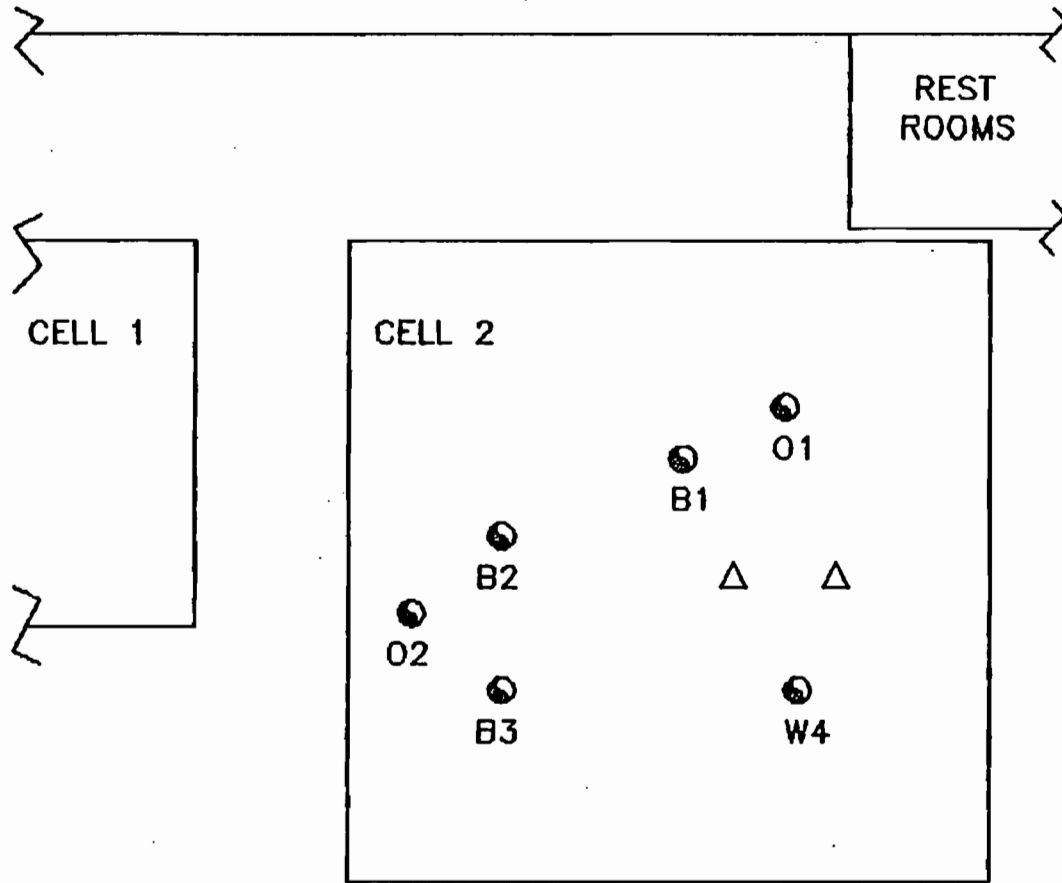


FLORIDA PRODUCTION ENG. INC.		FLORIDA
440 Fentress Blvd.		
VOLUSIA COUNTY		
Russell Engineering Associates, Inc.		
2300 N. Atlantic Avenue, Suite 15 Daytona Beach, Florida 32018 904/672-1446		
DRAWING #	DESIGNER	A-1
DATE 1989	DRAFTSPERSON P G	
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		FILE LOCATION

Manufacturing Cell #2

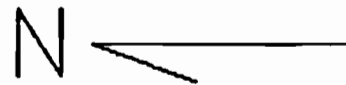


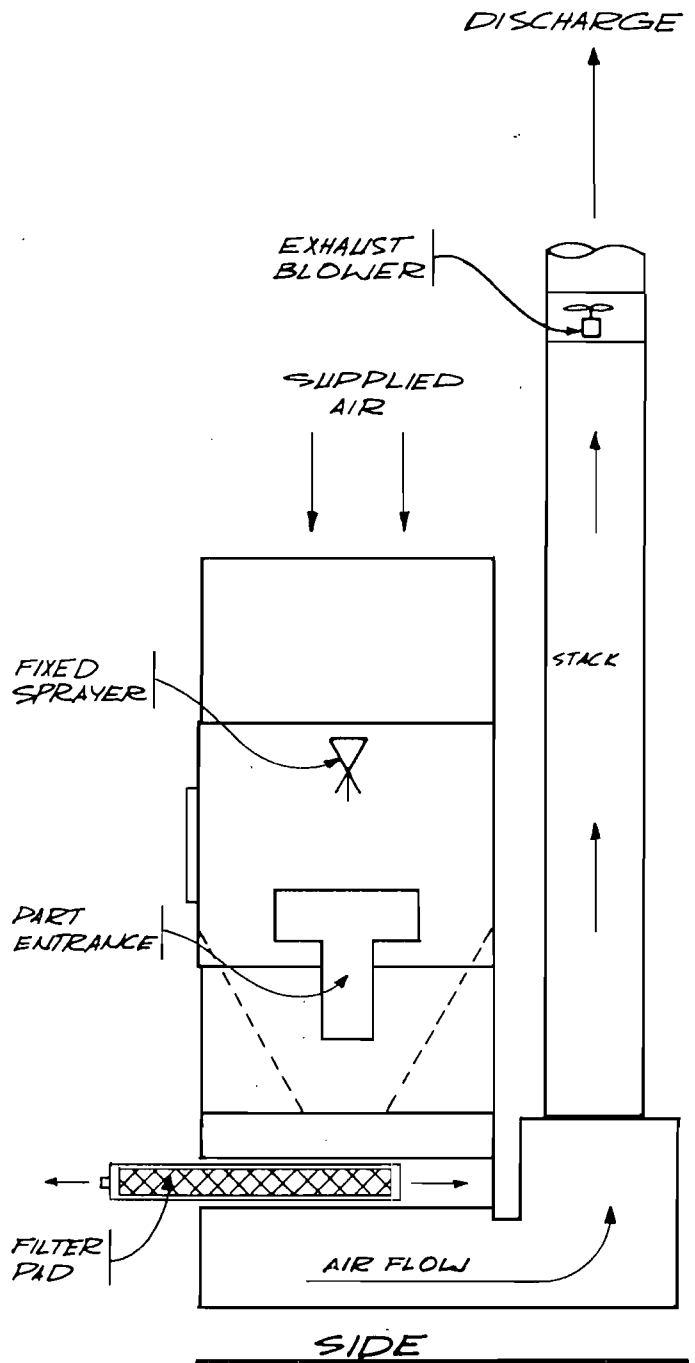
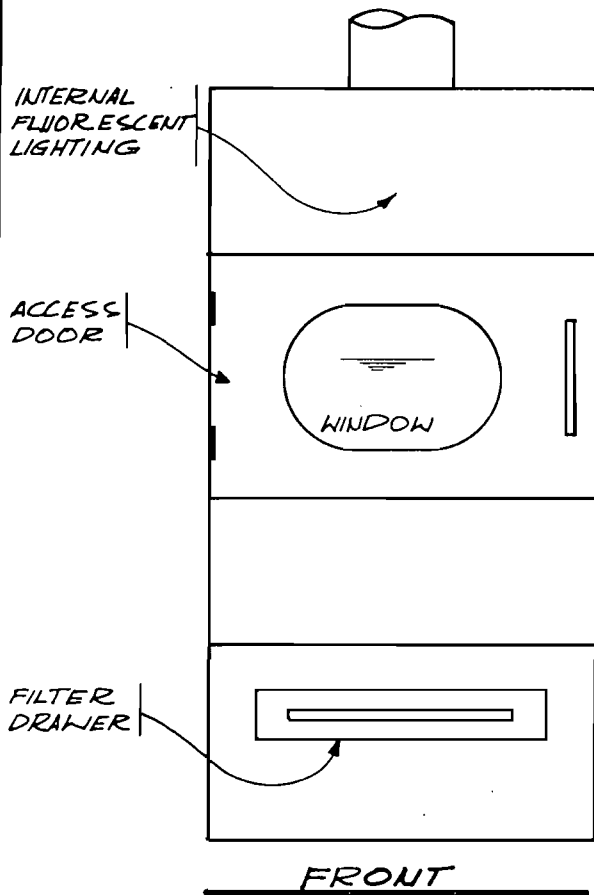
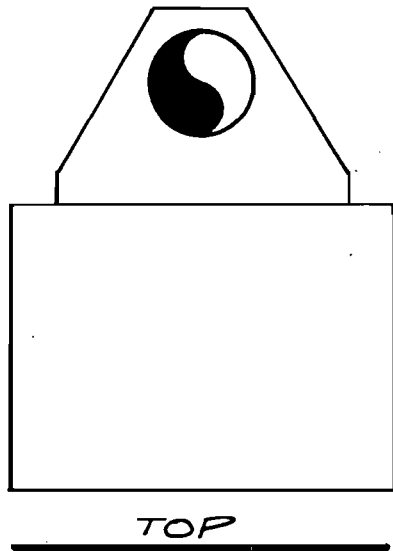
DISCHARGE POINT IDENTIFICATION



△ HEATER TUBE EXHAUST

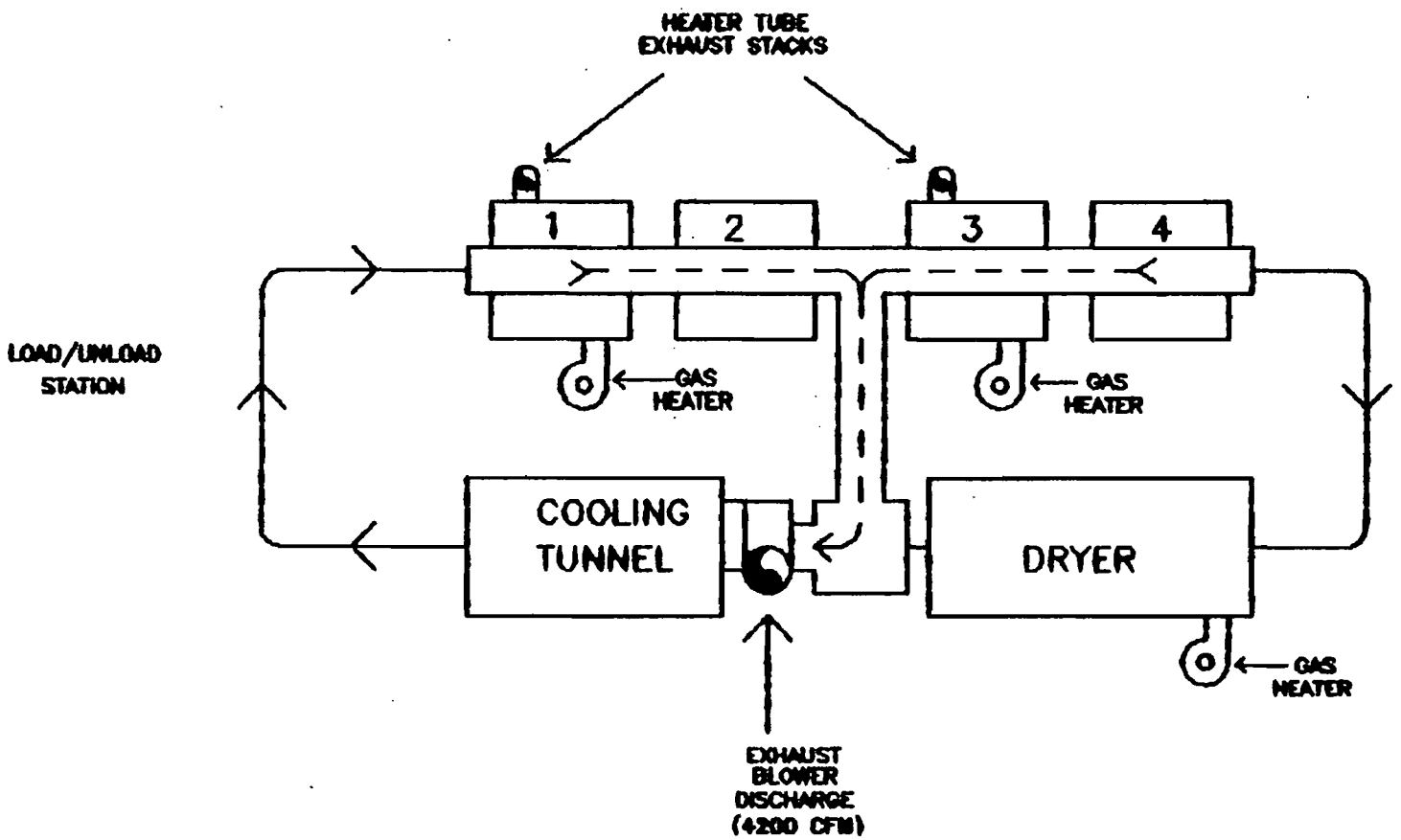
● DISCHARGE POINT





Russell Engineering Associates, Inc.	
FPE SPRAY BOOTH	
DATE APRIL 1990	DRAFTSPERSON PG
SCALE None	SHEET 1 OF 1

FOUR STAGE WASHER (W4)



Washer (W4)

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

Stack Height: 30 ft. Stack Diameter: 1.167 ft.
Gas Flow Rate: 4200 ACFM --- DSCFM Gas Exit Temperature: 100 °F.
Water Vapor Content: saturated % Velocity: 65.6 FPS

Spray booth (B1)

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

Stack Height: 30 ft. Stack Diameter: 1 ft.
Gas Flow Rate: 1350 ACFM --- DSCFM Gas Exit Temperature: ambient °F.
Water Vapor Content: ambient % Velocity: 28.7 FPS

Spray booth (B2)

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

Stack Height: 30 ft. Stack Diameter: 1 ft.
Gas Flow Rate: 1350 ACFM --- DSCFM Gas Exit Temperature: ambient °F.
Water Vapor Content: ambient % Velocity: 28.7 FPS

Exit Velocity Calculations

$$\text{Velocity} = \frac{\text{ft}^3/\text{sec}}{\text{pipe area}}$$

W4
 $\text{ft}^3/\text{sec} = 4200 \times 0.0167 = 70.14$

$$\text{Velocity} = \frac{70.14}{1.069} = 65.6 \text{ FPS}$$

B1
 $\text{ft}^3/\text{sec} = 1350 \times 0.0167 = 22.5$

$$\text{Velocity} = \frac{22.5}{0.785} = 28.7 \text{ FPS}$$

B2
 $\text{ft}^3/\text{sec} = 1350 \times 0.0167 = 22.5$

$$\text{Velocity} = \frac{22.5}{0.785} = 28.7 \text{ FPS}$$

Spray booth (B3)

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

Stack Height: 30 ft. Stack Diameter: 1 ft.
Gas Flow Rate: 1350 ACFM --- DSCFM Gas Exit Temperature: ambient °F.
Water Vapor Content: ambient % Velocity: 28.7 FPS

Oven (01)

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

Stack Height: 30 ft. Stack Diameter: 1 ft.
Gas Flow Rate: 1500 ACFM --- DSCFM Gas Exit Temperature: 150 °F.
Water Vapor Content: ambient % Velocity: 31.9 FPS

Oven (02)

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

Stack Height: 30 ft. Stack Diameter: 0.5 ft.
Gas Flow Rate: 450 ACFM --- DSCFM Gas Exit Temperature: 200 °F.
Water Vapor Content: ambient % Velocity: 38.3 FPS

Exit Velocity Calculations

$$\text{Velocity} = \frac{\text{ft}^3/\text{sec}}{\text{pipe area}}$$

B3

$$\text{ft}^3/\text{sec} = 1350 \times 0.0167 = 22.5$$

$$\text{Velocity} = \frac{22.5}{0.785} = 28.7 \text{ FPS}$$

01

$$\text{ft}^3/\text{sec} = 1500 \times 0.0167 = 25.05$$

$$\text{Velocity} = \frac{25.05}{0.785} = 31.9 \text{ FPS}$$

02

$$\text{ft}^3/\text{sec} = 450 \times 0.0167 = 7.52$$

$$\text{Velocity} = \frac{7.52}{0.1963} = 38.3 \text{ FPS}$$

MATERIAL SAFETY DATA SHEET

Date of Prep.
2/05/90

For Coatings, Resins and Related Materials

This MSDS Complies with 29 CFR 1910.1200 (The Hazard Communication Standard)

SECTION I

Manufacturer's Name BEE CHEMICAL COMPANY SAFETY/ENVIRONMENTAL DEPARTMENT
 Street Address 2700 E. 170th STREET City, State and Zip LANSING, ILLINOIS 60438
 Emergency Telephone No. (312) 474-7000 Customer Code #:
 Product Class DECORATIVE COATING Manufacturer's Code Id. 91142 Q106
 Appearance: DK SILVER VOC - 5.03 lbs/gal *735 134*

SECTION II - INGREDIENTS

Hazardous Ingredients	Percent By Wt	TLV PPM	PEL PPM	LEL	Vapor Pressure MM HG
ISOPROPANOL CAS# 67-63-0	3+/-1	400.00	400.00	2.00	33.00
ISOBUTYL ACETATE CAS# 110-19-0	18+/-2	150.00	150.00	1.40	12.50
TOLUENE * CAS# 108-88-3	9+/-1	100.00	100.00	1.30	22.00
XYLENE * CAS# 1330-20-7	2+/-1	100.00	100.00	1.00	6.00
METHYL ETHYL KETONE * CAS# 78-93-3	10+/-1	200.00	200.00	2.00	70.00
CYCLOHEXANONE CAS# 108-94-1	5+/-1	25.00	25.00	1.10	2.00
PETROLEUM DISTILATE CAS# 8030-30-6	15+/-2	100.00	400.00	1.20	38.00
NAPHTHOL SPIRITS CAS# 8052-41-3	3+/-1	100.00	500.00	1.00	12.00

* This chemical subject to the reporting requirements of Section 313, SARA Title III

Manufacturer's Code ID. 91142 Q106

SECTION III - PHYSICAL DATA

Boiling Range 175 - 312 F Vapor Density (X)Heavier ()Lighter, Than Air
Evaporation Rate ()Faster Percent Volatile Weight Per.
(X)Slower, Than Ether by Volume 74+/-4 Gallon 7.9
26

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

DOT Category FLAMMABLE LIQUID Flash Point 23 F TCC LEL* See Section II
DOT Shipping Name: PAINT

EXTINGUISHING MEDIA Use carbon dioxide or dry chemical extinguishers for small fires. Use foam for large fires.

SPECIAL FIRE FIGHTING PROCEDURE Cool closed containers with water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS Closed containers may build explosive pressure from heat. Vapors are heavier than air and may travel considerable distances to a source of ignition such as a spark, pilot light, cigarette or unprotected electrical device. Not sensitive to explosion upon mechanical impact.

HAZARDOUS DECOMPOSITION PRODUCTS Carbon dioxide, carbon monoxide, possibly hydrogen chloride.

Manufacturer's Code ID. 91142 Q106

SECTION V - HEALTH HAZARDS DATA

PERMISSIBLE LIMITS See Section II - Hazardous Ingredients

POTENTIAL EFFECTS OF OVEREXPOSURE

EYE CONTACT

CAN CAUSE EYE IRRITATION FROM VAPORS AND/OR LIQUID CONTACT, OBTAIN MEDICAL ATTENTION IMMEDIATELY

INHALATION

EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL & RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS, & ASPHYXIATION
INHALATION OF PROPYLENE OXIDE PRESENTS A POSSIBLE CANCER RISK BASED ON LABORATORY ANIMAL TEST DATA

CHRONIC EFFECTS: REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE

SKIN CONTACT

CONTACT CAN CAUSE SKIN IRRITATION
MATERIAL MAY BE ABSORBED THROUGH THE SKIN IN TOXIC AMOUNTS
REPEATED OR PROLONGED CONTACT MAY CAUSE DEFATTING AND DERMATITIS

INGESTION

CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITTING, AND DIARRHEA
ASPIRATION OF MATERIAL INTO LUNGS MAY CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL

OTHER

ROUTES OF ENTRY: Skin contact, eye contact, inhalation, ingestion.

Toxicity testing on the product has not been conducted. See SECTION XI for further toxicity information on the components of the product.

SECTION VI - EMERGENCY AND FIRST AID PROCEDURES

EYES: Flush immediately with large amounts of water for at least 15 minutes.
Obtain immediate medical attention.

SKIN: Wash thoroughly with soap and water. Remove contaminated clothing.
CONSULT PHYSICIAN IF IRRITATION PERSISTS

INGESTION: Thoroughly wash mouth with water.
Give two glasses of water if conscious.
DO NOT INDUCE VOMITING

INHALATION: Remove to fresh air. If breathing has stopped, give artificial
respiration. Obtain immediate medical attention.

SECTION VII - REACTIVITY DATA

STABILITY
STABLE

INCOMPATIBILITY (Materials to Avoid)
OXIDIZERS
BASES
ACIDS

HAZARDOUS POLYMERIZATION
WILL NOT OCCUR

EXPLOSION HAZARD
VAPORS MAY TRAVEL ALONG GROUND OR BE MOVED BY VENTILATION & IGNITED BY HEAT, PILOT
LIGHTS, FLAMES & IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT
CONTACT WITH HEAT MAY RESULT IN PRESSURE RELEASE FROM CLOSED CONTAINERS
AVOID STATIC CHARGE, GROUND AND BOND EQUIPMENT AGAINST STATIC BUILDUP WHEN POURING,
DISPENSING AND MIXING.
HIGH TEMPERATURES MAY CAUSE FIRE AND/OR EXPLOSION

CONDITIONS TO AVOID
HIGH TEMPERATURE
IGNITION SOURCES

Caution - Aluminum is present, could react with water to form H₂ gas.

SECTION VIII - SPILL OR LEAK PROCEDURES

RESPONSE TO SMALL SPILLS: Stop discharge and contain spill. Recover with explosion proof pumping equipment, commercial sorbents, vermiculite or other inert absorbent materials. Place in appropriate container(s) for further handling.

RESPONSE TO LARGE SPILLS: Stop discharge and contain spill or contaminated material using dike, barrier, or other means. Recover with vacuum truck, sorbents or other inert absorbent materials. Place in appropriate container(s) for further handling.

HAZARDS TO BE AVOIDED: Flammable liquid -- avoid sources of ignition. Do not flush to stream, other bodies of water or sewer. Avoid contact with skin or clothing.

Other hazards see Section Nos. IV and V. Eliminate all ignition sources (FLARES, FLAMES including PILOT LIGHTS, ELECTRICAL SPARKS, and STATIC CHARGE BUILDUP).

Evacuate area. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Wear appropriate protective

equipment. Stop spill at source. Dike area to prevent spreading. Liquid may be taken up on absorbent material and shoveled into containers for disposal.

Avoid breathing vapors.

DISPOSAL METHODS: (1) Recycle, if feasible.

(2) Incinerate at authorized facility.

(3) Treatment at Industrial or Liquid waste treatment facility.

(4) Landfill after solidification in a facility authorized to receive waste in accordance with Federal, State, and Local regulations.

NOTE: THIS MATERIAL IF BEING DISCARDED WOULD BE CLASSIFIED A HAZARDOUS IGNITABLE WASTE AND SHOULD BE DISPOSED IN ACCORDANCE WITH LOCAL, STATE, & FEDERAL REGULATIONS.

Caution - When incinerated HCL is present as decomposition product.

SECTION IX - SPECIAL PROTECTION INFORMATON

VENTILATION

Air pollution controls may be required. Check local and state regulations.

VENTILATE AREA

PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW PEL TLV(S)

RESPIRATORY PROTECTION

NONE NEEDED IF ADEQUATE VENTILATION IS PROVIDED OTHERWISE A NIOSH APPROVED RESPIRATOR WITH ORGANIC VAPOR CARTRIGES IS RECOMMENDED WITHIN RESPIRATOR TYPE LIMITATIONS.

RESPIRATOR USE MUST COMPLY WITH OSHA 1910.134 REGULATIONS. SINCE CONTAMINANT LEVELS WILL VARY DEPENDENT UPON OPERATION, INDUSTRIAL HYGIENE CONSULTATION IS RECOMMENDED.

EYE PROTECTION

USE CHEMICAL GOGGLES

GLOVES

USE CHEMICAL RESISTANT GLOVES

CLOTHES

TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WEAR PROTECTIVE WORK CLOTHES

ADDITIONAL INFORMATION

HAVE EYE WASHES AND SAFETY SHOWERS READILY ACCESSIBLE

WASH CONTAMINATED CLOTHING BEFORE REUSE

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Keep away from heat, sparks and flame. Use with adequate ventilation. Keep containers closed. Ground and bond equipment against static buildup when pouring, dispensing, and mixing.

OTHER PRECAUTIONS Avoid contact with skin or eyes. Avoid prolonged or repeated breathing of vapors. Do NOT take internally.

Overexposure to components has apparently been found to cause the following effects in laboratory animals:

LIVER ABNORMALITIES

KIDNEY DAMAGE

EYE DAMAGE

LUNG DAMAGE

SPLEEN DAMAGE

BRAIN DAMAGE

ANEMIA

Overexposure to components has been suggested as a cause of the following effects in humans:

LIVER ABNORMALITIES

KIDNEY DAMAGE

ANEMIA

CARDIAC ABNORMALITY

Persons with pre-existing skin disorders may be more susceptible to the effects of the product.

The information contained herein is to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws or regulations.

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MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

MANUFACTURER'S NAME
ASAHI SOLVENT MFG. Co., LTD.

ADDRESS
30 IKESHITA ANOCHO
TOYOAKE, JAPAN

EMERGENCY TELEPHONE NUMBER
0562-92-1101 (JAPAN)

DATE OF PREPARATION
JANUARY 26, 1990

INFORMATION TELEPHONE NUMBER
0562-92-1101 (JAPAN)

SECTION I PRODUCT IDENTIFICATION

CHEMICAL NAME : N/A
TRADE NAME : UNIVERSAL ZAP BASE SP
CHEMICAL FAMILY : EPOXY COATING

SECTION II INGREDIENTS

INGREDIENTS	CAS No.	PERCENT (WT)	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV (TWA)	PEL (TWA)	
EPOXY RESIN	25068-38-6	12.0	not est.	not est.	N/A
POLYVINYL BUTYRAL RESIN	70775-96-1	5.2	not est.	not est.	N/A
CHROMIUM(III) PHOSPHATE	7789-04-0	0.5	0.5mg(Cr)/m ³	0.5mg(Cr)/m ³	N/A
ACETONE	67-64-1	3.5	750 ppm	1000 ppm	180 mmHg
METHYL ETHYL KETONE	78-93-3	13.0	200 ppm	200 ppm	71.2 mmHg
METHYL ISOBUTYL KETONE	108-10-1	7.4	50 ppm	100 ppm	15.5 mmHg
ISOPROPANOL	67-63-0	5.9	400 ppm	400 ppm	32.0 mmHg
n-BUTANOL	71-36-3	8.8	(c) 50 ppm	100 ppm	5.0 mmHg
2-ETHOXYETHYL ACETATE	111-15-9	9.6	5 ppm	100 ppm	1.2 mmHg
TOLUENE	108-88-3	33.8	100 ppm	200 ppm	22.0 mmHg
DEMINERALIZED WATER	7732-18-5	0.3	not est.	not est.	17.5 mmHg

(c) = ceiling limit

CARCINOGENIC ACCORDING TO CRITERIA ESTABLISHED BY : * = NTP + = IARC @ = OSHA

SECTION III PHYSICAL DATA

BOILING RANGE: 131~320°F % VOLATILE VOLUME: 86.9% WT/GAL: 7.47
 VAPOR DENSITY: Heavier than air EVAPORATION RATE: Slower than ether
 APPEARANCE AND ODOR: Limpid liquid Smells of aroma.

SECTION IV FIRE EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA CLASS 1B
 FLASH POINT -4°F
 LEL 1.2%
 DOT. Flammable liquid

EXTINGUISH MEDIA:

FOAM ALCOHOL CO. DRY CHEMICAL WATER FOG FOAM OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers may explode when exposed to extreme heat.

SPECIAL FIRE FIGHTING PROCEDURES:

Wear self-contained breathing apparatus. Water may be used to cool closed containers to prevent pressure build-up and possible auto ignition or explosion when exposed to extreme heat.

SECTION V HEALTH HAZARD DATA

SIGNS AND SYMPTOMS OF EXPOSURE:

Eye watering, headaches, nausea, dizziness and loss of coordination.

EFFECTS OF OVEREXPOSURE:

INGESTION: Harmful or fatal if swallowed.

INHALATION: Vapor and spray mist are harmful if inhaled. They irritate eyes, nose and throat. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and damage for the brain and nervous system.

SKIN EXPOSURE: May cause moderate skin irritation. May be absorbed through the skin.

EYE EXPOSURE: Causes eye irritation, reddening and blurred vision.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE:

Prolonged or repeated contact may cause an allergic skin reaction.

PRIMARY ROUTE(S) OF ENTRY

DERMAL INHALATION INGESTION

EMERGENCY AND FIRST AID PROCEDURES:

INGESTION: Don't induce vomiting. Get medical attention immediately

INHALATION: Remove to fresh air. Apply artificial respiration and other supportive measures are required.

SKIN EXPOSURE: Remove promptly by wiping followed by washing by waterless hand cleaner and soap and water.

EYE EXPOSURE: Flush eyes thoroughly with plenty of water at least 30 minutes.

If any of the following 'occur' during or following use of this product, contact a poison control center, emergency room or physician immediately:
 Breathing difficulties, Persistent skin or eye irritation.

SECTION VI REACTIVITY DATA

STABILITY: STABLE UNSTABLE
 HAZAROUS POLYMERIZATION: WILL NOT OCCUR MAY OCCUR
 HAZAROUS DECOMPOSITION PRODUCTS:

May produce hazardous products including carbon monoxide and carbon dioxide when extreme heat.

CONDITIONS TO AVOID

Don't expose to heat or ignition sources.

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid contact with strong alkalis, strong mineral acids or strong oxidizing agents.

SECTION VII SPILL OR LEAK PROCEDURES

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Provide maximum ventilation. Only personal equipped with proper respiratory and skin and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sawdust, vermiculite, or other absorbent material and place into containers for disposal.

WASTE DISPOSAL METHOD:

Waste material must be disposed of in accordance with federal, state and local environmental control regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

SECTION VIII SAFE HANDLING USE INFORMATION

RESPIRATORY PROTECTION:

Overexposure to vapors may be prevented by ensuring ventilation controls, vapor exhaust fresh air entry. NIOSH/MSHA approved paint spray (TC-23C-) or air supplied (TC-19C-) respirators may also reduce exposure in all cases. Read respirator manufacturer's instructions and literature carefully to determine the type.

VENTILATION REQUIREMENT:

Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in SECTION II below the lowest suggested exposure limits and the LEL in SECTION IV below the stated limits, and to remove decomposition products during welding or flame cutting on surfaces coated with this product.

SKIN PROTECTION:

Wear protective clothing including apron and gloves constructed of nitrile rubber or neoprene rubber.

EYE PROTECTION:

Wear chemical-type splash goggles or full face shield.

HYGIENIC PRACTICES:

Clean or discard contamination clothing and shoes.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Don't store above 120°F. Store large quantities in buildings designed and protected for storage of NFPA class 1B flammable liquid.

OTHER PRECAUTION:

To avoid static charge build up, grounding and minimizing free distance is recommended. (Within a few inches)

ABBREVIATIONS:

CERT. = chemical O. K. on TSCA inventory; CAS No. not available
not est. = not established
N/A = not applicable
U/I = unknown information

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MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS



MANUFACTURER'S NAME
ASAHI SOLVENT MFG. Co., LTD.

ADDRESS
30 IKESHITA ANOCHO
TOYOAKE, JAPAN

EMERGENCY TELEPHONE NUMBER
0562-92-1101 (JAPAN)

DATE OF PREPARATION
JANUARY 24, 1990

INFORMATION TELEPHONE NUMBER
0562-92-1101 (JAPAN)

SECTION I PRODUCT IDENTIFICATION

CHEMICAL NAME : N/A
TRADE NAME : SAGLAN 99 CLEAR AUV-T
CHEMICAL FAMILY : OIL-FREE POLYESTER COATING

SECTION II INGREDIENTS

INGREDIENTS	CAS No	PERCENT (WT)	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			T/V (TWA)	PEL (TWA)	
OIL-FREE POLYESTER RESIN	68957-93-7	30.0	not est.	not est.	N/A
ISOBUTYLATED MELAMINE RESIN	68002-21-1	8.3	not est.	not est.	N/A
EPOXY RESIN	25068-38-6	4.2	not est.	not est.	N/A
METHANOL	67-58-1	2.1	200 ppm	200 ppm	95.0 mmHg
ISOBUTANOL	78-83-1	3.3	50 ppm	100 ppm	9.0 mmHg
2-BUTOXYETHANOL	111-78-2	7.8	25 ppm	50 ppm	0.8 mmHg
2-ETHOXYETHANOL	110-80-5	2.8	5 ppm	200 ppm	3.8 mmHg
XYLENE	1330-20-7	21.7	100 ppm	100 ppm	10.0 mmHg
SOLVENT NAPHTHA LIGHT AROMA.	64742-95-6	18.4	not est.	not est.	4.0 mmHg
ADDITIVE 1	70321-88-7	0.8	not est.	not est.	N/A
ADDITIVE 2	28780-85-0	0.3	not est.	not est.	N/A
ADDITIVE 3	41558-28-7	0.2	not est.	not est.	N/A
	82919-37-7	0.1	not est.	not est.	N/A

POSSIBLE HAZARDOUS MONOMER(S)
FORMALDEHYDE * + 50-00-0 <0.46 (c) 0.3 ppm 1 ppm U/I

(c) = ceiling limit

CARCINOGENIC ACCORDING TO CRITERIA ESTABLISHED BY : * = NTP + = IARC @ = OSHA

SECTION III PHYSICAL DATA *This is 96*

BOILING RANGE: 149-340 F % VOLATILE VOLUME: 82.1% WT/GAL: 8.43
VAPOR DENSITY: Heavier than air EVAPORATION RATE: Slower than ether
APPEARANCE AND ODOR: Limpid liquid Smells of aroma.

SECTION IV FIRE EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA CLASS 1B
 FLASH POINT 52°F
 LEL 1.0%
 DOT Flammable liquid

EXTINGUISH MEDIA:

FOAM ALCOHOL CO. DRY CHEMICAL WATER FOG FOAM OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers may explode when exposed to extreme heat.

SPECIAL FIRE FIGHTING PROCEDURES:

Wear self-contained breathing apparatus. Water may be used to cool closed containers to prevent pressure build-up and possible auto ignition or explosion when exposed to extreme heat.

SECTION V HEALTH HAZARD DATA

SIGNS AND SYMPTOMS OF EXPOSURE:

Eye watering, headaches, nausea, dizziness and loss of coordination.

EFFECTS OF OVEREXPOSURE:

INGESTION: Harmful or fatal if swallowed.

INHALATION: Vapor and spray mist are harmful if inhaled. They irritate eyes, nose and throat. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and damage for the brain and nervous system.

SKIN EXPOSURE: May cause moderate skin irritation. May be absorbed through the skin.

EYE EXPOSURE: Causes eye irritation, reddening and blurred vision.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE:

Prolonged or repeated contact may cause an allergic skin reaction.

PRIMARY ROUTE(S) OF ENTRY:

DERMAL INHALATION INGESTION

EMERGENCY AND FIRST AID PROCEDURES:

INGESTION: Don't induce vomiting. Get medical attention immediately.

INHALATION: Remove to fresh air. Apply artificial respiration and other supportive measures are required.

SKIN EXPOSURE: Remove promptly by wiping followed by washing by waterless hand cleaner and soap and water.

EYE EXPOSURE: Flush eyes thoroughly with plenty of water at least 30 minutes.

If any of the following occur during or following use of this product, contact a poison control center, emergency room or physician immediately:
 Breathing difficulties, Persistent skin or eye irritation.

SECTION VI REACTIVITY DATA

STABILITY: STABLE UNSTABLE
 HAZAROUS POLYMERIZATION: WILL NOT OCCUR MAY OCCUR

HAZAROUS DECOMPOSITION PRODUCTS:

May produce hazardous products including carbon monoxide and low molecular weight organic monomers when extreme heat.

CONDITIONS TO AVOID

Don't expose to heat or ignition sources.

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid contact with strong alkalis, strong mineral acids or strong oxidizing agents.

SECTION VII SPILL OR LEAK PROCEDURES

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Provide maximum ventilation. Only personal equipment with proper respiratory and skin and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sawdust, vermiculite, or other absorbent material and place into containers for disposal.

WASTE DISPOSAL METHOD:

Waste material must be disposed of in accordance with federal, state and local environmental control regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

SECTION VIII SAFE HANDLING USE INFORMATION

RESPIRATORY PROTECTION:

Overexposure to vapors may be prevented by ensuring ventilation controls, vapor exhaust fresh air entry. NIOSH/MSHA approved paint spray (TC-23C-) or air supplied (TC-19C-) respirators may also reduce exposure in all cases. Read respirator manufacturer's instructions and literature carefully to determine the type.

VENTILATION REQUIREMENT:

Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in SECTION II below the lowest suggested exposure limits and the LEL in SECTION IV below the stated limits, and to remove decomposition products during welding or flame cutting on surfaces coated with this product.

SKIN PROTECTION:

Wear protective clothing including apron and gloves constructed of nitrile rubber or neoprene rubber.

EYE PROTECTION:

Wear chemical-type splash goggles or full face shield.

HYGIENIC PRACTICES:

Clean or discard contamination clothing and shoes.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Don't store above 120°F. Store large quantities in buildings designed and protected for storage of NFPA class 1B flammable liquid.

OTHER PRECAUTION:

To avoid static charge build up, grounding and minimizing free distance is recommended. (Within a few inches)

ABBREVIATIONS:

CERT. = chemical O.K. on TSCA inventory; CAS # not available
not est. = not established
N/A = not applicable
U/I = unknown information

BEST AVAILABLE COPY

MATERIAL SAFETY DATA SHEET

Date of Prep.
6/25/90

For Coatings, Resins and Related Materials

This MSDS Complies with 29 CFR 1910.1200 (The Hazard Communication Standard)

SECTION I

Manufacturer's Name MORTON INTERNATIONAL SAFETY/ENVIRONMENTAL DEPARTMENT
Street Address 2700 E. 170th STREET City, State and Zip LANSING, ILLINOIS 60438
Emergency Telephone No. (708) 868-7402 Customer Code #:
Product Class THINNER Manufacturer's Code Id. T335
Appearance: VOC = 7.00 lbs/gal

SECTION II - INGREDIENTS

Hazardous Ingredients	Percent By Wt	TLV PPM	PEL PPM	LEL	Vapor Pressure MM HG
1-METHOXY-2-PROPANOL ACETATE CAS# 108-65-6	10+/-1	100.00	-----	1.30	3.70
TOLUENE * CAS# 108-88-3	45+/-3	100.00	100.00	1.00	24.00
METHYL ETHYL KETONE * CAS# 78-93-3	45+/-3	200.00	200.00	2.00	70.00

* This chemical subject to the reporting requirements of Section 313, SARA Title III
WI

JUN 25 '90 12:49 BEE CHEMICAL LANSING IL

P.3/7

Manufacturer's Code ID. T335

SECTION III - PHYSICAL DATA

Boiling Range 175 - 284 F Vapor Density (X)Heavier ()Lighter, Than Air

Evaporation Rate ()Faster Percent Volatile Weight Per
(X)Slower, Than Ether by Volume 100+/-4 Gallon 7.0
-----SECTION IV - FIRE AND EXPLOSION HAZARD DATA
-----DOT Category FLAMMABLE LIQUID Flash Point 25 F TCC LEL* See Section II
DOT Shipping Name: PAINT RELATED MATERIALEXTINGUISHING MEDIA Use carbon dioxide or dry chemical extinguishers for small
fires. Use foam for large fires.

SPECIAL FIRE FIGHTING PROCEDURE Cool closed containers with water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS Closed containers may build explosive pressure
from heat. Vapors are heavier than air and may
travel considerable distances to a source of
ignition such as a spark, pilot light,
cigarette or unprotected electrical device.
Not sensitive to explosion upon mechanical impact.HAZARDOUS DECOMPOSITION PRODUCTS Carbon dioxide, carbon monoxide, possibly
hydrogen chloride.

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P.4/7

Manufacturer's Code ID. T335

SECTION V - HEALTH HAZARDS DATA

PERMISSIBLE LIMITS See Section II - Hazardous Ingredients

POTENTIAL EFFECTS OF OVEREXPOSURE

EYE CONTACT

CAN CAUSE EYE IRRITATION FROM VAPORS AND/OR LIQUID CONTACT, OBTAIN MEDICAL ATTENTION IMMEDIATELY

INHALATION

EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL & RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS, & ASPHYXIATION

SKIN CONTACT

REPEATED OR PROLONGED CONTACT CAUSES IRRITATION
REPEATED OR PROLONGED CONTACT MAY CAUSE DEFATTING AND DERMATITIS

INGESTION

CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITTING, AND DIARRHEA
ASPIRATION OF MATERIAL INTO LUNGS MAY CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL

OTHER

ROUTES OF ENTRY: Skin contact, eye contact, inhalation, ingestion.

Toxicity testing on the product has not been conducted. See SECTION XI for further toxicity information on the components of the product.

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P.5/7

Manufacturer's Code ID. T335

SECTION VI - EMERGENCY AND FIRST AID PROCEDURES

EYES: Flush immediately with large amounts of water for at least 15 minutes.
Obtain immediate medical attention.

SKIN: Wash thoroughly with soap and water. Remove contaminated clothing.
CONSULT PHYSICIAN IF IRRITATION PERSISTS

INGESTION: Thoroughly wash mouth with water.
Give two glasses of water if conscious.
DO NOT INDUCE VOMITING

INHALATION: Remove to fresh air. If breathing has stopped, give artificial
respiration. Obtain immediate medical attention.

SECTION VII - REACTIVITY DATA

STABILITY
STABLE

INCOMPATIBILITY (Materials to Avoid)
OXIDIZERS

HAZARDOUS POLYMERIZATION
WILL NOT OCCUR

EXPLOSION HAZARD
VAPORS MAY TRAVEL ALONG GROUND OR BE MOVED BY VENTILATION & IGNITED BY HEAT. PILOT
LIGHTS, FLAMES & IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT
CONTACT WITH HEAT MAY RESULT IN PRESSURE RELEASE FROM CLOSED CONTAINERS
AVOID STATIC CHARGE, GROUND AND BOND EQUIPMENT AGAINST STATIC BUILDUP WHEN POURING,
DISPENSING AND MIXING.
HIGH TEMPERATURES MAY CAUSE FIRE AND/OR EXPLOSION

CONDITIONS TO AVOID
HIGH TEMPERATURE
IGNITION SOURCES

JUN 25 '90 12:50 BEE CHEMICAL LANSING IL

P.6/7

Manufacturer's Code ID. T335

SECTION VIII - SPILL OR LEAK PROCEDURES

RESPONSE TO SMALL SPILLS: Stop discharge and contain spill. Recover with explosion proof pumping equipment, commercial sorbents, vermiculite or other inert absorbent materials. Place in appropriate container(s) for further handling.

RESPONSE TO LARGE SPILLS: Stop discharge and contain spill or contaminated material using dike, barrier, or other means. Recover with vacuum truck, sorbents or other inert absorbent materials. Place in appropriate container(s) for further handling.

HAZARDS TO BE AVOIDED: Flammable liquid -- avoid sources of ignition. Do not flush to stream, other bodies of water or sewer. Avoid contact with skin or clothing.

Other hazards see Section Nos. IV and V. Eliminate all ignition sources (FLARES, FLAMES including PILOT LIGHTS, ELECTRICAL SPARKS, and STATIC CHARGE BUILDUP).

Evacuate area. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Wear appropriate protective equipment. Stop spill at source. Dike area to prevent spreading. Liquid may be taken up on absorbent material and shoveled into containers for disposal.

Avoid breathing vapors.

DISPOSAL METHODS: (1) Recycle, if feasible.
(2) Incinerate at authorized facility.
(3) Treatment at Industrial or Liquid waste treatment facility.
(4) Landfill after solidification in a facility authorized to receive waste in accordance with Federal, State, and Local regulations.

NOTE: THIS MATERIAL IF BEING DISCARDED WOULD BE CLASSIFIED A HAZARDOUS IGNITABLE WASTE AND SHOULD BE DISPOSED IN ACCORDANCE WITH LOCAL, STATE, & FEDERAL REGULATIONS.

SECTION IX - SPECIAL PROTECTION INFORMATON

VENTILATION

Air pollution controls may be required. Check local and state regulations.

PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW PEL TLV(S)

RESPIRATORY PROTECTION

NONE NEEDED IF ADEQUATE VENTILATION IS PROVIDED OTHERWISE A NIOSH APPROVED RESPIRATOR WITH ORGANIC VAPOR CARTRIGES IS RECOMMENDED WITHIN RESPIRATOR TYPE LIMITATIONS.

RESPIRATOR USE MUST COMPLY WITH OSHA 1910.134 REGULATIONS. SINCE CONTAMINANT LEVELS WILL VARY DEPENDENT UPON OPERATION, INDUSTRIAL HYGIENE CONSULTATION IS RECOMMENDED.

EYE PROTECTION

USE CHEMICAL GOGGLES

GLOVES

USE CHEMICAL RESISTANT GLOVES

CLOTHES

TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WEAR PROTECTIVE WORK CLOTHES

ADDITIONAL INFORMATION

HAVE EYE WASHES AND SAFETY SHOWERS READILY ACCESSIBLE

WASH CONTAMINATED CLOTHING BEFORE REUSE

JUN 25 '90 12:51 BEE CHEMICAL LANSING IL

P.7/7

Manufacturer's Code ID. T335

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Keep away from heat, sparks and flame. Use with adequate ventilation. Keep containers closed. Ground and bond equipment against static buildup when pouring, dispensing, and mixing.

OTHER PRECAUTIONS Avoid contact with skin or eyes. Avoid prolonged or repeated breathing of vapors. Do NOT take internally.

Overexposure to components has apparently been found to cause the following effects in laboratory animals:

LIVER ABNORMALITIES

KIDNEY DAMAGE

LUNG DAMAGE

SPLEEN DAMAGE

BRAIN DAMAGE

Overexposure to components has been suggested as a cause of the following effects in humans:

LIVER ABNORMALITIES

Persons with pre-existing skin disorders may be more susceptible to the effects of the product.

The information contained herein is to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws or regulations.

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MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

MANUFACTURER'S NAME
ASAHI SOLVENT MFG. Co., LTD.

ADDRESS
30 IKESHITA ANOCHO
TOYOAKE, JAPAN

EMERGENCY TELEPHONE NUMBER
0562-92-1101 (JAPAN)

DATE OF PREPARATION
JANUARY 26, 1990

INFORMATION TELEPHONE NUMBER
0562-92-1101 (JAPAN)

SECTION I PRODUCT IDENTIFICATION

CHEMICAL NAME : N/A
TRADE NAME : ZAP ELECTROSTATIC THINNER W
CHEMICAL FAMILY : ORGANIC SOLVENTS

SECTION II INGREDIENTS

INGREDIENTS	CAS No	PERCENT (WT)	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV (TWA)	PEL (TWA)	
n-BUTANOL	71-36-3	10.0	(c) 50 ppm	100 ppm	5.0 mmHg
3-METYL 3-METHOXYBUTANOL	66639-66-3	10.0	not est.	not est.	0.7 mmHg
2-ETHOXYETHY ACETATE	111-15-9	20.0	5 ppm	100 ppm	1.2 mmHg
SOLVENT NAPHTHA LIGHT AROM.	64742-95-6	60.0	not est.	not est.	4.9 mmHg

CARCINOGENIC ACCORDING TO CRITERIA ESTABLISHED BY : *=NTP +=IARC @=OSHA

SECTION III PHYSICAL DATA

BOILING RANGE: 230~338°F % VOLATILE VOLUME: 100 % WT/GAL: 7.40
VAPOR DENSITY: Heavier than air EVAPORATION RATE: Slower than ether
APPEARANCE AND ODOR: Limpid liquid Smells of aroma.

SECTION IV FIRE EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA CLASS 1B
 FLASH POINT 99° F
 LEL 1.4%
 DOT Flammable liquid

EXTINGUISH MEDIA:

FOAM ALCOHOL CO. DRY CHEMICAL WATER FOG FOAM OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers may explode when exposed to extreme heat.

SPECIAL FIRE FIGHTING PROCEDURES:

Wear self-contained breathing apparatus. Water may be used to cool closed containers to prevent pressure build-up and possible auto ignition or explosion when exposed to extreme heat.

SECTION V HEALTH HAZARD DATA

SIGNS AND SYMPTOMS OF EXPOSURE:

Eye watering, headaches, nausea, dizziness and loss of coordination.

EFFECTS OF OVEREXPOSURE:

INGESTION: Harmful or fatal if swallowed.

INHALATION: Vapor and spray mist are harmful if inhaled. They irritate eyes, nose and throat. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and damage for the brain and nervous system.

SKIN EXPOSURE: May cause moderate skin irritation. May be absorbed through the skin.

EYE EXPOSURE: Causes eye irritation, reddening and blurred vision.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE:

Prolonged or repeated contact may cause an allergic skin reaction.

PRIMARY ROUTE(S) OF ENTRY

DERMAL INHALATION INGESTION

EMERGENCY AND FIRST AID PROCEDURES:

INGESTION: Don't induce vomiting. Get medical attention immediately

INHALATION: Remove to fresh air. Apply artificial respiration and other supportive measures are required.

SKIN EXPOSURE: Remove promptly by wiping followed by washing by waterless hand cleaner and soap and water.

EYE EXPOSURE: Flush eyes thoroughly with plenty of water at least 30 minutes.

If any of the following 'occur' during or following use of this product, contact a poison control center, emergency room or physician immediately;
 Breathing difficulties, Persistent skin or eye irritation.

SECTION VI REACTIVITY DATA

STABILITY: STABLE UNSTABLE
 HAZARDOUS POLYMERIZATION: WILL NOT OCCUR MAY OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:

May produce hazardous products including carbon monoxide when extreme heat.

CONDITIONS TO AVOID

Don't expose to heat or ignition sources.

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid contact with strong alkalies, strong mineral acids or strong oxidizing agents.

SECTION VII SPILL OR LEAK PROCEDURES

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Provide maximum ventilation. Only personnel equipped with proper respiratory and skin and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sawdust, vermiculite, or other absorbent material and place into containers for disposal.

WASTE DISPOSAL METHOD:

Waste material must be disposed of in accordance with federal, state and local environmental control regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

SECTION VIII SAFE HANDLING USE INFORMATION

RESPIRATORY PROTECTION:

Overexposure to vapors may be prevented by ensuring ventilation controls, vapor exhaust fresh air entry. NIOSH/MSHA approved paint spray (TC-23C-) or air supplied (TC-19C-) respirators may also reduce exposure in all cases. Read respirator manufacturer's instructions and literature carefully to determine the type.

VENTILATION REQUIREMENT:

Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in SECTION II below the lowest suggested exposure limits and the LEL in SECTION IV below the stated limits, and to remove decomposition products during welding or flame cutting on surfaces coated with this product.

SKIN PROTECTION:

Wear protective clothing including apron and gloves constructed of nitrile rubber or neoprene rubber.

EYE PROTECTION:

Wear chemical-type splash goggles or full face shield.

HYGIENIC PRACTICES:

Clean or discard contamination clothing and shoes.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Don't store above 100°F. Store large quantities in buildings designed and protected for storage of NFPA class 1B flammable liquid.

OTHER PRECAUTION:

To avoid static charge build up, grounding and minimizing free distance is recommended. (Within a few inches)

ABBREVIATIONS:

CERT. = chemical O. K. on TSCA inventory; CAS # not available
not est. = not established
N/A = not applicable
U/I = unknown information

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MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

MANUFACTURER'S NAME
ASAHI SOLVENT MFG. Co., LTD.

ADDRESS
30 IKESHITA ANOCHO
TOYOAKE, JAPAN

EMERGENCY TELEPHONE NUMBER
0562-92-1101 (JAPAN)

DATE OF PREPARATION
JANUARY 26, 1990

INFORMATION TELEPHONE NUMBER
0562-92-1101 (JAPAN)

SECTION I PRODUCT IDENTIFICATION

CHEMICAL NAME : N/A
TRADE NAME : M5000TS THINNER
CHEMICAL FAMILY : ORGANIC SOLVENTS

SECTION II INGREDIENTS

INGREDIENTS	CAS No	PERCENT (WT)	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV (TWA)	PEL (TWA)	
METHYL ISOBUTYL KETONE	108-10-1	12.0	50 ppm	100 ppm	15.5 mmHg
2-BUTOXYETHANOL	111-76-2	5.0	25 ppm	50 ppm	0.6 mmHg
2-ETHOXYETHYL ACETATE	111-15-9	20.0	5 ppm	100 ppm	1.2 mmHg
XYLENE	1330-20-7	28.0	100 ppm	100 ppm	10.0 mmHg
SOLVENT NAPHTHA LIGHT AROM.	64742-95-6	35.0	not est.	not est.	4.9 mmHg

CARCINOGENIC ACCORDING TO CRITERIA ESTABLISHED BY : * = NTP + = IARC @ = OSHA

SECTION III PHYSICAL DATA

BOILING RANGE: 251-410°F % VOLATILE VOLUME: 100% WT/GAL: 7.40
 VAPOR DENSITY: Heavier than air EVAPORATION RATE: Slower than ether
 APPEARANCE AND ODOR: Limpid liquid Smells of aroma.

SECTION IV FIRE EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA CLASS 1B
 FLASH POINT 60°F
 LEL 1.1%
 DOT Flammable liquid

EXTINGUISH MEDIA:

FOAM ALCOHOL CO. DRY CHEMICAL WATER FOG FOAM OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Closed containers may explode when exposed to extreme heat.

SPECIAL FIRE FIGHTING PROCEDURES:

Wear self-contained breathing apparatus. Water may be used to cool closed containers to prevent pressure build-up and possible auto ignition or explosion when exposed to extreme heat.

SECTION V HEALTH HAZARD DATA

SIGNS AND SYMPTOMS OF EXPOSURE:

Eye watering, headaches, nausea, dizziness and loss of coordination.

EFFECTS OF OVEREXPOSURE:

INGESTION: Harmful or fatal if swallowed.

INHALATION: Vapor and spray mist are harmful if inhaled. They irritate eyes, nose and throat. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and damage for the brain and nervous system.

SKIN EXPOSURE: May cause moderate skin irritation. May be absorbed through the skin.

EYE EXPOSURE: Causes eye irritation, reddening and blurred vision.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE:

Prolonged or repeated contact may cause an allergic skin reaction.

PRIMARY ROUTE(S) OF ENTRY

DERMAL INHALATION INGESTION

EMERGENCY AND FIRST AID PROCEDURES:

INGESTION: Don't induce vomiting. Get medical attention immediately

INHALATION: Remove to fresh air. Apply artificial respiration and other supportive measures are required.

SKIN EXPOSURE: Remove promptly by wiping followed by washing by waterless hand cleaner and soap and water.

EYE EXPOSURE: Flush eyes thoroughly with plenty of water at least 30 minutes.

If any of the following 'occur' during or following use of this product, contact a poison control center, emergency room or physician immediately:
 Breathing difficulties, Persistent skin or eye irritation.

SECTION VI REACTIVITY DATA

STABILITY: STABLE UNSTABLE
 HAZARDOUS POLYMERIZATION: WILL NOT OCCUR MAY OCCUR
 HAZARDOUS DECOMPOSITION PRODUCTS:

May produce hazardous products including carbon monoxide when extreme heat.

CONDITIONS TO AVOID

Don't expose to heat or ignition sources.

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid contact with strong alkalis, strong mineral acids or strong oxidizing agents.

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MS000TS THINNER

SECTION VII SPILL OR LEAK PROCEDURES

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Provide maximum ventilation. Only persons equipped with proper respiratory and skin and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sawdust, vermiculite, or other absorbent material and place into containers for disposal.

WASTE DISPOSAL METHOD:

Waste material must be disposed of in accordance with federal, state and local environmental control regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

SECTION VIII SAFE HANDLING USE INFORMATION

RESPIRATORY PROTECTION:

Overexposure to vapors may be prevented by ensuring ventilation controls, vapor exhaust fresh air entry. NIOSH/MSHA approved paint spray (TC-23C-) or air supplied (TC-19C-) respirators may also reduce exposure in all cases. Read respirator manufacturer's instructions and literature carefully to determine the type.

VENTILATION REQUIREMENT:

Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in SECTION II below the lowest suggested exposure limits and the LEL in SECTION IV below the stated limits, and to remove decomposition products during welding or flame cutting on surfaces coated with this product.

SKIN PROTECTION:

Wear protective clothing including apron and gloves constructed of nitrile rubber or neoprene rubber.

EYE PROTECTION:

Wear chemical-type splash goggles or full face shield.

HYGIENIC PRACTICES:

Clean or discard contamination clothing and shoes.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Don't store above 100°F. Store large quantities in buildings designed and protected for storage of NFPA class 1B flammable liquid.

OTHER PRECAUTION:

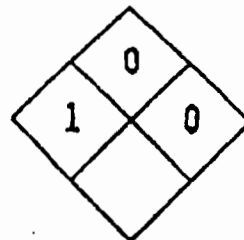
To avoid static charge build up, grounding and minimizing free distance is recommended. (Within a few inches)

ABBREVIATIONS:

- CERT. = chemical O. K. on TSCA inventory; CAS # not available
- not est. = not established
- N/A = not applicable
- U/I = unknown information

Parker+Amchem

HENKEL CORPORATION
 32100 Stephenson Highway
 Madison Heights, Michigan 48071



MATERIAL SAFETY DATA SHEET

CUSTOMER #

PRODUCT TRADE NAME	RIDOLINE 336		
DOT PROPER SHIPPING NAME	Not DOT regulated.		
DOT HAZARD CLASSIFICATION	Not applicable.		
TECHNICAL CONTACT (NAME)	Product Acceptance Office		
TELEPHONE NUMBER	(313) 583-9300	EMERGENCY NUMBER	1-517-263-9430

1 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD	TLV/PEL
Sodium tetraborate	1303-96-4	20-30	Irritant	1 mg/m ³

2 PHYSICAL DATA

APPEARANCE	White powder.		
SOLUBILITY IN WATER	Appreciable.		
ODOR	None.	pH of CONCENTRATE	Not applicable.
SPECIFIC GRAVITY	Not applicable.	BOILING POINT, °F.	Not applicable.
OTHER:			

3 FIRE & EXPLOSION DATA

FLASH POINT	None.
TEST METHOD	Not applicable.
EXTINGUISHING MEDIA	As required to extinguish surrounding fire.
UNUSUAL FIRE OR EXPLOSION HAZARDS	None.
SPECIAL FIRE FIGHTING PROCEDURES	None.

4 REACTIVITY DATA

STABLE

UNSTABLE

CONDITIONS TO AVOID

Not applicable.

INCOMPATIBLE MATERIALS

None.

HAZARDOUS POLYMERIZATION

WILL OCCUR

WILL NOT OCCUR

CONDITIONS TO AVOID

Not applicable.

HAZARDOUS DECOMPOSITION PRODUCTS

None.

5 HEALTH HAZARD DATA

EYES: Contact with eyes can cause irritation.

SKIN: Contact with skin can cause irritation.

INGESTION: May irritate the digestive tract.

INHALATION: Inhalation of dust can be an irritant to the respiratory tract.

Medical Conditions Generally Aggravated by Exposure: None known.

No component of this chemical is listed in the NTP Annual Report on Carcinogens, IARC Monographs or is regulated as a carcinogen by OSHA.

6 FIRST AID RECOMMENDATIONS

EYES: Immediately flush eyes in a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET MEDICAL ATTENTION.

SKIN: Wash thoroughly with soap and water.

INGESTION: Dilute by drinking several glasses of water or milk. GET MEDICAL ATTENTION. Do not induce vomiting unless directed by a doctor.

INHALATION: Remove to fresh air and remove contaminated clothing. If breathing is difficult, administer oxygen. If respiration stops, give mouth to mouth resuscitation. GET MEDICAL ATTENTION.

7 SPILL PROCEDURES & WASTE DISPOSAL

SPILL PROCEDURES

Sweep up or otherwise collect and store in suitable drum.

WASTE TREATMENT

Contact a licensed disposal agent.
This chemical contains phosphates. Waste treatment may be required prior to discharge to sewer.
Dispose of in compliance with all applicable federal, state and local regulations.

8 PERSONAL PROTECTION

VENTILATION REQUIREMENTS

GENERAL AREA EXHAUST

LOCAL EXHAUST

NO EXHAUST NECESSARY

As necessary to remove excessive dust

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION

Chemical goggles.

SKIN PROTECTION

Neoprene or polyvinyl gloves and protective clothing.

RESPIRATORY PROTECTION

MSHA/NIOSH dust filter mask or respirator if dusting occurs.

OTHER REQUIRED EQUIPMENT

Eye wash facility and emergency shower should be in close proximity.

9 SPECIAL PRECAUTIONS & STORAGE

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

DO NOT BREATHE DUST.

Wash thoroughly after handling.

For industrial use only.

PREPARED BY Product Acceptance Office DATE 07/12/88

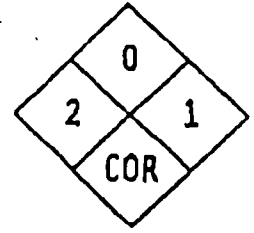
TITLE

CHEMICAL EMERGENCY TELEPHONE 1-800-424-9300

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Parker+Amchem

HENKEL CORPORATION
32100 Stephenson Highway
Madison Heights, Michigan 48071



MATERIAL SAFETY DATA SHEET

CUSTOMER #

PRODUCT TRADE NAME	ALODINE 1500		
DOT PROPER SHIPPING NAME	Compounds, rust preventing, NA1760.		
DOT HAZARD CLASSIFICATION	Corrosive		
TECHNICAL CONTACT (NAME)	Product Acceptance Office		
TELEPHONE NUMBER	(313) 583-9300	EMERGENCY NUMBER	1-517-263-9430

1 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD	TLV/PEL
+ Chromic Acid	7738-94-5	3-5	Carcinogen, NTP, IARC NTP, IARC, Oxidizer	0.05 mg/m ³ as Cr 0.10mg/m ³ as CrO
Ammonium Fluozirconate	1619-31-6	2-4	Irritant	2.5 mg/m ³ as F 2.5 mg/m ³ as F
Fluozirconic Acid	12021-95-3	1-3	Corrosive	2.5 mg/m ³ as F 2.5 mg/m ³ as F

This product contains a chemical (+) subject to the reporting requirements of Section 313, Title III of SARA, Part 372.

2 PHYSICAL DATA

APPEARANCE	Red-orange liquid		
SOLUBILITY IN WATER	Complete		
ODOR	Bland	pH of CONCENTRATE	1 - 2
SPECIFIC GRAVITY	1.04 - 1.08	BOILING POINT, °F.	>212 F
OTHER:	Freezing point: 27 F		

3 FIRE & EXPLOSION DATA

FLASH POINT None

TEST METHOD N/A

EXTINGUISHING MEDIA Water

UNUSUAL FIRE OR EXPLOSION HAZARDS

Spontaneous combustion may result if material dries on organic materials such as rags, sawdust etc.

SPECIAL FIRE FIGHTING PROCEDURES

Wear positive pressure self-contained breathing apparatus and full protective clothing.

4 REACTIVITY DATA

STABLE UNSTABLE

CONDITIONS TO AVOID

Keep from freezing.

INCOMPATIBLE MATERIALS

Organic materials, reducing agents and alkalies.

HAZARDOUS POLYMERIZATION

WILL OCCUR WILL NOT OCCUR

CONDITIONS TO AVOID

Not applicable.

HAZARDOUS DECOMPOSITION PRODUCTS

Hydrogen fluoride.

5 HEALTH HAZARD DATA

EYES: Eye contact may result in loss of vision with severe burns.

EYES AND SKIN: Contact with eyes, skin or mucous membranes can cause severe burns which may not be immediately painful or visible. Material causes acid burns; however, in many cases there may be no initial evidence of acid burn. (Delayed ulceration may occur.)

INGESTION: Can result in gastrointestinal damage; burns of the digestive tract.

INHALATION: Inhalation of vapors are irritating to the nose, throat and respiratory tract. Symptoms may include ulceration of the nose and throat, coughing, salivation, headache, fatigue, dizziness, nausea, shock and pulmonary edema.

CHRONIC: Prolonged or repeated skin contact may cause "chrome sores". Long-term exposure can cause liver damage, kidney damage and dermatitis. Prolonged or repeated inhalation of mist may cause ulceration and perforation of the nasal septum.

POSSIBLE CANCER HAZARD: There is laboratory evidence that aqueous sodium dichromate administered directly into the lung, at the highest tolerated dose, over the lifetime of rats, causes a significantly increased incidence of lung cancer. It is expected that if chromic acid was tested in the manner as aqueous sodium dichromate, it would give similar response. There is sufficient evidence for the carcinogenicity of chromium and certain chromium compounds both in humans and experimental animals.

Reference: NTP (National Toxicology Program), Annual Report on Carcinogens, 1983.

IARC (International Agency for Research on Cancer), Annual Report, 1982.

6 FIRST AID RECOMMENDATIONS

EYES: Immediately flush eyes in a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. **GET MEDICAL ATTENTION.**

SKIN: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Soak the affected area for one hour in an iced solution (0.13%) of zephrin chloride (30 cc of 17% concentrate per gallon of iced distilled water). **GET MEDICAL ATTENTION.**

INGESTION: Drink large quantities of water. **CORROSIVE. DO NOT INDUCE VOMITING.** If vomiting occurs, drink more water. **GET MEDICAL ATTENTION.** Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If breathing is difficult, give oxygen. **GET MEDICAL ATTENTION.**

7 SPILL PROCEDURES & WASTE DISPOSAL

SPILL PROCEDURES

Treat the spill with dilute solution of metabisulfite to reduce the chrome. Neutralize with lime to pH = 7 - 8.
Dike to contain spill.

WASTE TREATMENT

This chemical contains chromium compounds and fluoride compounds. Waste treatment and neutralization may be required prior to discharge to a sewer.

This chemical is a hazardous waste as defined by EPA Hazardous Waste and Consolidated Permit Regulations (or consult equivalent state regulations).

Contact a licensed disposal agent.

Dispose of in compliance with all applicable federal, state and local regulations.

8 PERSONAL PROTECTION

VENTILATION REQUIREMENTS

GENERAL AREA EXHAUST

LOCAL EXHAUST

NO EXHAUST NECESSARY

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION

Chemical goggles or face shield.

SKIN PROTECTION

Neoprene or polyvinyl gloves and appropriate protective clothing.

RESPIRATORY PROTECTION

Use NIOSH-approved respirator as required to prevent overexposure.

OTHER REQUIRED EQUIPMENT

Eye wash facility should be in close proximity.

9 SPECIAL PRECAUTIONS & STORAGE

DO NOT GET IN EYES, ON SKIN OR ON CLOTHING.

For industrial use only.

Contact with combustible material may cause fire.

PREPARED BY Product Acceptance Office DATE 11/16/88

TITLE

CHEMICAL EMERGENCY TELEPHONE 1-800-424-9300

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