Check Sheet

Company Name: United Technologies Corp- Pratt & Whitney
Permit Number: AC50-181702
PSD Number:
Permit Engineer:

Application:

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

Cross References:
- ☐
- ☐
- ☐

Intent:

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

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

Final Determination:

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

Post Permit Correspondence:

- ☒ Extensions/Amendments/Modifications
- ☐ Other

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece next to the article number.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

J.K. Sillan, Mgr.
Utilities Operations/Env. Affairs
UTC/Pratt Whitney
P.O. BOX 109600
West Palm Bch, Fl 33410-9600

4a. Article Number P 617 884 188

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 11-5-91

5. Signature (Addressee) J. Jones

6. Signature (Agent)

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

PS Form **3811**, October 1990 ☆U.S. GPO: 1990—273-861 **DOMESTIC RETURN RECEIPT**

PS Form **3800**, June 1990

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

UNITED STATES POSTAL SERVICE

P 617 884 188

Sent to J.K. Sillan
Street & No. UTC/Pratt Whitney
P.O. State & ZIP Code West Palm Bch, Fl

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date	11-4-91 PC 5D-181702

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

November 7, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. J. K. Sillan, Manager
Utilities Operations/Environmental Affairs
United Technologies Corp./Pratt & Whitney
Post Office Box 109600
West Palm Beach, Florida 33410-9600

Dear Mr. Sillan:

Re: Pattern Shop Environmental Control Booth (AC 50-181702)

This is in response to your October 2 letter requesting approval of additional materials for use in the Pattern Shop Environmental Control Booth. The Department hereby approves the use of the following materials as provided in Specific Condition No.3 of the above permit:

Material	Maximum Utilization Rate/Day
Freeman 690 Epoxy	1 gallon
RP 3260 Resin & RP 3260 Hardener	3 gallons
RP 4014 Resin & RP 1500 Hardener	4 quarts
Methyl Ethyl Ketone	1 gallon
Epoxical 332 Mass Cast	2 gallons
Epoxical 408 Resin & Epoxical 408 Hardener	1 quart
RP 3269 Resin & RP 3269 Hardener	4 gallons
Paraplast 8100	1 quart
Cee Bee Stripper A-202	1/2 quart
Dykem Hi Spot Blue	1/2 pint
Super 77 adhesive	10 ounces
Rubber cement	1/2 pint
Delta sanding sealer	1 quart

Recycled Paper

This letter shall become Attachment No. 4 to Permit No. AC 50-181702.

Sincerely,

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

SS/JR/plm

Attachments

c: I. Goldman, SED
W. Dail, Pratt & Whitney
J. Stormer, PBCHD

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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

Interoffice Memorandum

TO: Steve Smallwood

FROM: Clair Fancy CHF

DATE: November 7, 1991

SUBJ: Amendment to Construction Permit No. AC 50-181702
United Technologies Corp./Pratt & Whitney

Attached for your approval and signature is a letter amending the above referenced construction permit to allow the use of additional materials in the permittee's pattern shop.

The Bureau recommends approval of this amendment.

Attachments

CHF/JR/plm

CHF, OK 10-14-91

779

OK 11/8

UNITED TECHNOLOGIES PRATT&WHITNEY

P.O. Box 109600
West Palm Beach, FL 33410-9600
(407) 796-2000

RECEIVED
DER - MAIL ROOM
1991 OCT -7 AM 10: 12

October 2, 1991

Government Engine Business

Mr. C. H. Fancy
Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Re: Modification to Construction Permit No. AC 50-181702 - Pattern Shop Environmental Control Booth

Dear Mr. Fancy:

In accordance with specific condition #3 of the above referenced permit, Pratt & Whitney requests approval to use the following listed materials in the layup booth in addition to those currently listed in the permit.

Material Name	Maximum Utilization Rate/Day
o Freeman 690 Epoxy	1 gallon
o RP 3260 Resin & RP 3260 Hardener	3 gallons
o RP 4014 Resin & RP 1500 Hardener	4 quarts
o Methyl Ethyl Ketone	1 gallon
o Epoxical 332 Mass Cast	2 gallons
o Epoxical 408 Resin & Epoxical 408 Hardener	1 quart
o RP 3269 Resin & RP 3269 Hardener	4 gallons
o Paraplast 8100	1 quart
o Cee Bee Stripper A-202	1/2 quart
o Dykem Hi Spot Blue	1/2 pint
o Super 77 adhesive	10 ounces
o Rubber cement	1/2 pint
o Delta sanding sealer	1 quart

There will be no increase in the permitted daily and yearly VOC emission rate with the addition of these materials. Compliance will be demonstrated through calculations of the actual utilization rate and VOC content (obtained by EPA Method 24) of the material.

~~00103~~
1031

We have also included check number 473428 in the amount of $500.00 which is the fee for this modification request and the June 7 and July 12, 1991 modification request.

Should you have any questions, please contact Lisa Edwards at 796-5655. Your assistance in obtaining approval for use of these materials is appreciated.

Sincerely,

J. K. Sillan, Manager
Utilities Operations/Environmental Affairs

pc(0080a)

cc: F. Arcaro
L. Edwards
I. Goldman - DER, WPB
J. Stormer - PBCHU
File - Air Pollution Correspondence

TECHNOLOGIES
PRATT&WHITNEY

PRATT & WHITNEY
400 Main Street
Mail Stop 182-01
East Hartford
Connecticut 06108
U.S.A.

DATE OF CHECK: 09 24 91

VOUCHER NO.: 18725

473428 64-1278/611 3600

THE CITIZENS AND SOUTHERN NATIONAL BANK
ATLANTA, DEKALB COUNTY, GEORGIA

VOID AFTER 90 DAYS

PAY → CHECK AMOUNT: $*******500.00

OPERATING ACCOUNT

PAY TO THE ORDER OF
FLORIDA DEPARTMENT OF ENVIRONMENTAL
REGULATION
2600 BLAIR STONE RD
TALLAHASSEE FL 32399-2400

$*******500.00

AUTHORIZED SIGNATURE

AUTHORIZED COUNTERSIGNATURE

IN FULL SETTLEMENT OF ITEMS LISTED ON REMITTANCE ADVICE

[redacted]

Re: Modification to Construction - Environmental Control Booth

Dear Mr. Fancy:

In accordance with specific condition #3 of the above referenced permit, Pratt & Whitney requests approval to use the following listed materials in the layup booth in addition to those currently listed in the permit.

Material Name	Maximum Utilization Rate/Day
o Freeman 690 Epoxy	1 gallon
o RP 3260 Resin & RP 3260 Hardener	3 gallons
o RP 4014 Resin & RP 1500 Hardener	4 quarts
o Methyl Ethyl Ketone	1 gallon
o Epoxical 332 Mass Cast	2 gallons
o Epoxical 408 Resin & Epoxical 408 Hardener	1 quart
o RP 3269 Resin & RP 3269 Hardener	4 gallons
o Paraplast 8100	1 quart
o Cee Bee Stripper A-202	1/2 quart
o Dykem Hi Spot Blue	1/2 pint
o Super 77 adhesive	10 ounces
o Rubber cement	1/2 pint
o Delta sanding sealer	1 quart

There will be no increase in the permitted daily and yearly VOC emission rate with the addition of these materials. Compliance will be demonstrated through calculations of the actual utilization rate and VOC content (obtained by EPA Method 24) of the material.

~~00103~~
1031

P 832 538 958

Certified Mail Receipt

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

UNITED STATES POSTAL SERVICE

Sent to R-H. Henson	
Street & No. United Tech Corp / P+W	
P.O., State & ZIP Code W P Bch. Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date 9-18-91 AC 50-181702	

PS Form **3800**, June 1990

SENDER: Complete items 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. The return receipt 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)*

Article Addressed to:
R-H. Henson, Mgr.
United Tech. Corp. / P+W
P.O. Box 109600
West Palm Bch., Fl
33410-9600

4. Article Number
P 832 538 958

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail

Always obtain signature of addressee or agent and DATE DELIVERED.

Signature — Addressee

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

RECEIVED
SEP 2 A 1991
Division of Air Resources Management

RECEIPT

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

September 13, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. H. Henson, Manager-Plant Engineering
United Technologies Corp./Pratt & Whitney
Post Office Box 109600
West Palm Beach, Florida 33410-9600

Dear Mr. Henson:

Re: Pattern Shop Environmental Control Booth (AC 50-181702)

This is in response to your July 12 letter requesting approval of additional materials for use in the Pattern Shop Environmental Control Booth. The Department hereby approves the use of the following materials as provided in Specific Condition No. 3 of the above permit:

Material	Maximum Utilization Rate/Day
Aremcopot	6 quarts
Smoothon Urethane	1 gallon
Freeman 1020	2 pounds
Foamex L-800 Releasing Agent	1/2 gallon
Flexane 80	4 pounds
Repro 83	2 gallons
Epoxical 332	6 quarts
Epoxical 986	1 quart
Ekobond 51	2 quarts

This letter shall become Attachment No. 3 to Permit No. AC 50-181702.

Sincerely,

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

SS/JR/plm

Attachments

c: I. Goldman, SED
W. Dail, Pratt & Whitney
J. Stormer, PBCHD

Recycled Paper

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. W.J. Dail, Mgr.
Utilities Operations/Env. Affairs
United Tech./ Pratt & Whitney
P.O. Box 109600
West Palm Bch., Fl
33410-9600

4. Article Number
P 832 539 801

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X

7. Date of Delivery
7-5

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

PS Form **3811**, Apr. 1989 ★U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

P 832 539 801

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

UNITED STATES POSTAL SERVICE

Sent to W.J. Dail	
Street & No. United Tech/ Pratt & Whitney	
P.O., State & ZIP Code WP Bch, Fl	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$
Postmark or Date 7-2-91 AC 50-181702	

PS Form **3800**, June 1990

Florida Department of Environmental Regulation

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

Lawton Chiles, Governor

Carol M. Browner, Secretary

June 25, 1991

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. W. J. Dail, Manager
Utilities Operations/Environmental Affairs
United Technologies-Pratt & Whitney
P. O. Box 109600
West Palm Beach, Florida 33410-9600

Dear Mr. Dail:

Re: Permit No. AC 50-181702

The Department received your June 7 letter requesting approval of additional materials for use in the layup booth. We do not believe there will be a problem. However, before these materials can be approved, we must have the MSDS data sheets showing the composition of these products.

Sincerely,

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

CHF/JR/plm

c: I. Goldman, SED
J. Stormer, PBCHU

Recycled Paper

UNITED TECHNOLOGIES PRATT&WHITNEY

P.O. Box 109600
West Palm Beach, FL 33410-9600
(407) 796-2000

June 7, 1991

Government Engine Business

RECEIVED

JUN 17 1991

Division of Air
Resources Management

Mr. C. H. Fancy
Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Re: Modification to Construction Permit No. AC 50-181702 - Pattern Shop Environmental Control Booth

Dear Mr. Fancy:

In accordance with specific condition #3 of the above referenced permit, Pratt & Whitney requests approval to use the following listed materials in the layup booth in addition to those currently listed in the permit.

Material Name	Maximum Utilization Rate/Day
Aremcopot	6 quarts
Smoothon Urethane	1 gallon
Freeman 1020	2 lbs.
Foamex L-800 Releasing Agent	1/2 gallon
Flexane 80	4 lbs.
Repro 83	2 gallon

There will be no increase in the permitted daily and yearly VOC emission rate with the addition of these materials. Compliance will be demonstrated through calculations of the actual utilization rate and VOC content (obtained by EPA Method 24) of the material.

Should you have any questions, please contact Lisa Edwards at 796-5655. Your assistance in obtaining approval for use of these materials is appreciated.

Sincerely,

W. J. Dail, Manager
Utilities Operations/Environmental Affairs

pc(0080a)

cc: S. Bullock
L. Edwards
I. Goldman - DER, WPB
J. Stormer - PBCHU
File - Air Pollution Correspondence
J. Reynolds
CHF/BA

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. R.H. Henson Mgr.
United Tech. / Pratt & Whitney
P.O. BOX 109600
West Palm, Beach, Fl
33410-9600

4. Article Number
P 256 396 232

Type of Service:
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X T. Mull

7. Date of Delivery
11-16

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

PS Form **3811**, Apr. 1989 ★U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

P 256 396 232

RECEIPT FOR CERTIFIED MAIL

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

Sent to R.H. Henson	
Street and No. United Tech Pratt & W	
P.O., State and ZIP Code PO BOX 109600 West Palm Beach, 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 11-14-90 AC 50-181702	

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

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

November 8, 1990

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. R. H. Henson, Manager-Plant Engineering
United Technologies Corp./Pratt & Whitney
P. O. Box 109600
West Palm Beach, Florida 33410-9600

Dear Mr. Henson:

Re: Pattern Shop Environmental Control Booth (AC 50-181702)

This is in response to your September 14 letter requesting approval of additional materials for use in the Pattern Shop Environmental Control Booth. The Department hereby approves the use of the following materials as provided in Specific Condition No. 3 of the above permit:

Material	Maximum Utilization Rate/Day
Ren 1710 Resin & Hardener	2 gallons
Polyester Resin & Hardener	2 gallons
Lacquer Thinner	1 quart
Feather Rite & Cream Hardener	2 quarts
Tuf-fil & Cream Hardener	2 quarts
Epoxical C-301 Resin & Hardener	4 quarts
Foamex X-136 (4X00097) Parts A & B	6 quarts

This letter shall become Attachment No. 2 to Permit No. AC 50-181702.

Sincerely,

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

SS/JR/plm

Attachments

c: I. Goldman, SE District
W. Dail, Pratt & Whitney
J. Stormer, PBCHD

Recycled Paper

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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

Interoffice Memorandum

TO: Steve Smallwood

FROM: Clair Fancy

DATE: November 7, 1990

SUBJ: United Technologies Corp./Pratt & Whitney
AC 50-181702

Attached for your approval and signature is a letter approving the use of additional materials in the pattern shop environmental control booth at the above mentioned company.

I recommend your approval and signature.

CF/JR/plm

Attachments

OK
11-9-90

UNITED TECHNOLOGIES PRATT&WHITNEY

P.O. Box 109600
West Palm Beach, FL 33410-9600
(407) 796-2000

September 14, 1990

Government Engine Business

RECEIVED
SEP 17 1990
DER - BAQM

Mr. C. H. Fancy
Bureau of Air Quality Management
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Re: Modification to Construction Permit No. AC 50-181702 - Pattern Shop Environmental Control Booth

Dear Mr. Fancy:

In accordance with specific condition #3 of the above referenced permit, Pratt & Whitney requests approval to use the following listed materials in the layup booth in addition to those currently listed in the permit.

Material Name	Maximum Utilization Rate/Day
Ren 1710 Resin & Hardener	2 gallons
Polyester Resin & Hardener	2 gallons
Lacquer Thinner	1 quart
Feather Rite & Cream Hardener	2 quarts
Tuf-fil & Cream Hardener	2 quarts
Epoxical C-301 Resin & Hardener	4 quarts
Foamex X-136 (4X00097) Parts A & B	6 quarts

There will be no increase in the permitted daily and yearly VOC emission rate with the addition of these materials. Compliance will be demonstrated through calculations of the actual utilization rate and VOC content (obtained by EPA Method 24) of the material.

Should you have any questions, please contact Lisa Edwards at 796-5655. Your assistance in obtaining approval for use of these materials is appreciated.

Sincerely,

W. J. Dail, Manager
Utilities Operations/Environmental Affairs

pc(0060a)

cc: S. Bullock
L. Edwards
J. Goldman - DER, WPB
H. Levine
J. Stormer - PBCHD
File - Air Pollution Correspondence
J. Reynolds

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:
R.H. Henson, Mgr.-Plant Eng.
United Tech. Corp
Pratt & Whitney
P.O. BOX 109600
West Palm Beach, Fl 33410-9600

4. Article Number
P 256 396 181

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X J. Jones

6. Signature — Agent
X

7. Date of Delivery
8-27

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

PS Form **3811**, Mar. 1988 * U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

P 256 396 181

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

Sent to R. H. Henson	
Street and No. United Tech Corp	
P.O., State and ZIP Code Pratt & Whitney P.O. BOX 109600 WP B, 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 8-24-90 AC 50-181702	

PS Form 3800, June 1985 ☆U.S.G.P.O. 1989-234-555

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

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
NOTICE OF PERMIT

Mr. R. H. Henson, Manager-Plant Engineering
United Technologies Corp./Pratt & Whitney
P. O. Box 109600
West Palm Beach, Florida 33410-9600

August 23, 1990

Enclosed is construction permit No. AC 50-181702 for modifying an environmental control booth to handle fiberglass hand lay up work at your facility in West Palm Beach, Palm Beach 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:

I. Goldman, SE District
W. Dail, Pratt & Whitney
H. Levine, Pratt & Whitney
G. Sacco, PBCHD

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 8-24-90.

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.

Lori Tober
Clerk

8-24-90
Date

Final Determination

United Technologies Corp.
Pratt & Whitney
Palm Beach County
West Palm Beach, Florida

Modification of Environmental Control
Booth for Fiberglass Hand Lay Up Work
Permit No. AC 50-181702

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

August 23, 1990

Final Determination

The Technical Evaluation and Preliminary Determination for the permit to modify an environmental control booth to handle fiberglass hand lay up work at United Technologies-Pratt & Whitney in West Palm Beach, Palm Beach County, Florida, was distributed on July 20, 1990. The Notice of Intent to Issue was published in the Palm Beach Post on August 8, 1990. Copies of the evaluation were available for public inspection at the Department's Southeast District office in West Palm Beach, the Palm Beach County Health Department in West Palm Beach, and the Bureau of Air Regulation in Tallahassee.

No comments from the public were submitted on the Department's Intent to Issue the permit. The applicant requested a minor wording change to Specific Condition No. 3 allowing them to use other raw materials in addition to those specified in the permit. The final action of the Department will be to issue construction permit No. AC 50-181702 as proposed in the Technical Evaluation and Preliminary Determination with the added flexibility of using other raw materials when approved by the district office.

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:
United Technologies Corp.,
Pratt & Whitney
P. O. Box 109600
West Palm Beach, FL 33410-9610

Permit Number: AC 50-181702
Expiration Date: Dec. 31, 1991
County: Palm Beach
Latitude/Longitude: 26°53'12"N
80°17'55"W
Project: Modify Booth for Fiberglass Hand Lay Up Work

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 modification of an existing environmental control booth to accomodate fiberglass hand lay up work. This project will be located in West Palm Beach, Palm Beach County, Florida. The UTM coordinates of this site are Zone 17, 569.2 km E and 2975.8 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 June 1, 1990.

PERMITTEE:
United Technologies Corp.,
Pratt & Whitney

Permit Number: AC 50-181702
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.

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.

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

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 environmental control booth shall be allowed to operate for up to 4,992 hours per year.

3. Hydrocarbon emissions (VOC) shall not exceed the following calculated values, and total VOC emissions from the source shall not exceed 29.3 lbs/day and 1.8 tons/year. Compliance shall be demonstrated by applying the following raw material utilization rates and VOC content factors:

	Utilization Rate (per day)	VOC Content (lb/gal)	Emissions lbs/day
PVA Parting Agent	1 quart	3.05	0.76
1129 Resin & Hardener	3 quarts	0.13	0.09
105 Resin & 205 Hardener	2 gallons	1.51	3.02
Acetone	2 quarts	6.60	3.30
Contact Cement	2 gallons	11.04	22.08
		Total	29.25

Other raw materials may be used if prior approval is obtained from the Department and if the total VOC emissions do not exceed the limits listed above.

SPECIFIC CONDITIONS:

4. 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.

5. 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.

6. Compliance with the VOC limits in Specific Condition No. 3 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.

7. 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).

8. An application for an operation permit must be submitted to the Southeast 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

PERMITTEE:
United Technologies Corp.,
Pratt & Whitney

Permit Number: AC 50-181702
Expiration Date: December 31, 1991

SPECIFIC CONDITIONS:

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 23 day
of August, 1990

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

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

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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

Interoffice Memorandum

TO: Steve Smallwood

FROM: Clair Fancy

I signed for Steve M this one

DATE: August 23, 1990

SUBJ: Approval of Construction Permit No. AC 50-181702
United Technologies-Pratt & Whitney

Attached for your approval and signature is a permit prepared by the Bureau of Air Regulation for the above mentioned company to modify an environmental control booth to handle fiberglass hand lay up work.

No comments from the public were received during the public notice period.

Day 90, after which this permit will be issued by default, is October 6, 1990.

I recommend your approval and signature.

CF/JR/plm

Attachments

Clair
OK
BA

UNITED TECHNOLOGIES PRATT&WHITNEY

P.O. Box 109600
West Palm Beach, FL 33410-9600
(407) 796-2000

Government Engine Business

CERTIFIED MAIL

August 13, 1990

Mr. Claire Fancy
Deputy Chief
Bureau of Air Quality Management
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Fl. 32399-2400

RECEIVED
AUG 14 1990
DER - BAQM

Re: Pattern Shop/Mock Up Building Environmental Control Booth
Permit No. AC-50-181702

Dear Mr. Fancy:

Attached is the "Proof of Publication" from The Palm Beach Post for the above referenced permit which was published in the legal section of The Post on Wednesday, August 8, 1990.

In addition, Pratt & Whitney is requesting a revision to specific condition #3 of the draft permit. As stated in the attachment A of the permit application, other materials will be used in addition to the materials listed in specific condition #3. Therefore, Pratt & Whitney requests that specific condition #3 be revised as follows:

> The total VOC emissions from the source shall not exceed 29.3 lbs/day and 1.8 tons/year and compliance shall be demonstrated by utilizing the volalite matter content for each surface coating as determined by specific condition #6.

This revision is consistent with other permits Pratt & Whitney has recently obtained from the Department (AC 50-168734 and AC 50-168735) and it still maintains the requirement of limiting the VOC emissions to 29.3 lbs/day and 1.8 tons/year. However, it allows Pratt & Whitney to use the materials currently not listed under specific condition #3 as long as the daily and yearly emission rates are maintained.

Your assistance in revising the permit is appreciated. Should you have any questions please contact Lisa Edwards at 796-5655.

Yours truly,

R H Henson

R. H. Henson
Manager
Plant Engineering

pc(0053a)

cc: S. Bullock
J. Dail
L. Edwards
I. Goldman - DER, WPB
J. Reynolds
CHF/BA
H. Levine
J. Stormer - PBCHD
File - Air Pollution Correspondence

THE PALM BEACH POST

Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

PROOF OF PUBLICATION

STATE OF FLORIDA

COUNTY OF PALM BEACH

Before the undersigned authority personally appeared Chris Bull who on oath says that she/he is Class. Sales Mgr. of The Palm Beach Post, a daily and Sunday newspaper published at West Palm Beach in Palm Beach County, Florida; that the attached copy of advertising, being a Notice in the matter of of intent to issue in the --- Court, was published in said newspaper in the issues of August 8, 1990

Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/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.

Chris Bull

Sworn to and subscribed before me this 8 day of August A.D. 19 90

NOTARY PUBLIC STATE OF FLORIDA
MY COMMISSION EXP. NOV. 15, 1992
BONDED THRU GENERAL INS. UND.

NO. 294174
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 United Technologies Corp./Pratt & Whitney, P.O. Box 109600, West Palm Beach, Florida 33410-9600, to modify an environmental control booth for fiberglass hand lay up work at their facility in West Palm Beach, 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 (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 (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 statment 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 be 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 normal 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, FL 32399-2400

Department of Environmental Regulation
Southeast Florida District
1900 S. Congress Avenue, Suite A
West Palm Beach, FL 33406

Palm Beach County Health Dept.
Division of Environmental Science and Engineering
901 E. Evernia Street
West Palm Beach, FL 33402

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.

PUB: Palm Beach Post
August 8, 1990

UNITED TECHNOLOGIES PRATT&WHITNEY

P.O. Box 109600
West Palm Beach, FL 33410-9600
(407) 796-2000

Government Engine Business

August 1, 1990

RECEIVED
AUG 3 1990
DER-BAQM

Palm Beach Post & Times
Legal Advertising Department
2751 South Dixie Highway
West Palm Beach, Florida 33405

Attn: Legal Advertising

Gentlemen:

Please publish the attached notice one time only in the Legal Advertisement Section of the Palm Beach Post on Wednesday, August 8, 1990.

It is requested that you prepare an affidavit of publication for submission to the Florida Department of Environmental Regulation (DER). Please notify Lisa Edwards of our office (796-5655) when it is ready for pickup.

Please forward the bill to the following address:

W. J. Dail
Pratt & Whitney
P.O. Box 109600 - Mail Stop 717-03
West Palm Beach, Fl. 33410-9600

Sincerely,

W. J. Dail, Manager
Utilities Operations/Environmental Affairs

pc(0051a)

Attachment

cc: S. Benyon - DER-WPB
S. Brattebo
L. Edwards
C. Fancy - DER-Tallahassee
R. Henson
File - Air Pollution Correspondence

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

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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
Southeast Florida District
1900 S. Congress Avenue, Suite A
West Palm Beach, Florida 33406

Palm Beach County Health Dept.
Division of Environmental Science
and Engineering
901 E. Evernia Street
West Palm Beach, Florida 33402

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.

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. R. H. Henson, Mgr. Plant Eng.
United Technologies Corp.
Pratt & Whitney
P. O. Box 109600
West Palm Beach, FL 33410-9600

4. Article Number
P 256 396 149

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X

6. Signature — Agent
X T. Mc

7. Date of Delivery
7-23

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

PS Form **3811**, Apr. 1989 ★U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

P 256 396 149

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. R. H. Henson, United

Street and No.
P. O. Box 109600 Technologies

P.O., State and ZIP Code
West Palm Beach, FL 33410-960(

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: 7-20-90
Permit: AC 50-181702

PS Form 3800, June 1985

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

July 20, 1990

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. R. H. Henson, Manager-Plant Engineering
United Technologies Corp./Pratt & Whitney
P. O. Box 109600
West Palm Beach, Florida 33410-9600

Dear Mr. Henson:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permit for modification of an environmental control booth for fiberglass hand lay up work at your West Palm Beach facility.

Please submit any written comments 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: I. Goldman, SE District
W. Dail, Pratt & Whitney
H. Levine, Pratt & Whitney
G. Sacco, PBCHD

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

United Technologies Corp., DER File No. AC 50-181702
Pratt & Whitney
P. O. Box 109600
West Palm Beach, Florida 33410-9600

INTENT TO ISSUE

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

The applicant, United Technologies Corp., Pratt & Whitney, applied on June 1, 1990, to the Department of Environmental Regulation for a permit to modify an environmental control booth for fiberglass hand lay up work at their facility in West Palm Beach, Palm Beach 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;

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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:

I. Goldman, SE District
W. Dail, Pratt & Whitney
H. Levine, Pratt & Whitney
G. Sacco, PBCHD

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on 7-20-90.

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.

Kuri Doberr — Clerk

7-20-90 — 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 United Technologies Corp./Pratt & Whitney, P. O. Box 109600, West Palm Beach, Florida 33410-9600, to modify an environmental control booth for fiberglass hand lay up work at their facility in West Palm Beach, 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.

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(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
Southeast Florida District
1900 S. Congress Avenue, Suite A
West Palm Beach, Florida 33406

Palm Beach County Health Dept.
Division of Environmental Science
and Engineering
901 E. Evernia Street
West Palm Beach, Florida 33402

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

United Technologies Corp.
Pratt & Whitney
Palm Beach County
West Palm Beach, Florida

Modification of Environmental Control
Booth for Fiberglass Hand Lay Up Work
Permit No. AC 50-181702

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

July 20, 1990

I. Application Information

A. Applicant

United Technologies Corp.
Pratt & Whitney
P. O. Box 109600
West Palm Beach, Florida 33410-9600

B. Request

The Department received a complete application on June 1, 1990, for a permit to modify an environmental control booth for fiberglass hand lay up work at the applicant's site near West Palm Beach, Florida.

C. Location/Classification

The applicant's aircraft engine testing facility (SIC Code 3724) is located off State Road 710 approximately 20 miles Northwest of West Palm Beach. Latitude and longitude are 26°53'12"N and 80°17'55"W, respectively. The UTM coordinates of the site are: Zone 17, 569.2 km E and 2975.8 km N.

II. Project Description/Emissions

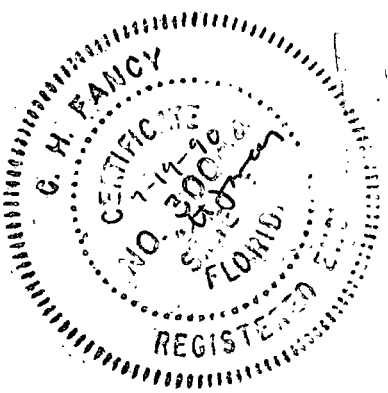
The applicant proposes to modify an existing environmental control booth for processing fiberglass hand lay up work at the aircraft engine testing facility. The booth is currently used exclusively for sanding fiberglass molds and parts which are used in the construction of jet engine mock-ups. The modification will involve operating the booth with doors closed and its vents ducted to the outside. The booth will also be used to glue foam to the inside of plywood boxes with contact cement. Total VOC emissions from the booth operation will be 29.3 lbs/day and 1.8 tons/yr.

III. Rule Applicability

The construction permit is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The proposed project is located in an area classified as nonattainment for ozone. Since the proposed installation is classified as a minor source, it is not subject to the new source review requirements of Rule 17-2.510. 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(1) and (2), General Pollutant Emission Limiting Standards.

IV. Conclusion

Based on the information provided by United Technologies Corp./Pratt & Whitney, 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:
United Technologies Corp.,
Pratt & Whitney
P. O. Box 109600
West Palm Beach, FL 33410-9610

Permit Number: AC 50-181702
Expiration Date: Dec. 31, 1991
County: Palm Beach
Latitude/Longitude: 26°53'12"N
80°17'55"W
Project: Modify Booth for Fiberglass Hand Lay Up Work

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 modification of an existing environmental control booth to accomodate fiberglass hand lay up work. This project will be located in West Palm Beach, Palm Beach County, Florida. The UTM coordinates of this site are Zone 17, 569.2 km E and 2975.8 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 June 1, 1990.

PERMITTEE:
United Technologies Corp.,
Pratt & Whitney

Permit Number: AC 50-181702
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.

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.

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

GENERAL CONDITIONS:

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, 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 environmental control booth shall be allowed to operate for up to 4,992 hours per year.

3. Hydrocarbon emissions (VOC) shall not exceed the following calculated values, and total VOC emissions from the source shall not exceed 29.3 lbs/day and 1.8 tons/year. Compliance shall be demonstrated by applying the following raw material utilization rates and VOC content factors:

	Utilization Rate (per day)	VOC Content (lb/gal)	Emissions lbs/day
PVA Parting Agent	1 quart	3.05	0.76
1129 Resin & Hardener	3 quarts	0.13	0.09
105 Resin & 205 Hardener	2 gallons	1.51	3.02
Acetone	2 quarts	6.60	3.30
Contact Cement	2 gallons	11.04	22.08
		Total	29.25

SPECIFIC CONDITIONS:

4. 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.

5. 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.

6. Compliance with the VOC limits in Specific Condition No. 3 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.

7. 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).

8. An application for an operation permit must be submitted to the Southeast 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

PERMITTEE:
United Technologies Corp.,
Pratt & Whitney

Permit Number: AC 50-181702
Expiration Date: December 31, 1991

SPECIFIC CONDITIONS:

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

UNITED TECHNOLOGIES
PRATT&WHITNEY

P.O. Box 109600
West Palm Beach, FL 33410-9600
(407) 796-2000

Government Engine Business

May 30, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Clair H. Fancy
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301-8241

Re: Air Pollution Construction Permit - Pattern Shop/Mock Up Building
Environmental Control Booth

Dear Mr. Fancy:

Enclosed are four (4) copies of DER Form 17-1.202(1) "Application to Operate/Construct Air Pollution Sources" for the above referenced air sources. We have also included the required check (No. 421791) for $200.00 made payable to the Department of Environmental Regulation.

Your efforts to issue this permit will be greatly appreciated. Should you have any questions, please contact Lisa (Hill) Edwards at (407) 796-5655.

Yours truly,

W. J. Dail, Manager
Utilities Operations/Environmental Affairs

RECEIVED
DER - MAIL ROOM
1990 JUN -1 PM 12:27

Attachment

cc: S. Bullock - w/attachment
L. Edwards - w/attachment
I. Goldman - DER w/attachment
R. Henson - w/o attachment
H. Levine - w/attachment
Jim Stormer - PBCHD - w/attachment
J. Reynolds

pc(0027a)

UNITED TECHNOLOGIES PRATT&WHITNEY

Best Available Copy

421791 64-1278 / 611

PRATT & WHITNEY
400 Main Street
Mail Stop 182-01
East Hartford
Connecticut 06108
U.S.A.

DATE OF CHECK	VOUCHER NO.
05 10 90	226390

THE CITIZENS AND SOUTHERN NATIONAL BANK
ATLANTA, DEKALB COUNTY, GEORGIA

VOID AFTER 90 DAYS

PAY →

CHECK AMOUNT
$ *******200.00

OPERATING ACCOUNT

$ *******200.00

PAY TO THE ORDER OF

FLORIDA DEPARTMENT OF ENVIROMNENTAL
REGULATION
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

AUTHORIZED SIGNATURE

AUTHORIZED COUNTERSIGNATURE

IN FULL SETTLEMENT OF ITEMS LISTED ON REMITTANCE ADVICE

[redacted]

D.

Re: Air Pollution Construction Permit - Pattern Shop/Mock Up Building
Environmental Control Booth

Dear Mr. Fancy:

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Yours truly,

W. J. Dail, Manager
Utilities Operations/Environmental Affairs

Attachment

cc: S. Bullock - w/attachment
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I. Goldman - DER w/attachment
R. Henson - w/o attachment
H. Levine - w/attachment
Jim Stormer - PBCHD - w/attachment

pc(0027a)

1031

DEP - MAIL ROOM
90 JUN -1 PM 12:27

#200pd.
6-1-90
Rcpt#151134

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

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

AC50-141702

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Environmental Control Booth (Hand Layup Application) [√] New[1] [ ] Existing[1]

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

COMPANY NAME: United Technologies Corp. - Pratt & Whitney COUNTY: Palm Beach

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) Environmental Control Booth ECR-1-MPA

SOURCE LOCATION: Street 17900 Beeline Hwy. City Jupiter

UTM: East 569.2 KM North 2975.8 KM

Latitude 26 ° 53 ' 12 "N Longitude 80 ° 17 ' 55 "W

APPLICANT NAME AND TITLE: United Technologies Corp. - Pratt & Whitney

APPLICANT ADDRESS: Same as source location

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of United Technologies Corp. Pratt & Whitney Environmental Control Booth (Hand Layup Application)

I certify that the statements made in this application for a 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: R H Henson
United Technologies Corp. - Pratt & Whitney
R. H. Henson, Manager - Plant Engineering
Name and Title (Please Type)
Date: 5/25/90 Telephone No. (407) 796-5461

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

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 Howard S. Levine

Howard S. Levine
Name (Please Type)

United Technologies Corp. - Pratt & Whitney
Company Name (Please Type)

P.O. Box 109600 West Palm Beach, Fl. 33410-9600
Mailing Address (Please Type)

Florida Registration No. 27645 Date: 5/25/90 Telephone No. (407) 796-5331

SECTION II: GENERAL PROJECT INFORMATION

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

See Attachment A

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

Start of ~~construction~~ modification Upon issuance of permit Completion of ~~construction~~ modification within one year of issuance of permit

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.)

Cost of booth - $60,600.00

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

This booth is located in the Patttern Shop/Mock-up Building of P&W's Manufacturing area. All other permitted air pollution sources in the Manufacturing area are covered under permit #AO 50-110892.

E. Requested permitted equipment operating time: hrs/day 16 ; days/wk 6 ; wks/yr 52 ;

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? Yes

   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. Ozone

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? Yes

   a. If yes, for what pollutants? Ozone

   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 justification for any answer of "No" that might be considered questionable.

Although "Reasonably Available Control Technology" (RACT) applies to this source, there are no emission limiting standards listed in Florida Administrative Code (FAC) Chapter 17-2.650 for brush application of fiberglass resins and epoxies.

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

A. Raw Materials and Chemicals Used in your Process, if applicable: See Attachments A, B and 1-11

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		

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

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

2. Product Weight (lbs/hr): N/A

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

See Attachment B

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	
Volatile Organic Compounds	4.3	1.8	None Listed	None Listed	10,950	5.5	N/A

[1]See Section V, Item 2.

[2]Reference 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)

[3]Calculated from operating rate and applicable standard.

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

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

Stack Height: N/A ft. Stack Diameter: N/A ft.

Gas Flow Rate: N/A ACFM N/A DSCFM Gas Exit Temperature: N/A °F.

Water Vapor Content: N/A % Velocity: N/A FPS

SECTION IV: INCINERATOR INFORMATION

Not Applicable

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

Description of Waste _____

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

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

Manufacturer _____

Date Constructed _____ Model No. _____

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

Stack Height: _____ ft. Stack Diamter: _____ 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) _____

D. Control Devices: (See Section V, Item 4) None for Hand Lay-up Application

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels N/A

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

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

Fuel Analysis:

Percent Sulfur: N/A Percent Ash: N/A

Density: N/A lbs/gal Typical Percent Nitrogen: N/A

Heat Capacity: N/A BTU/lb N/A BTU/gal

Other Fuel Contaminants (which may cause air pollution): N/A

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

Annual Average N/A Maximum N/A

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

All hazardous liquid or solid wastes will be placed in controlled waste drums and handled in accordance with Pratt & Whitney's hazardous waste operating permit #HO 50-124528.

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

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)]
   N/A
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.
   See Attachment B
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
   See Attachment B
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.)
   See Attachment C
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). N/A
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.
   See Figure 1A, 1B & 1C
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).
   See Figure 2
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.
   See Figure 3

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 Not Applicable

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:

[1]Explain method of determining efficiency.
[2]Energy 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:

[1] Explain method of determining efficiency.
[2] Energy 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:

[1]Applicant 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 Not Applicable

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^{2} _____ 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.

ATTACHMENT A
DESCRIPTION OF THE NATURE & EXTENT OF PROJECT

The Environmental Control booth is currently used solely as a sanding booth for sanding fiberglass molds and parts. These molds or parts are used predominately in the construction of jet engine mock-ups or for shop tooling. When the booth is used for sanding, the doors to the booth are left open and air conditioned plant air is drawn through the booth, filtered and discharged back into the plant. In accordance with Pratt & Whitney's September 26, 1989 telephone conversation with Mr. Tom Tittle, an air pollution construction/operation permit was not required for installation of this booth for sanding.

Pratt & Whitney plans to modify the booth to also be used for fiberglass hand layup work. In this mode of operation, the doors to the booth will be closed. Approximately 80% of outside air will be supplied to the booth from the roof mounted supply fans and the remaining 20% will be supplied through a 2" opening located at the bottom of the doors. The exhaust will be ducted to the outside.

The fiberglass hand layup work involves the application (by brushing) of products in a series of steps. None of the products are applied by spraying. The following is a typical example of the process:

1. Apply PVA Parting Agent (attachment 1) to a plug. The plug is made of either plywood, wood, masonite or urethane foam with a skin of fiberglass which has been coated with lacquer paint in an existing paint spray booth covered under permit #A050-110892.

2. Apply a surface coat composed of REN 1129 Resin and Hardener (attachments 2A and 2B).

3. Lay the cloth (fiberglass and carbon fiber).

4. Saturate the layers with REN 1710 Resin and Hardener (attachments 3A and 3B) or West System 105 Epoxy Resin and 205 Hardener (attachments 4A and 4B).

5. Grind and fill in with a combination of Feather Rite Putty and Cream Hardener (attachments 5A and 5B).

6. Clean rollers, brushes and miscellaneous equipment with acetone or lacquer thinner (attachments 6 and 7).

In some cases, the REN 1710 Resin and Hardener may be replaced with a Polyester Resin and Hardener (attachments 8A and 8B) and the Tuf-Fil Resin and Cream Hardener (attachments 9 and 4B) may be used in addition or substituted for the combination Feather Rite and Cream Hardener.

In addition, the booth will be used to adhere foam inside of plywood boxes with contact cement (attachment 10) and to mass cast small components with Epoxy Thick Section 301 Resin and Hardener (attachments 11A and 11B).

Attachment B

Emission Calculations

Maximum LB's/Day

The following is the maximum amount of material to be used in one day for producing a large mold and for adhering foam inside of plywood boxes.

Note: See Table 1 for VOC content of each product.

1 quart of PVA Parting Agent

3 quarts of 1129 Resin & Hardener

2 gallons of West System 105 Resin & 205 Hardener

2 quarts of Acetone (for clean up)

2 gallons of contact cement

The conversion factor 0.00835 has been used throughout the calculations to convert grams/liter to lbs/gal (i.e. 1 gram/liter = 0.00835 lb/gal).

1 quart PVA Parting Agent x 365 grams/liter x 0.00835 lb/gal x 1 gal/4 quarts = 0.762 lbs

3 quarts 1129 Resin & Hardener x 15 grams/liter x 0.00835 lb/gal x 1 gal/4 qts = 0.094 lbs.

2 gal West System 105 Resin and 205 Hardener x 180.7 grams/liter x 0.00835 lb/gal = 3.018 lbs.

2 quarts Acetone x 789.9 grams/liter x 0.00835 lb/gal x 1 gal/4 qts = 3.298 lbs.

2 gallons contact cement x 1322 grams/liter x 0.00835 lb/gal = 22.077 lbs.

Total = 0.762 lbs + 0.094 lbs. + 3.018 lbs + 3.298 lbs + 22.077 lbs = 29.249 or 30 lbs.

Maximum LBS/HR

Assume the work is performed over a typical 7 hour day:
30 lbs/day x 1 day/7 hrs. = 4.29 lbs/hr or 4.3 lbs/hr.

Attachment B
(Cont.)

Actual Lbs/year

Assume the work to calculate the maximum lbs/day is performed 10 days/month, 12 months/year.

30 lbs/day x 10 days/month x 12 months/year = 3600 lbs/yr. or 1.8 tons/year.

Potential lbs/year

Assume both operates 365 days/year and 30 lbs/day of VOC's are emitted.

30 lbs/day x 365 days/year = 10,950 lbs/year or 5.5 tons/year

TABLE 1
(page 1 of 2)

Attachment No.	Product Name	VOC Content* (grams/liter)
1	Partall Film #10 (PVA Parting Agent)	365
2A	RP 1129 Resin	15
2B	RP 1129 Hardener	15
3A	RP 1710 Resin	9
3B	RP 1710 Hardener	10.6
4A	West System 105 Epoxy Resin	172.5
4B	West System 205 Hardener	249.5
5A	Feather Rite	240
5B	Cream Hardener	0
6	Acetone	789.9
7	Lacquer Thinner	820.4
8A	624 Solvent (Silimark #41)	780
8B	Lupersol DDM-9 Red	32.52
9	Freeman Tuf-Fil Pine	0
10	Contact Cement	1322
11A	Epoxical C-301 Resin	21
11B	Epoxical C-301 Hardener	10

* Based on MSDS sheets and telephone conversations with the manufacturer.

TABLE 1
(page 2 of 2)

Some of the products listed on page 1 of Table 1 are combined at different ratios. The following are the product names, combination ratios and VOC content for these combinations:

Product Name and Combination Ratio	VOC Content (grams/liter)
RP 1129 Resin and RP 1129 Hardener are combined at a ratio of 10 parts to 1 part.	15
RP 1710 Resin and RP 1710 Hardener are combined at a ratio of 10 parts to 1 part.	9.16
West System 105 Epoxy Resin and West System 205 Hardener are combined at a ratio of 5 parts to 1 part.	180.7
624 Solvent and Lupersol DDM-9 Red are combined at a ratio of 50 parts to 1 part.	765.1
Epoxical C-301 Resin and Epoxical C-301 Hardener are combined at a ratio of 10 parts to 1 part.	19.9

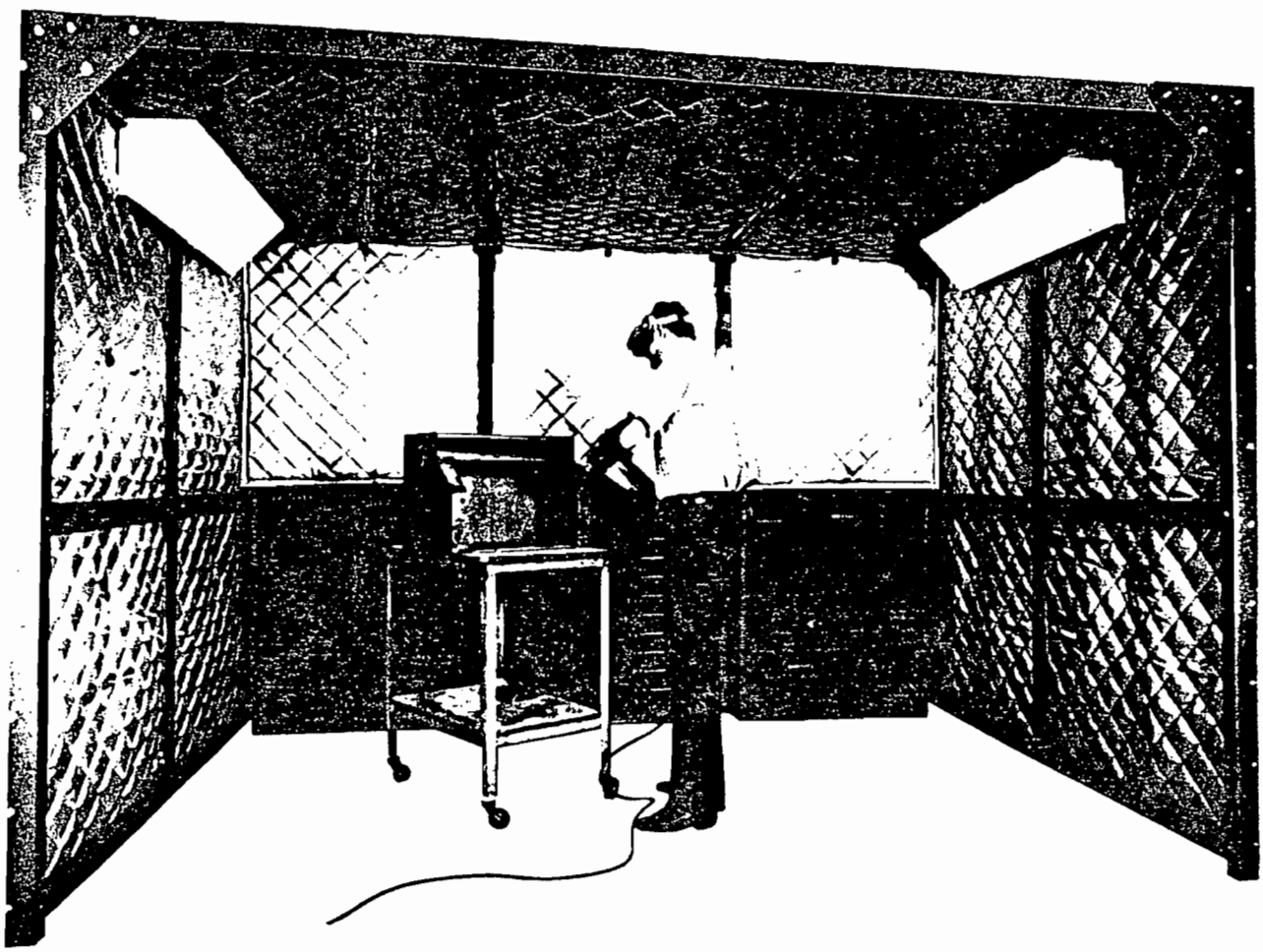
9612e

INSTALLATION AND OPERATION MANUAL

MODELS ECB 2 / ECB 3 / ECB 4

Includes Installation, Operation, Service Instructions and Parts List

ATTACHMENT C
Page 1 of 7



FACTS AND FIGURES

- The Torit-Donaldson Environmental Control Booth (ECB) is a self-contained work station incorporating dust control, sound control and lighting.
- The modular dust collectors are available in 2, 3 and 4 module arrangements.
- Each module contains a 3 horsepower blower, 6 cartridge-type filters, a cleaning mechanism and a 2.6 cubic foot dust storage container.
- Filter cleaning is accomplished with 90 psig compressed air. A Photohelic Gauge®, which provides cleaning on demand, is recommended.
- System is designed to maintain 100 fpm velocity across face of booth.
- Booth height and depth are constant, width varies with number of modules.

Dust Collectors Modules	Booth Dimension INSIDE	Overall Dimension OUTSIDE
2	84w x 90d x 87h	90w x 122d x 90h
3	129w x 90d x 87h	135w x 122d x 90h
4	174w x 90d x 87h	180w x 122d x 90h

- The interior of the booth is lined with acoustical material that effectively contains noise generated inside of the booth.
- Booth lighting is provided by two 4-foot fluorescent light fixtures. Two sets of 40 watt fluorescent bulbs not provided by Torit.

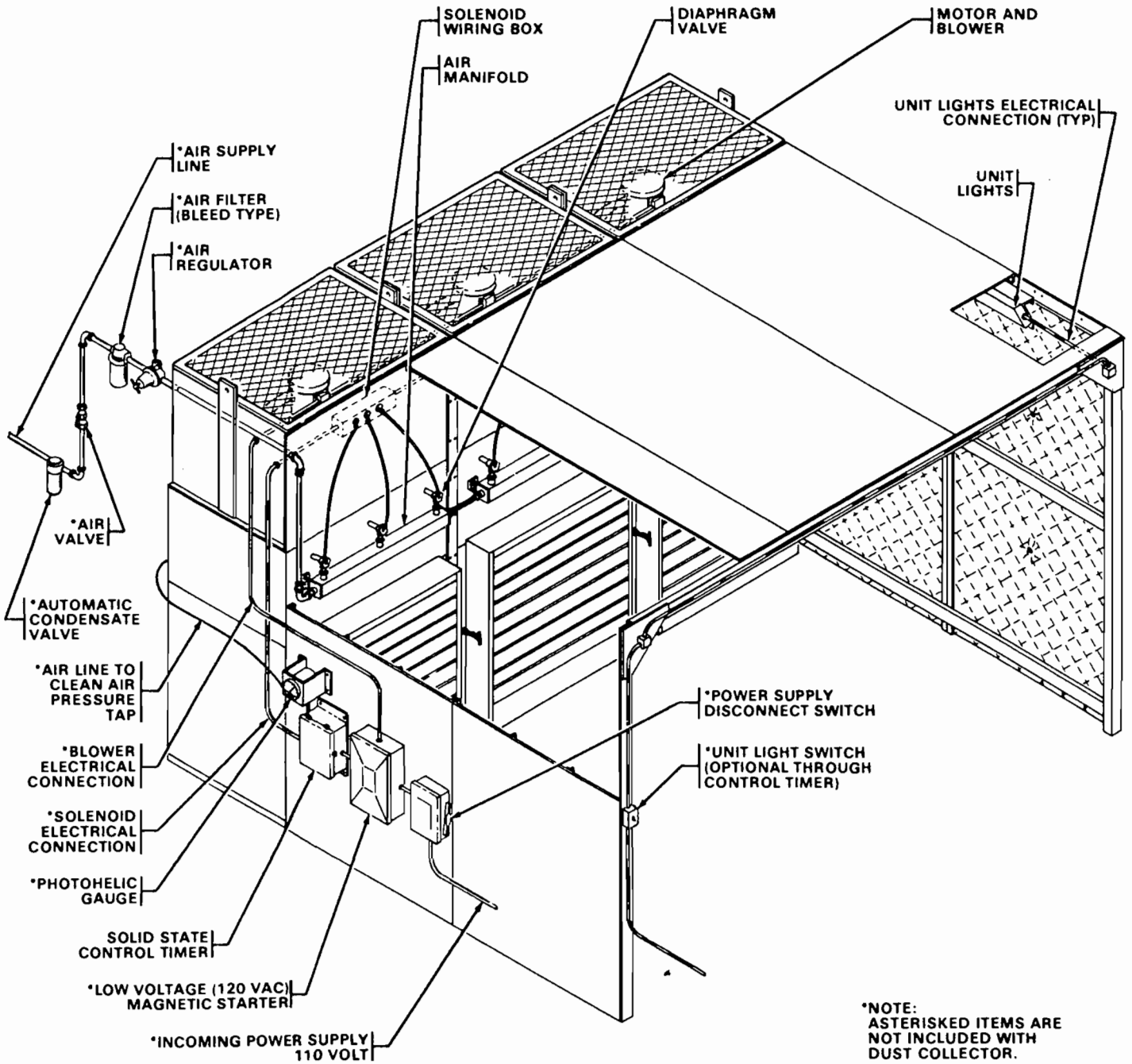


FIGURE 1 — TYPICAL INSTALLATION

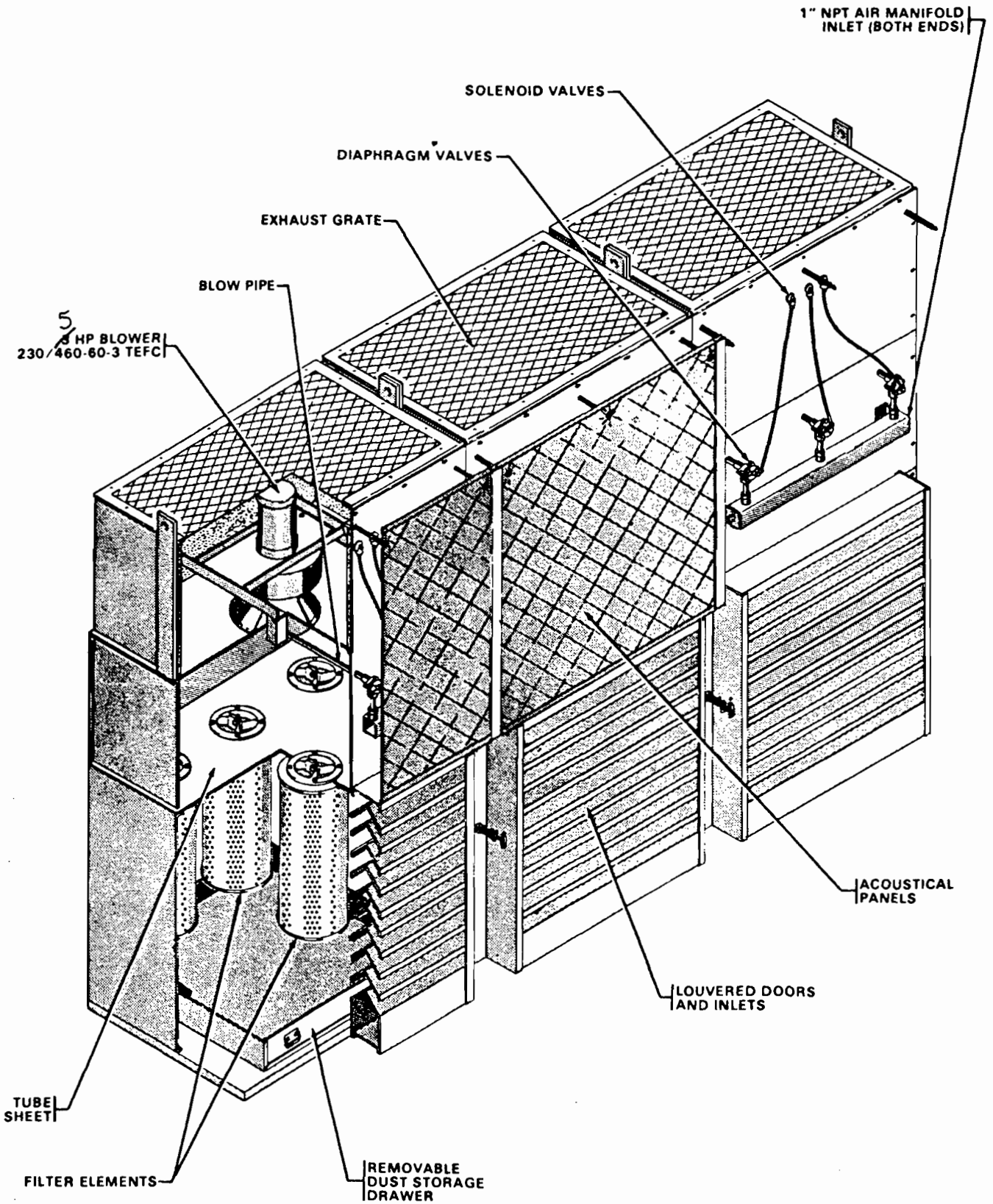


FIGURE 2 — CUTAWAY VIEW

Donaldson Company, Inc. ©1985

OPERATIONAL EXPLANATION

During normal operation, dust enters through the door louvers and is collected on the outside of the filter elements. The filtered air passes up through the element and out the clean air plenum. See Figure 3.

Cleaning sequence is controlled by a solid state timer, factory set to pulse filter every 10 seconds. Two filters are cleaned with each pulse. During filter element purge, the solid state control timer automatically activates the air valve solenoid. The air valve opens, resulting in a pulse of compressed air traveling into the blowpipe and down through the element. The compressed air pulse, plus induced air passes outward through the filter elements removing the dust from the outside of the elements. The dust falls into the dust storage drawer. At the end of the 100 millisecond pulse, the air valve closes and the elements are back in operation. At any one time, only one group of (2) elements are taken off line for cleaning while the remaining elements are still in operation.

PRE-INSTALLATION

The best installation and operation results are obtained when the Environmental Control Booth is installed on a flat surface. Pre-punched holes in mating sections, particularly where roof section joins the dust collector modules, will align for easy bolting. If surface is not flat, modules and booth walls must be shimmed to align the bolt holes.

Also to be considered when locating an Environmental Control Booth is access to compressed air and electrical connections and easy access to emptying of the dust storage containers located inside of the dust collector modules. A forklift would aid installing roof panels of booth area.

INSPECTION

The ECB dust collector is normally shipped by common carrier truck and should be checked for any damage that may have occurred en route. Any damage should be noted and the carrier notified within 24 hours.

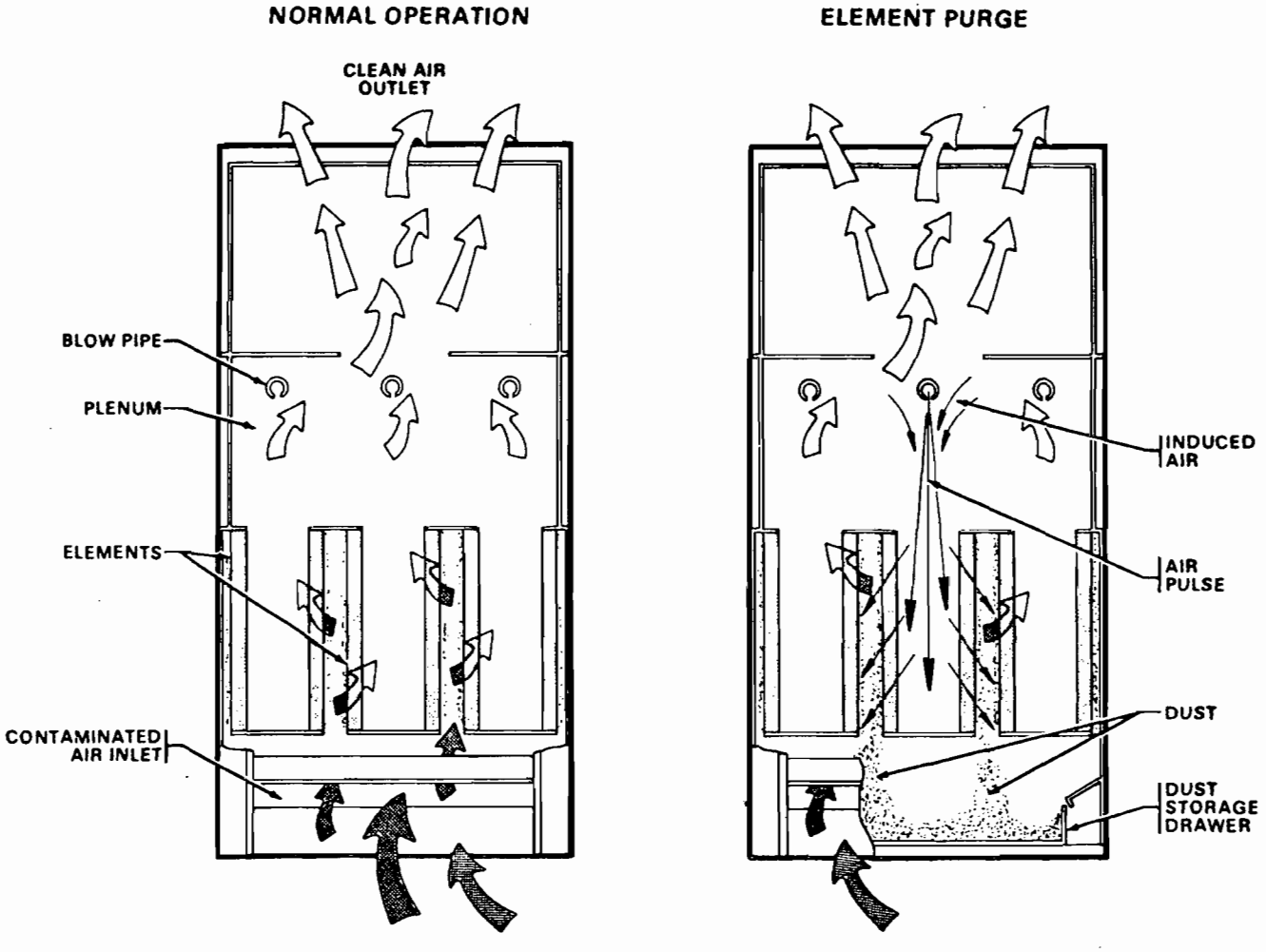
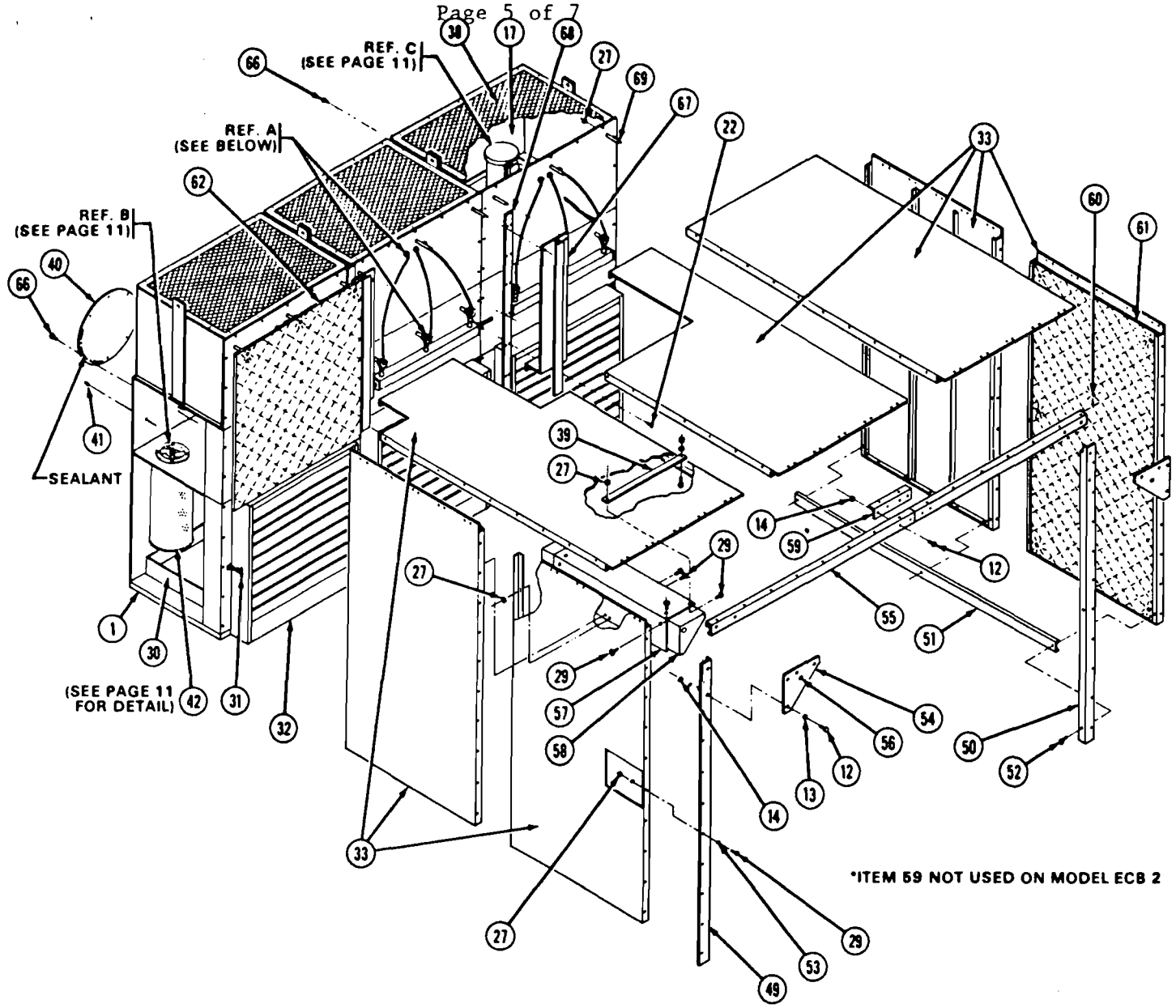


FIGURE 3 — OPERATIONAL SCHEMATICS



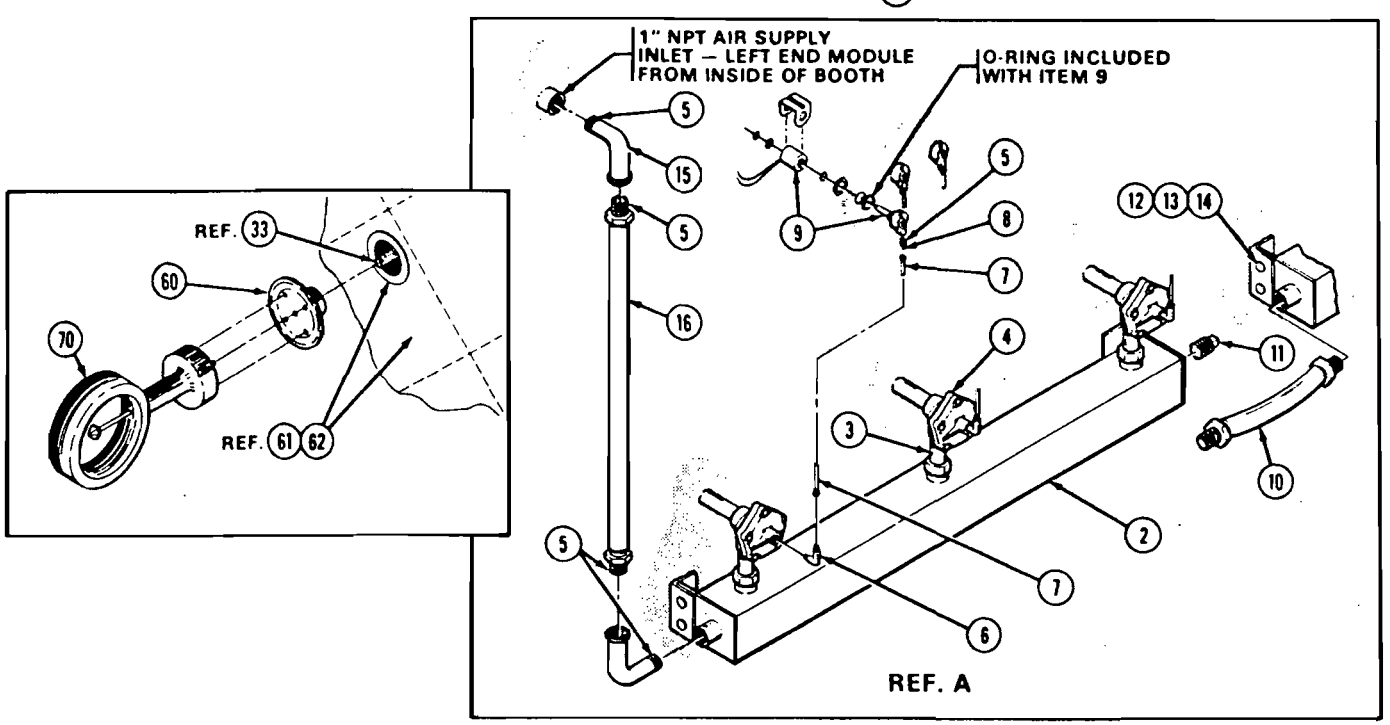


FIGURE 4 — ASSEMBLY

OPERATING ADJUSTMENTS

Compressed air is specified at a pressure of 90 psig. The control timer is factory set to clean a segment of elements every 10 seconds.

Higher than design ΔP can often be lowered by increasing the frequency of cleaning, minimum dwell time between pulses is 3 seconds. Additional cleaning energy may be obtained by adjusting pressure up to a maximum of 100 psig. DO NOT increase the length of each pulse beyond the nominal 100 millisecond factory setting. Longer pulses do not aid cleaning, they simply waste compressed air.

DO NOT increase air pressure beyond 100 psig. Filter damage may result.

A low ΔP can be raised to design levels by increasing dwell time between pulses. Pressure switch control may be added to clean only when ΔP reaches design level.

ΔP = Pressure drop across filter elements

SERVICE

WARNING

DISCONNECT ELECTRICAL POWER BEFORE SERVICING ANY ELECTRICAL COMPONENTS.

SHUT OFF AND BLEED AIR SUPPLY BEFORE SERVICING ANY AIR CIRCUITS.

ELEMENT REPLACEMENT

Always replace outside washer gasket, (46) when replacing filter elements, (45).

Remove all filter elements, starting with those nearest doors by turning crank counterclockwise until hanger is loose enough to remove from hanger bracket. See Figure 8. Disassemble hanger rods from elements and install in new elements as shown in Figure 8. Install elements in cabinet as explained under INSTALL ELEMENTS.

CAUTION

Dust laden filters may be heavy and difficult to handle when removed through access door opening.

INSTALL ELEMENTS (if not factory installed)

Unscrew hanger pivot until it touches lock nut on end of mounting rod. See Figure 8.

Hang element assembly on hanger brackets as shown in Figure 8.

Turn crank clockwise until the element bottoms out on stops. TIGHTEN BY HAND ONLY — DO NOT USE WRENCHES. See Figure 8.

NOTE

Install elements at back of cabinet first and work towards the doors.

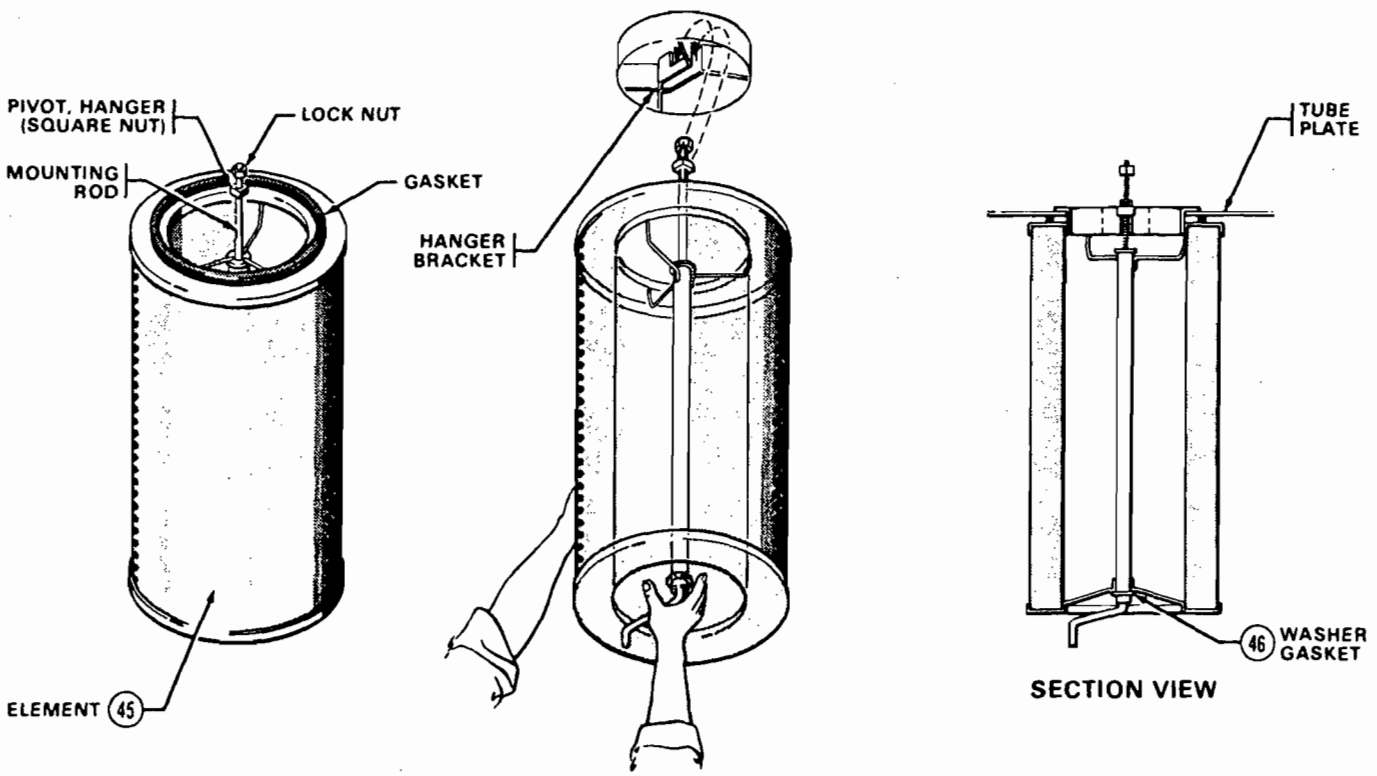


FIGURE 8 — ELEMENT REPLACEMENT

Donaldson Company, Inc. ©1985

PHOTOHELIC GAUGE INSTALLATION

Ref. Figure 9. Remove 1/8 NPT pipe plugs and screw 1/8 NPT elbow (71) and 1/8 NPT Tees (72) into pre-drilled holes on the back of dust collector modules.

As illustrated, install 3/16 ID plastic tubing (73) and connect to Photohelic Gauge which is typically located in a control panel.

For proper operation of Photohelic it is important that connection and filter (74) are installed as shown on Figure 9.

Electrical wiring for the Photohelic is shown on Figure 7.

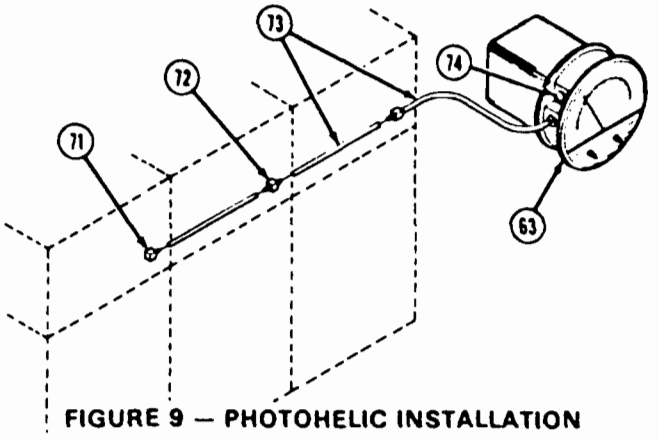
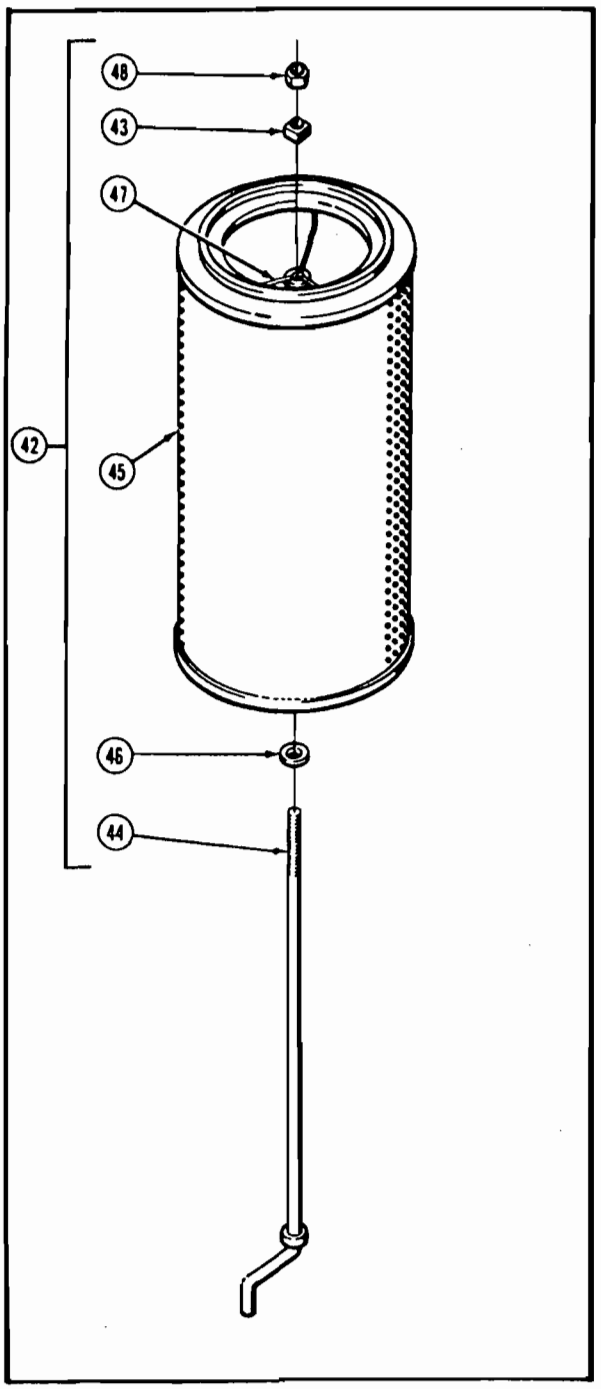
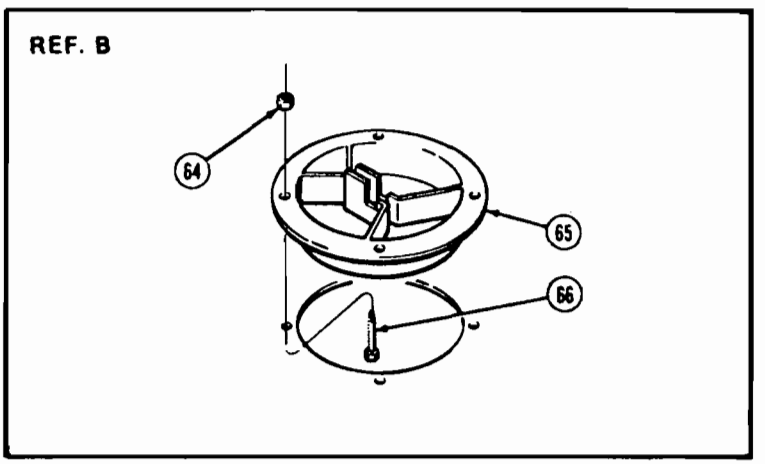
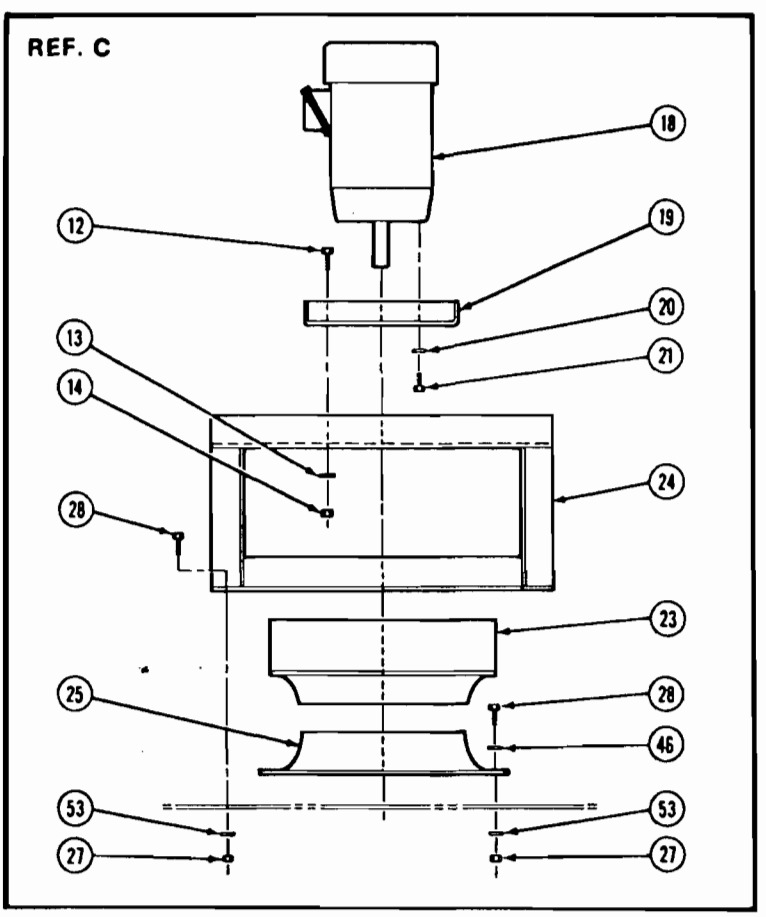


FIGURE 9 — PHOTOHELIC INSTALLATION

PARTS DRAWING FIGURE 10







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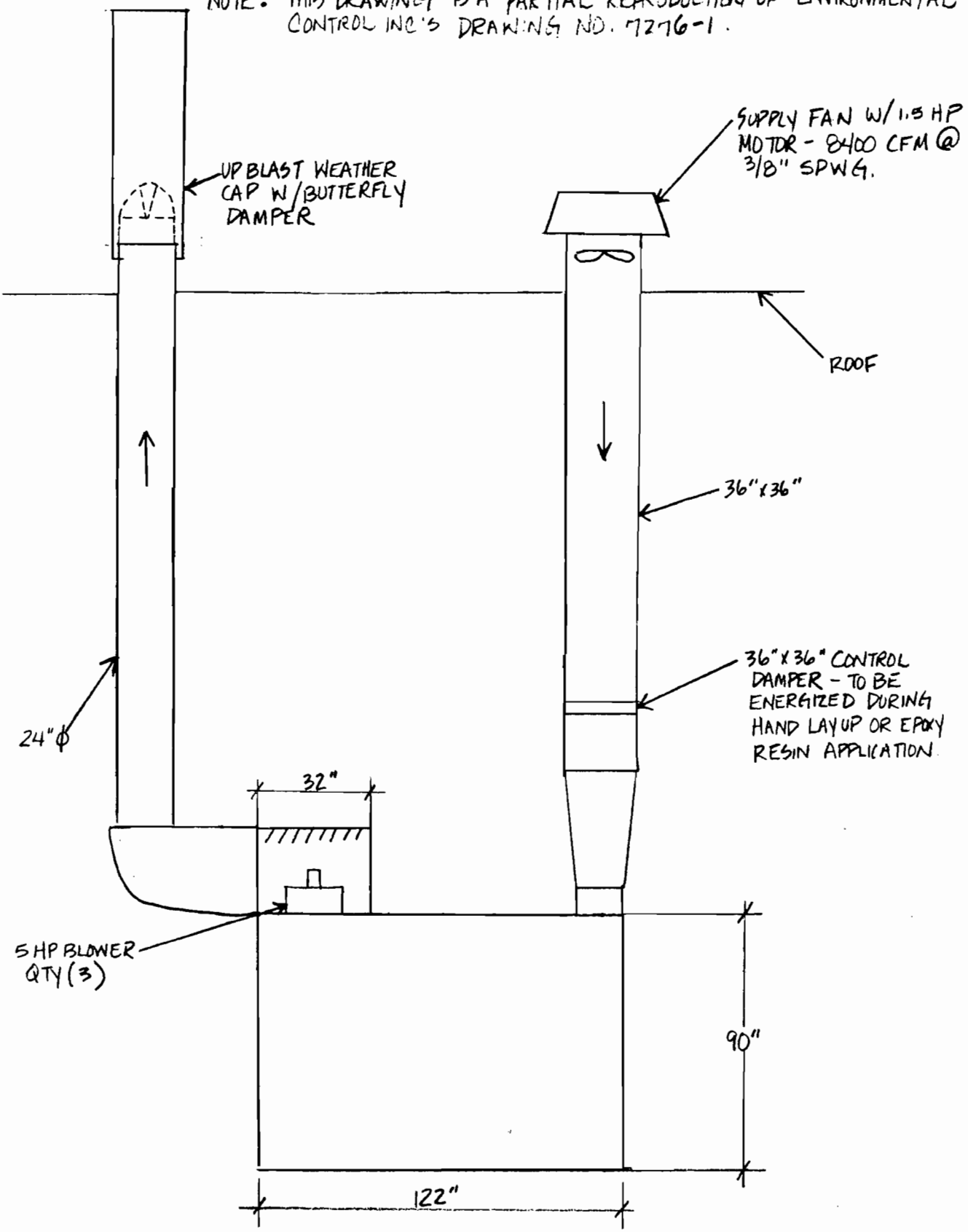
UNITED TECHNOLOGIES PRATT&WHITNEY

FIGURE 1A

PRATT & WHITNEY CONTROLLED

BY	L. Hill	TITLE	SIDE VIEW - ENVIRONMENTAL CONTROL BOOTH - NOT TO SCALE SECTION V - #6	YEAR	SERIES	JOB NUMBER
DATE	5/8/90					
MODEL				PAGE		

NOTE: THIS DRAWING IS A PARTIAL REPRODUCTION OF ENVIRONMENTAL CONTROL INC'S DRAWING NO. 7276-1.



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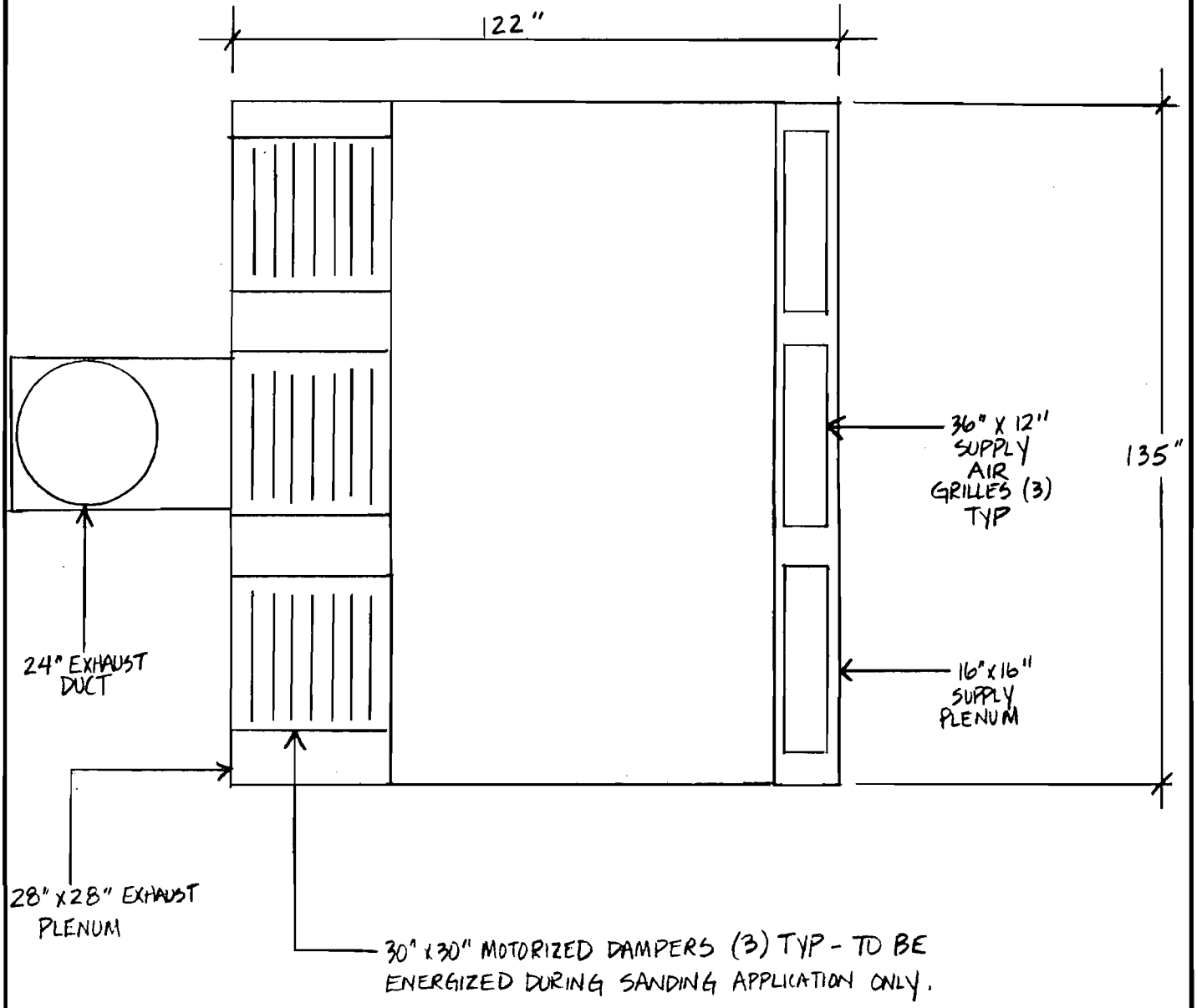
UNITED TECHNOLOGIES PRATT&WHITNEY

FIGURE 1B

PRATT & WHITNEY CONTROLLED

BY	L.HILL	TITLE	PLAN VIEW - ENVIRONMENTAL CONTROL BOOTH - NOT TO SCALE SECTION V - #6	YEAR	SERIES	JOB NUMBER
DATE	5/8/90					
MODEL				PAGE		

NOTE: THIS DRAWING IS A PARTIAL REPRODUCTION OF ENVIRONMENTAL CONTROL INC'S DRAWING NO. 7276-1.



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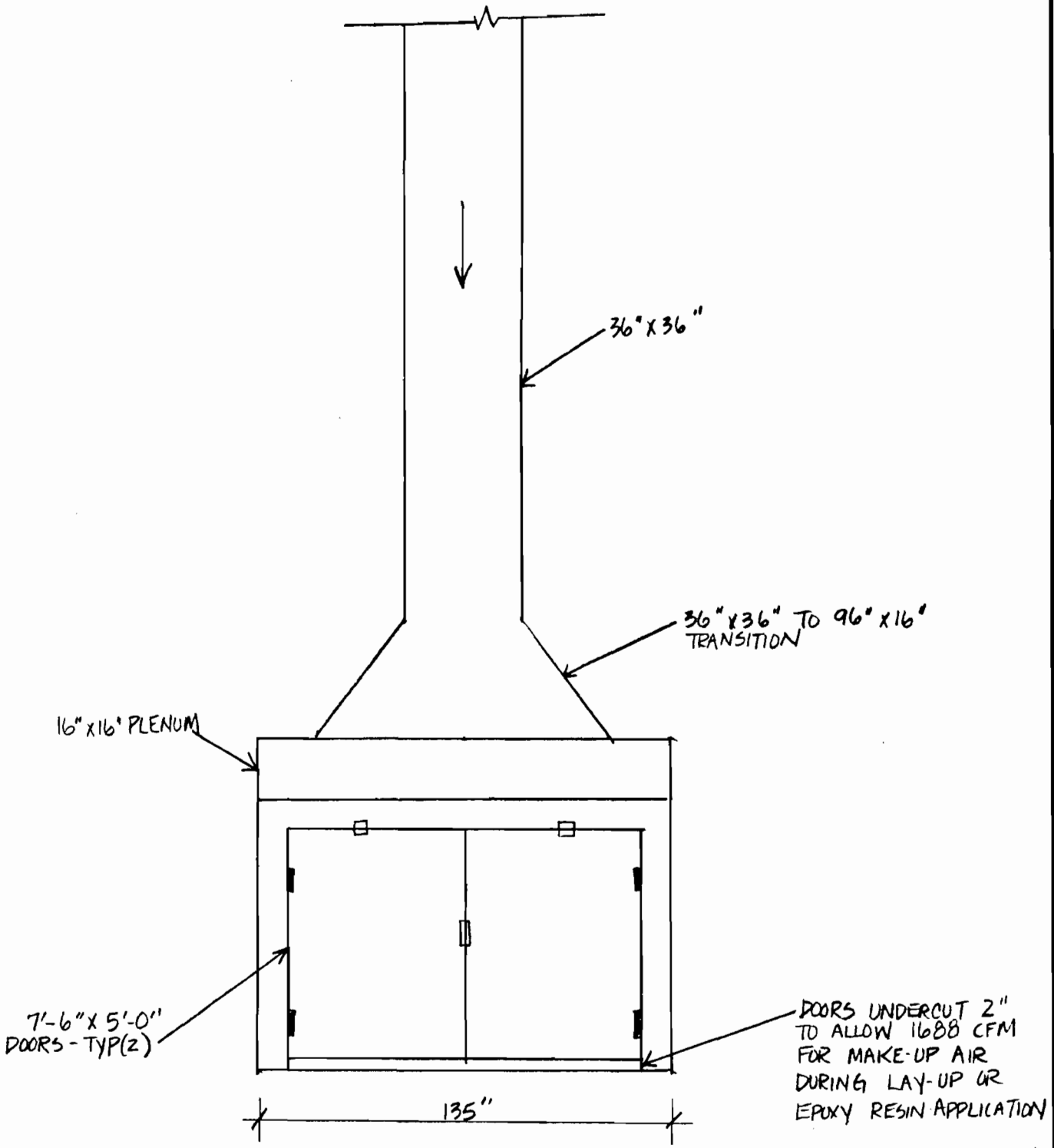
UNITED TECHNOLOGIES PRATT&WHITNEY

FIGURE 1C

PRATT & WHITNEY CONTROLLED

BY	L.Hill	TITLE	FRONT VIEW - ENVIRONMENTAL CONTROL BOOTH - NOT TO SCALE SECTION V - #6	YEAR	SERIES	JOB NUMBER
DATE	3/8/90					
MODEL				PAGE		

NOTE: THIS DRAWING IS A PARTIAL REPRODUCTION OF ENVIRONMENTAL CONTROL INC'S DRAWING NO. 7276-1.



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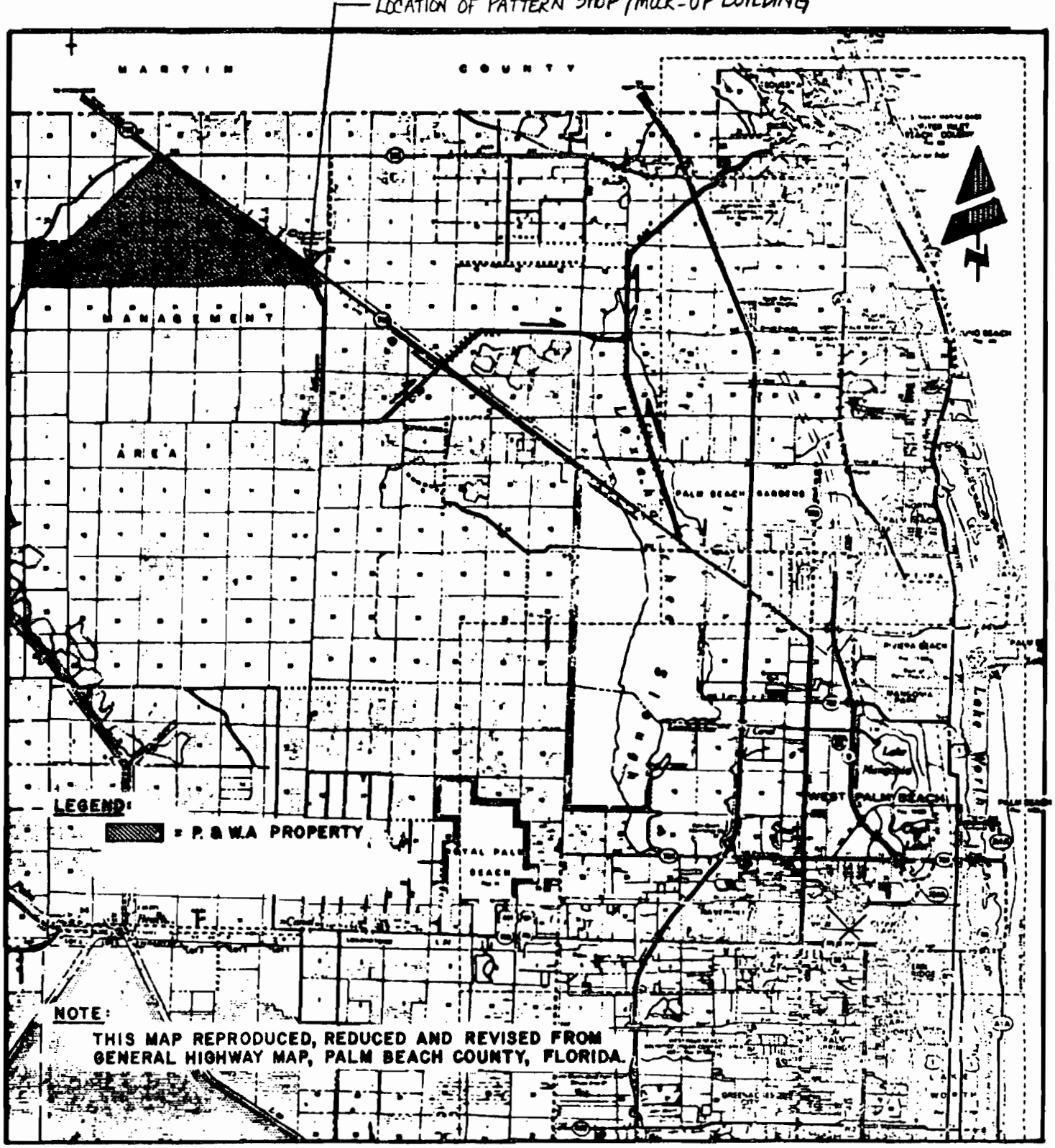
Best Available Copy

FIGURE 2

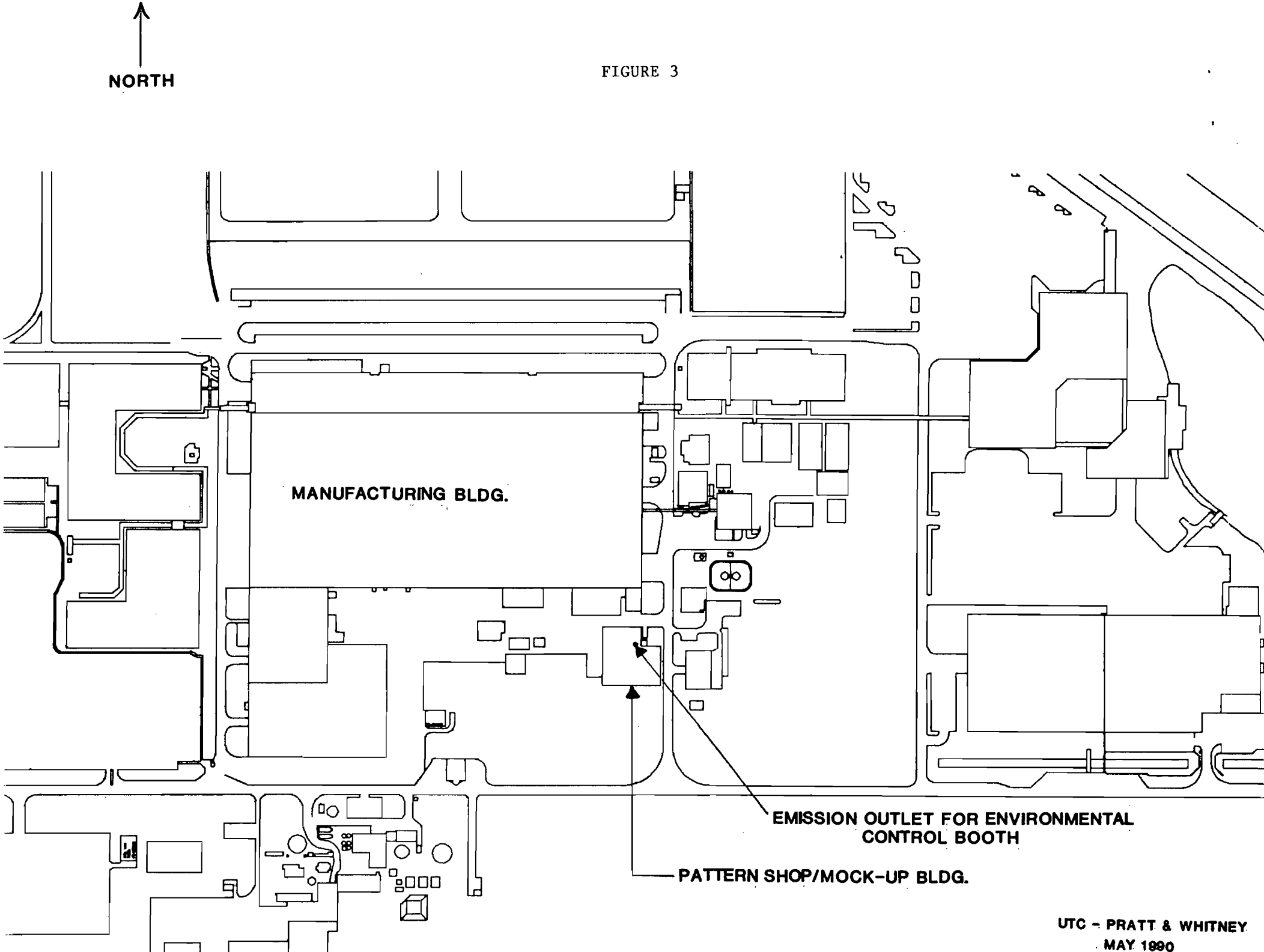


PL-772 A
7/18/81

SITE LOCATION MAP
FOR UTC - PRATT & WHITNEY PROPERTY
PALM BEACH COUNTY, FLORIDA

0 1 2 3 4 MILES
SCALE

FIGURE 3


NORTH
MANUFACTURING BLDG.
EMISSION OUTLET FOR ENVIRONMENTAL CONTROL BOOTH
PATTERN SHOP/MOCK-UP BLDG.
UTC - PRATT & WHITNEY
MAY 1990

Attachment 1

MATERIAL SAFETY DATA SHEET

PARTALL® FILM #10

D.O.T. SHIPPING NAME: ALCOHOL N.O.S. FLAMMABLE LIQUID; FLAMMABLE LIQUID UN 1987 N.M.F.C. 42690-2

SECTION 1 - MANUFACTURER

REXCO
P.O. BOX 1045
CARPINTERIA, CA 93013

HAZARD RATING

0 LEAST	HEALTH	2
1 SLIGHT		
2 MODERATE	FIRE	3
3 HIGH		
4 EXTREME	REACTIVITY	0

DATE PREPARED: NOVEMBER 10, 1989

EMERGENCY TELEPHONE NO. Chemtrec 1-800-424-9300

OTHER CALLS: REXCO 805-963-6505

SECTION 2 - HAZARDOUS INGREDIENTS

CHEMICAL/COMMON NAME	OSHA/PEL	ACGIH/TLV	CAS NO.
ETHYL ALCOHOL	1000	1000	64-17-5
NORMAL BUTYL ALCOHOL (SKIN ABSORBABLE)	100	50	71-36-3
DENATURING AGENTS: (ONE OR MORE OF THE FOLLOWING MAY BE PRESENT)			
METHYL ALCOHOL (SKIN ABSORBABLE)	200	200	67-56-1
ETHYL ACETATE	400	400	141-78-6
METHYL ISOBUTYL KETONE	100	50	108-10-1

SECTION 3 - PHYSICAL & CHEMICAL CHARACTERISTICS

BOILING POINT: 156-220° F. SPECIFIC GRAVITY (H_2O=1): 0.814 VAPOR PRESSURE (mm Hg): 26.67
SOLUBILITY IN WATER: COMPLETE REACTIVITY IN WATER: NO VAPOR DENSITY (Air=1): 1.2

APPEARANCE AND ODOR: GREEN LIQUID/ALCOHOLIC MELTING POINT: N/A

SECTION 4 - FIRE & EXPLOSION DATA

FLASH POINT: 70 ° F. C.O.C. FLAMMABLE LIMITS IN AIR % BY VOLUME: LEL LOWER 3.3% LEL UPPER 18.7%
AUTO-IGNITION: 670 ° F. EXTINGUISHER MEDIA: USE FOAM, CO_2 OR DRY CHEMICAL.

FIRE FIGHTING PROCEDURES: THE USE OF SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED FOR FIRE FIGHTERS. WATER MAY BE UNSUITABLE AS AN EXTINGUISHING MEDIA, BUT HELPFUL IN KEEPING ADJACENT CONTAINERS COOL. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES.

UNUSUAL FIRE AND EXPLOSION HAZARDS: LOW FLASH POINT. KEEP WORK AREAS FREE OF HOT METAL SURFACES AND OTHER SOURCES OF IGNITION.

SECTION 5 - PHYSICAL HAZARDS (REACTIVITY DATA)

STABILITY: STABLE CONDITIONS TO AVOID: OPEN FLAMES, HOT SURFACES, OR ANY IGNITION SOURCE.

INCOMPATIBILITY: THIS PRODUCT IS INCOMPATIBLE WITH STRONG OXIDIZING AGENTS, STRONG ACIDS OR BASES, ALKALI METALS, HALOGENS AND STRONG ALKALIES.

HAZARDOUS DECOMPOSITION PRODUCTS: THERMAL DECOMPOSITION IN THE PRESENCE OF AIR MAY YIELD CARBON MONOXIDE AND/OR CARBON DIOXIDE. ABOVE 200 ° C, ACETALDEHYDE, CROTONALDEHYDE AND ACETONE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

ALL INFORMATION APPEARING HEREIN CONCERNING OUR PRODUCT IS BASED UPON TESTS AND DATA BELIEVED TO BE RELIABLE; HOWEVER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE SAFETY, TOXICITY, AND SUITABILITY OF THE PRODUCT FOR HIS OWN USE. SINCE THE ACTUAL USE BY OTHERS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED, IS MADE BY REXCO AS TO THE EFFECTS OF SUCH USE, THE RESULTS TO BE OBTAINED, OR THE SAFETY AND TOXICITY OF THE PRODUCT NOR DOES REXCO ASSUME ANY LIABILITY ARISING OUT OF USE BY OTHERS, OF THE PRODUCT REFERRED TO HEREIN. NOR IS THE INFORMATION HEREIN TO BE CONSTRUED AS ABSOLUTELY COMPLETE SINCE ADDITIONAL INFORMATION MAY BE NECESSARY WHEN PARTICULAR CONDITIONS EXIST OR BECAUSE OF APPLICABLE LAWS OR GOVERNMENT REGULATIONS.

SECTION 6 - HEALTH HAZARDS

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ACUTE HEALTH EFFECTS AND ROUTES OF POTENTIAL ENTRY, PLUS SYMPTOMS OF OVEREXPOSURE

1. INHALATION: IRRITATES EYE, NOSE, THROAT, AND RESPIRATORY TRACT. MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION WITH SYMPTOMS OF HEADACHE, DIZZINESS, LOSS OF COORDINATION, UNCONSCIOUSNESS, AND EVEN DEATH IN EXTREME CASES.

2. SKIN: EXPOSURE TO LIQUID CAN CAUSE DEFATTING, DRYING AND IRRITATION.

3. EYES: IRRITATION TO CONJUNCTIVA.

4. INGESTION: GASTROINTESTINAL IRRITATION, BLINDNESS, DIZZINESS, HEADACHE, NAUSEA AND VOMITING LEADING TO SEVERE ILLNESS, UNCONSCIOUSNESS AND PERHAPS EVEN DEATH.
NOTE: TOXIC EFFECTS ARE FROM DENATURING AGENTS.

CHRONIC HEALTH EFFECTS:

CLASSIC ALCOHOLIC SYMPTOMS INCLUDING BIZARRE BEHAVIOR, SLURRED SPEECH AND LACK OF COORDINATION. POSSIBLE LIVER AND KIDNEY DAMAGE. DEFATTING OF SKIN, CHRONIC CONJUNCTIVITIS, CENTRAL NERVOUS SYSTEM DEPRESSION.

SYMPTOMS OF EXPOSURE: OVEREXPOSURE TO FUMES - LIGHT HEADED, NAUSEOUS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: PREEXISTING EYE, SKIN, CENTRAL NERVOUS SYSTEM OR RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

CHEMICAL LISTED AS CARCINOGEN OR PARTIAL CARCINOGEN: NATIONAL TOXICOLOGY PROGRAM: NO
I.A.R.C. MONOGRAPHS: NO OSHA: NO

ROUTES OF ENTRY: (EMERGENCY AND FIRST AID PROCEDURES)

1. INHALATION: IF LIGHT HEADED OR HAVING BREATHING DIFFICULTIES EXPOSE VICTIM TO FRESH AIR AND/OR OXYGEN. IF BREATHING STOPS, BEGIN ARTIFICIAL RESPIRATION AND SEEK MEDICAL ATTENTION.

2. EYES: FLUSH IMMEDIATELY WITH COLD WATER FOR 15 MINUTES, AND SEEK MEDICAL ATTENTION.

3. SKIN: WASH WITH SOAP AND WATER. IF IRRITATION FROM CONTACT PERSISTS, SEEK MEDICAL ATTENTION.

4. INGESTION: IF THIS PRODUCT IS SWALLOWED, INDUCE VOMITING IF THE VICTIM IS CONSCIOUS. SEEK IMMEDIATE MEDICAL ADVICE AND/OR ATTENTION.

SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

HANDLING AND STORAGE: STORE AWAY FROM OPEN FLAMES, HEAT AND SPARKS. STORE ONLY IN AREAS APPROVED FOR FLAMMABLE LIQUIDS. REPACK ONLY INTO D.O.T. APPROVED GLASS, POLYETHYLENE OR EPOXY LINED METAL CONTAINERS. IF TRANSFERRED, ALL NEW CONTAINERS MUST CONTAIN PRODUCT LABELS REQUIRED FOR PROPER IDENTIFICATION, SAFETY, HANDLING AND STORAGE.

OTHER PRECAUTIONS: WATER MAY BE UNSUITABLE AS AN EXTINGUISHING MEDIA, BUT HELPFUL IN KEEPING ADJACENT AREAS COOL. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES. EMPTY CONTAINERS MAY CONTAIN VAPORS THAT ARE FLAMMABLE AND/OR EXPLOSIVE.

IN CASE OF SPILL: KEEP SOURCES OF IGNITION AND HOT METAL SURFACES ISOLATED FROM THE SPILL. FLUSH SPILLED MATERIAL INTO SUITABLE RETAINING AREAS OR CONTAINERS. SMALL AMOUNTS OF SPILLED MATERIAL MAY BE ABSORBED WITH ANY STANDARD ABSORBENT. CAUTION! FLOORS COVERED WITH RESIDUAL MATERIAL BECOME EXTREMELY SLIPPERY WHEN WET.

WASTE DISPOSAL: CONSULT FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION 8 - SPECIAL PROTECTION INFORMATION AND CONTROL MEASURES

RESPIRATORY: THE USE OF RESPIRATORY PROTECTION DEPENDS ON VAPOR CONCENTRATIONS ABOVE THE TIME-WEIGHTED TLV: USE A NIOSH APPROVED CARTRIDGE RESPIRATOR OR GAS MASK.

VENTILATION: LOCAL EXHAUST (EXPLOSION PROOF VENTILATION).

PROTECTIVE GLOVES: IMPERMEABLE GLOVES FOR SENSITIVE INDIVIDUALS.

EYE PROTECTION: SAFETY GLASSES, GOGGLES OR FACE SHIELD.

PROTECTIVE EQUIPMENT: EYE WASHES AND SAFETY SHOWERS ARE RECOMMENDED IN WORK AREA.

HYGIENIC PRACTICES: CONTAMINATED CLOTHING SHOULD BE REMOVED AND WASHED IN HOT WATER WITH SOAP.

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MATERIAL SAFETY DATA SHEET

CIBA-GEIGY CORPORATION PLASTICS & ADDITIVES DIVISION THREE SKYLINE DRIVE HAWTHORNE, NEW YORK 10532 (914) 347-4700	EMERGENCY PHONE NUMBER: (800) 888-8372

SECTION I-IDENTITY INFORMATION

IDENTITY (TRADENAME): RP 1129 RESIN

FAMILY/CHEMICAL NAME:
EPOXY
PRODUCT TYPE:
SURFACE COAT RESIN
IMPORTANT:

* *
* THIS MATERIAL WILL NOT BE SOLD FOR USE IN PRODUCTS *
* FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR *
* ABRADED SKIN, OR IMPLANTATION WITHIN THE HUMAN BODY, IS *
* SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF *
* SUCH POTENTIAL USES, CIBA-GEIGY CORPORATION IS NOT ABLE *
* TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR *
* SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. *
* *

HAZARD STATEMENT :

* *
* THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN *
* PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD *
* COMMUNICATION STANDARD 29 CFR 1910.1200. *
* THIS PRODUCT IS CONSIDERED TO BE A HAZARDOUS *
* CHEMICAL UNDER THAT STANDARD. *
* *

SECTION II-HAZARDOUS INGREDIENTS

CHEMICAL NAME: BENTONITE
COMMON NAME : BENTONITE
CAS NUMBER : 01302-78-9
EXPOSURE LIMITS:
OSHA PEL : 15 MG./CU. M. AIR (AS NUISANCE DUST) TWA.

ACGIH TLV: 10 MG./CU. M. AIR (AS NUISANCE DUST) TWA.
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: TITANIUM DIOXIDE
COMMON NAME : TITANIUM DIOXIDE
CAS NUMBER : 13463-67-7
EXPOSURE LIMITS:
OSHA PEL : 15 MG./CU. M. AIR (AS NUISANCE DUST) TWA.
ACGIH TLV: 10 MG./CU. M. AIR (AS NUISANCE DUST) TWA.
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: CALCIUM CARBONATE
COMMON NAME : CALCIUM CARBONATE
CAS NUMBER : 01317-65-3
EXPOSURE LIMITS:
OSHA PEL : 15 MG./CU. M. AIR (AS NUISANCE DUST) TWA.
ACGIH TLV: 10 MG./CU. M. AIR (AS NUISANCE DUST) TWA.
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: DIGLYCIDYL ETHER OF BISPHENOL A
COMMON NAME : EPOXY RESIN
CAS NUMBER : 25068-38-6
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: C12 AND C14 ALKYL GLYCIDYL ETHERS
COMMON NAME : EPOXIDE 8
CAS NUMBER : 68609-97-2
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: PARA-TERTIARY BUTYLPHENYL GLYCIDYL ETHER
COMMON NAME : REACTIVE DILUENT
CAS NUMBER : 03101-60-8
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

SECTION III-PHYSICAL DATA

APPEARANCE AND ODOR:
WHITE PASTE
BOILING POINT:
NOT DETERMINED.

EVAPORATION RATE:
NOT DETERMINED.
PERCENT VOLATILE:
NEGLIGIBLE.
VAPOR DENSITY:
NOT DETERMINED.
VAPOR PRESSURE:
@ 25C 0.67 MMHG.
SOLUBILITY IN WATER:
NEGLIGIBLE
PH:
NOT DETERMINED.
SPECIFIC GRAVITY:
1.47 - 1.50 (WATER = 1)

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:
293F (PMCC)
FLAMMABLE LIMITS IN AIR-LOWER:
NOT ESTABLISHED.
FLAMMABLE LIMITS IN AIR-UPPER:
NOT ESTABLISHED.
EXTINGUISHING MEDIA:
CARBON DIOXIDE, DRY CHEMICAL, FOAM, WATER.
FIRE FIGHTING PROCEDURES-SPECIAL:
USE SELF-CONTAINED BREATHING APPARATUS.
UNUSUAL FIRE AND EXPLOSION HAZARDS:
DECOMPOSITION AND COMBUSTION PRODUCTS MAY BE TOXIC.

SECTION V-REACTIVITY DATA

STABILITY:
STABLE.
CONDITIONS TO AVOID:
EXCESSIVE HEAT FOR PROLONGED PERIODS OF TIME.
INCOMPATIBILITY:
STRONG OXIDIZERS, ACIDS AND BASES.
HAZARDOUS DECOMPOSITION PRODUCTS:
COMBUSTION MAY FORM TOXIC MATERIALS, SUCH AS CARBON DIOXIDE, CARBON MONOXIDE.
HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

SECTION VI-HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:
DERMAL; HEATED PRODUCT MAY PRODUCE INHALABLE VAPORS.
THRESHOLD LIMIT VALUE:
NONE ESTABLISHED FOR THIS PRODUCT. SEE THE HAZARDOUS INGREDIENTS SECTION.
SKIN IRRITATION:
IRRITANT.

Attachment 2a (Continued)

EYE IRRITATION:
IRRITANT.
SENSITIZATION:
POSSIBLE IN SUSCEPTIBLE INDIVIDUALS.
OVEREXPOSURE EFFECTS:
SKIN AND EYE IRRITATION AND ALLERGIC SKIN REACTIONS.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
SKIN AND EYE CONDITIONS.
EMERGENCY AND FIRST AID PROCEDURES-EYES:
IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-SKIN:
WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDER BEFORE RE-USE.
EMERGENCY AND FIRST AID PROCEDURES-INGESTION:
IF CONSCIOUS, GIVE PLENTY OF WATER TO DRINK. DO NOT INDUCE VOMITING. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-INHALATION:
REMOVE TO FRESH AIR. GIVE OXYGEN AND/OR ARTIFICIAL RESPIRATION, IF NEEDED. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-OTHER:
REFERRAL TO A PHYSICIAN IS RECOMMENDED IF THERE IS ANY QUESTION ABOUT THE SERIOUSNESS OF ANY INJURY.

SECTION VII-SPILL OR LEAK PROCEDURES

SPILL PROCEDURES:
REMOVE SPILLAGE BY ABSORBING IN ABSORBENT MATERIAL.
WASTE DISPOSAL METHODS:
CONSULT QUALIFIED LOCAL OR CORPORATE PERSONNEL FOR METHOD THAT WILL COMPLY WITH LOCAL, STATE AND FEDERAL HEALTH AND ENVIRONMENTAL REGULATIONS.

SECTION VIII-SPECIAL PROTECTION INFORMATION

VENTILATION:
GENERAL MECHANICAL AND LOCAL EXHAUST IN ACCORDANCE WITH ACGIH RECOMMENDATIONS.
PROTECTIVE GLOVES:
WEAR IMPERMEABLE GLOVES.
EYE PROTECTION:
WEAR SPLASH-PROOF CHEMICAL GOGGLES.
RESPIRATORY PROTECTION:
USE NIOSH APPROVED ORGANIC VAPOR CARTRIDGE RESPIRATOR WHEN VAPOR/MIST EXPOSURE IS LIKELY.

SECTION IX-SPECIAL PRECAUTIONS

HANDLING, SHIPPING AND STORING PRECAUTIONS:
WARNING CAUSES SKIN AND EYE IRRITATION. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. AVOID BREATHING VAPOR OR MIST. AVOID PROLONGED

OR REPEATED CONTACT WITH SKIN. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

HANDLING PRECAUTIONS:
NUISANCE DUST MAY BE GENERATED WHEN SANDING OR SAWING CURED MATERIAL.

SECTION X- REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:
LIQUID PLASTIC, N.O.I.
DOT CLASS:
NOT REGULATED.
RCRA STATUS:
NOT A HAZARDOUS WASTE UNDER RCRA (40 CFR 261).
SARA/TITLE III - TOXIC CHEMICALS LIST:
THIS PRODUCT DOES NOT CONTAIN A TOXIC CHEMICAL FOR ROUTINE ANNUAL 'TOXIC CHEMICAL RELEASE REPORTING' UNDER SEC. 313 (40 CFR 372).
TSCA INVENTORY STATUS:
CHEMICAL COMPONENTS LISTED ON TSCA INVENTORY.
PENNSYLVANIA RIGHT-TO-KNOW ACT:
THE FOLLOWING IS REQUIRED COMPOSITION INFORMATION.

CHEMICAL NAME	: BENTONITE
CAS NUMBER	: 1302-78-9
COMMON NAME	: BENTONITE
COMMENTS	: NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

CHEMICAL NAME	: LIMESTONE
CAS NUMBER	: 1317-65-3
COMMON NAME	: CALCIUM CARBONATE
COMMENTS	: HAZARDOUS SUBSTANCE.

* * *

CHEMICAL NAME	: TITANIUM OXIDE (TIO2)
CAS NUMBER	: 13463-67-7
COMMON NAME	: TITANIUM DIOXIDE
COMMENTS	: HAZARDOUS SUBSTANCE.

* * *

CHEMICAL NAME	: PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE
CAS NUMBER	: 25068-38-6
COMMON NAME	: EPOXY RESIN
COMMENTS	: NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

CHEMICAL NAME	: OXIRANE, 4-(1,1-DIMETHYLETHYL)PHENOXY METHYL -
CAS NUMBER	: 3101-60-8
COMMON NAME	: BUTYLPHENYL GLYCIDYL ETHER
COMMENTS	: NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

CHEMICAL NAME	: OXIRANE, MONO (C12-14-ALKYLOXY)METHYL DERIV

S.

CAS NUMBER	:	68609-97-2
COMMON NAME	:	C12 + C14 ALKYL GLYCIDYL ETHERS
COMMENTS	:	NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

ISSUE DATE: 12/10/88 REVISION: 05C ISSUED BY: PETER HENIGE
FOR FURTHER INFORMATION, PLEASE CONTACT: PRODUCT SAFETY DIR

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.

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MATERIAL SAFETY DATA SHEET

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CIBA-GEIGY CORPORATION PLASTICS & ADDITIVES DIVISION THREE SKYLINE DRIVE HAWTHORNE, NEW YORK 10532 (914) 347-4700	EMERGENCY PHONE NUMBER: (800) 888-8372

SECTION I-IDENTITY INFORMATION

IDENTITY (TRADENAME): **RP 1129 HARDENER**

FAMILY/CHEMICAL NAME:
AMINE

PRODUCT TYPE:
SURFACE COAT HARDENER

IMPORTANT:

* *
* THIS MATERIAL WILL NOT BE SOLD FOR USE IN PRODUCTS *
* FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR *
* ABRADED SKIN, OR IMPLANTATION WITHIN THE HUMAN BODY, IS *
* SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF *
* SUCH POTENTIAL USES, CIBA-GEIGY CORPORATION IS NOT ABLE *
* TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR *
* SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. *
* *

HAZARD STATEMENT :

* *
* THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN *
* PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD *
* COMMUNICATION STANDARD 29 CFR 1910.1200. *
* THIS PRODUCT IS CONSIDERED TO BE A HAZARDOUS *
* CHEMICAL UNDER THAT STANDARD. *
* *

SECTION II-HAZARDOUS INGREDIENTS

CHEMICAL NAME: 4 METHYL BENZENESULFONAMIDE
COMMON NAME : SUBSTITUTED BENZENESULFONAMIDE
CAS NUMBER : 00070-55-3
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: 4,4'-ISOPROPYLIDENE DIPHENOL
COMMON NAME : BISPHENOL A
CAS NUMBER : 00080-05-7
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: N-ETHYL, 4-METHYL BENZENESULFONAMIDE
COMMON NAME : SUBSTITUTED BENZENESULFONAMIDE
CAS NUMBER : 00080-39-7
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: 2-METHYL BENZENESULFONAMIDE
COMMON NAME : SUBSTITUTED BENZENESULFONAMIDE
CAS NUMBER : 00088-19-7
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: DIETHYLENE TRIAMINE
COMMON NAME : DETA
CAS NUMBER : 00111-40-0
EXPOSURE LIMITS:
ACGIH TLV: 4 MG./CU. M. TWA (SKIN).
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: N-ETHYL, 2-METHYL BENZENESULFONAMIDE
COMMON NAME : SUBSTITUTED BENZENESULFONAMIDE
CAS NUMBER : 01077-56-1
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: DIETHYLENE TRIAMINE, DIGLYCIDYL ETHER OF BISPHENOL A ADDUCT
COMMON NAME : AMINE ADDUCT
CAS NUMBER : 68610-56-0
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

SECTION III-PHYSICAL DATA

APPEARANCE AND ODOR:
CLEAR AMBER LIQUID, WITH AMMONIA ODOR
BOILING POINT:
) 400F
EVAPORATION RATE:
NOT DETERMINED.
PERCENT VOLATILE:
(1%.
VAPOR DENSITY:
NOT DETERMINED.

VAPOR PRESSURE:
@ 70C > 1.7 MMHG.
SOLUBILITY IN WATER:
SLIGHT.
PH:
NOT DETERMINED.
SPECIFIC GRAVITY:
1.07 - 1.17 (WATER = 1)

---------- SECTION IV-FIRE AND EXPLOSION HAZARD DATA ----------

FLASH POINT:
262F (PMCC)
FLAMMABLE LIMITS IN AIR-LOWER:
NOT ESTABLISHED.
FLAMMABLE LIMITS IN AIR-UPPER:
NOT ESTABLISHED.
EXTINGUISHING MEDIA:
CARBON DIOXIDE, DRY CHEMICAL, FOAM, WATER.
FIRE FIGHTING PROCEDURES-SPECIAL:
USE SELF-CONTAINED BREATHING APPARATUS.
UNUSUAL FIRE AND EXPLOSION HAZARDS:
DECOMPOSITION AND COMBUSTION PRODUCTS MAY BE TOXIC.

---------- SECTION V-REACTIVITY DATA ----------

STABILITY:
STABLE.
CONDITIONS TO AVOID:
EXCESSIVE HEAT FOR PROLONGED PERIODS OF TIME.
INCOMPATIBILITY:
STRONG OXIDIZING AGENTS, ACIDS, METAL-ORGANIC COMPOUNDS.
HAZARDOUS DECOMPOSITION PRODUCTS:
COMBUSTION MAY FORM TOXIC MATERIALS, SUCH AS CARBON DIOXIDE, CARBON MONOXIDE.
HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

---------- SECTION VI-HEALTH HAZARD DATA ----------

PRIMARY ROUTES OF EXPOSURE:
DERMAL; HEATED PRODUCT MAY PRODUCE INHALABLE VAPORS.
THRESHOLD LIMIT VALUE:
NONE ESTABLISHED FOR THIS PRODUCT. SEE THE HAZARDOUS INGREDIENTS SECTION.
SKIN IRRITATION:
CORROSIVE. CAUSES BURNS.
EYE IRRITATION:
CORROSIVE. CAUSES BURNS.
SENSITIZATION:
POSSIBLE IN SUSCEPTIBLE INDIVIDUALS.
OVEREXPOSURE EFFECTS:
DANGER CORROSIVE. CAUSES SKIN AND EYE BURNS. CAUSES ALLERGIC

SKIN AND RESPIRATORY REACTIONS.

OVEREXPOSURE-ACUTE:
DANGER CORROSIVE. CAUSES SKIN AND EYE BURNS.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
SKIN AND EYE CONDITIONS.

EMERGENCY AND FIRST AID PROCEDURES-EYES:
IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.

EMERGENCY AND FIRST AID PROCEDURES-SKIN:
WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDER BEFORE RE-USE.

EMERGENCY AND FIRST AID PROCEDURES-INGESTION:
IF CONSCIOUS, GIVE PLENTY OF WATER TO DRINK. DO NOT INDUCE VOMITING. CALL A PHYSICIAN.

EMERGENCY AND FIRST AID PROCEDURES-INHALATION:
REMOVE TO FRESH AIR. GIVE OXYGEN AND/OR ARTIFICIAL RESPIRATION, IF NEEDED. CALL A PHYSICIAN.

EMERGENCY AND FIRST AID PROCEDURES-OTHER:
REFERRAL TO A PHYSICIAN IS RECOMMENDED IF THERE IS ANY QUESTION ABOUT THE SERIOUSNESS OF ANY INJURY.

SECTION VII-SPILL OR LEAK PROCEDURES

SPILL PROCEDURES:
REMOVE SPILLAGE BY ABSORBING IN ABSORBENT MATERIAL. AVOID CONTACT.

WASTE DISPOSAL METHODS:
CONSULT QUALIFIED LOCAL OR CORPORATE PERSONNEL FOR METHOD THAT WILL COMPLY WITH LOCAL, STATE AND FEDERAL HEALTH AND ENVIRONMENTAL REGULATIONS.

SECTION VIII-SPECIAL PROTECTION INFORMATION

VENTILATION:
GENERAL MECHANICAL AND LOCAL EXHAUST IN ACCORDANCE WITH ACGIH RECOMMENDATIONS.

PROTECTIVE GLOVES:
IMPERMEABLE GLOVES AND PROTECTIVE CLOTHING.

EYE PROTECTION:
FULL FACE SHIELD.

RESPIRATORY PROTECTION:
USE NIOSH APPROVED ORGANIC VAPOR CARTRIDGE RESPIRATOR WHEN VAPOR/MIST EXPOSURE IS LIKELY.

SECTION IX-SPECIAL PRECAUTIONS

HANDLING, SHIPPING AND STORING PRECAUTIONS:
DANGER CORROSIVE - CAUSES SKIN AND EYE BURNS. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. DO NOT GET IN EYES, ON SKIN, ON CLOTHING. AVOID BREATHING VAPOR OR MIST. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

Best Available Copy

HANDLING PRECAUTIONS:
NUISANCE DUST MAY BE GENERATED WHEN SANDING OR SAWING
CURED MATERIAL.

---------- SECTION X- REGULATORY INFORMATION ----------

DOT PROPER SHIPPING NAME:
ALKALINE CORROSIVE LIQUID, N.O.S., NA 1719
DIETHYLENE TRIAMINE SOLUTION
DOT CLASS:
CORROSIVE MATERIAL.
RCRA STATUS:
NOT A HAZARDOUS WASTE UNDER RCRA (40 CFR 261) BUT HANDLE
WITH CARE DUE TO CORROSIVE EFFECT ON SKIN AND EYES.
SARA/TITLE III - TOXIC CHEMICALS LIST:
THIS PRODUCT IS (OR CONTAINS) A TOXIC CHEMICAL FOR ROUTINE
ANNUAL "TOXIC CHEMICAL RELEASE REPORTING" UNDER SEC. 313
(40 CFR 372).
15.0000% 80-05-7 4,4'-ISOPROPYLIDENEDIPHENOL
TSCA INVENTORY STATUS:
CHEMICAL COMPONENTS LISTED ON TSCA INVENTORY.
PENNSYLVANIA RIGHT-TO-KNOW ACT:
THE FOLLOWING IS REQUIRED COMPOSITION INFORMATION.

CHEMICAL NAME : 1,2-ETHANEDIAMINE, N-(2-AMINOETHYL)-
CAS NUMBER : 00111-40-0
COMMON NAME : DIETHYLENE TRIAMINE
COMMENTS : HAZARDOUS SUBSTANCE.
* * *

CHEMICAL NAME : PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYME
WITH (CHLOROMETHYL)OXIRANE, DIETHYLENETRIAMIN
TERMINATED
CAS NUMBER : 68610-56-0
COMMON NAME : DIETHYLENE TRIAMINE ADDUCT WITH EPOXY RESIN
COMMENTS : NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST
* * *

CHEMICAL NAME : BENZENESULFONAMIDE, 4-METHYL-
CAS NUMBER : 00070-55-3
COMMON NAME : TOLUENE SULFONAMIDE
COMMENTS : NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LI
* * *

CHEMICAL NAME : PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-
CAS NUMBER : 00080-05-7
COMMON NAME : BISPHENOL A
COMMENTS : NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE
* * *

CHEMICAL NAME : BENZENESULFONAMIDE, 2-METHYL-
CAS NUMBER : 00088-19-7
COMMON NAME : TOLUENE SULFONAMIDE
COMMENTS : NOT ON PENNSYLVANIA HAZARDOUS SUBSTANC
* * *

ISSUE DATE: 12/09/88 REVISION: 06C ISSUED BY: M. MUNSELL
FOR FURTHER INFORMATION, PLEASE CONTACT: PRODUCT SAFETY DIR

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.

Attachment 3A

05758 Reused 1/10/88

MATERIAL SAFETY DATA SHEET

CIBA-GEIGY CORPORATION PLASTICS & ADDITIVES DIVISION SEVEN SKYLINE DRIVE HAWTHORNE, NEW YORK 10532 (914) 347-4700	EMERGENCY PHONE NUMBER: (800) 888-8372

RECEIVED
FEB 3 1989
SAFETY ENGINEERING

SECTION I-IDENTITY INFORMATION

IDENTITY (TRADENAME): RP 1710 RESIN

FAMILY/CHEMICAL NAME:
EPOXY
PRODUCT TYPE:
LAMINATING RESIN
IMPORTANT:

* *
* THIS MATERIAL WILL NOT BE SOLD FOR USE IN PRODUCTS *
* FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR *
* ABRADED SKIN, OR IMPLANTATION WITHIN THE HUMAN BODY, IS *
* SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF *
* SUCH POTENTIAL USES, CIBA-GEIGY CORPORATION IS NOT ABLE *
* TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR *
* SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. *
* *

HAZARD STATEMENT :

* *
* THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN *
* PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD *
* COMMUNICATION STANDARD 29 CFR 1910.1200. *
* THIS PRODUCT IS CONSIDERED TO BE A HAZARDOUS *
* CHEMICAL UNDER THAT STANDARD. *
* *

SECTION II-HAZARDOUS INGREDIENTS

CHEMICAL NAME: CALCIUM CARBONATE
COMMON NAME : CALCIUM CARBONATE
CAS NUMBER : 01317-65-3
EXPOSURE LIMITS:
OSHA PEL : 15 MG./CU. M. AIR TWA.
ACGIH TLV: 10 MG./CU. M. AIR TWA.
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: PARA-TERTIARY BUTYLPHENYL GLYCIDYL ETHER
COMMON NAME : REACTIVE DILUENT
CAS NUMBER : 03101-60-8

CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: TITANIUM DIOXIDE
COMMON NAME : TITANIUM DIOXIDE
CAS NUMBER : 13463-67-7
EXPOSURE LIMITS:
OSHA PEL. : 15 MG./CU. M. AIR (AS NUISANCE DUST) TWA.
ACGIH TLV: 10 MG./CU. M. AIR (AS NUISANCE DUST) TWA.
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: DIGLYCIDYL ETHER OF BISPHENOL A
COMMON NAME : EPOXY RESIN
CAS NUMBER : 25068-38-6
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

CHEMICAL NAME: C12 AND C14 ALKYL GLYCIDYL ETHERS
COMMON NAME : EPOXIDE 8
CAS NUMBER : 68609-97-2
CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY NTP, IARC, OR OSHA.

SECTION III-PHYSICAL DATA

APPEARANCE AND ODOR:
WHITE OPAQUE LIQUID, WITH VERY SLIGHT MILD ODOR
BOILING POINT:
NOT DETERMINED.
EVAPORATION RATE:
NOT DETERMINED.
PERCENT VOLATILE:
0.6% MAX
VAPOR DENSITY:
NOT DETERMINED.
VAPOR PRESSURE:
@ 25C 0.19 MMHG.
SOLUBILITY IN WATER:
NEGLIGIBLE
PH:
NOT DETERMINED.
SPECIFIC GRAVITY:
1.47 - 1.50 (WATER = 1)

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:
293F (PMCC)
FLAMMABLE LIMITS IN AIR-LOWER:
NOT ESTABLISHED.
FLAMMABLE LIMITS IN AIR-UPPER:
NOT ESTABLISHED.
EXTINGUISHING MEDIA:
CARBON DIOXIDE, DRY CHEMICAL, FOAM, WATER.
FIRE FIGHTING PROCEDURES-SPECIAL:
USE SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
DECOMPOSITION AND COMBUSTION PRODUCTS MAY BE TOXIC.

SECTION V-REACTIVITY DATA

STABILITY:
STABLE.
CONDITIONS TO AVOID:
EXCESSIVE HEAT FOR PROLONGED PERIODS OF TIME.
INCOMPATIBILITY:
STRONG OXIDIZERS, ACIDS AND BASES.
HAZARDOUS DECOMPOSITION PRODUCTS:
COMBUSTION MAY FORM TOXIC MATERIALS, SUCH AS CARBON DIOXIDE, CARBON MONOXIDE.
HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

SECTION VI-HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:
DERMAL; HEATED PRODUCT MAY PRODUCE INHALABLE VAPORS.
THRESHOLD LIMIT VALUE:
NONE ESTABLISHED FOR THIS PRODUCT. SEE THE HAZARDOUS INGREDIENTS SECTION.
SKIN IRRITATION:
IRRITANT.
EYE IRRITATION:
IRRITANT.
SENSITIZATION:
POSSIBLE IN SUSCEPTIBLE INDIVIDUALS.
OVEREXPOSURE EFFECTS:
SKIN AND EYE IRRITATION AND ALLERGIC SKIN REACTIONS.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
SKIN AND EYE CONDITIONS.
EMERGENCY AND FIRST AID PROCEDURES-EYES:
IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-SKIN:
WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDER BEFORE RE-USE.
EMERGENCY AND FIRST AID PROCEDURES-INGESTION:
IF CONSCIOUS, GIVE PLENTY OF WATER TO DRINK. DO NOT INDUCE VOMITING. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-INHALATION:
REMOVE TO FRESH AIR. GIVE OXYGEN AND/OR ARTIFICIAL RESPIRATION, IF NEEDED. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-OTHER:
REFERRAL TO A PHYSICIAN IS RECOMMENDED IF THERE IS ANY QUESTION ABOUT THE SERIOUSNESS OF ANY INJURY.

SECTION VII-SPILL OR LEAK PROCEDURES

SPILL PROCEDURES:
REMOVE SPILLAGE BY ABSORBING IN ABSORBENT MATERIAL.
WASTE DISPOSAL METHODS:
CONSULT QUALIFIED LOCAL OR CORPORATE PERSONNEL FOR METHOD THAT WILL COMPLY WITH LOCAL, STATE AND FEDERAL HEALTH AND ENVIRONMENTAL REGULATIONS.

Attachment 3A (Continued)

SECTION VIII-SPECIAL PROTECTION INFORMATION

VENTILATION:
GENERAL MECHANICAL AND LOCAL EXHAUST IN ACCORDANCE WITH ACGIH RECOMMENDATIONS.

PROTECTIVE GLOVES:
WEAR IMPERMEABLE GLOVES.

EYE PROTECTION:
WEAR SPLASH-PROOF CHEMICAL GOGGLES.

RESPIRATORY PROTECTION:
USE NIOSH APPROVED ORGANIC VAPOR CARTRIDGE RESPIRATOR WHEN VAPOR/MIST EXPOSURE IS LIKELY.

SECTION IX-SPECIAL PRECAUTIONS

HANDLING, SHIPPING AND STORING PRECAUTIONS:
WARNING! CAUSES SKIN AND EYE IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.
AVOID CONTACT WITH EYES, SKIN, AND CLOTHING.
AVOID PROLONGED OR REPEATED CONTACT WITH SKIN.
WASH THOROUGHLY AFTER HANDLING.

HANDLING PRECAUTIONS:
NUISANCE DUST MAY BE GENERATED WHEN SANDING OR SAWING CURED MATERIAL.

SECTION X-REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:
LIQUID PLASTIC, N.O.I.

DOT CLASS:
NOT REGULATED.

RCRA STATUS:
NOT A HAZARDOUS WASTE UNDER RCRA (40 CFR 261).

SARA/TITLE III - TOXIC CHEMICALS LIST:
THIS PRODUCT DOES NOT CONTAIN A TOXIC CHEMICAL FOR ROUTINE ANNUAL 'TOXIC CHEMICAL RELEASE REPORTING' UNDER SEC. 313 (40 CFR 372).

TSCA INVENTORY STATUS:
CHEMICAL COMPONENTS LISTED ON TSCA INVENTORY.

PENNSYLVANIA RIGHT-TO-KNOW ACT:
THE FOLLOWING IS REQUIRED COMPOSITION INFORMATION.

CHEMICAL NAME	: LIMESTONE
CAS NUMBER	: 1317-65-3
COMMON NAME	: CALCIUM CARBONATE
COMMENTS	: HAZARDOUS SUBSTANCE.

* * *

CHEMICAL NAME	: TITANIUM OXIDE (TIO2)
CAS NUMBER	: 13463-67-7
COMMON NAME	: TITANIUM DIOXIDE
COMMENTS	: HAZARDOUS SUBSTANCE.

* * *

CHEMICAL NAME	: PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-, POLYMER WITH (CHLOROMETHYL)OXIRANE
CAS NUMBER	: 25068-38-6
COMMON NAME	: EPOXY RESIN

Attachment 3A (Continued)

COMMENTS	: NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

CHEMICAL NAME	: OXIRANE, ((4-(1,1-DIMETHYLETHYL)PHENOXY)METHYL)-
CAS NUMBER	: 3101-60-8
COMMON NAME	: BUTYLPHENYL GLYCIDYL ETHER
COMMENTS	: NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

CHEMICAL NAME	: OXIRANE, MONO((C12-14-ALKYLOXY)METHYL) DERIVS.
CAS NUMBER	: 68609-97-2
COMMON NAME	: C12 + C14 ALKYL GLYCIDYL ETHERS
COMMENTS	: NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

ISSUE DATE: 12/10/88 REVISION: 06 PREPARED BY: PETER HENIGE
FOR FURTHER ~~HEALTH/~~SAFETY INFORMATION, CONTACT : PRODUCT SAFETY DIR
FOR TECHNICAL INFORMATION CONTACT YOUR TECHNICAL SALES REPRESENTATIVE.

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.

Revision 05757

Attachment 3B

MATERIAL SAFETY DATA SHEET

CIBA-GEIGY CORPORATION FORMULATED SYSTEMS GROUP 4917 DAWN AVE EAST LANSING, MI 48823 (517) 351-5900	EMERGENCY PHONE NUMBER: (800) 888-8372

SECTION I-IDENTITY INFORMATION

IDENTITY (TRADENAME): RP 1710 HARDENER

FAMILY/CHEMICAL NAME:
ACCELERATED AMINE
PRODUCT TYPE:
LAMINATING HARDENER
IMPORTANT:

* *
* THIS MATERIAL WILL NOT BE SOLD FOR USE IN PRODUCTS *
* FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR *
* ABRADED SKIN, OR IMPLANTATION WITHIN THE HUMAN BODY, IS *
* SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF *
* SUCH POTENTIAL USES, CIBA-GEIGY CORPORATION IS NOT ABLE *
* TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR *
* SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. *
* *

HAZARD STATEMENT :

* *
* THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN *
* PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD *
* COMMUNICATION STANDARD 29 CFR 1910.1200. *
* THIS PRODUCT IS CONSIDERED TO BE A HAZARDOUS *
* CHEMICAL UNDER THAT STANDARD. *
* *

SECTION II-HAZARDOUS INGREDIENTS

CHEMICAL NAME: TRIETHYLENE TETRAMINE
COMMON NAME : TETA
CAS NUMBER : 00112-24-3
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN

E

BY NTP, IARC, OR OSHA.

CHEMICAL NAME: NONYL PHENOL
COMMON NAME : NONYL PHENOL
CAS NUMBER : 25154-52-3
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN
BY NTP, IARC, OR OSHA.

CHEMICAL NAME: SALICYLIC ACID
COMMON NAME : SALICYLIC ACID
CAS NUMBER : 00069-72-7
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN
BY NTP, IARC, OR OSHA.

CHEMICAL NAME: TRIETHYLENE TETRAMINE POLYMER WITH METHYL OXIRANE
COMMON NAME : HYDROXY ALKYLATED POLYAMINE
CAS NUMBER : 26950-63-0
CARCINOGENICITY:
THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN
BY NTP, IARC, OR OSHA.

SECTION III-PHYSICAL DATA

APPEARANCE AND ODOR:
CLEAR AMBER LIQUID, WITH SLIGHT AMMONIACAL ODOR
BOILING POINT:
NOT DETERMINED.
EVAPORATION RATE:
NOT DETERMINED.
PERCENT VOLATILE:
NEGLIGIBLE.
VAPOR DENSITY:
NOT DETERMINED.
SOLUBILITY IN WATER:
MODERATE.
PH:
NOT DETERMINED.
SPECIFIC GRAVITY:
1.02 - 1.06 (WATER = 1)

SECTION IV-FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:
) 340F (OPEN CUP)
FLAMMABLE LIMITS IN AIR-LOWER:
NOT ESTABLISHED.
FLAMMABLE LIMITS IN AIR-UPPER:
NOT ESTABLISHED.
EXTINGUISHING MEDIA:

CARBON DIOXIDE, DRY CHEMICAL, FOAM, WATER.
FIRE FIGHTING PROCEDURES-SPECIAL:
USE SELF-CONTAINED BREATHING APPARATUS.
UNUSUAL FIRE AND EXPLOSION HAZARDS:
DECOMPOSITION AND COMBUSTION PRODUCTS MAY BE TOXIC.

SECTION V-REACTIVITY DATA

STABILITY:
STABLE.
CONDITIONS TO AVOID:
EXCESSIVE HEAT FOR PROLONGED PERIODS OF TIME.
INCOMPATIBILITY:
STRONG OXIDIZING AGENTS, ACIDS, METAL-ORGANIC COMPOUNDS.
HAZARDOUS DECOMPOSITION PRODUCTS:
COMBUSTION MAY FORM TOXIC MATERIALS, SUCH AS CARBON DIOXIDE, CARBON MONOXIDE.
HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

SECTION VI-HEALTH HAZARD DATA

PRIMARY ROUTES OF EXPOSURE:
DERMAL; HEATED PRODUCT MAY PRODUCE INHALABLE VAPORS.
THRESHOLD LIMIT VALUE:
NONE ESTABLISHED FOR THIS PRODUCT. SEE THE HAZARDOUS INGREDIENTS SECTION.
SKIN IRRITATION:
IRRITANT.
EYE IRRITATION:
REGARD AS CORROSIVE
SENSITIZATION:
POSSIBLE IN SUSCEPTIBLE INDIVIDUALS.
OVEREXPOSURE EFFECTS:
SKIN IRRITATION AND EYE BURNS.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
SKIN AND EYE CONDITIONS.
EMERGENCY AND FIRST AID PROCEDURES-EYES:
IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-SKIN:
WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDER BEFORE RE-USE.
EMERGENCY AND FIRST AID PROCEDURES-INGESTION:
IF CONSCIOUS, GIVE PLENTY OF WATER TO DRINK. DO NOT INDUCE VOMITING. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-INHALATION:
REMOVE TO FRESH AIR. GIVE OXYGEN AND/OR ARTIFICIAL RESPIRATION, IF NEEDED. CALL A PHYSICIAN.
EMERGENCY AND FIRST AID PROCEDURES-OTHER:
REFERRAL TO A PHYSICIAN IS RECOMMENDED IF THERE IS ANY QUESTION ABOUT THE SERIOUSNESS OF ANY INJURY.

SECTION VII-SPILL OR LEAK PROCEDURES

SPILL PROCEDURES:
REMOVE SPILLAGE BY ABSORBING IN ABSORBENT MATERIAL.
WASTE DISPOSAL METHODS:
CONSULT QUALIFIED LOCAL OR CORPORATE PERSONNEL FOR METHOD THAT WILL COMPLY WITH LOCAL, STATE AND FEDERAL HEALTH AND ENVIRONMENTAL REGULATIONS.

SECTION VIII-SPECIAL PROTECTION INFORMATION

VENTILATION:
GENERAL MECHANICAL AND LOCAL EXHAUST IN ACCORDANCE WITH ACGIH RECOMMENDATIONS.
PROTECTIVE GLOVES:
WEAR IMPERMEABLE GLOVES.
EYE PROTECTION:
WEAR SPLASH-PROOF CHEMICAL GOGGLES.
RESPIRATORY PROTECTION:
USE NIOSH APPROVED ORGANIC VAPOR CARTRIDGE RESPIRATOR WHEN VAPOR/MIST EXPOSURE IS LIKELY.

SECTION IX-SPECIAL PRECAUTIONS

HANDLING, SHIPPING AND STORING PRECAUTIONS:
DANGER CORROSIVE - CAUSES EYE BURNS AND SKIN IRRITATION. DO NOT GET IN EYES. AVOID CONTACT WITH SKIN AND CLOTHING. AVOID BREATHING VAPORS OR MIST. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

HANDLING PRECAUTIONS:
NUISANCE DUST MAY BE GENERATED WHEN SANDING OR SAWING CURED MATERIAL.

SECTION X- REGULATORY INFORMATION

DOT PROPER SHIPPING NAME:
LIQUID PLASTIC, N.O.I.
DOT CLASS:
NOT REGULATED.
RCRA STATUS:
NOT A HAZARDOUS WASTE UNDER RCRA (40 CFR 261).
SARA/TITLE III - TOXIC CHEMICALS LIST:
THIS PRODUCT DOES NOT CONTAIN A TOXIC CHEMICAL FOR ROUTINE ANNUAL 'TOXIC CHEMICAL RELEASE REPORTING' UNDER SEC. 313 (40 CFR 372).
TSCA INVENTORY STATUS:
CHEMICAL COMPONENTS LISTED ON TSCA INVENTORY.
PENNSYLVANIA RIGHT-TO-KNOW ACT:
THE FOLLOWING IS REQUIRED COMPOSITION INFORMATION.

Attachment 3B (Continued)

CHEMICAL NAME : 1,2-ETHANEDIAMINE, N,N'-BIS(2-AMINOETHYL)-
CAS NUMBER : 112-24-3
COMMON NAME : TRIETHYLENE TETRAMINE
COMMENTS : HAZARDOUS SUBSTANCE.

* * *

CHEMICAL NAME : PHENOL, NONYL-
CAS NUMBER : 25154-52-3
COMMON NAME : NONYL PHENOL
COMMENTS : HAZARDOUS SUBSTANCE.

* * *

CHEMICAL NAME : 1,2-ETHANEDIAMINE, N,N'-BIS(2-AMINOETHYL)-, POLYMER WITH METHYLOXIRANE
CAS NUMBER : 26950-63-0
COMMON NAME : PROPOXYLATED TRIETHYLENE TETRAMINE
COMMENTS : NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

CHEMICAL NAME : BENZOIC ACID, 2-HYDROXY-
CAS NUMBER : 69-72-7
COMMON NAME : SALICYLIC ACID
COMMENTS : NOT ON PENNSYLVANIA HAZARDOUS SUBSTANCE LIST.

* * *

ISSUE DATE: 12/10/88 REVISION: 07C ISSUED BY: PETER HENIGE
FOR FURTHER INFORMATION, PLEASE CONTACT: PRODUCT SAFETY DIR

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.

MATERIAL SAFETY DATA SHEET

Product Trade Name:
WEST SYSTEM® 105 Resin

HMIS Hazard Rating Index
2 Health
1 Flammability
0 Reactivity
H Personal Protection

Manufacturer:
Gougeon Brothers, Inc
100 Patterson Ave.
Bay City, MI 48706 USA
(517) 684-7286

Emergency Telephone:
Chemtrec **(800) 424-9300**
Poison Hotline **(313) 745-5711**

Date Prepared: January 11, 1990
Replaces: June 2, 1989

Section 1 - Product Information

Chemical Tradename/Synonyms: . . . . . Diluted epoxidized resin
Chemical Family . . . . . .Diluted epoxy resin
DOT Hazard Classification: . . . . . .Not regulated
Formula/Molecular Weight: . . . . . .n/a - mixture

Section 2 - Hazardous Ingredients

Material or component:	CAS Number	Contents %	ACGIH (TLV)	OSHA (PEL)	STEL
Benzyl alcohol	100-51-6		n/a	n/a	n/a
Bisphenol-F based epoxy resin	28064-14-4		n/a	n/a	n/a
Bisphenol-A based epoxy resin	25068-38-6		n/a	n/a	n/a
Epichlorohydrin	106-89-8	< 4 ppm	2 ppm	2 ppm	--

Section 3 - Physical Data

Boiling Point:	> 400°F	Melting point:	n/a	Solubility in Water:	slight
% Volatile (vol):	< 15	Specific Gravity (water = 1):	1.15	Vapor pressure (mmHg):	< 1 mmHg @ 20°C
Evaporation rate:	slower than butyl acetate	Vapor Density:	heavier than air	pH:	no info.
Freezing point:	no info.	Viscosity:	no info.	Critical temperature:	no info.

Appearance and odor: . . . Light yellow liquid with mild odor.

Other: . . . None

Section 4 - Fire & Explosion Hazard Data

Flash point (method): > 200°F (TCC) Autoignition temperature: > 800°F
Flammable limits in air (%): n/d Lower: n/d Upper: n/d

Extinguishing media: . . . . . Foam, CO_2, dry chemical

Special fire fighting procedures: . . . . Remove all ignition sources. Wear self-contained breathing apparatus and complete personal protective equipment.

Unusual fire and explosion hazards: . . Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat.

Section 5 - Reactivity Data

Product corrosive: No Stability: Stable

Hazardous polymerization: . . . . . Will not occur by itself, but a mass of more than one pound of product plus an aliphatic amine will cause irreversible polymerization with significant heat buildup.

Conditions to avoid: . . . . . Excessive heat over long periods of time degrades the resin.

Materials to avoid: . . . . . Strong acids or bases.

Hazardous decomposition products: . . Fumes produced when heated to decomposition may include carbon monoxide and carbon dioxide.

Section 6 - Health Hazard Data

Ingestion: . . . . . Low acute oral toxicity.

Inhalation: . . . . . Not considered a problem unless heated to high temperature.

Eye contact: . . . . May cause irritation.

Skin contact: . . . . May cause allergic skin response.

Skin absorption: . . Not likely to be absorbed in toxic amounts.

Chronic effects of overexposure: . . Epichlorohydrin has been reported to produce cancer in laboratory animals and epidemiological studies present "weak" evidence of cancer risk to humans. It is listed in the IARC monographs and by NTP.

Other: . . . . . Referral to a physician is recommended if there is any question about the seriousness of any injury.

Section 7 - Emergency & First Aid Procedures

Ingestion: . . . . . Induce vomiting if large amounts are ingested.

Inhalation: . . . . . Remove to fresh air if effects occur. Consult a physician.

Eye contact: . . . . Flush immediately with water for 5 minutes. Consult a physician.

Skin contact: . . . . Wash off in flowing water or shower. Consult a physician. Decontaminate clothing and accessories before reuse.

Section 8 - Spills, Leaks, Handling & Storage Procedures

Spill & leak procedures: . . . . . Soak up in absorbent material or scrape up. Residual can be removed with non-flammable solvent such as methylene chloride.

Waste disposal method: . . . . . (Disposer must comply with federal, state or local waste disposal laws.) Dispose of waste per federal, state or local regulations.

Handling & storage methods: . . . . Store in tight containers to prevent moisture absorption and loss of volatiles.

Section 9 - Special Protection Information

Ventilation requirements: . . . . . Good room ventilation usually adequate for most operations.

Respiratory protection: . . . . . (Use NIOSH/MSHA approved respirators.) Use respirators whenever exposure to vapor/mist is likely unless levels are below applicable limits.

Protective clothing: . . . . . Clean, body-covering clothing; rubber gloves.

Eye protection: . . . . . Safety glasses.

Additional protective measures: . . . Practice good caution and personal cleanliness to avoid skin and eye contact. Avoid breathing vapors of heated materials.

Section 10 - Special Precautions

None

Section 11 - Additional Information

This product contains the following chemicals that have been designated as cancer and/or reproductive hazards under California Proposition 65, SARA Title III, Section 313 and state R-T-K composition in Pennsylvania, Massachusetts and Canada:

Component	CAS Number	Wt. %
Epichlorohydrin	106-89-8	< 4 ppm

The information in the MSDS was obtained from sources which we believe are reliable but cannot guarantee. Additionally, your use of the information is beyond our control and may be beyond our knowledge. Therefore, the information is provided without any representation or warranty, express or implied.

MATERIAL SAFETY DATA SHEET

Product Trade Name:
WEST SYSTEM® 205 Fast Hardener

HMIS Hazard Rating Index
3 Health
1 Flammability
0 Reactivity
H Personal Protection

Manufacturer:
Gougeon Brothers, Inc
100 Patterson Ave.
Bay City, MI 48706 USA
(517) 684-7286

Emergency Telephone:
Chemtrec (800) 424-9300
Poison Hotline (313) 745-5711

Date Prepared: October 18, 1989
Replaces: June 2, 1989----

Section 1 - Product Information

Chemical Tradename/Synonyms: . . . . . Modified aliphatic polyamine
Chemical Family . . . . . Amine hardener
DOT Hazard Classification . . . . . Corrosive material, UN1760
Formula/Molecular Weight: . . . . . n/a - mixture

Section 2 - Hazardous Ingredients

Material or component:	CAS Number	Contents %	ACGIH (TLV)	OSHA (PEL)	STEL
Phenol (hydroxybenzene)	108-95-2	< 12	5 ppm	5 ppm	10 ppm
Triethylenetetramine (TETA)	112-24-3		n/a	n/a	n/a
Tetraethylenepentamine (TEPA)	112-57-2		not est.	not est.	not est.
Modified polyamine	n/a		n/a	n/a	n/a

Section 3 - Physical Data

Boiling Point:	> 480°F	Melting point:	n/a	Solubility in Water:	appreciable
% Volatile (vol):	nil	Specific Gravity (water = 1):	1.06	Vapor pressure (mmHg):	< 1 mmHg @ 20°C
Evaporation rate:	slower than butyl acetate	Vapor Density:	heavier than air	pH:	no info.
Freezing point:	no info.	Viscosity:	no info.	Critical temperature:	no info

Appearance and odor: . . . Amber-colored liquid, ammonia odor.

Other: . . . None

Section 4 - Fire & Explosion Hazard Data

Flash point (method): > 200°F (PMCC) Autoignition temperature: 572°F
Flammable limits in air (%): n/d lower: n/d Upper: n/d

Extinguishing media: . . . . . Water fog, alcohol foam, CO_2, dry chemical.

Special fire fighting procedures: . . . . Use full protective clothing and a self-contained breathing apparatus.

Unusual fire and explosion hazards: . .Not available.

Section 5 - Reactivity Data

Product corrosive: No Stability: Stable

Hazardous polymerization: . . . . . Will not occur.

Conditions to avoid: . . . . . Avoid excessive heat for long periods of time.

Materials to avoid: . . . . . .Acids, oxidizing materials, halogenated organic compounds such as methylene chloride. (See Section 10, Special Precautions.)

Hazardous decomposition products: . . Carbon monoxide, carbon dioxide, and nitrogen oxides when burned.

Section 6 - Health Hazard Data

Ingestion: . . . . . .Single dose oral toxicity is low.

Inhalation: . . . . . Excessive exposure may cause irritation to upper respiratory tract.

Eye contact: . . . . May cause severe irritation with corneal injury.

Skin contact: . . . . Not considered to be primary dermal irritant.

Skin absorption: . . Low toxicity by dermal absorption.

Chronic effects of overexposure: . . Possible irritation and sensitization.

Section 7 - Emergency & First Aid Procedures

Ingestion: . . . . . .Do not induce vomiting. Give large amounts of water or milk. Get medical attention immediately.

Inhalation: . . . . . Move to fresh air if effects occur. Consult a physician.

Eye contact: . . . . Immediate and continuous irrigation with flowing water for at least 30 minutes. Prompt medical consultation is essential.

Skin contact: . . . . Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes.

Other: . . . . . .Referral to a physician is recommended if there is any question about the seriousness of any injury.

Section 8 - Spills, Leaks, Handling & Storage Procedures

Spill & leak procedures: . . . . . Large spill - dike and pump into appropriate containers. Small spill - dilute with water and use non-combustible absorbent material/sand and shovel into suitable container.

Waste disposal method: . . . . . .(Disposer must comply with federal, state or local waste disposal laws.) Dispose of waste in accordance with federal, state, and local regulations.

Handling & storage methods: . . . . Store in cool, dry place with adequate ventilation, away from open flames and high temperatures.

Section 9 - Special Protection Information

Ventilation requirements: . . . . . General mechanical or local in accordance with ACGIH recommendations.

Respiratory protection: . . . . . .(Use NIOSH/MSHA approved respirators.) NIOSH-approved respiratory protection required in the absence of proper environmental control.

Protective clothing: . . . . . .Impervious gloves - neoprene or rubber.

Eye protection: . . . . . .Splash-proof goggles or safety glasses with side shields.

Additional protective measures: . . .No information.

Section 10 - Special Precautions

Avoid contact with eyes or prolonged contact with skin.

Avoid repeated or prolonged inhalation of vapors.

Don't let the hardener accidentally contact acids, oxidizing materials, or halogenated compounds such as methylene chloride; it can react violently. While reactions with these chemicals may be slow initially, external heating or self-heating can result in rapid temperature increases and serious hazards. If such reactions were to take place in a closed waste drum, where the growing vapor pressure had no way of being released, the drum could expand and rupture.

Section 11 - Additional Information

None

The information in the MSDS was obtained from sources which we believe are reliable but cannot guarantee. Additionally, your use of the information is beyond our control and may be beyond our knowledge. Therefore, the information is provided without any representation or warranty, express or implied.

MATERIAL DATA SAFETY SHEET

Attachment 5A **BEST AVAILABLE COPY**

U.S. CHEMICAL & PLASTICS
1446 W. TUSCARAWAS ST.
CANTON, OH 44706
PHONE: 216-455-4311

Product Code: 21330, 21335, 21360, 21333
21350

Revision Date: 4/25/89
Supercedes Form Dated: 1/27/89

TRADENAME ..... Feather-Rite
PROPER SHIPPING NAME ..... Putty
SYNONYM OR CROSS REFERENCE ..... Polyester Paste
SCHEDULE B#: 3907.91.000-8

HAZARDOUS INGREDIENTS

Materials or Components	% (w/w)	CAS No.	Hazard data
Styrene	13-20%	100-42-5	OSHA: PEL 100 ppm; CPEL 200 ppm ACGIH: TLV 50 ppm; STEL 100 ppm See Health Hazard Information
Non-Fibrous Talc	32-42%	14807-96-6	ACGIH: TWA 2 mg/m^3; OSHA: TLV 20 mppcf
Calcium Carbonate	1-10%	1317-65-3	ACGIH: TWA 10 ppm
Glass Beads	1-10%	50815-87-7	ACGIH: TWA 10 mg/m^3
Castor Oil Derivative	1-3%	8001-78-3	OSHA: PEL 15 mg/m^3

PHYSICAL PROPERTIES

BOILING POINT ..... N/A
VAPOR PRESSURE ..... N/A
VAPOR DENSITY (Air = 1) ..... >1
WATER SOLUBILITY ..... None
APPEARANCE ..... Off-white, smooth paste

MELTING POINT ..... N/A
SPECIFIC GRAVITY (Water = 1) 1.2
VOLATILE BY VOLUME 13-20%
EVAPORATION RATE (Ethyl Ether = 1) ..... Slower than Ethyl Ether

FIRE AND EXPLOSION DATA

FLASH POINT ^{0}F ..... 89^{0}F Seta Closed Cup
FIRE EXTINGUISHING MEDIA ..... CO_2, Dry Chemicals, Foam.
SPECIAL FIRE FIGHTING PROCEDURES ..... Firefighters wear self-contained breathing apparatus. Fight like a fuel oil fire.
UNUSUAL FIRE AND EXPLOSION HAZARD ..... Closed containers exposed to high temperatures such as fire conditions may rupture.
FLAMMABLE LIMITS ..... N/E

HEALTH HAZARD INFORMATION

THRESHOLD LIMIT VALUE ..... Styrene 50 ppm TLV. At 400 ppm or higher, styrene is irritating to
HEALTH HAZARDS ..... respiratory tract and eyes.
Harmful or fatal if swallowed! Irritant when in contact with eyes and open or abraded skin. Avoid breathing of vapors! Chronic use may effect eyes, skin, lungs, and central nervous system.

FIRST AID PROCEDURES:

SKIN CONTACT ..... Wash with soap and excess water. Obtain medical attention if irritation occurs.
EYE CONTACT ..... Flush promptly with excess water for 15 minutes. Call a physician.
IF SWALLOWED ..... Do not induce vomiting. Call a physician. If conscious, give a glass of water to person.
INHALATION ..... Remove from contaminated areas, apply artificial respiration if necessary, call a physician.

TOXICITY

ORAL (acute) (rats) ..... N/E
INHALATION (acute) (rats) ..... N/E
ACUTE INTRAPERITONEAL (mice) ..... N/E
CHRONIC, SUBCHRONIC, ETC.: ..... N/E

REACTIVITY DATA

Attachment 5A (Continued)

STABILITY	Stable
INCOMPATIBILITY	Peroxides or strong oxidizing agents, acids, alkalies and/or amines.
HAZARDOUS DECOMPOSITION PRODUCTS	Thermal decomposition will yield carbon monoxide and carbon dioxide and acrid fumes.
HAZARDOUS POLYMERIZATION	May occur.
CONDITIONS TO AVOID	Contact with strong oxidizing agents, sunlight, contamination and/or prolonged storage above 100°F.

SPILL AND DISPOSAL METHOD

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Wash and clean up small spills with water and detergent. Pick up large spills with inert absorbent and place in a container for disposal.
WASTE DISPOSAL METHOD	Dispose method must comply with local, state, and federal regulations.

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE EXPOSURE, OR ACCIDENT CALL DAY OR NIGHT, IN THE USA OR CANADA
Chemtrec (USA) 1-800-424-9300 Canutec (Canada) 1-613-996-6666 (collect)

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION	Ventilate with air flow to keep vapor concentration below TLV or wear NSHA or NIOSH approved respirator.
VENTILATION REQUIREMENTS	
LOCAL	Fan or forced air.
MECHANICAL	Exhaust
SPECIAL	Acceptable (explosion proof motor)
EYE	See handling and storage precautions.
HAND	Safety goggles or face shield to protect against spraying.
OTHER PROTECTIVE EQUIPMENT	Neoprene or equivalent required. Eye wash fountain and safety shower should be available. Prevent inhalation of dust when sanding cured product. When ventilation is inadequate, use NIOSH approved air line mask or self-contained breathing apparatus.

HANDLING AND STORAGE PRECAUTIONS

OTHER STORAGE AND HANDLING CONDITIONS	Keep away from extreme heat, open flames, or other sources of ignition. Store with adequate ventilation. Do not store above 100°F.

SECTION 313

SUPPLIER NOTIFICATION: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372:

Cas#	Chemical Name	Percent by Weight
100-42-5	Styrene	15.0%

This information must be included in all MSDS'S that are copied and distributed for this material.

MISCELLANEOUS ..... HMIS RATING: Health = 2, Flammability = 3, Reactivity = 2
CODE: Least Hazardous = 0, Greatest Hazard = 4

Do not flame cut, weld, or melt empty containers.

PREPARED BY: D.S. Chemical & Plastics Technical Department

ADDRESS: 1446 W. Tuscarawas St. Canton, OH 44706

PHONE: 216-455-4311

NOTES: N/E = Not Established N/D = Not Determined N/A = Not Applicable

"The information in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the users responsibility to determine the suitability of this information for the adoption of safety precautions as necessary. We reserve the right to revise Material Safety Data Sheets from time to time as new technical information becomes available. The user has the responsibility to contact the company to make sure that the sheet is the latest one issued."

DATE ISSUED: 2/24/84
REVISION: 6/28/84

OMB No. 44-R1387

Occupational Safety and Health Administration

MATERIAL SAFETY DATA SHEET

00980

Attachment 5B

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

E

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
U.S. Chemical & Plastics	216-455-4311

ADDRESS (Number, Street, City, State, and ZIP Code): 1446 W. Tuscarawas St., Canton, Ohio 44706

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
BPO Paste Catalyst	Cream Hardener
CHEMICAL FAMILY	**FORMULA**
Dibenzoyl Peroxide (Benzoyl Peroxide)	$(C_6H_5CO)_2O_2$

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST BENZOYL PEROXIDE	50	5 mg/m³ (TWA)	ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H_2O=1)	0.90.
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT, VOLATILE BY VOLUME (%) Water=	16%
VAPOR DENSITY (AIR=1)	> 1	EVAPORATION RATE (Ethyl Ether=1)	< 1
SOLUBILITY IN WATER	insoluble		
APPEARANCE AND ODOR	White or pigmented paste.		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
180°F (TCC)	N/A		

EXTINGUISHING MEDIA
CO_2, dry chemicals, foam (small quantities)

SPECIAL FIRE FIGHTING PROCEDURES
Large quantities: Evacuate area and fight fire from a distance. Cool surrounding area with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS
When confined during exposure to a fire, an explosive decomposition may occur.

(Continued on reverse side)

SECTION V · HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
Not established

EFFECTS OF OVEREXPOSURE
HARMFUL OR FATAL IF SWALLOWED! IRRITANT WHEN IN CONTACT WITH EYES & OPEN OR ABRADED SKIN!

EMERGENCY AND FIRST AID PROCEDURES
SKIN CONTACT: Wash with soap & water. SWALLOWED: Do not induce vomiting. If victim is conscious, give water or milk to drink. Call a physician. EYE CONTACT: Flush with water 15 minutes. Call a physician

SECTION VI · REACTIVITY DATA

STABILITY	**UNSTABLE**	X	**CONDITIONS TO AVOID** Exposure to open flame, temperatures above 105°F (40°C) & contact with combustible material can cause decomposition.
	STABLE		

INCOMPATABILITY *(Materials to avoid)*
Strong oxidizing and reducing agents and metal salts

HAZARDOUS DECOMPOSITION PRODUCTS
Flammable gases can form explosive mixtures with air

HAZARDOUS POLYMERIZATION	**MAY OCCUR**		**CONDITIONS TO AVOID**
	WILL NOT OCCUR	X	

SECTION VII · SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Small quantities absorb on vermiculite or perlite & sweep up with non-sparking utensils. Large quantities wash area with water; consult manufacturer.

WASTE DISPOSAL METHOD
Incineration in accordance with polution regulations or landfill in accordance with local regulations.

CAUTION: Do not incinerate in closed containers!

SECTION VIII · SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*
Ventilate with air flow to keep vapor concentration below TLV.

VENTILATION Fan or Forced Air	**LOCAL EXHAUST** Acceptable	**SPECIAL** SEE SECTION IX
	MECHANICAL *(General)* Acceptable	**OTHER**

PROTECTIVE GLOVES Recommended	**EYE PROTECTION** Recommended to protect against accidental splashes

OTHER PROTECTIVE EQUIPMENT

SECTION IX · SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Keep away from extreme heat, open flame, or other sources of ignition. Do not store above 105°F. USE WITH ADEQUATE VENTILATION.

OTHER PRECAUTIONS
DANGER: HARMFUL IF SWALLOWED! COMBUSTIBLE! AVOID BREATHING OF VAPORS! Do not flame cut, braze, weld, or melt empty containers.

GPO 934-180

ACETONE

00794 Revised date

ACETONE
ACETONE
ACETONE

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

EMERGENCY CONTACTS:
GASTON L. PILLORI: (201) 796-7100
AFTER BUSINESS HOURS, HOLIDAYS:
(201) 796-7523
CHEMTREC ASSISTANCE: (800) 424-9300

DATE: 04/12/89
PO NBR: F0024725A
ACCT: 665350-01
INDEX: 30891010026
CAT NO: A934A

THE INFORMATION BELOW IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.

SUBSTANCE IDENTIFICATION

CAS-NUMBER 67-64-1

SUBSTANCE: **ACETONE**

TRADE NAMES/SYNONYMS:
DIMETHYLFORMALDEHYDE; DIMETHYLKETAL; DIMETHYL KETONE; BETA-KETOPROPANE; PROPANONE; 2-PROPANONE; PYROACETIC ETHER; B-KETOPROPANE; RCRA U002; STCC 4908105; UN 1090; A-949; A-40; A-20; A-19; A-946; A-18; A-18-S; A-18-SK; A-11; A-11-S; A-16-P; A-16-S; C3H6O; ACC00140

CHEMICAL FAMILY:
KETONE, ALIPHATIC

MOLECULAR FORMULA: C-H3-C-O-C-H3

MOLECULAR WEIGHT: 58.08

CERCLA RATINGS (SCALE 0-3): HEALTH=1 FIRE=3 REACTIVITY=0 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=3 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: ACETONE PERCENT: 100

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
ACETONE:
1000 PPM (2400 MG/M3) OSHA TWA
750 PPM (1780 MG/M3) ACGIH TWA; 1000 PPM (2375 MG/M3) ACGIH STEL
250 PPM (590 MG/M3) NIOSH RECOMMENDED 10 HOUR TWA

5000 POUNDS CERCLA SECTION 103 REPORTABLE QUANTITY
SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING

PHYSICAL DATA

DESCRIPTION: CLEAR, COLORLESS, VOLATILE LIQUID WITH A CHARACTERISTIC,

SWEETISH, FRAGRANT, MINT-LIKE ODOR AND PUNGENT, SWEETISH TASTE.

BOILING POINT: 133 F (56 C) MELTING POINT: -139 F (-95 C)

SPECIFIC GRAVITY: 0.7899 VOLATILITY: 100%

VAPOR PRESSURE: 180 MMHG @ 20 C EVAPORATION RATE: (BUTYL ACETATE=1) 14.4

PH: NEUTRAL IN SOLUTION SOLUBILITY IN WATER: VERY SOLUBLE

ODOR THRESHOLD: 20 PPM VAPOR DENSITY: 2.0

SOLVENT SOLUBILITY: SOLUBLE IN ETHANOL, ETHER, CHLOROFORM, BENZENE, MOST OILS, DIMETHYLFORMAMIDE

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK.

VAPOR-AIR MIXTURES ARE EXPLOSIVE.

FLASH POINT: -4 F (-20 C) (CC) UPPER EXPLOSIVE LIMIT: 13%

LOWER EXPLOSIVE LIMIT: 2.5% AUTOIGNITION TEMP.: 869 F (465 C)

FLAMMABILITY CLASS(OSHA): IB

FIREFIGHTING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, HALON, WATER SPRAY OR ALCOHOL FOAM (1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL FOAM (1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FIREFIGHTING:
MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. COOL FIRE-EXPOSED CONTAINERS WITH WATER FROM SIDE UNTIL WELL AFTER FIRE IS OUT. STAY AWAY FROM STORAGE TANK ENDS. FOR MASSIVE FIRE IN STORAGE AREA, USE UNMANNED HOSE HOLDER OR MONITOR NOZZLES, ELSE WITHDRAW FROM AREA AND LET FIRE BURN. WITHDRAW IMMEDIATELY IN CASE OF RISING SOUND FROM VENTING SAFETY DEVICE OR ANY DISCOLORATION OF STORAGE TANK DUE TO FIRE (1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4, GUIDE PAGE 26).

EXTINGUISH ONLY IF FLOW CAN BE STOPPED. USE FLOODING AMOUNTS OF WATER AS A FOG; SOLID STREAMS MAY BE INEFFECTIVE. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING VAPORS; KEEP UPWIND. IF FIRE IS UNCONTROLLABLE OR CONTAINERS ARE EXPOSED TO DIRECT FLAME, EVACUATE TO A RADIUS OF 1500 FEET. CONSIDER EVACUATION OF DOWNWIND AREA IF MATERIAL IS LEAKING.

WATER MAY BE INEFFECTIVE (NFPA FIRE PROTECTION GUIDE ON HAZARDOUS MATERIALS, EIGHTH EDITION).

ALCOHOL FOAM (NFPA FIRE PROTECTION GUIDE ON HAZARDOUS MATERIAL, EIGHTH EDITION).

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49CFR172.101:
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49CFR172.101 AND 172.402:
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS: 49CFR173.119
EXCEPTIONS: 49CFR173.118

TOXICITY

ACETONE:
500 PPM EYE-HUMAN IRRITATION; 395 MG OPEN SKIN-RABBIT MILD IRRITATION; 3950 UG EYE-RABBIT SEVERE IRRITATION; 20 MG/24 HOURS EYE-RABBIT MODERATE IRRITATION; 500 MG/24 HOURS SKIN-RABBIT MILD IRRITATION; 500 PPM INHALATION-HUMAN TCLO; 12000 PPM/4 HOURS INHALATION-MAN TCLO; 10 MG/M3/6 HOURS INHALATION-MAN TCLO; 440 UG/M3/6 MINUTES INHALATION-MAN TCLO; 2857 MG/KG ORAL-MAN TDLO; 1159 MG/KG UNREPORTED-MAN LDLO; 5800 MG/KG ORAL-RAT LD50; 8 GM/KG ORAL-DOG LDLO; 3000 MG/KG ORAL-MOUSE LD50; 5340 MG/KG ORAL-RABBIT LD50; 20 GM/KG SKIN-RABBIT LD50; 110 GM/M3/1 HOUR INHALATION-MOUSE LCLO; 1297 MG/KG INTRAPERITONEAL-MOUSE LD50; 8 GM/KG INTRAPERITONEAL-DOG LDLO; 500 MG/KG INTRAPERITONEAL-RAT LDLO; 1576 MG/KG INTRAVENOUS-RABBIT LDLO; 5500 MG/KG INTRAVENOUS-RAT LD50; 4 GM/KG INTRAVENOUS-MOUSE LDLO; 5000 MG/KG SUBCUTANEOUS-GUINEA PIG LDLO; 5 GM/KG SUBCUTANEOUS-DOG LDLO; MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS DATA (RTECS);
CARCINOGEN STATUS: NONE.
ACETONE IS A SKIN, EYE AND MUCOUS MEMBRANE IRRITANT AND CENTRAL NERVOUS SYSTEM DEPRESSANT. THE USE OF ALCOHOLIC BEVERAGES MAY ENHANCE THE TOXIC EFFECTS. PERSONS WITH CHRONIC RESPIRATORY OR SKIN DISEASES MAY BE AT AN INCREASED RISK FROM EXPOSURE.

HEALTH EFFECTS AND FIRST AID

INHALATION:
ACETONE:
IRRITANT/NARCOTIC. 20,000 PPM IMMEDIATELY DANGEROUS TO LIFE OR HEALTH.
ACUTE EXPOSURE- VAPOR CONCENTRATIONS AROUND 1000 PPM MAY CAUSE SLIGHT TRANSIENT IRRITATION OF THE UPPER RESPIRATORY TRACT. EXPOSURE TO 12,000 PPM HAS CAUSED THROAT IRRITATION AND CENTRAL NERVOUS SYSTEM DEPRESSION WITH WEAKNESS OF THE LEGS, HEADACHE, DIZZINESS, DROWSINESS, NAUSEA AND A GENERAL FEELING OF MALAISE. OTHER POSSIBLE EFFECTS FROM EXPOSURE TO HIGH CONCENTRATIONS INCLUDE DRYNESS OF THE MOUTH AND THROAT, INCOORDINATION OF MOTION AND SPEECH, RESTLESSNESS, ANOREXIA, VOMITING, SOMETIMES FOLLOWED BY HEMATEMESIS, HYPOTHERMIA, DYSPNEA, SLOW, IRREGULAR RESPIRATION, SLOW, WEAK PULSE, PROGRESSIVE COLLAPSE WITH STUPOR, AND IN SEVERE CASES, COMA. LIVER DAMAGE MAY BE INDICATED BY HIGH UROBILIN LEVELS AND JAUNDICE. KIDNEY DAMAGE MAY BE INDICATED BY ALBUMIN AND RED AND WHITE BLOOD CELLS IN THE URINE. BLOOD GLUCOSE LEVELS MAY BE AFFECTED AND FATAL KETOSIS IS POSSIBLE.
CHRONIC EXPOSURE- WORKERS EXPOSED TO 500 PPM/6 HOURS/6 DAYS EXPERIENCED MUCOUS MEMBRANE IRRITATION, AN UNPLEASANT SMELL, HEAVY EYES, OVERNIGHT HEADACHE, AND GENERAL WEAKNESS ACCOMPANIED BY HEMATOLOGIC CHANGES. RECOVERY OCCURRED IN SEVERAL DAYS. WORKERS EXPOSED TO 1000 PPM FOR 3 HOURS/DAY FOR 7-15 YEARS REPORTED CHRONIC INFLAMMATION OF THE RESPIRATORY TRACT, STOMACH AND DUODENUM, DIZZINESS, LOSS OF STRENGTH, AND ASTHENIA. DROWSINESS, VERTIGO, SENSATION OF HEAT, AND COUGHING HAVE ALSO BEEN REPORTED FROM CHRONIC EXPOSURE TO LOW CONCENTRATIONS. ANIMAL STUDIES SHOW ADVERSE EFFECTS ON FERTILITY WHEN FEMALES WERE EXPOSED CHRONICALLY DURING PREGNANCY.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
ACETONE:
IRRITANT.

ACUTE EXPOSURE- CONTACT WITH THE LIQUID CAUSED MILD IRRITATION IN RABBITS. CELLULAR DAMAGE TO THE OUTER LAYERS OF THE EPITHELIUM WITH MILD EDEMA AND HYPEREMIA HAS BEEN DEMONSTRATED IN HUMANS, BUT WAS READILY REVERSIBLE. SMALL AMOUNTS MAY BE ABSORBED THROUGH INTACT SKIN.
CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE DERMATITIS WITH DRYING, CRACKING, AND ERYTHEMA DUE TO THE DEFATTING ACTION. THE AMOUNT ABSORBED THROUGH THE SKIN INCREASES DIRECTLY WITH THE FREQUENCY AND EXTENT OF THE EXPOSURE. 2 OF 3 GUINEA PIGS EXPOSED BY SKIN CONTACT FOR 3 WEEKS DEVELOPED CATARACTS BY THE END OF THREE MONTHS.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:
ACETONE:
IRRITANT.
ACUTE EXPOSURE- IN HUMANS, VAPORS PRODUCE ONLY SLIGHT IRRITATION WHEN THE CONCENTRATION IS AT OR BELOW 1000 PPM. HOWEVER, HIGH VAPOR CONCENTRATIONS HAVE CAUSED CORNEAL EPITHELIAL AND CONJUNCTIVAL INJURY IN ANIMALS. LIQUID SPLASHED IN HUMAN EYES CAUSES AN IMMEDIATE STINGING SENSATION AND, IF WASHED PROMPTLY, DAMAGE ONLY TO THE CORNEAL EPITHELIUM CHARACTERIZED BY MICROSCOPIC GRAY DOTS AND A FOREIGN BODY SENSATION, WHICH HEALS COMPLETELY IN 1-2 DAYS.
CHRONIC EXPOSURE- PROLONGED OR REPEATED EXPOSURE TO THE VAPORS MAY CAUSE IRRITATION OR CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:
ACETONE:
NARCOTIC.
ACUTE EXPOSURE- MAY CAUSE A FRUITY ODOR OF THE BREATH AND MUCOUS MEMBRANE AND GASTROENTERIC IRRITATION. IN ACUTE CASES, A LATENT PERIOD MAY BE FOLLOWED BY RESTLESSNESS AND VOMITING PROCEEDING TO HEMATEMESIS AND PROGRESSIVE COLLAPSE WITH STUPOR. HEPATORENAL LESIONS HAVE BEEN REPORTED. THE BLOOD GLUCOSE LEVEL MAY BE AFFECTED AND KETOSIS MAY BE FATAL. 10-20 MILLILITERS HAVE BEEN TOLERATED WITHOUT ILL EFFECTS. 200 MILLILITERS HAVE CAUSED STUPOR WITHIN A HALF HOUR, FLUSHED CHEEKS, SHALLOW RESPIRATION, AND COMA WHICH LASTED FOR 12 HOURS. RENAL GLUCOSURIA PERSISTED FOR 5 MONTHS.
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- IF VICTIM IS CONSCIOUS, IMMEDIATELY GIVE 2 TO 4 GLASSES OF WATER, AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT. GET MEDICAL ATTENTION IMMEDIATELY.

ANTIDOTE:
NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:
ACETONE:
ACIDS: INCOMPATIBLE.
AMINES (ALIPHATIC): INCOMPATIBLE.
BROMINE: VIOLENT REACTION WITH EXCESS AMOUNTS OF BROMINE.
BROMINE TRIFLUORIDE: EXPLOSION ON CONTACT.
BROMOFORM: VIOLENT REACTION IN PRESENCE OF BASES (E.G. POTASSIUM HYDROXIDE).
CHLOROFORM: VIOLENT REACTION IN PRESENCE OF A BASE.
CHROMIUM TRIOXIDE: IGNITION ON CONTACT AT AMBIENT TEMPERATURE.
CHROMYL CHLORIDE: INCANDESCENT REACTION.
DIOXYGEN DIFLUORIDE + SOLID CARBON DIOXIDE: EXPLOSION AT -78 C.
HEXACHLOROMELAMINE: POSSIBLE EXPLOSION.
HYDROGEN PEROXIDE: EXPLOSION.
NITRIC ACID: IGNITION.
NITRIC + ACETIC ACID MIXTURE: POSSIBLE EXPLOSION.
NITRIC + SULFURIC ACID MIXTURE: VIOLENT OXIDATION.
NITROSYL CHLORIDE: EXPLOSIVE REACTION.
NITROSYL PERCHLORATE: IGNITION AND EXPLOSION.
NITRYL PERCHLORATE: IGNITION AND EXPLOSION.
OXIDIZERS (STRONG): FIRE AND EXPLOSION HAZARD.
PERMONOSULFURIC ACID: EXPLOSION.
PLASTICS: INCOMPATIBLE.
PLATINUM + NITROSYL CHLORIDE: POSSIBLE EXPLOSION.
POTASSIUM-TERT-BUTOXIDE: IGNITION.
RAYON: INCOMPATIBLE.
SODIUM HYPOBROMITE: EXPLOSION.
SODIUM HYPOIODITE: POSSIBLE EXPLOSION.
SULFUR DICHLORIDE: VIOLENT REACTION.
SULFURIC ACID AND POTASSIUM BICHROMATE: IGNITION.
THIODIGLYCOL + HYDROGEN PEROXIDE: POSSIBLE EXPLOSION.
THIOTRIAZYL PERCHLORATE: POSSIBLE EXPLOSION.
1,1,1-TRICHLOROETHANE: EXOTHERMIC CONDENSATION BY A BASIC CATALYST.
TRICHLOROMELAMINE: POSSIBLE EXPLOSION.
SEE ALSO KETONES.

KETONES:
ACETALDEHYDE: VIOLENT CONDENSATION REACTION.
NITRIC ACID + HYDROGEN PEROXIDE: FORMATION OF EXPLOSIVE PRODUCT.
PERCHLORIC ACID: VIOLENT DECOMPOSITION.

DECOMPOSITION:
THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE TOXIC OXIDES OF CARBON.

POLYMERIZATION:
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

STORAGE

STORE IN ACCORDANCE WITH 29 CFR 1910.106.

BONDING AND GROUNDING: SUBSTANCES WITH LOW ELECTROCONDUCTIVITY, WHICH MAY BE IGNITED BY ELECTROSTATIC SPARKS, SHOULD BE STORED IN CONTAINERS WHICH MEET THE BONDING AND GROUNDING GUIDELINES SPECIFIED IN NFPA 77-1983, RECOMMENDED PRACTICE ON STATIC ELECTRICITY.

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

DISPOSAL

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 40CFR 262. EPA HAZARDOUS WASTE NUMBER U002.

****

CONDITIONS TO AVOID

MAY BE IGNITED BY HEAT, SPARKS OR FLAMES. CONTAINER MAY EXPLODE IN HEAT OF FIRE. VAPOR EXPLOSION HAZARD INDOORS, OUTDOORS OR IN SEWERS. RUN-OFF TO SEWER MAY CREATE FIRE OR EXPLOSION HAZARD.

****

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:
SHUT OFF IGNITION SOURCES. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. USE WATER SPRAY TO REDUCE VAPORS. FOR SMALL SPILLS, TAKE UP WITH SAND OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL. FOR LARGER SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL. NO SMOKING, FLAMES OR FLARES IN HAZARD AREA! KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND DENY ENTRY.

REPORTABLE QUANTITY (RQ): 5000 POUNDS
THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) SECTION 304 REQUIRES THAT A RELEASE EQUAL TO OR GREATER THAN THE REPORTABLE QUANTITY FOR THIS SUBSTANCE BE IMMEDIATELY REPORTED TO THE LOCAL EMERGENCY PLANNING COMMITTEE AND THE STATE EMERGENCY RESPONSE COMMISSION (40 CFR 355.40). IF THE RELEASE OF THIS SUBSTANCE IS REPORTABLE UNDER CERCLA SECTION 103, THE NATIONAL RESPONSE CENTER MUST BE NOTIFIED IMMEDIATELY AT (800) 424-8802 OR (202) 426-2675 IN THE METROPOLITAN WASHINGTON, D.C. AREA (40 CFR 302.6).

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE GENERAL DILUTION VENTILATION TO MEET PUBLISHED EXPOSURE LIMITS. VENTILATION EQUIPMENT MUST BE EXPLOSION-PROOF.

RESPIRATOR:
THE FOLLOWING RESPIRATORS AND MAXIMUM USE CONCENTRATIONS ARE RECOMMENDATIONS BY THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NIOSH POCKET GUIDE TO CHEMICAL HAZARDS OR NIOSH CRITERIA DOCUMENTS; OR DEPARTMENT OF LABOR, 29CFR1910 SUBPART Z.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION.

1000 PPM- ANY CHEMICAL CARTRIDGE RESPIRATOR WITH ORGANIC VAPOR CARTRIDGE(S).
ANY POWERED AIR-PURIFYING RESPIRATOR WITH ORGANIC VAPOR CARTRIDGE(S).
ANY SUPPLIED-AIR RESPIRATOR.
ANY SELF-CONTAINED BREATHING APPARATUS.

6250 PPM- ANY SUPPLIED-AIR RESPIRATOR OPERATED IN A CONTINUOUS FLOW MODE.

12,500 PPM- ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR (GAS MASK) WITH A CHIN-STYLE OR FRONT- OR BACK-MOUNTED ORGANIC VAPOR CANISTER.
ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE.
ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE.

20,000 PPM- ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE AND OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

ESCAPE- ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR (GAS MASK) WITH A CHIN-STYLE OR FRONT- OR BACK-MOUNTED ORGANIC VAPOR CANISTER.
ANY APPROPRIATE ESCAPE-TYPE SELF-CONTAINED BREATHING APPARATUS.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE AND OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

CLOTHING:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE. CONTACT LENSES SHOULD NOT BE WORN.

AUTHORIZED - FISHER SCIENTIFIC GROUP, INC.
CREATION DATE: 09/06/84 REVISION DATE: 11/09/88

-ADDITIONAL INFORMATION-
THE INFORMATION BELOW IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration
Attachment 7

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Rec'd 10/5/81 CLH

000537

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
AXTON CROSS COMPANY	617-429-6766
ADDRESS (Number, Street, City, State, and ZIP Code): Cross St., P. O. Box 336, Holliston, MA 01746	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS: Lacquer Thinner TTT-306
CHEMICAL FAMILY: Lacquer Thinner	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.) IBP-Dry PT	288-388°F	SPECIFIC GRAVITY (H_2O=1)	.8204
VAPOR PRESSURE (mm Hg.)		PERCENT, VOLATILE BY VOLUME (%)	100
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____ =1)	
SOLUBILITY IN WATER Negligible			
APPEARANCE AND ODOR Water white liquid, mild mineral spirits odor blend with aromatic hydrocarbon odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
Tag closed cup 27°C (80°F)		~~0.9~~	~~7.0~~

EXTINGUISHING MEDIA
CO_2 foam, dry chemicals, water fog

SPECIAL FIRE FIGHTING PROCEDURES
Use air-supplied breathing equipment for enclosed areas. Cool exposedcontainer with water. Avoid breathing vapor or fumes.

UNUSUAL FIRE AND EXPLOSION HAZAROS
Combustible liquid. Do not store with strong oxidants like chlorine or concentrated oxygen.

(Continued on reverse side)

1

SECTION V - HEALTH HAZARD DATA

LIMIT VALUE
100 ppm for 8 hours work day

OVEREXPOSURE—
Inhalation of high vapor concentrations may result ranging from nes and headaches to unconsciousness.

GENCY AND FIRST AID PROCEDURES
overcome by vapor, remove from exposure immediately. Call a physician. If breathing irregular or stopped, start resuscitation, administer oxygen. If ingested, do not inducevomiting; call a physician. In eyes, flush with clear water for 15 min. or until irritation subsides.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	High temperatures or heat

INCOMPATABILITY *(Materials to avoid)*
Oxygen and strong oxidants. May dissolve some plastics and rubber

HAZARDOUS DECOMPOSITION PRODUCTS
Fumes, smoke and carbon monoxide in case of incomplete combustion.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove all ignation sourves. Keep people away. Recover free liquid. Add absorbant to spills area. Keep out of sewers, etc. Avoid breathing vapors. Ventilate enclosed spaces. Open all windows and doors.

WASTE DISPOSAL METHOD
Recover free liquid. Stay up wind and/or use personal protective equipment. Absorb with dry solids and incinerate. Run-off to waterway creates fire hazard. Notify fire and health agencies.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*
Hydrogen vapor canister, supplied-air or a hose mask.

VENTILATION	LOCAL EXHAUST Face velocity 760 fpm	SPECIAL Use only with adequate* ventilation.
	MECHANICAL *(General)* Use explosion-proof equipment	OTHER No smoking or open lights.

PROTECTIVE GLOVES Hydrocarbon-insoluable rubber of plastic	EYE PROTECTION chemical goggles or face splash shield

OTHER PROTECTIVE EQUIPMENT
Hydrocarbon-insoluable apron such as neoprene or equivalent

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Keep container closed when not in use. Do not store near heat, sparks, flame or strong oxidant. Adequate* ventilation required.

OTHER PRECAUTIONS
Avoid prolonged or repeated breathing of vapors or contact with skin.

*Adequate means equivalent to outdoors ventilation

EXXON COMPANY, U.S.A.
A DIVISION OF EXXON CORPORATION

DATE ISSUED: 02/19/87
SUPERSEDES DATE: 12/04/86

MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME -- POLYESTER RESIN
624 SOLVENT

PRODUCT CODE
131524 - 00624

CHEMICAL NAME
Petroleum Solvent

CAS NUMBER
8052-41-3

PRODUCT APPEARANCE AND ODOR
Clear water-white liquid
Mild mineral spirits odor

EMERGENCY TELEPHONE NUMBER
(713) 656-3424

B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO. OF COMPONENTS	APPROXIMATE CONCENTRATION
This product can be defined as: Low Aromatic Stoddard Solvent	8052-41-3	100%

It consists predominantly of C7-C10 hydrocarbons.

This product contains:		
C7-C10 saturated hydrocarbons	Mixture	Approximately 92+%
Toluene	108-88-3	Approximately 0.4%
Xylene	1330-20-7	Approximately 0.5%
Ethylbenzene	100-41-4	Approximately 0.2%
C8+ Aromatics	Mixture	Approximately 6%

See Section E for Health and Hazard Information

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by Exxon

EXPOSURE LIMIT FOR TOTAL PRODUCT
100 ppm (525 mg/m3) for an 8-hour workday

BASIS
Recommended by the American Conference of Governmental Industrial Hygienists (ACGIH) for Stoddard Solvent

C. PRIMARY ROUTES OF ENTRY AND EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN CONTACT
In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INHALATION
If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM)
COMBUSTIBLE - Per DOT 49 CFR 173.115
38°C (100°F)
ASTM D 56, Tag Closed Cup

AUTOIGNITION TEMPERATURE
Approximately 255°C (490°F)
ASTM D 2155

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity	BASIS
0	2	0	Recommended by the National Fire Protection Association

HANDLING PRECAUTIONS
Keep product away from heat, sparks, pilot lights, static electricity, and open flame.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 0.9% Upper Flammable Limit 7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use dry chemical, foam or carbon dioxide. Water may be ineffective, but water should be used to keep fire-exposed containers cool. If a leak or spill has ignited, use water spray to disperse the vapors and to protect men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

NOTE: The inclusion of the phrase "water may be ineffective" is to indicate that although water can be used to cool and protect exposed material, water may not extinguish the fire unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, aldehydes and other decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)
High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic, and may have other central nervous system effects including death.

NATURE OF HAZARD AND TOXICITY INFORMATION
Prolonged or repeated skin contact with this product tends to remove skin oils possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria.

Product contacting the eyes may cause eye irritation.

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same naphtha boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats and male and female mice and in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. It is therefore highly unlikely that the kidney effects observed in male rats have significant implications for humans exposed at or below the recommended vapor limits in the workplace.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE
Approximately 153-202°C (308-396°F)

SPECIFIC GRAVITY (15.6 C/15.6 C)
0.78

MOLECULAR WEIGHT
145

pH
Essentially neutral

POUR, CONGEALING OR MELTING POINT
Less than -18°C (0°F)
Pour Point by ASTM D 97

VISCOSITY
0.90 cP @ 25°C ASTM D 445

VAPOR PRESSURE
Less than 10 mm Hg @ 25°C
ASTM D 2879

VAPOR DENSITY (AIR = 1)
Approximately 5.0

PERCENT VOLATILE BY VOLUME
100 @ 1 atm. and 25°C (77°F)

EVAPORATION RATE @ 1 ATM. AND 25 C (77 F)
(n-BUTYL ACETATE = 1)
0.1

SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F)
Negligible; less than 0.1%

G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.

H. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.
Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, combustible vapors from absorbed material.

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use explosion-proof equipment. No smoking or open lights.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

PERSONAL HYGIENE
Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

DOT IDENTIFICATION NUMBER
UN 1255

Attachment 8A (Continued)

624 SOLVENT

The information and recommendations contained herein are, to the best of Exxon's knowledge and belief, accurate and reliable as of the date issued. Exxon does not warrant or guarantee their accuracy or reliability, and Exxon shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use.

The Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by Exxon Company, U.S.A. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Exxon's interpretation of the available data.

FOR ADDITIONAL INFORMATION ON HEALTH EFFECTS CONTACT:
DIRECTOR OF INDUSTRIAL HYGIENE
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 2737
HOUSTON, TX 77252-2180
(713) 656-2443

FOR OTHER PRODUCT INFORMATION CONTACT:

MANAGER, MARKETING TECHNICAL SERVICES
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 2355
HOUSTON, TX 77252-2180
(713) 656-5948

BEST AVAILABLE COPY

MATERIAL SAFETY DATA SHEET

Lucidol Attachment 8B

PENNWALT
CHEMICALS ■ EQUIPMENT
HEALTH PRODUCTS
1740 MILITARY ROAD, P.O. BOX 1048, BUFFALO, NEW YORK 14240 • (716) 877-1740

05066

Essentially Similar to O.S.H.A. Form 20

MATERIAL SAFETY DATA SHEET

Pennwalt Code: 118 POLYESTER HARDENER

Revision Date: 08/27/86
Supersedes Form Dated: 08/26/85

TRADENAME ..... LUPERSOL DDM-9 RED
CHEMICAL NAME ..... Methyl Ethyl Ketone Peroxide
MOLECULAR FORMULA ..... Mixture of $C_4H_{10}O_4$ and $C_8H_{18}O_6$

CHEMICAL FAMILY.....Organic Peroxide
SYNONYMS .....2-Butanone Peroxide
C.A.S. REGISTRY NUMBER(S) .. Peroxide: 1338-23-4
DMP: 131-11-3

HAZARDOUS INGREDIENTS

Materials or Components	% w/w	Hazard Data
Methyl Ethyl Ketone Peroxide structures account for 8.8 ± 0.1% active oxygen		TLV=0.2 ppm* (ceiling limit)
Dimethyl Phthalate	35	TLV 1981 = 5 mg/m^3
Red Dye	0.2%	
Proprietary solvent mixture (U.S. Patent 3,330,871)	Bal.	

* 11% active oxygen material

RECEIVED AUG 12 1987 SAFETY ENGINEERING

SHIPPING INFORMATION

D.O.T. SHIPPING NAME... Methyl Ethyl Ketone Peroxide
HAZARD CLASSIFICATION..... Organic Peroxide
I.D. NUMBER UN2550

FREIGHT CLASSIFICATION ..... Chemicals NOIBN
IMDG CODE PAGE 5186

PHYSICAL PROPERTIES

MELTING/FREEZING POINT, °C ..... Below -30
MOLECULAR WEIGHT ..... N/A
SPECIFIC GRAVITY (H_2O = 1), 25/25°C ..... 1.0840 min
*S.A.D.T. ..... 70°C, 45# Cube
*Self Accelerating Decomposition Temperature

VAPOR PRESSURE ..... N/E
VAPOR DENSITY (Air = 1)..... N/E
% VOLATILES BY VOLUME ..... N/E
APPEARANCE & ODOR ..... Red oily liquid, ketone odor
SOLUBILITY in H_2O ..... slight

FIRE AND EXPLOSION DATA

FLASH POINT, °C/°F..... 58/137
EXTINGUISHING MEDIA..... Water spray, Water Fog, Dry Chemical, Foam
SPECIAL FIRE-FIGHTING PROCEDURES ..... If large amount is involved, evacuate area and fight fire from safe distance. Cool surrounding material with water.
UNUSUAL FIRE & EXPLOSION HAZARDS..... Contamination, Temperature - Can decompose with force if confined during exposure to fire.

REACTIVITY DATA

STABILITY ..... Unstable
CONDITIONS CONTRIBUTING TO INSTABILITY ..... Thermal decomposition, contamination
INCOMPATIBILITY (avoid contact with) ..... Strong acids, strong alkalis, strong oxidizers, acetone, transition metal salts, promoters and reducing agents
HAZARDOUS DECOMPOSITION PRODUCTS ..... Decomposition products are flammable and may autoignite
CONDITIONS TO AVOID ..... Heat, flames, sparks, ignition sources, contamination

SPILL OR LEAK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED ..... Absorb with Vermiculite/Perlite, sweep or scoop up using non-sparking tools and dispose of immediately.
WASTE DISPOSAL METHOD ..... Consult with a Lucidol representative for the telephone number of your state's hazardous waste agency.

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MATERIAL SAFETY DATA SHEET

LUPERSOL DDM-9 RED

TOXICITY

ORAL (acute)(rats)..... LD_{50} = 681 mg/kg
DERMAL (acute)(rabbit)..... N/E
INHALATION (acute)(rats)..... LC_{50} = 33 mg/l (4 hours)(1977)

NOTES: Data obtained on 11% active oxygen material. Should be similar

CHRONIC, SUBCHRONIC, ETC.:

AMES TEST: Negative

HEALTH HAZARD INFORMATION

EFFECTS OF EXPOSURE:

IRRITATION.....	SKIN - Severe EYE - Severe	CORROSIVITY	SKIN - N/E EYE - May Cause Blindness
SENSITIZATION	N/E	LUNG EFFECTS	Irritant
INHALATION EFFECTS	Irritating to airways & lungs	OTHER	N/E

EMERGENCY FIRST AID:

INGESTION	Do NOT induce vomiting. Get emergency medical attention for lavage.
DERMAL	Flush with soap and water. Get medical attention.
EYE CONTACT	IMMEDIATELY flush with plenty of water for at least 15 minutes. Get emergency medical attention.
INHALATION	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS ...	Use with adequate ventilation. Local exhaust.
EYE	Safety glasses, goggles, face shield
HAND (Glove Type)	Neoprene, nitrile rubber
*RESPIRATOR TYPE.....	Can or cartridge, gas or vapor
OTHER PROTECTIVE EQUIPMENT..	Eyewash station

*Use only NIOSH/MESA approved equipment

LABEL PRECAUTIONS

PRECAUTIONARY LABELING..... Wash thoroughly after handling
Do not get in eyes, on skin or clothing
Do not store near combustibles
Empty container may contain hazardous residues
Keep container closed
Keep away from heat, sparks, and flames
Do not reuse container

OTHER STORAGE AND HANDLING CONDITIONS ..... Store below 100°F (38°C) to maintain active oxygen content, preferably between 65-85°F

PREPARED BY: Marketing Services Department
ADDRESS: 1740 Military Road, Buffalo, NY 14240
PHONE: (716)877-1740

NOTES: N/E = Not Established
N/A = Not Applicable

"The above information is accurate to the best of our knowledge. However, since data, safety standards, and governm regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, Pennwa MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF T INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that has all current data relevant to his particular use."

Material Safety Data Sheet

FREEMAN TUF-FIL PINE

QUICK IDENTIFIER
Common Name: (used on label and list)

Rev # 00459

May be used to comply with OSHA's Hazard Communication Standard, 29CFR 1910. 1200. Standard must be consulted for specific requirements.

Attachment 9

H HEALTH 2
F FLAMMABILITY 2
R REACTIVITY 2
PERSONAL PROTECTION H

SECTION 1 -

Manufacturer's Name	FREEMAN MANUFACTURING & SUPPLY COMPANY		
Address	1246 West 70th Street	Emergency Telephone No.	216-961-4200
City, State, and ZIP	Cleveland, Ohio 44102-2097	Other Information Calls	Same As Above
Signature of Person Responsible for Preparation (Optional)		Date Prepared	April 21, 1986

SECTION 2 – HAZARDOUS INGREDIENTS/IDENTITY

Hazardous Component(s) (chemical & common name(s))	OSHA PEL	ACGIH TLV	Other Exposure Limits	% (optional)	CAS NO.
Unsaturated Polyester Resin in Monomer *		See Below		<50%	Not Available
Titanium Dioxide	15 mg/M3	5 (respirable dust) mg/M3 10 mg/M3 (Total dust)		<10%	13463-67-7
Iron Oxide	10 mg/M3			<10%	1309-37-1
* Resin Components:					
Unsaturated Polyester Resin	Not Determined			>50%	-
Styrene Monomer	100PPM	50PPM		<50%	100-42-5

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SECTION 3 - PHYSICAL & CHEMICAL CHARACTERISTICS

Boiling Point	OF COMPOUND: Not applicable	Specific Gravity (H2O=1)	2.036	Vapor Pressure (mm Hg)	Not Determined
	Vapor Density (Air = 1) Styrene:	3.6			
Solubility in Water	Insoluble	Reactivity in Water	None	VOC Content = 0 grams/liter	
Appearance and Odor	Smooth paste, styrene odor.	Melting Point	N/A		

SECTION 4 – FIRE & EXPLOSION DATA

Flash Point	OF COMPOUND: 200° C	Method Used	(Clev. Open Cup)	Flammable Limits in Air % by Volume	LEL Lower	Styrene: 1.1	UEL Upper 6.1
Auto-Ignition Temperature	N/A	Extinguisher Media	Foam, CO_2, or dry chemical.				

Special Fire Fighting Procedures: None known. However, firefighters should wear self-contained breathing apparatus to avoid inhalation of smoke or vapors.

Unusual Fire and Explosion Hazards: Styrene will polymerize readily at elevated temperatures of fire conditons. If this occurs in a closed container, there is a possibility of violent rupture.

SECTION 5 - PHYSICAL HAZARDS (REACTIVITY DATA)

Stability Unstable ☐ Stable ☒ **Conditions to Avoid**: Heat and direct sunlight.

Incompatability (Materials to Avoid): Strong acies and oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, low molecular weight hydrocarbons and organic acids.

Hazardous Polymerization May Occur ☒ Will Not Occur ☐ **Conditions to Avoid**: Sunlight, open flames, and contamination.

SECTION 6 – HEALTH HAZARDS - HAZARDS OF STYRENE CONTAINED IN THE RESIN

1. Acute: Styrene may be irritating to all parts of the respiratory tract at 400PPM.

2. Chronic: Styrene: May be fatal at 10,000 PPM.

Signs and Symptoms of Exposure: Styrene at 400PPM or in strong concentration is irritating to all parts of the respiratory tract and eyes. May be fatal at 10,000PPM. Somewhat anesthetic. Styrene vapor generation of polyester resins rarely exceeds 200PPM.

Medical Conditions Generally Aggravated by Exposure: See Signs and Symptoms of Exposure.

Chemical Listed as Carcinogen or Potential Carcinogen — National Toxicology Program: Yes ☐ No ☒ — I.A.R.C. Monographs: Yes ☐ No ☒ — OSHA: Yes ☐ No ☒

Emergency and First Aid Procedures: Remove victim to a well ventilated area. Make comfortably warm but not hot. Use oxygen or artificial respiration as required. In case of eye contact, flush with copious amounts of water for fifteen minutes and seek medical attention.

ROUTES OF ENTRY

1. Inhalation x See Emergency and First Aid, Signs and Symptoms of Exposure.
2. Eyes x See Emergency and First Aid, Signs and Symptoms of Exposure.
3. Skin x Mildly irritating.
4. Ingestion x Styrene may be fatal at 10,000PPM.

SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be Taken in Handling and Storage: Avoid storage above 100°F. Avoid prolonged or repeated skin contact and inhalation of heated vapors or spray mists.

Other Precautions: Avoid improper addition of promoter and/or catalyst. A promoter and catalyst used with this product should always be mixed separately with the product and must never be mixed together.

Steps to be Taken in Case Material is Released or Spilled: Remove saturated clothing promptly and wash affected area with soap and water. Remove all sources of ignition.Ventilate area. Absorb with inert materials such as vermiculite or sand and place in a closed container.

Waste Disposal Methods (Consult federal, state and local regulations): Incinerate in an approved incinerator or dispose of in a chemical dump in accordance with Local, State, and Federal regulations.

SECTION 8 - SPECIAL PROTECTION INFORMATION/CONTROL MEASURES

Respiratory Protection (Specify Type): Must be worn to prevent inhalation of heated vapors, spray mists, or if TLV is exceeded.

Ventilation (Local / Mechanical / Special / Other): Provide general dilution or local exhaust ventilation to comply with Sections II, IV.

Protective Gloves: Chemical resistant plastic or rubber gloves required.

Eye Protection: Wear face shield or chemical goggles.

Other Protective Clothing or Equipment: Safety shower and eye wash stations should be available.

Work Hygienic Practices: See Above Control Measures.

IMPORTANT
Do not leave any blank spaces. If required information is unavailable, unknown, or does not apply, so indicate.

Attachment 10

E 1st page only

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HORIZON CHEMICALS & PAINTERS SUPPLY, INC.
MATERIAL SAFETY DATA SHEET

00315

SECTION I

MANUFACTURER'S NAME DIAMOND SHAMROCK CHEMICAL CO.	EMERGENCY TELEPHONE NO. (216) 352-93111 x 207 @ Tech Ctr.
ADDRESS: 1300 Union Commerce Building, Cleveland, Ohio	44115
CHEMICAL NAME AND SYNONYMS Contact Cement	TRADE NAME AND SYNONYMS 508
CHEMICAL FAMILY Neoprene	FORMULA

SECTION II HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVE & SOLVENTS	%	TLV (units)	ALLOYS & METALLIC COATINGS	%	TLV (units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE Phenolic Resin Neoprene	.05 .07		METALLIC COATINGS		
SOLVENTS Methylene Chloride III Trichloruethane	.585 .291		FILLER METAL PLUS COATINGS OR CORE FLUX		
ADDITIVES Anti oxident	.004		OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (units)

SECTION III PHYSICAL DATA

BOILING POINT('F)	104	SPECIFIC GRAVITY(H20 = 1) @ 25/25'C	1.322
VAPOR PRESSURE(M M Hg) @ 20'C	350	PERCENT VOLATILE BY VOLUME (%)	100
VAPOR DENSITY (air=1)	2.93	EVAPORATION RATE BUTYL ACETATE = 1	71
SOLUBILITY IN WATER @25'C gm/100 gms	1.32		•
APPEARANCE AND ODOR			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (method used) NONE (C.O.C.)	FLAMMABLE LIMITS	LOWER	UPPER
EXTINGUISHING MEDIA SELF-EXTINGUISHING			
SPECIAL FIR FIGHTING PROCEDURES NONE			
UNUSUAL FIRE AND EXPLOSION HAZARDS Extremely high temperatures, i.e. energy sources as 10,000 volts electric arc			

HORIZON CHEMICALS & PAINTERS SUPPLY, INC.

MATERIAL SAFETY DATA SHEET PAGE 2

CHEMICAL NAME AND SYNONYMS: 508

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE TLV = 500 ppm by vol. in air (MAC = 500)

EFFECTS OF OVEREXPOSURE Irritation to the nose and throat. Causes mental dullness, dizziness, drowsiness, stupor, headache, nausea, unconsciousness, even death

EMERGENCY AND FIRST AID PROCEDURES

Remove promptly from contaminated area. If breathing has stopped, apply artificial respiration. A physician should be called at once.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE		**CONDITIONS TO AVOID** Excessive moisture, heat & air
	STABLE	X	

INCOMPATABILITY (materials to avoid) None

HAZARDOUS DECOMPOSITION PRODUCTS Hydrogen chloride and phosgene

HAZARDOUS POLYMERIZATION	MAY OCCUR	X	**CONDITIONS TO AVOID** High temperatures
	WILL NOT OCCUR		

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wipe up all spills with absorbent cloth or allow to evaporate with plenty of ventilation.

WASTE DISPOSAL METHOD

Evaporation

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

Self-contained; Positive pressure hose mask;air-line mask; canister type gas mask

VENTILATION	**LOCAL EXHAUST** General ventilation is adequate	**SPECIAL**
	MECHANICAL (General) Required in low working areas	**OTHER**
PROTECTIVE GLOVES Polyvinyl alcohol plastic		**EYE PROTECTION** Chemical safety goggles
OTHER PROTECTIVE EQUIPMENT		

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING IN STORING

Avoid high temperatures, i.e., open flames, electrical arc. Store in a cool well ventilated area

OTHER PRECAUTIONS

Attachment 11A **BEST AVAILABLE COPY**

MATERIAL SAFETY DATA SHEET

E

UNITED STATES GYPSUM COMPANY
101 South Wacker Drive/Chicago, Illinois 60606

EMERGENCY PHONE
DAY: 312/321-4383
NIGHT: 312/321-4000

Used in Photoplastic Lab D/771

SECTION I

PRODUCT NO: 16070

PRODUCT: EPOXICAL C-301 Thick Section Casting Resin (Gray)
DATE ISSUED: September 29, 1981

SECTION II
HAZARDOUS INGREDIENTS

00972

MATERIAL:	%	TLV:
n-butyl glycidyl ether	less than 04	50ppm *
bis epoxy resin	25	not established

*NIOSH recommends 4.4ppm, ACGIH - 25 ppm (1981)

SECTION III
PHYSICAL DATA

BOILING POINT: 327 F
VAPOR PRESSURE: 3.2 @ 77 F
VAPOR DENSITY (Air = 1): 4.5
SOLUBILITY IN WATER: Slight
SPECIFIC GRAVITY (H2O = 1): 2.1
APPEARANCE AND ODOR: Viscous, aluminum colored liquid.

SECTION IV
FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): Greater than 120 F (PMCC)
EXTINGUISHING MEDIA: Carbon Monoxide, Dry Chemical, Foam, Water Fog
SPECIAL FIRE FIGHTING PROCEDURES: Self contained breathing apparatus should be used in confined or poorly ventilated areas.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None

SECTION V
HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE: May cause skin sensitization or other allergic responses. May cause respiratory sensitization. May be irritating to skin or eyes.

NO. 3039

70

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

PRODUCT NO. 16070

: EPOXICAL C-301 Thick Section Casting Resin (Gray)

ERGENCY AND FIRST AID PROCEDURES:
EYES: Flush with water for 15 minutes. See physician.
SKIN: Remove contaminated clothing, including shoes. Wash skin with soap and water. Wash clothing before reuse. Discard contaminated shoes.
INHALATION: Remove to fresh air. Oxygen and artificial respiration, if necessary.
INGESTION: If conscious, give water or milk and induce vomiting. Call physician.

SECTION VI
REACTIVITY DATA

STABILITY: Stable
INCOMPATABILITY: Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide and/or Carbon Dioxide.
HAZARDOUS POLYMERIZATION: Will not occur.

SECTION VII
SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Remove all sources of ignition. Scrape up. Flush contaminated area with water.
WASTE DISPOSAL METHOD: Incinerate in accordance with local, state and federal regulations.

SECTION VIII
SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: NIOSH approved organic vapor respirator.
VENTILATION: General mechanical and local exhaust.
PROTECTIVE EQUIPMENT: Rubber gloves, chemical goggles.

MATERIAL SAFETY DATA SHEET

E

UNITED STATES GYPSUM COMPANY
101 South Wacker Drive/Chicago, Illinois 60606

EMERGENCY PHONE
DAY: 312/321-4383
NIGHT: 312/321-4000

SECTION I

PRODUCT NO: 16069

PRODUCT: EPOXICAL C-301 Thick Section Casting Hardener
DATE ISSUED: September 29, 1981
CHEMICAL FAMILY: Polyamine

00973

SECTION II
HAZARDOUS INGREDIENTS

MATERIAL:	%	TLV:
Diethylenetriamine-epoly resin adduct	45-55	1ppm due to diethylene-triamine (skin)
1-piperazine ethanamine	20-30	not established
aliphatic ether amine	20-30	not established

SECTION III
PHYSICAL DATA

BOILING POINT: Greater than 410 F
VAPOR PRESSURE: 1mm Hg at 100 F
VAPOR DENSITY (Air = 1): 4.4
SOLUBILITY IN WATER: Slightly
SPECIFIC GRAVITY (H2O = 1): 1.0
PERCENT VOLATILE BY VOLUME: (%) Nil
APPEARANCE AND ODOR: Blue colored liquid with an amine odor

SECTION IV
FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): Greater than 170 F (TOC)
EXTINGUISHING MEDIA: Carbon Dioxide, Dry chemical, Water Spray
SPECIAL FIRE FIGHTING PROCEDURES: Self contained breathing apparatus should be used in confined or poorly ventilated areas.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

SECTION V
HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE: Danger! Causes Burns
EYES: Extremely irritating with possible permanent eye injury.
SKIN: Corrosive; expected to cause severe skin damage with burns and blistering. Toxic effects due to skin absorption possible.
INHALATION: May cause irritation of upper respiratory tract. A sensitizer.

NO. 3039

While UNITED STATES GYPSUM COMPANY believes that the data contained herein are factual and the opinions expressed are those of qualified experts regarding the results of the tests conducted, the data are not to be taken as warranty or representation for which UNITED STATES GYPSUM

Best Available Copy

PRODUCT NO: 16069

T: EPOXICAL C-301 Thick Section Casting Hardener

MERGENCY AND FIRST AID PROCEDURES:

EYES: Flush immediately and thoroughly with water for at least 15 minutes. Get medical attention.

SKIN: Remove contaminated clothing, including shoes. Wash skin immediately with soap and water. Get medical attention.

INHALATION: Remove to fresh air. Get medical help for serious exposure.

INGESTION: DO NOT INDUCE VOMITING. If conscious, give large amounts of water. If immediately available, give one ounce of vinegar in equal amount of water. Call physician and/or transport to medical facility.

SECTION VI
REACTIVITY DATA

STABILITY: Stable

INCOMPATABILITY: Mineral acids, copper, copper alloys.

HAZARDOUS DECOMPOSITION PRODUCTS: Ammonia, carbon monoxide carbon dioxide, aldehydes.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION VII
SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain spill if possible. Ventilate area, avoid breathing vapor. Avoid all personal contact. Wipe up or absorb on suitable material and shovel up.

WASTE DISPOSAL METHOD: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

SECTION VIII
SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: NIOSH approved respirator with organic vapor cartridge may be indicated for some applications.

VENTILATION: Local exhaust recommended. Note, dense vapor.

PROTECTIVE EQUIPMENT: Chemical workers goggles with face shield, rubber gloves. Eye bath and safety shower should be available to all workers.

SECTION IX
SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in a cool, dry, well ventilated area.