



State of Ohio Environmental Protection Agency

Street Address:

1800 WaterMark Drive
Columbus, OH 43215-1099

TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

P.O. Box 1049
Columbus, OH 43216-1049

08/07/97

CERTIFIED MAIL

13-18-60-7686

RE: Final Chapter 3745-35 Permit To Operate

Excello Specialty Company
Robert A. Isaksen
4495 Cranwood Parkway
Cleveland, OH 44128

Dear Robert A. Isaksen:

The enclosed Permit(s) to Operate allow you to operate the described emissions unit(s) in the manner indicated in the Permit(s). Because each permit contains several terms and conditions, I urge you to read them carefully.

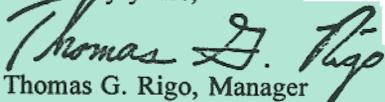
The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Review Appeals Commission within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
236 East Town Street
Room 300
Columbus, Ohio 43215

If you have any questions, please contact the Cleveland Division of Air Pollution Control at (216) 664-2324.

Very truly yours,



Thomas G. Rigo, Manager
Field Operations and Permit Section
Division of Air Pollution Control

cc: Cleveland Division of Air Pollution Control
Jim Orlemann, DAPC Engineering
Becky Castle, DAPC PMU

PERMIT TO OPERATE AN EMISSIONS UNIT

Effective Date: 08/07/97

Facility ID: 13-18-60-7686

Expiration Date: 08/07/00

FINAL ISSUE

This document constitutes issuance for:

Excello Specialty Company
18807 Miles Road
Cleveland, OH 44128

of a permit to operate for:

K001 (Coating line #1)

Screen printing: adhesive coating and curing/drying line

PART I General Terms & Conditions

1. Compliance Requirements

The above-described emissions unit is and shall remain in full compliance with all applicable State and federal laws and regulations and the terms and conditions of this permit.

2. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.

3. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

4. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of three years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

5. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State and federal air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

6. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions unit or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of this emissions unit(s) that is (are) served by such control system(s).

7. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permittee. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Permit Renewal

Approximately six months prior to the expiration date of this permit, a notice regarding the renewal of this permit will be sent to the permittee's designated facility contact. If you are not contacted, please contact the appropriate Ohio EPA District Office or local air agency. It is the permittee's responsibility to renew this permit even if no notice of its expiration is received.

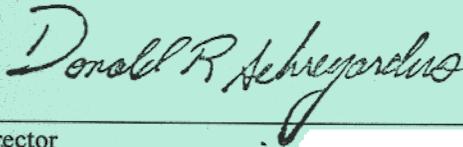
The following Ohio EPA District Office or local air agency has jurisdiction located: the area in which the facility is

Cleveland Division of Air Pollution Control
1925 St. Clair
Cleveland, OH 44114
(216) 664-2324

You will be contacted approximately six months prior to expiration date regarding the renewal of this permit. If you are not contacted, please contact the appropriate DO or LAA.

10. The permittee is also subject to the attached special terms and conditions.

OHIO ENVIRONMENTAL PROTECTION AGENCY



Director

Special Terms and Conditions

Applicable Emissions Limitations and/or Control Requirements

The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Screen printing line for application of adhesive coating with curing/drying line, with a catalytic incinerator for control of OC/VOC emissions	OAC 3745-21-07 (G)	OC/VOC emissions shall be controlled by an incinerator. Overall control efficiency of the system shall be at least 85%, by weight. Destruction efficiency of the incinerator shall be at least 90%, by weight.
	PTI 13-2396	4 lbs/hr OC

2. Additional Terms and Conditions

The total emissions of OC/VOC from emissions units K001-K005 shall not exceed 87.6 tons per year, based on a rolling 12-month summation of the monthly emissions.

To ensure enforceability of the annual OC/VOC emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of OC/VOC (tons)
1	7.4
1-2	14.8
1-3	22.3
1-4	29.7
1-5	37.2
1-6	44.6
1-7	52.0
1-8	59.5
1-9	66.9
1-10	74.0
1-11	81.8
1-12	87.6

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitation for OC/VOC shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.c The emissions of any single HAP from emissions units K001-K005 shall not exceed 9 tons per year, based on a rolling 12-month summation of the monthly emissions. The emissions of any combination of HAPs from emissions units K001-K005 shall not exceed 24 tons per year, based on a rolling 12-month summation of the monthly emissions.

Additional Terms and Conditions (continued)

- 2.d** To ensure enforceability of the annual, single HAPs emission limitation during the first 12 calendar months of operation following issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Single HAP (tons)
1	2.3
1-2	3.0
1-3	3.8
1-4	4.5
1-5	5.3
1-6	6.0
1-7	6.8
1-8	7.5
1-9	8.3
1-10	9.0
1-11	9.0
1-12	9.0

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for single HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.e** To ensure enforceability of the annual, combined HAPs emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Combination of HAPs (tons)
1	6
1-2	8
1-3	10
1-4	12
1-5	14
1-6	16
1-7	18
1-8	20
1-9	22
1-10	24
1-11	24
1-12	24

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for combined HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The average temperature of the exhaust gases at the inlet to the catalytic incinerator, for any 3-hour block of time, shall not be less than 650 degrees Fahrenheit.
2. The temperature difference across the catalyst bed of the incinerator during each one hour test period (described below in section C.6.) shall not be less than thirty-three degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

1. To ensure compliance with the OC/VOC hourly emission limit, the following records shall be kept for the emissions unit on a daily basis:

Monitoring and/or Record Keeping Requirements (continued)

- 1.a For each job:
 - i. The name of the adhesive applied.
 - ii. The production rate in sheets/job, to be defined as "A".
 - iii. The adhesive application area, in units of square feet per sheet.
 - iv. The adhesive coverage rate, in units of pounds per square foot, to be defined as "B".
 - v. The VOC content, in units of pounds of VOC per pound of coating, to be defined as "C".
 - vi. The hours of operation, in units of hours/job, to be defined as "HJ".
 - vii. The rate of uncontrolled VOC emissions in units of pounds per job, to be defined as "UJOC." "UJOC" shall be calculated as follows: $UJOC = A * B * C$.
 - viii. The VOC emission rate, after application of control device, in units of pounds per job, to be defined as "JOC". "JOC" shall be calculated as follows: $JOC = UJOC * (1.0 - D)$, where D = overall control efficiency, in decimal form.

- 1.b For the line:
 - i. The daily total hours of operation, TH. TH shall have the units of hours per day, and shall be calculated in the following manner:
 $TH = \text{the sum, from } i = 1 \text{ to } i = n, \text{ of } (HJ)_i$,
 where
 $HJ = \text{number of hours of operation for each job,}$
 $i = \text{subscript denoting an individual job, and}$
 $n = \text{the total number of jobs.}$

 - ii. The average hourly emissions, HE. HE shall have the units of pounds of OC/VOC per hour, and shall be calculated in the following manner:
 $(HE) = \text{the sum, from } i = 1 \text{ to } i = n, \text{ of } (JOC)_i$, divided by (TH),
 where
 $TH = \text{daily total hours of operation in hours/day,}$
 $JOC = \text{the OC/VOC emission rate for each job, after application of control device, in units of pounds per job,}$
 $i = \text{subscript denoting an individual job, and}$
 $n = \text{the total number of jobs.}$

- 2. Monthly records shall be kept of the total OC/VOC emissions, MLE, for the emissions unit, in units of pounds. This shall be calculated in the following manner:
 $MLE = \text{the sum, from } i = 1 \text{ to } i = n, \text{ of } (JOC)_i$,
 where
 $MLE = \text{monthly OC/VOC emissions for the line,}$
 $JOC = \text{OC/VOC emissions from each job,}$
 $i = \text{subscript denoting an individual job, and}$
 $n = \text{the total number of jobs.}$

- 3. Monthly records shall be kept of the total OC/VOC emissions, MFE, for emissions units K001-K005, in units of tons. This shall be calculated in the following manner:
 $MFE = \text{the sum, from } i = 1 \text{ to } i = n, \text{ of } (MLE)_i$, divided by 2000 lbs,
 where
 $MFE = \text{monthly OC/VOC emissions for the facility,}$
 $MLE = \text{monthly OC/VOC emissions from each line,}$
 $i = \text{subscript denoting an individual line, and}$
 $n = \text{the total number of lines.}$

- 4. Beginning after the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the rolling, 12-month summation of the OC/VOC emissions for emissions units K001-K005. Also, during the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the cumulative OC/VOC emissions for emissions units K001-K005.

- 5. To ensure compliance with the yearly HAP emission limit, the following monthly records shall be kept:

- 5.a For each adhesive used in emissions units K001-K005, that contains one or more HAP:
 - i. Name of the adhesive.
 - ii. Amount of the adhesive used, in pounds per month, to be defined as "AH".
 - iii. Name of all HAP(s) contained in the adhesive.
 - iv. Content of each HAP in the adhesive, in units of pounds HAP/pound adhesive, to be defined as "BSH".
 - v. For each HAP in the adhesive, the amount of that HAP emitted, before application of control device, in units of pounds per month, to be defined as "UMSH". "UMSH" shall be calculated as follows:
 $UMSH = AH * BSH$.
 - vi. For each HAP in the adhesive, the amount of that HAP emitted, after application of control device, in units of pounds per month, to be defined as "MSH." "MSH" shall be calculated as follows:
 $MSH = UMSH * (1.0 - D)$, where D = overall control efficiency, in decimal form.

Monitoring and/or Record Keeping Requirements (continued)

- 5.b For each single HAP, the total amount of that HAP emitted, from emissions units K001-K005, in tons, after application of control device, calculated according to the following equation:
SHAP = the sum, from $i = 1$ to $i = n$, of (MSH)_i, divided by 2000 lbs,
where
SHAP = total monthly emissions for a single HAP from the facility, after application of control device, in tons,
(MSH)_i = total emissions of a single HAP from one adhesive, after application of control device, in pounds,
 i = subscript denoting an individual adhesive, and
 n = the total number of different adhesives containing the HAP.
- 5.c For the combined HAPs, the total combined HAP emissions from emissions units K001-K005, after application of control device, calculated according to the following equation:
THAP = the sum, from $i = 1$ to $i = n$, of (SHAP)_i,
where
THAP = monthly total HAPs emissions from the facility, after application of control device, in tons,
SHAP = total monthly emissions for a single HAP, after application of control device, in tons,
 i = subscript denoting an individual HAP, and
 n = the total number of different HAPs.
- 5.d Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the single HAPs emissions for emissions units K001-K005.
Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of total HAPs emissions.
Also, during the first 12 calendar months of operation following issuance of this permit, the cumulative emissions of all single and total HAPs for emissions units K001-K005.
6. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the combustion temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within +/- 1 percent of the temperature being measured or +/- 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.
- During each week that all lines are operated, the permittee shall schedule all lines to operate for a continuous one hour test period. For that scheduled one hour test period, the permittee shall record the average temperature difference across the catalyst bed.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the hourly emission limitation for OC/VOC for this emissions unit.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitation for OC/VOC and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitations for single and combined HAP(s) and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
4. The permittee shall submit deviation (excursion) reports that identify all one hour test periods, during which the temperature difference across the catalyst bed of the incinerator was less than thirty-three degrees Fahrenheit.
5. The permittee shall submit an annual report which identifies the total actual emissions of OC/VOC for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
6. The permittee shall submit an annual report which identifies the total actual emissions of each single HAP for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
7. The permittee shall submit an annual report which identifies the total actual emissions of combined HAPs for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.

Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - 1.a The emission testing shall be conducted within 6 months prior to permit renewal.
 - 1.b The emission testing shall be conducted to demonstrate compliance with the mass emission rate, destruction efficiency, and overall control efficiency limitations for OC/VOC .
 - 1.c The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC, Method 25. The test method(s) which must be employed to demonstrate compliance with the allowable emission limitations for OC/VOC are specified below.
 - 1.d The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. Miscellaneous Requirements

1. Sections A, B, C, D, and E constitute the federally enforceable portion of these permit terms and conditions.

PERMIT TO OPERATE AN EMISSIONS UNIT

Effective Date: 8/7/97

Facility ID: 13-18-60-7686

Expiration Date: 08/07/00

FINAL ISSUE

This document constitutes issuance for:

Excello Specialty Company
18807 Miles Road
Cleveland, OH 44128

of a permit to operate for:

K002 (Coating line #2)

Screen printing: adhesive coating and curing/drying line

PART I General Terms & Conditions

1. Compliance Requirements

The above-described emissions unit is and shall remain in full compliance with all applicable State and federal laws and regulations and the terms and conditions of this permit.

2. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.

3. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

4. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of three years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

5. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State and federal air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

6. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions unit or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of this emissions unit(s) that is (are) served by such control system(s).

7. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permittee. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Permit Renewal

Approximately six months prior to the expiration date of this permit, a notice regarding the renewal of this permit will be sent to the permittee's designated facility contact. If you are not contacted, please contact the appropriate Ohio EPA District Office or local air agency. It is the permittee's responsibility to renew this permit even if no notice of its expiration is received.

The following Ohio EPA District Office or local air agency has jurisdiction in the area in which the facility is located:

Cleveland Division of Air Pollution Control
1925 St. Clair
Cleveland, OH 44114
(216) 664-2324

You will be contacted approximately six months prior to expiration date regarding the renewal of this permit. If you are not contacted, please contact the appropriate DO or LAA.

10. The permittee is also subject to the attached special terms and conditions.

OHIO ENVIRONMENTAL PROTECTION AGENCY

A handwritten signature in cursive script, reading "Donald R. Schreyer", is written over a horizontal line.

Director

Part II: Special Terms and Conditions

Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Screen printing line for application of adhesive coating with curing/drying line, with a catalytic incinerator for control of OC/VOC emissions	OAC 3745-21-07 (G)	OC/VOC emissions shall be controlled by an incinerator. Overall control efficiency of the system shall be at least 85%, by weight. Destruction efficiency of the incinerator shall be at least 90%, by weight.
	PTI 13-2396	4 lbs/hr OC

2. Additional Terms and Conditions

- 2.a The total emissions of OC/VOC from emissions units K001-K005 shall not exceed 87.6 tons per year, based on a rolling 12-month summation of the monthly emissions.
- 2.b To ensure enforceability of the annual OC/VOC emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of OC/VOC (tons)
1	7.4
1-2	14.8
1-3	22.3
1-4	29.7
1-5	37.2
1-6	44.6
1-7	52.0
1-8	59.5
1-9	66.9
1-10	74.0
1-11	81.8
1-12	87.6

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitation for OC/VOC shall be based upon a rolling, 12-month summation of the monthly emissions.

2. Additional Terms and Conditions (continued)

2.c The emissions of any single HAP from emissions units K001-K005 shall not exceed 9 tons per year, based on a rolling 12-month summation of the monthly emissions. The emissions of any combination of HAPs from emissions units K001-K005 shall not exceed 24 tons per year, based on a rolling 12-month summation of the monthly emissions.

2.d To ensure enforceability of the annual, single HAPs emission limitation during the first 12 calendar month of operation following issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Single HAP (tons)
1	2.3
1-2	3.0
1-3	3.8
1-4	4.5
1-5	5.3
1-6	6.0
1-7	6.8
1-8	7.5
1-9	8.3
1-10	9.0
1-11	9.0
1-12	9.0

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for single HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

2.e To ensure enforceability of the annual, combined HAPs emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Combination of HAPs (tons)
1	6
1-2	8
1-3	10
1-4	12
1-5	14
1-6	16
1-7	18
1-8	20
1-9	22
1-10	24
1-11	24
1-12	24

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for combined HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The average temperature of the exhaust gases at the inlet to the catalytic incinerator, for any 3-hour block of time, shall not be less than 650 degrees Fahrenheit.
2. The temperature difference across the catalyst bed of the incinerator during each one hour test period (described below in section C.6.) shall not be less than thirty-three degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

1. To ensure compliance with the OC/VOC hourly emission limit, the following records shall be kept for the emissions unit on a daily basis:

Monitoring and/or Record Keeping Requirements (continued)

- 1.a For each job:
- The name of the adhesive applied.
 - The production rate in sheets/job, to be defined as "A".
 - The adhesive application area, in units of square feet per sheet.
 - The adhesive coverage rate, in units of pounds per square foot, to be defined as "B".
 - The VOC content, in units of pounds of VOC per pound of coating, to be defined as "C".
 - The hours of operation, in units of hours/job, to be defined as "HJ".
 - The rate of uncontrolled VOC emissions in units of pounds per job, to be defined as "UJOC." "UJOC" shall be calculated as follows: $UJOC = A * B * C$.
 - The VOC emission rate, after application of control device, in units of pounds per job, to be defined as "JOC". "JOC" shall be calculated as follows: $JOC = UJOC * (1.0 - D)$, where D = overall control efficiency, in decimal form.
- 1.b For the line:
- The daily total hours of operation, TH. TH shall have the units of hours per day, and shall be calculated in the following manner:
TH = the sum, from $i = 1$ to $i = n$, of (HJ)_i,
where
HJ = number of hours of operation for each job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
 - The average hourly emissions, HE. HE shall have the units of pounds of OC/VOC per hour, and shall be calculated in the following manner:
(HE) = the sum, from $i = 1$ to $i = n$, of (JOC)_i, divided by (TH),
where
TH = daily total hours of operation in hours/day,
JOC = the OC/VOC emission rate for each job, after application of control device, in units of pounds per job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
2. Monthly records shall be kept of the total OC/VOC emissions, MLE, for the emissions unit, in units of pounds. This shall be calculated in the following manner:
MLE = the sum, from $i = 1$ to $i = n$, of (JOC)_i,
where
MLE = monthly OC/VOC emissions for the line,
JOC = OC/VOC emissions from each job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
3. Monthly records shall be kept of the total OC/VOC emissions, MFE, for emissions units K001-K005, in units of tons. This shall be calculated in the following manner:
MFE = the sum, from $i = 1$ to $i = n$, of (MLE)_i, divided by 2000 lbs,
where
MFE = monthly OC/VOC emissions for the facility,
MLE = monthly OC/VOC emissions from each line,
 i = subscript denoting an individual line, and
 n = the total number of lines.
4. Beginning after the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the rolling, 12-month summation of the OC/VOC emissions for emissions units K001-K005. Also, during the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the cumulative OC/VOC emissions for emissions units K001-K005.
5. To ensure compliance with the yearly HAP emission limit, the following monthly records shall be kept:
- For each adhesive used in emissions units K001-K005, that contains one or more HAP:
- Name of the adhesive.
 - Amount of the adhesive used, in pounds per month, to be defined as "AH".
 - Name of all HAP(s) contained in the adhesive.
 - Content of each HAP in the adhesive, in units of pounds HAP/pound adhesive, to be defined as "BSH".
 - For each HAP in the adhesive, the amount of that HAP emitted, before application of control device, in units of pounds per month, to be defined as "UMSH". "UMSH" shall be calculated as follows:
 $UMSH = AH * BSH$.
 - For each HAP in the adhesive, the amount of that HAP emitted, after application of control device, in units of pounds per month, to be defined as "MSH." "MSH" shall be calculated as follows:
 $MSH = UMSH * (1.0 - D)$, where D = overall control efficiency, in decimal form.

Monitoring and/or Record Keeping Requirements (continued)

- 5.b** For each single HAP, the total amount of that HAP emitted, from emissions units K001-K005, in tons, after application of control device, calculated according to the following equation:
SHAP = the sum, from $i = 1$ to $i = n$, of $(MSH)_i$, divided by 2000 lbs,
where
SHAP = total monthly emissions for a single HAP from the facility, after application of control device, in tons,
 $(MSH)_i$ = total emissions of a single HAP from one adhesive, after application of control device, in pounds,
 i = subscript denoting an individual adhesive, and
 n = the total number of different adhesives containing the HAP.
- 5.c** For the combined HAPs, the total combined HAP emissions from emissions units K001-K005, after application of control device, calculated according to the following equation:
THAP = the sum, from $i = 1$ to $i = n$, of $(SHAP)_i$,
where
THAP = monthly total HAPs emissions from the facility, after application of control device, in tons,
SHAP = total monthly emissions for a single HAP, after application of control device, in tons,
 i = subscript denoting an individual HAP, and
 n = the total number of different HAPs.
- 5.d** Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the single HAPs emissions for emissions units K001-K005.
Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of total HAPs emissions.
Also, during the first 12 calendar months of operation following issuance of this permit, the cumulative emissions of all single and total HAPs for emissions units K001-K005.
- 6.** The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the combustion temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within +/- 1 percent of the temperature being measured or +/- 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

During each week that all lines are operated, the permittee shall schedule all lines to operate for a continuous one hour test period. For that scheduled one hour test period, the permittee shall record the average temperature difference across the catalyst bed.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the hourly emission limitation for OC/VOC for this emissions unit.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitation for OC/VOC and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitations for single and combined HAP(s) and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
4. The permittee shall submit deviation (excursion) reports that identify all one hour test periods, during which the temperature difference across the catalyst bed of the incinerator was less than thirty-three degrees Fahrenheit.
5. The permittee shall submit an annual report which identifies the total actual emissions of OC/VOC for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
6. The permittee shall submit an annual report which identifies the total actual emissions of each single HAP for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
7. The permittee shall submit an annual report which identifies the total actual emissions of combined HAPs for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.

Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

1.a The emission testing shall be conducted within 6 months prior to permit renewal.

The emission testing shall be conducted to demonstrate compliance with the mass emission rate, destruction efficiency, and overall control efficiency limitations for OC/VOC .

1.c The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC, Method 25. The test method(s) which must be employed to demonstrate compliance with the allowable emission limitations for OC/VOC are specified below.

The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. Miscellaneous Requirements

1. Sections A, B, C, D, and E constitute the federally enforceable portion of these permit terms and conditions.

4. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of three years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

5. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State and federal air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

6. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions unit or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of this emissions unit(s) that is (are) served by such control system(s).

7. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permittee. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Permit Renewal

Approximately six months prior to the expiration date of this permit, a notice regarding the renewal of this permit will be sent to the permittee's designated facility contact. If you are not contacted, please contact the appropriate Ohio EPA District Office or local air agency. It is the permittee's responsibility to renew this permit even if no notice of its expiration is received.

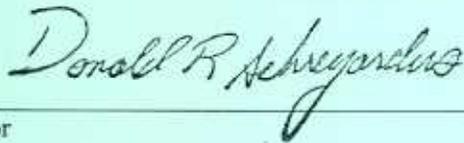
The following Ohio EPA District Office or local air agency has jurisdiction in the area in which the facility is located:

Cleveland Division of Air Pollution Control
1925 St. Clair
Cleveland, OH 44114
(216) 664-2324

You will be contacted approximately six months prior to expiration date regarding the renewal of this permit. If you are not contacted, please contact the appropriate DO or LAA.

10. The permittee is also subject to the attached special terms and conditions.

OHIO ENVIRONMENTAL PROTECTION AGENCY



Director

I: Special Terms and Conditions

Applicable Emissions Limitations and/or Control Requirements

- The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Screen printing line for application of adhesive coating with curing/drying line, with a catalytic incinerator for control of OC/VOC emissions	OAC 3745-21-07 (G)	OC/VOC emissions shall be controlled by an incinerator. Overall control efficiency of the system shall be at least 85%, by weight. Destruction efficiency of the incinerator shall be at least 90%, by weight.
	PTI 13-2396	4 lbs/hr OC

2. Additional Terms and Conditions

The total emissions of OC/VOC from emissions units K001-K005 shall not exceed 87.6 tons per year, based on a rolling 12-month summation of the monthly emissions.

To ensure enforceability of the annual OC/VOC emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of OC/VOC (tons)
1	7.4
1-2	14.8
1-3	22.3
1-4	29.7
1-5	37.2
1-6	44.6
1-7	52.0
1-8	59.5
1-9	66.9
1-10	74.0
1-11	81.8
1-12	87.6

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitation for OC/VOC shall be based upon a rolling, 12-month summation of the monthly emissions.

Additional Terms and Conditions (continued)

The emissions of any single HAP from emissions units K001-K005 shall not exceed 9 tons per year, based on a rolling 12-month summation of the monthly emissions. The emissions of any combination of HAPs from emissions units K001-K005 shall not exceed 24 tons per year, based on a rolling 12-month summation of the monthly emissions.

2.d To ensure enforceability of the annual, single HAPs emission limitation during the first 12 calendar months of operation following issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Single HAP (tons)
1	2.3
1-2	3.0
1-3	3.8
1-4	4.5
1-5	5.3
1-6	6.0
1-7	6.8
1-8	7.5
1-9	8.3
1-10	9.0
1-11	9.0
1-12	9.0

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for single HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

To ensure enforceability of the annual, combined HAPs emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Combination of HAPs (tons)
1	6
1-2	8
1-3	10
1-4	12
1-5	14
1-6	16
1-7	18
1-8	20
1-9	22
1-10	24
1-11	24
1-12	24

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for combined HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The average temperature of the exhaust gases at the inlet to the catalytic incinerator, for any 3-hour block of time, shall not be less than 650 degrees Fahrenheit.
2. The temperature difference across the catalyst bed of the incinerator during each one hour test period (described below in section C.6.) shall not be less than thirty-three degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

1. To ensure compliance with the OC/VOC hourly emission limit, the following records shall be kept for the emissions unit on a daily basis:



Monitoring and/or Record Keeping Requirements (continued)

- 1.a** For each job:
- The name of the adhesive applied.
 - The production rate in sheets/job, to be defined as "A".
 - The adhesive application area, in units of square feet per sheet.
 - The adhesive coverage rate, in units of pounds per square foot, to be defined as "B".
 - The VOC content, in units of pounds of VOC per pound of coating, to be defined as "C".
 - The hours of operation, in units of hours/job, to be defined as "HJ".
 - The rate of uncontrolled VOC emissions in units of pounds per job, to be defined as "UJOC." "UJOC" shall be calculated as follows: $UJOC = A * B * C$.
 - The VOC emission rate, after application of control device, in units of pounds per job, to be defined as "JOC". "JOC" shall be calculated as follows: $JOC = UJOC * (1.0 - D)$, where D = overall control efficiency, in decimal form.
- 1.b** For the line:
- The daily total hours of operation, TH. TH shall have the units of hours per day, and shall be calculated in the following manner:
 $TH = \text{the sum, from } i = 1 \text{ to } i = n, \text{ of } (HJ)_i$,
where
HJ = number of hours of operation for each job,
i = subscript denoting an individual job, and
n = the total number of jobs.
 - The average hourly emissions, HE. HE shall have the units of pounds of OC/VOC per hour, and shall be calculated in the following manner:
 $(HE) = \text{the sum, from } i = 1 \text{ to } i = n, \text{ of } (JOC)_i$, divided by (TH),
where
TH = daily total hours of operation in hours/day,
JOC = the OC/VOC emission rate for each job, after application of control device, in units of pounds per job,
i = subscript denoting an individual job, and
n = the total number of jobs.
- 2.** Monthly records shall be kept of the total OC/VOC emissions, MLE, for the emissions unit, in units of pounds. This shall be calculated in the following manner:
 $MLE = \text{the sum, from } i = 1 \text{ to } i = n, \text{ of } (JOC)_i$,
where
MLE = monthly OC/VOC emissions for the line,
JOC = OC/VOC emissions from each job,
i = subscript denoting an individual job, and
n = the total number of jobs.
- 3.** Monthly records shall be kept of the total OC/VOC emissions, MFE, for emissions units K001-K005, in units of tons. This shall be calculated in the following manner:
 $MFE = \text{the sum, from } i = 1 \text{ to } i = n, \text{ of } (MLE)_i$, divided by 2000 lbs,
where
MFE = monthly OC/VOC emissions for the facility,
MLE = monthly OC/VOC emissions from each line,
i = subscript denoting an individual line, and
n = the total number of lines.
- 4.** Beginning after the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the rolling, 12-month summation of the OC/VOC emissions for emissions units K001-K005. Also, during the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the cumulative OC/VOC emissions for emissions units K001-K005.
- 5.** To ensure compliance with the yearly HAP emission limit, the following monthly records shall be kept:
- 5.a** For each adhesive used in emissions units K001-K005, that contains one or more HAP:
- Name of the adhesive.
 - Amount of the adhesive used, in pounds per month, to be defined as "AH".
 - Name of all HAP(s) contained in the adhesive.
 - Content of each HAP in the adhesive, in units of pounds HAP/pound adhesive, to be defined as "BSH".
 - For each HAP in the adhesive, the amount of that HAP emitted, before application of control device, in units of pounds per month, to be defined as "UMSH". "UMSH" shall be calculated as follows:
 $UMSH = AH * BSH$.
 - For each HAP in the adhesive, the amount of that HAP emitted, after application of control device, in units of pounds per month, to be defined as "MSH." "MSH" shall be calculated as follows:
 $MSH = UMSH * (1.0 - D)$, where D = overall control efficiency, in decimal form.

Monitoring and/or Record Keeping Requirements (continued)

- 5.b For each single HAP, the total amount of that HAP emitted, from emissions units K001-K005, in tons, after application of control device, calculated according to the following equation:
SHAP = the sum, from $i = 1$ to $i = n$, of $(MSH)_i$, divided by 2000 lbs,
where
SHAP = total monthly emissions for a single HAP from the facility, after application of control device, in tons,
 $(MSH)_i$ = total emissions of a single HAP from one adhesive, after application of control device, in pounds,
 i = subscript denoting an individual adhesive, and
 n = the total number of different adhesives containing the HAP.
- 5.c For the combined HAPs, the total combined HAP emissions from emissions units K001-K005, after application of control device, calculated according to the following equation:
THAP = the sum, from $i = 1$ to $i = n$, of $(SHAP)_i$,
where
THAP = monthly total HAPs emissions from the facility, after application of control device, in tons,
SHAP = total monthly emissions for a single HAP, after application of control device, in tons,
 i = subscript denoting an individual HAP, and
 n = the total number of different HAPs.
- 5.d Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the single HAPs emissions for emissions units K001-K005.
Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of total HAPs emissions.
Also, during the first 12 calendar months of operation following issuance of this permit, the cumulative emissions of all single and total HAPs for emissions units K001-K005.
6. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the combustion temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within +/- 1 percent of the temperature being measured or +/- 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.
- During each week that all lines are operated, the permittee shall schedule all lines to operate for a continuous one hour test period. For that scheduled one hour test period, the permittee shall record the average temperature difference across the catalyst bed.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the hourly emission limitation for OC/VOC for this emissions unit.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitation for OC/VOC and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitations for single and combined HAP(s) and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
4. The permittee shall submit deviation (excursion) reports that identify all one hour test periods, during which the temperature difference across the catalyst bed of the incinerator was less than thirty-three degrees Fahrenheit.
5. The permittee shall submit an annual report which identifies the total actual emissions of OC/VOC for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
6. The permittee shall submit an annual report which identifies the total actual emissions of each single HAP for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
7. The permittee shall submit an annual report which identifies the total actual emissions of combined HAPs for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.

Testing Requirements

- The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- 1.a The emission testing shall be conducted within 6 months prior to permit renewal.
 - 1.b The emission testing shall be conducted to demonstrate compliance with the mass emission rate, destruction efficiency, and overall control efficiency limitations for OC/VOC.
 - 1.c The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC, Method 25. The test method(s) which must be employed to demonstrate compliance with the allowable emission limitations for OC/VOC are specified below.
 - 1.d The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. Miscellaneous Requirements

1. Sections A, B, C, D, and E constitute the federally enforceable portion of these permit terms and conditions.

PERMIT TO OPERATE AN EMISSIONS UNIT

Effective Date: 8/7/97

Facility ID: 13-18-60-7686

Expiration Date: 08/07/00

FINAL ISSUE

This document constitutes issuance for:

Excello Specialty Company
18807 Miles Road
Cleveland, OH 44128

of a permit to operate for:

K004 (Coating line #4)

Screen printing: adhesive coating and curing/drying line

PART I General Terms & Conditions

1. Compliance Requirements

The above-described emissions unit is and shall remain in full compliance with all applicable State and federal laws and regulations and the terms and conditions of this permit.

2. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.

3. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

4. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of three years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

5. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State and federal air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

6. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions unit or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of this emissions unit(s) that is (are) served by such control system(s).

7. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permittee. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Permit Renewal

Approximately six months prior to the expiration date of this permit, a notice regarding the renewal of this permit will be sent to the permittee's designated facility contact. If you are not contacted, please contact the appropriate Ohio EPA District Office or local air agency. It is the permittee's responsibility to renew this permit even if no notice of its expiration is received.

The following Ohio EPA District Office or local air agency has jurisdiction in the area in which the facility is located:

Cleveland Division of Air Pollution Control
1925 St. Clair
Cleveland, OH 44114
(216) 664-2324

You will be contacted approximately six months prior to expiration date regarding the renewal of this permit. If you are not contacted, please contact the appropriate DO or LAA.

10. The permittee is also subject to the attached special terms and conditions.

OHIO ENVIRONMENTAL PROTECTION AGENCY

A handwritten signature in cursive script, reading "Donald R. Scheyardus", is written over a horizontal line.

Director

Special Terms and Conditions

licable Emissions Limitations and/or Control Requirements

The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Screen printing line for application of adhesive coating with curing/drying line, with a catalytic incinerator for control of OC/VOC emissions	OAC 3745-21-07 (G)	OC/VOC emissions shall be controlled by an incinerator. Overall control efficiency of the system shall be at least 85%, by weight. Destruction efficiency of the incinerator shall be at least 90%, by weight.
	PTI 13-2396	4 lbs/hr OC

2. Additional Terms and Conditions

- 2.a The total emissions of OC/VOC from emissions units K001-K005 shall not exceed 87.6 tons per year, based on a rolling 12-month summation of the monthly emissions.
- 2.b To ensure enforceability of the annual OC/VOC emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of OC/VOC (tons)
1	7.4
1-2	14.8
1-3	22.3
1-4	29.7
1-5	37.2
1-6	44.6
1-7	52.0
1-8	59.5
1-9	66.9
1-10	74.0
1-11	81.8
1-12	87.6

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitation for OC/VOC shall be based upon a rolling, 12-month summation of the monthly emissions.

Additional Terms and Conditions (continued)

The emissions of any single HAP from emissions units K001-K005 shall not exceed 9 tons per year, based on a rolling 12-month summation of the monthly emissions. The emissions of any combination of HAPs from emissions units K001-K005 shall not exceed 24 tons per year, based on a rolling 12-month summation of the monthly emissions.

To ensure enforceability of the annual, single HAPs emission limitation during the first 12 calendar month of operation following issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Single HAP (tons)
1	2.3
1-2	3.0
1-3	3.8
1-4	4.5
1-5	5.3
1-6	6.0
1-7	6.8
1-8	7.5
1-9	8.3
1-10	9.0
1-11	9.0
1-12	9.0

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for single HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.e To ensure enforceability of the annual, combined HAPs emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Combination of HAPs (tons)
1	6
1-2	8
1-3	10
1-4	12
1-5	14
1-6	16
1-7	18
1-8	20
1-9	22
1-10	24
1-11	24
1-12	24

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for combined HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The average temperature of the exhaust gases at the inlet to the catalytic incinerator, for any 3-hour block of time, shall not be less than 650 degrees Fahrenheit.
2. The temperature difference across the catalyst bed of the incinerator during each one hour test period (described below in section C.6.) shall not be less than thirty-three degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

1. To ensure compliance with the OC/VOC hourly emission limit, the following records shall be kept for the emissions unit on a daily basis:

Monitoring and/or Record Keeping Requirements (continued)

- I.a** For each job:
- The name of the adhesive applied.
 - The production rate in sheets/job, to be defined as "A".
 - The adhesive application area, in units of square feet per sheet.
 - The adhesive coverage rate, in units of pounds per square foot, to be defined as "B".
 - The VOC content, in units of pounds of VOC per pound of coating, to be defined as "C".
 - The hours of operation, in units of hours/job, to be defined as "HJ".
 - The rate of uncontrolled VOC emissions in units of pounds per job, to be defined as "UJOC." "UJOC" shall be calculated as follows: $UJOC = A * B * C$.
 - The VOC emission rate, after application of control device, in units of pounds per job, to be defined as "JOC". "JOC" shall be calculated as follows: $JOC = UJOC * (1.0 - D)$, where D = overall control efficiency, in decimal form.
- I.b** For the line:
- The daily total hours of operation, TH. TH shall have the units of hours per day, and shall be calculated in the following manner:
TH = the sum, from $i = 1$ to $i = n$, of (HJ)_i,
where
HJ = number of hours of operation for each job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
 - The average hourly emissions, HE. HE shall have the units of pounds of OC/VOC per hour, and shall be calculated in the following manner:
(HE) = the sum, from $i = 1$ to $i = n$, of (JOC)_i, divided by (TH),
where
TH = daily total hours of operation in hours/day,
JOC = the OC/VOC emission rate for each job, after application of control device, in units of pounds per job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
- 2.** Monthly records shall be kept of the total OC/VOC emissions, MLE, for the emissions unit, in units of pounds. This shall be calculated in the following manner:
MLE = the sum, from $i = 1$ to $i = n$, of (JOC)_i,
where
MLE = monthly OC/VOC emissions for the line,
JOC = OC/VOC emissions from each job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
- 3.** Monthly records shall be kept of the total OC/VOC emissions, MFE, for emissions units K001-K005, in units of tons. This shall be calculated in the following manner:
MFE = the sum, from $i = 1$ to $i = n$, of (MLE)_i, divided by 2000 lbs,
where
MFE = monthly OC/VOC emissions for the facility,
MLE = monthly OC/VOC emissions from each line,
 i = subscript denoting an individual line, and
 n = the total number of lines.
- 4.** Beginning after the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the rolling, 12-month summation of the OC/VOC emissions for emissions units K001-K005. Also, during the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the cumulative OC/VOC emissions for emissions units K001-K005.
- 5.** To ensure compliance with the yearly HAP emission limit, the following monthly records shall be kept:
- For each adhesive used in emissions units K001-K005, that contains one or more HAP:
- Name of the adhesive.
 - Amount of the adhesive used, in pounds per month, to be defined as "AH".
 - Name of all HAP(s) contained in the adhesive.
 - Content of each HAP in the adhesive, in units of pounds HAP/pound adhesive, to be defined as "BSH".
 - For each HAP in the adhesive, the amount of that HAP emitted, before application of control device, in units of pounds per month, to be defined as "UMSH". "UMSH" shall be calculated as follows:
 $UMSH = AH * BSH$.
 - For each HAP in the adhesive, the amount of that HAP emitted, after application of control device, in units of pounds per month, to be defined as "MSH." "MSH" shall be calculated as follows:
 $MSH = UMSH * (1.0 - D)$, where D = overall control efficiency, in decimal form.

Monitoring and/or Record Keeping Requirements (continued)

- 5.b For each single HAP, the total amount of that HAP emitted, from emissions units K001-K005, in tons, after application of control device, calculated according to the following equation:
SHAP = the sum, from $i = 1$ to $i = n$, of $(MSH)_i$, divided by 2000 lbs,
where
SHAP = total monthly emissions for a single HAP from the facility, after application of control device, in tons,
 $(MSH)_i$ = total emissions of a single HAP from one adhesive, after application of control device, in pounds,
 i = subscript denoting an individual adhesive, and
 n = the total number of different adhesives containing the HAP.
- 5.c For the combined HAPs, the total combined HAP emissions from emissions units K001-K005, after application of control device, calculated according to the following equation:
THAP = the sum, from $i = 1$ to $i = n$, of $(SHAP)_i$,
where
THAP = monthly total HAPs emissions from the facility, after application of control device, in tons,
SHAP = total monthly emissions for a single HAP, after application of control device, in tons,
 i = subscript denoting an individual HAP, and
 n = the total number of different HAPs.
- 5.d Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the single HAPs emissions for emissions units K001-K005.
Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of total HAPs emissions.
Also, during the first 12 calendar months of operation following issuance of this permit, the cumulative emissions of all single and total HAPs for emissions units K001-K005.
6. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the combustion temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within +/-1 percent of the temperature being measured or +/- 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

During each week that all lines are operated, the permittee shall schedule all lines to operate for a continuous one hour test period. For that scheduled one hour test period, the permittee shall record the average temperature difference across the catalyst bed.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the hourly emission limitation for OC/VOC for this emissions unit.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitation for OC/VOC and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitations for single and combined HAP(s) and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
4. The permittee shall submit deviation (excursion) reports that identify all one hour test periods, during which the temperature difference across the catalyst bed of the incinerator was less than thirty-three degrees Fahrenheit.
5. The permittee shall submit an annual report which identifies the total actual emissions of OC/VOC for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
6. The permittee shall submit an annual report which identifies the total actual emissions of each single HAP for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
7. The permittee shall submit an annual report which identifies the total actual emissions of combined HAPs for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.

Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - 1.a The emission testing shall be conducted within 6 months prior to permit renewal.
 - 1.b The emission testing shall be conducted to demonstrate compliance with the mass emission rate, destruction efficiency, and overall control efficiency limitations for OC/VOC.
 - 1.c The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC, Method 25. The test method(s) which must be employed to demonstrate compliance with the allowable emission limitations for OC/VOC are specified below.
 - 1.d The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. Miscellaneous Requirements

1. Sections A, B, C, D, and E constitute the federally enforceable portion of these permit terms and conditions.

PERMIT TO OPERATE AN EMISSIONS UNIT

Effective Date: 8/7/97

Facility ID: 13-18-60-7686

Expiration Date: 08/07/00

FINAL ISSUE

This document constitutes issuance for:

Excello Specialty Company
18807 Miles Road
Cleveland, OH 44128

of a permit to operate for:

K005 (Coating line #5)
Screen printing: adhesive coating and curing/drying line

PART I General Terms & Conditions

1. Compliance Requirements

The above-described emissions unit is and shall remain in full compliance with all applicable State and federal laws and regulations and the terms and conditions of this permit.

2. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.

3. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

4. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of three years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

5. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State and federal air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

6. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions unit or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of this emissions unit(s) that is (are) served by such control system(s).

7. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permittee. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Permit Renewal

Approximately six months prior to the expiration date of this permit, a notice regarding the renewal of this permit will be sent to the permittee's designated facility contact. If you are not contacted, please contact the appropriate Ohio EPA District Office or local air agency. It is the permittee's responsibility to renew this permit even if no notice of its expiration is received.

The following Ohio EPA District Office or local air agency has jurisdiction in the

in which the facility is located:

Cleveland Division of Air Pollution Control
1925 St. Clair
Cleveland, OH 44114
(216) 664-2324

You will be contacted approximately six months prior to expiration date regarding the renewal of this permit. If you are not contacted, please contact the appropriate DO or LAA.

10. The permittee is also subject to the attached special terms and conditions.

OHIO ENVIRONMENTAL PROTECTION AGENCY



Director

II: Special Terms and Conditions

Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Screen printing line for application of adhesive coating with curing/drying line, with a catalytic incinerator for control of OC/VOC emissions	OAC 3745-21-07 (G)	OC/VOC emissions shall be controlled by an incinerator. Overall control efficiency of the system shall be at least 85%, by weight. Destruction efficiency of the incinerator shall be at least 90%, by weight.
	PTI 13-2396	4 lbs/hr OC

2. Additional Terms and Conditions

- 2.a The total emissions of OC/VOC from emissions units K001-K005 shall not exceed 87.6 tons per year, based on a rolling 12-month summation of the monthly emissions.
- 2.b To ensure enforceability of the annual OC/VOC emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of OC/VOC (tons)
1	7.4
1-2	14.8
1-3	22.3
1-4	29.7
1-5	37.2
1-6	44.6
1-7	52.0
1-8	59.5
1-9	66.9
1-10	74.0
1-11	81.8
1-12	87.6

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitation for OC/VOC shall be based upon a rolling, 12-month summation of the monthly emissions.

Additional Terms and Conditions (continued)

- 2.c The emissions of any single HAP from emissions units K001-K005 shall not exceed 9 tons per year, based on a rolling 12-month summation of the monthly emissions. The emissions of any combination of HAPs from emissions units K001-K005 shall not exceed 24 tons per year, based on a rolling 12-month summation of the monthly emissions.
- 2.d To ensure enforceability of the annual, single HAPs emission limitation during the first 12 calendar months of operation following issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Single HAP (tons)
1	2.3
1-2	3.0
1-3	3.8
1-4	4.5
1-5	5.3
1-6	6.0
1-7	6.8
1-8	7.5
1-9	8.3
1-10	9.0
1-11	9.0
1-12	9.0

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for single HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.e To ensure enforceability of the annual, combined HAPs emission limitation during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the monthly emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of Any Combination of HAPs (tons)
1	6
1-2	8
1-3	10
1-4	12
1-5	14
1-6	16
1-7	18
1-8	20
1-9	22
1-10	24
1-11	24
1-12	24

After the first 12 calendar months of operation following issuance of this permit, compliance with the annual emission limitation for combined HAP(s) shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The average temperature of the exhaust gases at the inlet to the catalytic incinerator, for any 3-hour block of time, shall not be less than 650 degrees Fahrenheit.
2. The temperature difference across the catalyst bed of the incinerator during each one hour test period (described below in section C.6.) shall not be less than thirty-three degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

1. To ensure compliance with the OC/VOC hourly emission limit, the following records shall be kept for the emissions unit on a daily basis:

Monitoring and/or Record Keeping Requirements (continued)

- I.a** For each job:
- i. The name of the adhesive applied.
 - ii. The production rate in sheets/job, to be defined as "A".
 - iii. The adhesive application area, in units of square feet per sheet.
 - iv. The adhesive coverage rate, in units of pounds per square foot, to be defined as "B".
 - v. The VOC content, in units of pounds of VOC per pound of coating, to be defined as "C".
 - vi. The hours of operation, in units of hours/job, to be defined as "HJ".
 - vii. The rate of uncontrolled VOC emissions in units of pounds per job, to be defined as "UJOC." "UJOC" shall be calculated as follows: $UJOC = A * B * C$.
 - viii. The VOC emission rate, after application of control device, in units of pounds per job, to be defined as "JOC". "JOC" shall be calculated as follows: $JOC = UJOC * (1.0 - D)$, where D = overall control efficiency, in decimal form.
- I.b** For the line:
- i. The daily total hours of operation, TH. TH shall have the units of hours per day, and shall be calculated in the following manner:
TH = the sum, from $i = 1$ to $i = n$, of (HJ)_i,
where
HJ = number of hours of operation for each job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
 - ii. The average hourly emissions, HE. HE shall have the units of pounds of OC/VOC per hour, and shall be calculated in the following manner:
(HE) = the sum, from $i = 1$ to $i = n$, of (JOC)_i, divided by (TH),
where
TH = daily total hours of operation in hours/day,
JOC = the OC/VOC emission rate for each job, after application of control device, in units of pounds per job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
- 2.** Monthly records shall be kept of the total OC/VOC emissions, MLE, for the emissions unit, in units of pounds. This shall be calculated in the following manner:
MLE = the sum, from $i = 1$ to $i = n$, of (JOC)_i,
where
MLE = monthly OC/VOC emissions for the line,
JOC = OC/VOC emissions from each job,
 i = subscript denoting an individual job, and
 n = the total number of jobs.
- 3.** Monthly records shall be kept of the total OC/VOC emissions, MFE, for emissions units K001-K005, in units of tons. This shall be calculated in the following manner:
MFE = the sum, from $i = 1$ to $i = n$, of (MLE)_i, divided by 2000 lbs,
where
MFE = monthly OC/VOC emissions for the facility,
MLE = monthly OC/VOC emissions from each line,
 i = subscript denoting an individual line, and
 n = the total number of lines.
- 4.** Beginning after the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the rolling, 12-month summation of the OC/VOC emissions for emissions units K001-K005. Also, during the first 12 calendar months of operation following issuance of this permit, monthly records shall be kept of the cumulative OC/VOC emissions for emissions units K001-K005.
- 5.** To ensure compliance with the yearly HAP emission limit, the following monthly records shall be kept:
- For each adhesive used in emissions units K001-K005, that contains one or more HAP:
- i. Name of the adhesive.
 - ii. Amount of the adhesive used, in pounds per month, to be defined as "AH".
 - iii. Name of all HAP(s) contained in the adhesive.
 - iv. Content of each HAP in the adhesive, in units of pounds HAP/pound adhesive, to be defined as "BSH".
 - v. For each HAP in the adhesive, the amount of that HAP emitted, before application of control device, in units of pounds per month, to be defined as "UMSH". "UMSH" shall be calculated as follows:
 $UMSH = AH * BSH$.
 - vi. For each HAP in the adhesive, the amount of that HAP emitted, after application of control device, in units of pounds per month, to be defined as "MSH." "MSH" shall be calculated as follows:
 $MSH = UMSH * (1.0 - D)$, where D = overall control efficiency, in decimal form.

Monitoring and/or Record Keeping Requirements (continued)

- b For each single HAP, the total amount of that HAP emitted, from emissions units K001-K005, in tons, after application of control device, calculated according to the following equation:
SHAP = the sum, from $i = 1$ to $i = n$, of (MSH)_i, divided by 2000 lbs,
where
SHAP = total monthly emissions for a single HAP from the facility, after application of control device, in tons,
(MSH)_i = total emissions of a single HAP from one adhesive, after application of control device, in pounds,
 i = subscript denoting an individual adhesive, and
 n = the total number of different adhesives containing the HAP.
- 5.c For the combined HAPs, the total combined HAP emissions from emissions units K001-K005, after application of control device, calculated according to the following equation:
THAP = the sum, from $i = 1$ to $i = n$, of (SHAP)_i,
where
THAP = monthly total HAPs emissions from the facility, after application of control device, in tons,
SHAP = total monthly emissions for a single HAP, after application of control device, in tons,
 i = subscript denoting an individual HAP, and
 n = the total number of different HAPs.
- 5.d Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the single HAPs emissions for emissions units K001-K005.
Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of total HAPs emissions.
Also, during the first 12 calendar months of operation following issuance of this permit, the cumulative emissions of all single and total HAPs for emissions units K001-K005.
6. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the combustion temperature immediately upstream and downstream of the incinerator's catalyst bed when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within +/-1 percent of the temperature being measured or +/- 5 degrees Fahrenheit, whichever is greater. The temperature monitors and recorder(s) shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

During each week that all lines are operated, the permittee shall schedule all lines to operate for a continuous one hour test period. For that scheduled one hour test period, the permittee shall record the average temperature difference across the catalyst bed.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedances of the hourly emission limitation for OC/VOC for this emissions unit.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitation for OC/VOC and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month emission limitations for single and combined HAP(s) and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the monthly, maximum allowable cumulative emission levels.
4. The permittee shall submit deviation (excursion) reports that identify all one hour test periods, during which the temperature difference across the catalyst bed of the incinerator was less than thirty-three degrees Fahrenheit.
5. The permittee shall submit an annual report which identifies the total actual emissions of OC/VOC for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
6. The permittee shall submit an annual report which identifies the total actual emissions of each single HAP for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.
7. The permittee shall submit an annual report which identifies the total actual emissions of combined HAPs for emissions units K001-K005. The report shall be submitted annually, i.e., by January 31 of each year, and shall cover the previous calendar year.

Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - 1.a The emission testing shall be conducted within 6 months prior to permit renewal.
 - 1.b The emission testing shall be conducted to demonstrate compliance with the mass emission rate, destruction efficiency, and overall control efficiency limitations for OC/VOC .
 - 1.c The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for VOC, Method 25. The test method(s) which must be employed to demonstrate compliance with the allowable emission limitations for OC/VOC are specified below.
 - 1.d The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. Miscellaneous Requirements

1. Sections A, B, C, D, and E constitute the federally enforceable portion of these permit terms and conditions.