



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL  
LAKE COUNTY**

**CERTIFIED MAIL**

Street Address:

122 S. Front Street

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center  
P.O. Box 1049

**Application No: 02-20685**

**Fac ID: 0243081365**

**DATE: 8/25/2005**

Avery Dennison Corp.  
Stephen Gittins  
7590 Auburn Rd.  
Painesville, OH 44077

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it 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 by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 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 within thirty (30) days after the notice of the Directors 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  
309 South Fourth Street, Room 222  
Columbus, Ohio 43215

Sincerely,

*Michael W. Ahern*

Michael W. Ahern, Manager  
Permit Issuance and Data Management Section  
Division of Air Pollution Control

CC: USEPA

NEDO



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**Permit To Install  
Terms and Conditions**

**Issue Date: 8/25/2005  
Effective Date: 8/25/2005**

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**FINAL PERMIT TO INSTALL 02-20685**

Application Number: 02-20685  
Facility ID: 0243081365  
Permit Fee: **\$500**  
Name of Facility: Avery Dennison Corp.  
Person to Contact: Stephen Gittins  
Address: 7590 Auburn Rd.  
Painesville, OH 44077

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**8195 Garfield Rd.  
Mentor, Ohio**

Description of proposed emissions unit(s):  
**Pilot coater.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. State and Federally Enforceable Permit-To-Install General Terms and Conditions

#### 1. Monitoring and Related Recordkeeping and Reporting Requirements

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - i. The date, place (as defined in the permit), and time of sampling or measurements.
  - ii. The date(s) analyses were performed.
  - iii. The company or entity that performed the analyses.
  - iv. The analytical techniques or methods used.
  - v. The results of such analyses.
  - vi. The operating conditions existing at the time of sampling or measurement.
- b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five 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 this permit. Such records may be maintained in computerized form.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
  - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to

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the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.8 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
  - iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## **2. 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, i.e., upset, of any emissions units 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. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to 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 the emission unit(s) that is (are) served by such control system(s).

## **3. Risk Management Plans**

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

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**4. Title IV Provisions**

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

**5. Severability Clause**

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

**6. General Requirements**

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. 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 or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to

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the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

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## **7. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

## **8. Federal and State Enforceability**

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

## **9. Compliance Requirements**

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

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- iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
  - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

#### 10. Permit-To-Operate Application

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

#### 11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

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**12. 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.

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### **13. Permit-To-Install**

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

## **B. State Only Enforceable Permit-To-Install General Terms and Conditions**

### **1. Compliance Requirements**

The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

### **2. Reporting Requirements**

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping of state-only enforceable 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 state-only required 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 (i.e., postmarked) quarterly, 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.)

### **3. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder.

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The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

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**4. Authorization To Install or Modify**

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

**5. Construction of New Sources(s)**

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

**6. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

**7. Applicability**

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

**8. Construction Compliance Certification**

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If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) that the facility has been constructed in accordance with the permit-to-install application and the terms and conditions of the permit-to-install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

**9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)**

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., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**C. Permit-To-Install Summary of Allowable Emissions**

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)  
 TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

| <u>Pollutant</u> | <u>Tons Per Year</u> |
|------------------|----------------------|
| VOC              | 90.0                 |
| NOx              | 10.5                 |
| CO               | 8.4                  |

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**Part II - FACILITY SPECIFIC TERMS AND CONDITIONS**

**A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions**

None

**B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(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 specified in narrative form following the table.

| <u>Operations, Property, and/or Equipment</u>  | <u>Applicable Rules/Requirements</u>                       |   |
|--|--|---|
| K001 - A research and development headquarters pilot coater K001 [with associated web unwind station, application coating stations, web treatment units, direct fired drying ovens (with maximum combined heat capacity of 16 MmBtu/hr) web rewind station, and storage tanks. | OAC rule 3745-31-05 (A) (5)                                | 40 CFR Part 63, Subpart DDDDD (Boilers and Process Heaters) |
|  | OAC rule 3745-31-05(C)                                     |   |
|  | OAC rule 3745-21-09 (F)                                    |   |
|  | 40 CFR Part 60, Subpart RR                                 |   |
|  | 40 CFR Part 63, Subpart JJJJ (Paper and Other Web Coating) |   |

**Avery**

**PTI A**

**Issued: 8/25/2005**

Emissions Unit ID: K001

Applicable Emissions  
Limitations/Control  
Measures

410 pounds of volatile organic compounds (VOCs) per hour, including cleanup, as a daily average

2.0 pounds per hour and 8.76 tons per year of nitrogen oxides (NOx) emissions from the ovens (See section A.1.2.c)

1.6 pounds per hour and 7.0 tons per year of carbon monoxide (CO) emissions from the ovens (See section A.1.2.c)

90.0 tons VOC per rolling 12-month period including coatings and cleanup materials

The VOC content for any coating employed in this emissions unit shall not exceed 2.9 pounds per gallon, as applied excluding water and exempt solvents.

The permittee shall not discharge VOC emissions into the atmosphere of more than 0.2 kg of VOC per of coating solids

applied, calculated as a mass weighted average for each month.

The permittee shall not discharge organic HAP emissions into the atmosphere of more than 1.6 percent of the total mass of coating applied or more than 8 percent of the total mass of coating solids applied calculated for each month. (See Section A.1.2.a.)

(See Section A.1.2.b. of these terms and conditions)

## 2. Additional Terms and Conditions

- 2.a The total monthly HAP, applied shall be determined by Equation 6 of Section 63.3370 of 40 CFR Part 63, Subpart JJJJ, as follows:

$$H_m = \sum_{i=1}^p C_{hi}M_i + \sum_{j=1}^q C_{hij}M_{ij} - M_{vret}$$

where:

$H_m$  = Total monthly organic HAP applied, kg.

$p$  = Number of different coating materials applied in a month.

$C_{hi}$  = Organic HAP content of coating material,  $i$ , as-purchased, expressed as a mass fraction, kg/kg.

$M_i$  = Mass of as-purchased coating material,  $i$ , applied in a month, kg.

$q$  = Number of different materials added to the coating material.

$C_{hij}$  = Organic HAP content of material,  $j$ , added to as-purchased coating material,  $i$ , expressed as a mass fraction, kg/kg.

$M_{ij}$  = Mass of material,  $j$ , added to as-purchased coating material,  $i$ , in a month, kg.

$M_{vret}$  = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in §63.3370.

- 2.b The natural gas boiler for process heat for this emissions unit is less than 10 MmBtu per hour and is classified in the "small gaseous fuel category" as defined in the Boiler MACT and is an affected source. According to section 63.7506(c)(4), there are no applicable requirements, including initial notification for this boiler.
- 2.c The Best Available Technology determination for this emissions unit includes the

use of only natural gas, as fuel.

In addition, because the annual limits for NO<sub>x</sub> and CO from this PTI are based on the maximum potential to emit, no monitoring or record keeping of the gas usage is required.

- 2.d** Ozone is emitted from the corona treaters on this coating line in quantities less than 1.0 ton per year. Because at this time there are no applicable requirements for ozone, no emission limitations have been included in this permit.
- 2.e** The permittee shall comply with all applicable requirements in the MACT for Paper and other Web Coating, 40 CFR Part 63, Subpart JJJJ.

And, if this MACT is substantially revised then the permittee is expected to comply with the newly revised applicable requirements of the MACT and must submit a minor modification to the Title V permit, as required.

## II. Operational Restrictions

- The permittee shall install and use low NO<sub>x</sub> burners in the drying ovens.
- The weight of VOCs applied/used in this emissions unit shall not exceed 90 tons per rolling 12 months, calculated using the following formula:

$$90.0 \text{ tons VOC} \geq \sum_{i=1}^n \frac{(P_i)(VOC_i)}{2000 \text{ lbs/ton}} + (1.23 + 0.14 + 0.47)$$

where:

P<sub>i</sub> = usage of the coating and cleanup material i, in gallons during the last 12 months

VOC<sub>i</sub> = volatile organic compound content of coating i, cleanup material i, in pounds per gallon.

To ensure enforceability during the first twelve (12) calendar months of operation following the effective date of this permit to install, VOC emissions from this emissions unit, Ohio EPA emissions unit K001, shall not exceed the emissions levels specified in the following table:

| Month<br>(after issuance) | Cumulative VOC emissions<br>(including cleanup)<br>tons per year |
|---------------------------|--|
|---------------------------|--|

**Avery Dennison Corp.**  
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**Issue:**

**Facility ID: 0243081365**

Emissions Unit ID: K001

|    |    |
|----|----|
| 1  | 24 |
| 2  | 30 |
| 3  | 36 |
| 4  | 42 |
| 5  | 48 |
| 6  | 54 |
| 7  | 60 |
| 8  | 66 |
| 9  | 72 |
| 10 | 78 |
| 11 | 84 |
| 12 | 90 |

After the first 12 calendar months of operation following the issuance of this permit, compliance shall be based upon a rolling, 12-month summation of the VOC emissions.

### III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month for this emissions unit:
  - a. the name and identification number of each coating and cleanup material employed;
  - b. the VOC content of each coating and cleanup material employed for each day, in pounds per gallon;
  - c. the number of gallons of each coating and cleanup material employed for each day;
  - d. the total VOC emissions from all coatings and cleanup materials for each day, in pounds and tons per day;
  - e. the total VOC emissions from all coatings and cleanup materials, to date, in tons per month;
  - f. the rolling 12-month VOC emissions from all coatings and cleanup materials, in tons;
  - g. the total number of hours the emissions unit was in operation for each day, in hours per day; and
  - h. the daily average hourly VOC emission rate from all coatings and cleanup materials employed, [(d)/(g)], in pounds per hour (daily average).
2. The permittee shall collect and record the following information each month for this

emissions unit:

- a. The name and identification number of each coating employed;
- b. The weighted average of the mass of solvent (VOC) used per mass of coating solids applied, in kg VOC/kg coating solids applied, calculated in accordance with the equation in section 60.443(a)(2) of 40 CFR 60, Subpart RR, and as follows:
  - i. The weight fraction of volatile organic compounds and the weight fraction coating solids of each coating applied shall be determined by 40 CFR Part 60, Appendix A, Reference Method 24, or other test method approved by U.S. EPA, or by the coating manufacturer's formulation data. In accordance with the USEPA's written approval of February 11, 1998, Headspace Gas Chromatograph Technique modified Method 8260 may be used to determine the VOC content of the water-based coatings, pursuant to section 4.3 of Method 24, 40 CFR Part 60, Appendix A.

- ii. The weighted average shall be calculated using the following equation:

$$G = (TWM_o) / (TWM_s)$$

Where

$TWM_o$  = the sum, from  $i = 1$  to  $i = n$ , of  $(W_{oi} \times M_{ci})_i$

$TWM_s$  = the sum, from  $i = 1$  to  $i = n$ , of  $(W_{si} \times M_{ci})_i$

$i$  = subscript denoting an individual coating

$n$  = the number of different coatings employed

$M_{ci}$  = the total mass (kg) of each coating (i) applied during the calendar month as determined from facility records

$W_{oi}$  = the weight fraction of volatile organic compounds of each coating (i) applied during the calendar month as determined by Reference Method 24 or other test method approved by U.S. EPA, or by the coating manufacturer's formulation data.

Emissions Unit ID: K001

$W_{si}$  = the weight fraction of coating solids of each coating (i) applied during the calendar month as determined by Reference Method 24 or other test method approved by U.S. EPA, or by the coating manufacturer's formulation data.

3. The permittee shall collect and record the following information each month for this emissions unit:
  - a. The name and identification number of each coating employed;
  - b. If the permittee is demonstrating compliance with the HAP emissions limit in section 63.332(b)(3) [ $\leq 8\%$  of the coating solids applied], then the average of the mass of HAP emissions per mass of coating solids applied, in kg HAP/kg coating solids applied, calculated in accordance with the equations in section 63.3370(c)(4) of 40 CFR 63, Subpart JJJJ, and as follows:
    - i. If required, the weight fraction of HAP and the weight fraction coating solids of each coating applied shall be determined by 40 CFR Part 63, Appendix A, Reference Method 311, 40 CFR Part 60, Appendix A, Reference Method 24, or other test method approved by U.S. EPA, or by the coating manufacturer's formulation data,
    - ii. The average shall be calculated using the following equation:

Where:

$H_s$  = Monthly average, as-applied, organic HAP to coating solids ratio, kg organic HAP/kg coating solids applied.

$p$  = Number of different coating materials applied in a month.

$Chi$  = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, kg/kg.

$Mi$  = Mass of as-purchased coating material, i, applied in a month, kg.

$q$  = Number of different materials added to the coating material.

$Chij$  = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, kg/kg.

$Mij$  = Mass of material, j, added to as-purchased coating material, i, in a month, kg.

$Mvret$  = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in §§ 63.3370.

$Csi$  = Coating solids content of coating material, i, expressed as a mass fraction, kg/kg.

$Csij$  = Coating solids content of material, j, added to as-purchased coating material, i, expressed as a mass-fraction, kg/kg.

- c. If the permittee is demonstrating compliance with the HAP emission limit in section 63.3320(b)(2) [ $\leq$  .6% of the mass of coating material applied], then the average of the mass of HAP emissions per mass of coating applied, in kg HAP/kg coating applied, calculated in accordance with the equations in section 63.3370(c)(3) of 40 CFR 63, Subpart JJJJ, and as follows:

$$H_L = \frac{\sum_{i=1}^p C_{hi} M_i + \sum_{j=1}^q C_{hij} M_{ij} - M_{vret}}{\sum_{i=1}^p M_i + \sum_{j=1}^q M_{ij}} \quad \text{Eq. 4}$$

- i. If required, the weight fraction of HAP and the weight fraction coating of each coating applied shall be determined by 40 CFR Part 63, Appendix A, Reference Method 311, 40 CFR Part 60, Appendix A, Reference Method 24, or other test method approved by U.S. EPA, or by the coating manufacturer's formulation data.
- ii. The average shall be calculated by the following formula:

Where:

HL = Monthly average, as-applied, organic HAP content of all coating materials applied, expressed as kg organic HAP per kg of coating material applied, kg/kg.

p = Number of different coating materials applied in a month.

Chi = Organic HAP content of coating material, i, as-purchased, expressed as a mass fraction, kg/kg.

Mi = Mass of as-purchased coating material, i, applied in a month, kg.

q = Number of different materials added to the coating material.

Chij = Organic HAP content of material, j, added to as-purchased coating material, i, expressed as a mass fraction, kg/kg.

Mij = Mass of material, j, added to as-purchased coating material, i, in a month, kg.

Mvret = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in §§ 63.3370.

#### **IV. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports which include the following information for this emissions unit:
  - a. an identification of each day during which the average hourly VOC emissions exceeded 410.0 pounds per hour, and the average hourly VOC emissions for each such day;
  - b. an identification of any record indicating that the rolling 12-month summation of VOC emissions exceeded 90.0 tons year, and the actual rolling 12-month summation and/or the actual annual VOC emissions;
  - c. an identification of each month during which the mass-weighted average VOC emissions from coatings exceeded 0.20 kg VOC/kg of coating solids applied, and the actual mass-weighted average VOC emissions from coatings in kg VOC per kg of coating solids applied, for each such month;
  - d. an identification of any record indicating that the VOC content of any coating used in this emissions unit exceeded 2.9 pounds of VOC per gallon of coating, excluding water and exempt solvents.
  - e. an identification of each month during which the average HAP emissions from coatings exceeded 8 percent of the mass of coating solids applied as described in the equation in Section III.3(b)(ii) of the terms and conditions of this permit, and 1.6 percent of the mass of coatings, applied as described in the equation in Section III.3.(c)(ii) of the terms and conditions of this permit, and actual percentage of the HAP emissions of the mass of coatings and the actual percentage of the HAP emissions of the mass of coating solids for each such month.
2. Within 60 days after startup of this emissions unit, the permittee shall submit to the Ohio EPA a Notification of Compliance Status, signed by the responsible official who shall certify its accuracy, attesting to whether the emissions unit has complied with the

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relevant standard. The notification shall list:

- a. The methods that were used to determine compliance;
  - b. The results of any performance tests, opacity or visible emission observations, continuous monitoring system (CMS) performance evaluations, and/or other monitoring procedure or methods that were conducted;
  - c. The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods;
  - d. The type and quantity of Hazardous Air Pollutant(s) [HAP(s)] emitted by the emissions unit, reported in units and averaging times and in accordance with the test methods specified in 40 CFR 63 Subpart JJJJ;
  - e. An analysis demonstrating whether the affected source is a major source or an area source;
  - f. A description of the air pollution control equipment (or method) for each emission point, including each control device (or method) for each HAP and the control efficiency (percent) for each control device (or method); and
  - g. A statement by the owner or operator of this affected source of whether the emissions unit has complied with the requirements of 40 CFR Part 63, Subpart JJJJ.
3. The permittee shall submit semi-annual compliance reports as required by 40 CFR Part 63, Subpart JJJJ in accordance with the requirements of 63.3400(c)(1) and (2).
  4. The permittee shall submit quarterly reports that identify the days during which any fuel other than natural gas is burned in this emissions unit. The report shall indicate the type of fuel, the extent of its use and the plan to prevent the reoccurrence.
  5. The permittee shall submit annual reports that identify the total amount of VOC emitted during the previous calendar year.

## **E. Testing Requirements**

1. Compliance with the emissions limits in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation  
2.9 pounds of VOC per gallon of coating, as applied

### **Applicable Compliance Method**

Compliance shall be determined based upon the record keeping requirements specified in section III.1 of these terms and conditions. In accordance with OAC

rule 3745-21-04(B)(5), USEPA Method 24 shall be used to determine the VOC content of the coatings. Formulation data may be used for VOC content compliance demonstration if a specific formulation of a coating is used less than 250 gallons per year or if the formulation data of a coating was based upon method 24. In accordance with the USEPA's written approval of February 11, 1998, Headspace Gas Chromatograph Technique modified Method 8260 may be used to determine the VOC content of the water-based coatings, pursuant to section 11.4 of Method 24, 40 CFR Part 60, Appendix A (revised as of July 1, 2004).

- b. Emission Limitation:  
410.0 lbs VOC/hr, including cleanup on a daily average basis; and 90.0 tons VOC per rolling 12-month period

Applicable Compliance Method:

Compliance shall be based on the record keeping requirements in Section III.1 of these terms and conditions.

- c. Emission Limitation  
The permittee shall not discharge into the atmosphere emissions of more than 0.20 kg VOC/kg coating solids applied, calculated as a mass-weighted average for each calendar month.

Applicable Compliance Method

Compliance shall be based upon the on the record keeping requirements in Section III.2. of these terms and conditions.

- d. Emission Limitation  
The permittee shall not discharge into the atmosphere emissions of more than 8 percent of the HAPs to coating solids applied (0.08 kg HAP/kg solids) , calculated as a mass-weighted average for each calendar month.

Applicable Compliance Method

Compliance shall be based upon the on the record keeping requirements in Section III.3 of these terms and conditions.

- e. Emission Limitation  
The permittee shall not discharge into the atmosphere emissions of more than 1.6 percent of the HAPs to the mass of coating, applied (0.016 kg HAP/kg coating materials applied), calculated as a mass-weighted average for each

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calendar month.

**Applicable Compliance Method**

Compliance shall be based upon the on the record keeping requirements in Section III.3 of these terms and conditions.

- f. **Emission Limitation:**  
2.0 pounds per hour and 8.76 tons per year of Nitrogen Oxides (NO<sub>x</sub>)

**Applicable Compliance Method:**

Compliance shall be determined by multiplying the emission factor of 100 pounds NO<sub>x</sub> per million cubic feet of natural gas (EPA AP-42, July 1998, Section 1.4, Natural Gas Combustion) by the maximum hourly natural gas combustion capacity (20,000 ft<sup>3</sup>/hr) of this emissions unit. If required by Ohio EPA, emission testing to determine compliance with the above emission limitation shall be perform, using method 1 - 4 and 7 of 40 CFR Part 60, appendix A.

Compliance with the annual limit shall be assumed providing that compliance with the hourly limit is established

- g. **Emission Limitation:**  
1.6 pounds per hour and 7.0 tons per year of CO

**Applicable Compliance Method:**

Compliance shall be determined by multiplying the emission factor of 84 pounds CO per million cubic feet of natural gas (EPA AP-42, July 1998, Section 1.4) by the maximum hourly natural combustion capacity (20,000 ft<sup>3</sup>/hr) of this emissions unit. If required by Ohio EPA, emission testing to determine compliance with the above emission limitation shall be perform, using method 1 - 4 and 10 of 40 CFR Part 60, appendix A.

Compliance with the annual limit shall be assumed providing that compliance with the hourly limit is established

## **VI. Miscellaneous Requirements**

None

**B. State Only Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(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 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> |
|---|--------------------------------------|--|
| K001 - A research and development headquarters pilot coater K001 [with associated web unwind station, application coating stations, web treatment units, direct fired drying ovens (with maximum combined heat capacity of 16 MmBtu/hr) web rewind station, and storage tanks. A small natural gas boiler (<10 mmBtu/hr)] |                                      | None   |

**2. Additional Terms and Conditions**

**2.a** None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None