



Louisville Metro Air Pollution Control District
 850 Barret Avenue
 Louisville, Kentucky 40204-1745



Permit No.: 107-74-C (R1)

Plant ID 15

Effective Date: [Click here to enter a date.](#) Expiration Date: [Click here to enter a date.](#) Permit Fee \$

Reynolds Flexible Packaging
 Louisville Laminating Plant
 1225 W. Burnett Ave
 Louisville, KY 40210

is authorized to operate the described process equipment by the Louisville Metro Air Pollution Control District. Authorization is based on information provided with the application submitted by the company and in accordance with applicable regulations and the conditions specified herein.

Process equipment description:

Laminator #12, Inta-Roto Inc., Model # GM-2000-M-201, equipped with a rotogravure printing (or coating) station and a glue station.
 Two electric batch “cookers” for coatings.
 A lacquer mixing room containing three submerged-fill arms for filling drums with solvent, one mixer, two floor vents and one ceiling hood.

Applicable Regulation(s): 1.05, 2.03, 2.16, 5.01, 5.02, 5.21, 6.29, 40 CFR 63 Subpart KK

Control reference(s): 577-74-C (R1)

Application No. 28612

Application Received 8/9/1974
 2/26/2008

Permit Writer: Chris Gerstle

{Manager}
 Air Pollution Control Officer

Date Sent to Public Comment 12/16/2011

Date of Final Draft [Click here to enter a date.](#)

This permit covers only the provisions of Kentucky Revised Statutes Chapter 77 Air Pollution Control, the regulations of the Louisville Metro Air Pollution Control District (District) and, where appropriate, certain federal regulations. The issuance of this permit does not exempt any owner or operator to whom it has been issued from prosecution on account of the emission or issuance of any air contaminant caused or permitted by such owner or operator in violation of any of the provisions of KRS 77 or District regulations. Any permit shall be considered invalid if timely payment of applicable fees is not made after receipt of the statement of fees (SOF). The permit contains general permit conditions and specific permit conditions. General conditions are applicable unless a more stringent requirement is specified elsewhere in the permit.

General Conditions

- G1. The owner or operator of the affected facility covered by this permit shall notify the District of any process change, equipment change, material change, or change in method or hours of operation. This requirement is applicable to those changes that may have the potential for increasing the emission of air contaminants to a level in excess of the applicable limits or standards specified in this permit or District regulations.
- G2. The owner or operator shall obtain new or revised permits from the District when:
(See [District Regulation 2.16](#) for Title V sources. See [District Regulation 2.17](#) for FEDOOP sources. See [District Regulation 2.03](#) for other sources.)
- a. The company relocates to a different physical address.
 - b. The ownership of the company is changed.
 - c. The name of the company as shown on the permit is changed.
 - d. Permits are nearing expiration or have expired.
- G3. The owner or operator shall submit a timely application for changes according to G2. For minor sources only, the District does not require application for permit renewal. The District automatically commences the process of permit renewal for minor sources upon expiration. Timely renewal is not always achievable; therefore, the company is hereby authorized to continue operation in compliance with the latest District permit(s) until the District issues the renewed permit(s).
- G4. The owner or operator shall not be authorized to transfer ownership or responsibility of the permit. The District may transfer permits after appropriate notification (Form AP-100A) has been received and review has been made.
- G5. The owner or operator shall pay the required permit fees within 30 days after issuance of the SOF by the District, unless other arrangements have been proposed and accepted by the District.

- G6. This permit allows operation 8,760 hours per year unless specifically limited elsewhere in this permit.
- G7. The owner or operator shall submit emission inventory reports as required by [Regulation 1.06](#).
- G8. The owner or operator shall timely report abnormal conditions or operational changes, which may cause excess emissions as required by [Regulation 1.07](#).
- G9. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month.
- G10. If a change in the “Responsible Official” (RO) occurs during the term of this permit, the owner or operator shall provide written notification (AP-100A) to the District within 30 calendar days of the date the RO change occurs.

Specific Conditions

S1. Standards (Regulation 2.03, section 5.1)

a. VOC

- i. The owner or operator shall not cause or allow the emissions of VOC from any affected facility unless at least one of the following requirements is met: (Regulation 6.29, section 3.1) (See [Comment 2](#))
 - 1) The volatile fraction of all inks and coatings, as applied to the substrate, used on the affected facility shall contain no more than 25% VOC by volume, (section 3.1.1)
 - 2) The non-volatile fraction, minus water and exempt solvents, of all inks and coatings, as applied to the substrate, used on the affected facility shall be at least 60% by volume, (section 3.1.2)
 - 3) All inks and coatings, as applied to the substrate, used on the affected facility shall contain no more than 0.5 pound of VOC per pound of solids, (section 3.1.3) or
 - 4) For packaging rotogravure printing or specialty rotogravure printing, when using solvent based inks and coatings, the owner or operator shall not cause or allow the emission of VOC from any affected facility to exceed 35% by weight of the VOC net input into the affected facility. (section 3.1.4.2)
- ii. The owner or operator shall operate and maintain the thermal oxidizer at a minimum combustion temperature of 1400 °F (until a performance test is conducted and approved that demonstrates compliance with >65% destruction efficiency) averaged over a three hour period, when using solvent based inks and coatings to reduce the rotogravure printing ink and solvent VOC emissions by 65%. (Regulation 6.29, section 3) (See [Comment 2](#))
- iii. Compliance with the requirements shall be based upon the inks and coatings, as applied, used by the affected facility during a calendar-day averaging period. (Regulation 1.05, section 4.1 and 6.29, section 3.2)

b. HAP (40 CFR 63 Subpart KK)

Each product and packaging rotogravure printing affected source shall limit organic HAP emissions to no more than 4 percent of the mass of inks, coatings, varnishes, adhesives, primers, solvents, reducers, thinners, and other materials applied for the month. (§63.825(b)(4)) (See [Comment 3](#))

c. TAC

The owner or operator shall not allow emissions of any TAC to exceed environmentally acceptable (EA) levels, whether specifically established by modeling or determined by the District to be de minimis. (Regulations 5.01 and 5.21)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. VOC

- i. The owner or operator of an affected facility subject to Regulation 6.29 shall maintain records of operations for the approved averaging period for the most recent five-year period. The records shall be made available to the District, the Cabinet, and the EPA upon request. The records shall include, but not be limited to, the following: (Regulation 6.29, section 6.1)
 - 1) The regulation and section number applicable to the affected facility for which the records are being maintained, (section 6.1.1)
 - 2) The application method and substrate type (metal, plastic, paper, etc.), (section 6.1.2)
 - 3) The amount and type of each ink, coating, and solvent used at each point of application, including exempt compounds, during the averaging period, (section 6.1.3)
 - 4) The VOC content as applied in each ink, coating, and solvent, (section 6.1.4)
 - 5) The date for each application of each ink, coating, and solvent, and, (section 6.1.5)
 - 6) Oven temperature (section 6.1.6)
- ii. The owner or operator shall maintain daily records of the thermal oxidizer combustion chamber temperature when Laminator #12 is using solvent based coatings. The temperature shall be monitored continuously (i.e., at least every 15 minutes), and the temperature recorded at least every 15 minutes (minimum of four equally-spaced readings per hour). The three-hour average temperature shall be calculated as the average of the readings (except that an average need only be calculated if readings occur below the specified temperature level.)
- iii. During solvent coating operations, any three-hour period during which the average combustion chamber temperature is more than 50 °F below the operating temperature of 1400 °F, or the combustion chamber temperature established during the most recent performance test that demonstrated compliance with >65% destruction efficiency, shall be classified as a period of excess emissions for reporting purposes. To manage this requirement, the plant shall consider temperature measurements below 1375 °F to be “action levels”. Temperature measurements below 1350 °F are considered an excursion. (Regulation 6.29, sections 6.2 and 6.2.1, 40 CFR 64)
- iv. The owner or operator shall maintain daily records that show the percent reduction of VOC emissions when using solvent based inks and coatings. (Regulation 1.05, section 4.1.1) (See [Comment 2](#))

b. HAP (40 CFR 63 Subpart KK)

- i. The owner or operator of each product and packaging rotogravure printing affected source shall demonstrate compliance with S1.a.iii following the proposed procedure: Demonstrate that the monthly average as-applied organic HAP content, H_L , of all materials applied is less than 0.04 kg HAP per kg of material applied, as determined by Equation 6 from 40 CFR 60 Subpart KK. (§63.825(b)(4)) (See [Comment 3](#))
- ii. Each owner or operator of an affected source subject to this subpart shall maintain, on a monthly basis, the records of all measurements needed to demonstrate compliance with this standard, such as material usage, HAP usage, volatile matter usage, and solids usage that support data that the source is required to report. (§63.829(b)(1))

c. TAC

- i. The owner or operator shall maintain records sufficient to demonstrate environmental acceptability, including, but not limited to MSDS, analysis of emissions, and/or modeling results.
- ii. If a new TAC is introduced or the content of a TAC in a raw material increases, the owner or operator shall re-evaluate the environmental acceptability and document the environmentally acceptable emissions.

S3. Reporting (Regulation 2.16, section 4.1.9.3)**a. VOC**

- i. Identification of all periods of excursions during the reporting period. Excursion is defined as any departure from an established control device performance indicator range (i.e., temperature drops more than 50 °F below either a minimum combustion chamber temperature of 1400 °F or the combustion chamber temperature established during the most recent performance test that demonstrated compliance with >65% destruction efficiency for more than 3 hours).
- ii. Identification of all periods when the VOC emissions exceeded 35% by weight of the VOC net input into the affected facility. If there were no periods of exceedance during a reporting period, the owner or operator shall submit a negative declaration for the reporting period.

b. HAP (40 CFR 63 Subpart KK)

Exceedances of the standards in S1.a.iii (§63.830(b)(6)(i))

c. TAC

Within 6 months of a change that impacts the demonstration of environmental acceptability, the owner or operator shall submit the re-evaluated EA demonstration to the District.

S4. **Testing** (Regulation 1.04, section 2.1)**VOC**

- a. The owner or operator shall perform an EPA Reference Method 25 or 25A performance test within 180 days after the effective date of the permit on the inlet and outlet of the control device and once every five years thereafter to determine the destruction efficiency of the thermal oxidizer. The test shall be performed at maximum capacity, or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test at these conditions may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment. In lieu of the control efficiency test, the owner or operator may submit a signature guarantee from the control device manufacture stating the control device efficiency.
- b. The owner or operator shall perform a capture efficiency test for the thermal oxidizer using EPA guidelines within 180 days after the effective date of the permit. In lieu of performing a capture efficiency test, the owner or operator may submit a reasonable estimate of capture efficiency with thorough justification subject to approval by the District.
- c. The owner or operator shall submit written compliance test plans (protocol) for the control efficiency and capture efficiency. They shall include the EPA test methods that will be used for stack testing, the process operating parameters (e.g., press production rate, identification of raw materials applied during testing, etc.) that will be monitored during the stack test, and the control device operating parameters (e.g., minimum combustion chamber temperature, volumetric air flow rate, etc.) that will be monitored during the performance test. The compliance test plans shall be furnished to the District at least 30 days prior to the actual date of the performance test.
- d. The stack tests shall include sampling of the inlet and outlet gas streams of the thermal oxidizer to determine the control efficiency for VOC. The stack test shall establish the minimum combustion chamber temperature necessary to achieve the required 65% destruction efficiency.
- e. The owner or operator shall provide the District at least 10 days prior notice of any performance test to afford the District the opportunity to have an observer present.
- f. The owner or operator shall furnish the District with a written report of the results of the performance test within 60 days following the actual date of the performance test. The stack test report shall include, at a minimum, the inlet and outlet lb/hr VOC emissions, VOC destruction and capture efficiencies, Federal Test Methods used during testing, volumetric air flow rate, volumetric flow sampling location (location of traverse points), stack diameter, % O₂, and % moisture.

Comments

- The following equipment is covered in Regulation 6.29, section 1.8.1: Lacquer mixing room containing three submerged-fill arms for fillings drums with solvent, one mixer, and one soak tank. This equipment is utilized in the operation of Emission Units U1 and U2.
- Uncontrolled VOC emissions may be calculated according to the following methodology:

$$\text{VOC (lb)} = \text{Coating used (gal)} \times \text{Density (lb/gal)} \times \text{VOC content (\%)}$$
 or

$$\text{VOC (lb)} = \text{Coating used (gal)} \times \text{VOC content (lb/gal)}$$

Controlled VOC emissions may be calculated according to the following methodology:

$$\text{VOC (lb)} = \text{Coating used (gal)} \times \text{Density (lb/gal)} \times \text{VOC content (\%)} \times [100 - (\text{Capture Efficiency (\%)} \times \text{Destruction Efficiency (\%)})]$$

or

$$\text{VOC (lb)} = \text{Coating used (gal)} \times \text{VOC content (lb/gal)} \times [100 - (\text{Capture Efficiency (\%)} \times \text{Destruction Efficiency (\%)})]$$

An example of a methodology to determine compliance is as follows:

$$\frac{\text{Total Solvent Based Controlled VOC Emissions}}{\text{Total Solvent Based Uncontrolled VOC Emissions}} \times 100\% < 35\%?$$

- In a letter dated January 9, 2001, Reynolds submitted their Notification of Compliance Status to the District and proposed to follow the compliance option §63.825(b)(4). To demonstrated compliance with §63.825(b)(4), the following equation is used:

$$H_L = \frac{\sum_{i=1}^p M_i C_{hi} + \sum_{j=1}^q M_j C_{hj}}{\sum_{i=1}^p M_i + \sum_{j=1}^q M_j}$$

C_{hi} = the organic HAP content of ink or other solids-containing material, i, expressed as a weight-fraction, kg/kg.

C_{hj} = the organic HAP content of solvent j, expressed as a weight-fraction, kg/kg.

H_L = the monthly average, as-applied, organic HAP content of all solids-containing materials applied at less than 0.04 kg organic HAP per kg of material applied, kg/kg.

M_i = the mass of ink or other material, i, applied in a month, kg.

M_j = the mass of solvent, thinner, reducer, diluent, or other non-solids-containing material, j, applied in a month, kg.

p = the number of different inks, coatings, varnishes, adhesives, primers, and other materials applied in a month.

q = the number of different solvents, thinners, reducers, diluents, or other non-solids-containing materials applied in a month.

4. The oxidizer combustion chamber temperature is monitored with an electronic thermocouple and the emission control system has an interlock system incorporated into the oxidizer control that shuts down the laminator if the average oxidizer temperature falls more than 25 °F below either a minimum combustion chamber temperature of 1400 °F or the combustion chamber temperature established during the most recent performance test that demonstrated compliance with >65% destruction efficiency for one hour. The functionality of the interlock / automatic shut down system is tested annually.
5. *HAP applied* means the organic HAP content of all inks, coatings, varnishes, adhesives, primers, solvent, and other materials applied to a substrate by a packaging rotogravure printing affected source.
6. LMAPCD approved the STAR EA Compliance Demonstration for Category 1 and 2 TACs on October 6, 2008. All processes were below the de minimis levels for all Category 1 and 2 TACs by MSDS, Trivial and Insignificant Activities and natural gas combustion. Therefore, there are no additional permitting or compliance plan requirements.
7. The TAC emissions from the combustion of natural gas are considered to be “de minimis emissions” by the District. This includes all of the emissions from a process or process equipment for which the only emissions are the products of combustion of natural gas, such as from a natural gas-fired boiler or turbine, but does not include the other emissions from a process or process equipment that are not the products of the combustion of natural gas.
8. Regulation 1.05, applies because the source is a Control Technique Guidance source which emits VOCs in quantities of 25 tons or more per year and is subject to Regulation 6.29.
9. Laminator #12 was not included in the SIP Revision Application (Federal Register, May 16, 1990 and January 13, 1998, 40 CFR Part 52, Subpart S, 52.920).
10. The glue used in the glue station has 0% VOC, therefore Regulation 6.24 does not apply.
11. The construction permit fees are based on potential uncontrolled emissions of greater than 100 tons per year of VOC and subject to a NESHAP in accordance with Regulation 2.08, section 2.5.1.2.2.