



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



Permit No.: C-0015-1001-15-V

Plant ID: 0015

Effective Date: X/X/2015

Expiration Date: X/X/2016

LLFLEX, LLC  
 1225 West Burnett Ave.  
 Louisville, KY 40210

is authorized to install 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:

Modification of Inta-Roto Inc. GM-1000 Laminator #14 to use solvent-based coatings and water-based coatings. A MEGTEC Systems Magnum 14,000 catalytic oxidizer will be installed on the exhaust from Laminator #14 system. Modification of Laminator #10 by adding a second Cerutti 28R-38R coating station to the system as well as adding a second oven with a 0.8 MMBtu/hr burner.

Applicable Regulation(s): 1.05, 2.03, 2.05, 2.16, 5.00, 5.21, 6.29, 40 CFR 64, and 40 CFR 63 Subpart KK

Control reference(s): N/A

Application No.	68827	Application Received:	1/9/2015
	69985		3/9/2015

Permit Writer: Emily Tyler

Date of Public Comment 3/5/2015; 6/20/2015

{Manager1}  
 Air Pollution Control Officer  
 {date1}

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. 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 (except equipment 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 100A) has been received and review has been made.
- G5. The owner or operator shall pay the required permit fees within 45 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 (Form 100A) to the District within 30 calendar days of the date the RO change occurs.

### Specific Conditions

#### S1. Standards (Regulation 2.03, section 6.1)

##### a. VOC

- i. The owner or operator shall not allow plant-wide VOC emissions to equal or exceed 250 tons per 12 consecutive months. (Regulation 2.05)<sup>1</sup>
- ii. The owner or operator shall not allow or cause the emission of VOC from any affected facility unless at least one of the following requirements is met: (Regulation 6.29, section 3)
  - 1) The volatile fraction of all water based inks and coatings, as applied to the substrate, used on the affected facility shall contain no more than 25% VOC by volume, (Regulation 6.29, section 3.1.1)
  - 2) The non-volatile fraction, minus water and exempt solvents, of all water based inks and coatings, as applied to the substrate, used on the affected facility shall be at least 60% by volume, (Regulation 6.29, section 3.1.2)
  - 3) All water based 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, or (Regulation 6.29, section 3.1.3)
  - 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. (Regulation 6.29, section 3.1.4.2)
- iii. The owner or operator shall operate and maintain the catalyst bed inlet temperature of at least 550°F (until a performance test is conducted and approved that demonstrates compliance with >65% destruction efficiency) averages 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)
- iv. 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 6.29, section 3.2)(Regulation 1.05, section 4.1)

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<sup>1</sup> The plant-wide 250 tpy VOC limit a PSD avoidance limit.

**b. HAP (40 CFR 60 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.<sup>2</sup> (40 CFR 63.825(b)(4))

**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*.<sup>3</sup> (Regulations 5.00 and 5.21)

**S2. Monitoring and Record Keeping (Regulation 2.03, section 6.1)**

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 shall, monthly, calculate and record the monthly and 12 consecutive month plant-wide VOC emissions.
- ii. The owner or operator of an affected facility subject to Regulation 6.29 shall maintain daily records 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 limited to, the following: (Regulation 6.29, section 6.1)(Regulation 1.05, section 4.1)
  - 1) The regulation and section number applicable to the affected facility for which the records are being maintained, (Regulation 6.29, section 6.1.1)
  - 2) The application method and substrate type (metal, plastic, paper, etc.), (Regulation 6.29, section 6.1.2)
  - 3) The amount and type of each ink, coating, and solvent used at each point of application, including exempt compounds, per day, (Regulation 6.29, section 6.1.3)
  - 4) The VOC content as applied in each ink, coating, and solvent, (Regulation 6.29, section 6.1.4)

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<sup>2</sup> *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.

<sup>3</sup> 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. There are no Category 3 and 4 TACs.

- 5) The date for each application of each ink, coating, and solvent, and (Regulation 6.29, section 6.1.5)
  - 6) Oven temperature. (Regulation 6.29, section 6.1.6)
- iii. Uncontrolled VOC emissions shall be calculated according to the following methodology unless another method is approved by the District:

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

or

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

Controlled VOC emissions shall be calculated according to the following methodology unless another method is approved by the District:

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

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 unless another method is approved by the District:

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

- iv. The owner or operator shall maintain daily records of the catalyst bed inlet temperature when Laminator #14 is using solvent based coatings. The inlet 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 inlet 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). (40 CFR 64)
- v. During solvent coating operations for Laminator #14, any three-hour period during which the minimum catalyst bed inlet temperature of 550°F is not achieved, shall be classified as a period of excess emissions for reporting purposes. (Regulation 6.29, sections 6.2 and 6.2.1)(40 CFR 64)
- vi. 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)<sup>4</sup>

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<sup>4</sup> 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.

**b. HAP (40 CFR 60 Subpart KK)**

- i. The owner or operator of each product and packaging rotogravure printing affected source shall demonstrate compliance with S1.b. 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 63 Subpart KK. (40 CFR 63.825(b)(4))
- 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. (40 CFR 63.829(b)(1))
- iii. To demonstrate compliance with §63.825(b)(4), the following equation is used:<sup>5</sup>

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

$C_{hi}$  = 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.

**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. The owner or operator shall re-evaluate the environmental acceptability and document the environmentally acceptable emissions if a new TAC is introduced or the content of a TAC in a raw material increases above *de minimis* at the time of the change.

<sup>5</sup> 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).

S3. **Reporting** (Regulation 2.03, section 6.1)

The owner or operator shall submit semi-annual compliance reports that include the information in this section. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall clearly identify any deviation from a permit requirement. The compliance reports shall be postmarked within 60 days following the end of each reporting period. All compliance reports shall include the following certification statement per Regulation 2.16, section 3.5.11.

- “Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete”.
- Signature and title of the responsible official of the company.

The compliance reports are due on or before the following dates of each calendar year:

<u>Report Description</u>	<u>Report Period</u>	<u>Report Due Date</u>
1 <sup>st</sup> Semi-annual Report	January 1 <sup>st</sup> through June 30 <sup>th</sup>	August 29 <sup>th</sup>
2 <sup>nd</sup> Semi-annual Report	July 1 <sup>st</sup> through December 31 <sup>st</sup>	March 1 <sup>st</sup>

a. **VOC**

i. For the 250 tpy plantwide VOC limit:

- 1) The monthly and 12 consecutive month plant-wide VOC emissions;
- 2) Identification of all periods of exceedances of the plant-wide VOC limit including the quantity of excess emissions;
- 3) Reason for excess emissions; and
- 4) Description of corrective action taken to prevent future exceedances.
- 5) A negative declaration if there were no exceedances.

ii. Identification of all periods of exceedances during the reporting period. Exceedance is defined as any departure from an established control device performance indicator range (i.e., the minimum catalyst bed inlet temperature is below than 550°F for a 3 hour average).

iii. 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 60 Subpart KK)**

Exceedances of the standards in S1.b. (40 CFR 63.830(b)(6)(i))

c. **TAC**

- i. The owner or operator shall report any conditions that were inconsistent with those conditions analyzed in the most recent Environmental Acceptability Demonstration or a negative declaration stating that operations were within the conditions analyzed. This includes, but is not limited to, control device upset conditions.
- ii. For any conditions outside the analysis, the owner or operator shall re-analyze to determine whether these conditions comply with the STAR program. Changes to the air dispersion modeling program or meteorological data used in the most recent Environmental Acceptability Demonstration do not trigger the requirement to re-analyze. (Regulation 5.21 sections 4.22 – 4.24)
- iii. The owner or operator shall submit the re-evaluated EA demonstration to the District within 6 months after a change of a raw material as described in S2.c.ii.

S4. **Testing** (Regulation 2.03, section 6.1)

**General Testing Requirements:**

Plant-wide the owner or operator shall retest all control devices within Ten (10) years since the most recent District accepted performance test or within 180 days of after the effective date of the permit if no previous test has been performed, unless the District requires a different time schedule. For equipment which has been tested but not within ten years prior to the effective date of this permit the Company may submit within 90 days of the effective date of this permit, contingent on approval by the District, a schedule which shall at a minimum propose testing for all affected equipment within this permit cycle. Thereafter the Company shall retest each affected device at least once every 10 years. Devices of adequately similar design and filter media may be represented by a common performance test contingent upon review and approval by the District of the testing protocol. In lieu of the control efficiency testing, unless required by a Federal Regulation, the owner or operator may submit a signature guarantee from the control device manufacture stating the control device efficiency.

The owner or operator shall use the most recent District accepted performance test results to demonstrate compliance with the emission limits and in the annual emission inventory reporting.

The owner or operator shall construct all equipment in such a manner that the following testing requirements can be performed.

**VOC****Specific Test Requirements:**

- a. The owner or operator shall perform an EPA Reference Method 25 or 25A performance test within 180 days after achieving normal operation on the inlet and outlet of the MEGTEC Systems Magnum 14,000 catalytic oxidizer control device and once every five years thereafter to determine the destruction efficiency of the catalytic oxidizer. The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted 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 maximum capacity, allowable/permitted capacity, or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit
- b. The owner or operator shall perform a capture efficiency test for the catalytic oxidizer using EPA guidelines within 180 days after achieving normal operation 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 plan (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. Attached to the permit is a Protocol Checklist for a Performance Test with the information to be submitted in the protocol.
- d. The stack tests shall include sampling of the inlet and outlet gas streams of the catalytic oxidizer to determine the control efficiency for VOC. The stack test shall verify the minimum inlet combustion 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 traverse points), stack diameter, %O<sub>2</sub>, and % moisture.

**Comments**

- 1. The construction permit fee of \$8,135.67 is based on the Schedule of Fees table in Regulation 2.08, section 12. The following table is a breakdown of the applicable fees.

<b>Fee Type</b>	<b>Amount</b>
Permit Actions: Significant Permit Revision New Construction	\$2,542.40
STAR Program De Minimis Determination Only (Per TAC up to 5 TACs)	\$508.48
PSD/NNSR (Per NSR Pollutant)	\$5,084.79

### Protocol Checklist for a Performance Test

A completed protocol should include the following information:

- 1. Facility name, location, and ID #;
- 2. Responsible Official and environmental contact names;
- 3. Permit numbers that are requiring the test to be conducted;
- 4. Test methods to be used (i.e. EPA Method 1, 2, 3, 4, and 5);
- 5. Alternative test methods or description of modifications to the test methods to be used;
- 6. Purpose of the test including equipment and pollutant to be tested; the purpose may be described in the permit that requires the test to be conducted or may be to show compliance with a federal regulation or emission standard;
- 7. Tentative test dates (These may change but the District will need final notice at least 10 days in advance of the actual test dates in order to arrange for observation.);
- 8. Maximum rated production capacity of the system;
- 9. Production-rate goal planned during the performance test for demonstration of compliance (if appropriate, based on limits);
- 10. Method to be used for determining rate of production during the performance test;
- 11. Method to be used for determining rate of production during subsequent operations of the process equipment to demonstrate compliance;
- 12. Description of normal operation cycles;
- 13. Discussion of operating conditions that tend to cause worse case emissions; it is especially important to clarify this if worst case emissions do not come from the maximum production rate;
- 14. Process flow diagram;
- 15. The type and manufacturer of the control equipment, if any;
- 16. The control equipment (baghouse, scrubber, condenser, etc.) parameter to be monitored and recorded during the performance test. Note that this data will be used to ensure representative operation during subsequent operations. These parameters can include pressure drops, flow rates, pH, and temperature. The values achieved during the test may be required during subsequent operations to describe what pressure drops, etcetera, are indicative of good operating performance; and
- 17. How quality assurance and accuracy of the data will be maintained, including:
  - Sample identification and chain-of-custody procedures
  - If audit samples are required for this test method, audit sample provider and number of audit samples to be used
- 18. Pipe, duct, stack, or flue diameter to be tested;
- 19. Distances from the testing sample ports to the nearest upstream and downstream flow disturbances such as bends, valves, constrictions, expansions, and exit points for outlet and additionally for inlet;
- 20. Determine number of traverse points to be tested for outlet and additionally for inlet if required using Appendix A-1 to 40 CFR Part 60;
  - Method 1 if stack diameter is >12"
  - Method 1a if stack diameter is greater than or equal to 4" and less than 12"
  - Alternate method of determination for <4"
  - If a sample location at least two stack or duct diameters downstream and half a diameter upstream from any flow disturbance is not available then an alternative procedure is available for determining the acceptability of a measurement location. This procedure described in Method 1, Section 11.5 allows for the determination of gas flow angles at the sampling points and comparison of the measured results with acceptability criteria.
- 21. The Stack Test Review fee shall be submitted with each stack test protocol.