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

Permit No.: 523-07-C (R2)[1] Plant ID: 0189

Effective Date: x/xx/2014 Expiration Date: x/xx/2015

Rohm and Haas – Louisville Plant
4300 Camp Ground Road
Louisville, KY 40216

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:

KB Distillation Columns (E-KB-03-810) and Process Condenser (E-KB-03-761) controlled by either the Regenerative Thermal Oxidizer (C-KAC-14-723) or the Alternate Thermal Oxidizer (C-KAC-14-726).
One (1) barge unloading/line clearing operation (E-KB-BargeLine) used for unloading MMA from barge to an existing tank for KB Distillation Columns (E-KB-03-810).

Applicable Regulation(s): 1.05, 2.03, 2.04, 2.16, 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.24, 7.25, 40 CFR 64

Control reference(s): 263-05-C (RTO) and 264-05-C (ATO)

Application No.	10565 34491, 66583 67280	Application Received 2/13/2007 2/23/2012, 8/18/2014 9/29/2014
Permit Writer:	Yiqiu Lin	
Date of Public Comment	5/12/2014, 11/13/2014	

{Manager1}
Air Pollution Control Officer
{date1}

[1] This permit replaces construction permit 182-04-C.

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 (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. For Emission Point 03-810, the owner or operator shall limit VOC emissions to less than 40 lbs/day and 8 lbs/hr for Class II solvents and less than 3000 lbs/day and 450 lb/hr for Class III solvents, unless VOC emissions are reduced by at least 85%.[2, 3] (Regulation 6.24, section 3.2)

ii. The owner or operator shall utilize controls, Regenerative Thermal Oxidizer (RTO) (C-KAC-14-723) or Alternate Thermal Oxidizer (ATO) (C-KAC-14-726), to meet the emissions standards for the process equipment when the process is in operation. The owner or operator shall vent the VOC emissions from Emission Point 03-810 to the RTO or to the ATO during bypassing of the RTO. [4] (Regulation 2.03, section 6.1)

iii. For Emission Points 03-810, 04-516, 57-101-89, 58-325, 03-770, 03-771, 03-785, 03-801, 03-850, 03-851, 03-860, 03-880, 03-881, 03-930, 03-931, 04-521, 04-525, 04-880, 13-800, 58-101, 58-108, 58-109, and 58-140, the owner or operator shall limit the VOC emissions to less than 40 tons per 12 consecutive month period in order to avoid PSD/Non-attainment NSR.[5] (Construction Permit 182-04-C, dated November 30, 2004) (Regulation 2.04, section 5.1) (See Attachment A)

iv. For Emission Points 03-112, 03-210, 02-010, 02-020, 02-030, 02-040, 02-050, 02-060, 02-070, 02-080, 03-134, 05-690, 05-691, 17-166, 03-290, 03-291, 03-296, 03-300, 09-102, and E-KB-BargeLine, the owner or operator shall limit the VOC emissions to less than or equal to 5.0 tons per 12

[2] If the source is venting the emissions to the RTO, the RTO is assumed to attain at least an average thermal efficiency of 95% VOC destruction efficiency and to meet the reduction requirements of 85% for Regulation 6.24, for Emission Points (03-810).

[3] This permit is being revised at the request of the source to allow emission point 03-810 to bypass both RTO and ATO for no more than 72 minutes bypass time each calendar day. This permit has been revised at the request of the source to re-designate the condenser (formerly C-KB-03-760, now identified as E-KB-03-760) from control devices for the KB distillation columns (E-KB-03-810) to process recovery equipment. Emission Point 03-810 is equipped with a process condenser (E-KB-03-761) that operates whenever this emission point is in operation. The calendar day starts at 00:00:00 AM and running to 23:59:59 PM.

[4] Both control devices may be bypassed for no more than 72 minutes each calendar day determined by the VOC emission limits and the 85% VOC emissions reductions per Regulation 6.24, section 3.2.

[5] The controlled potential VOC emissions for the project are below the significant level of 40 tpy for PSD/Non-attainment NSR. Therefore, the permit contains a PSD/Non-attainment NSR avoidance limit that they will demonstrate compliance with as described in the permit.

consecutive month period total unless a BACT is approved.[6] (Regulation 7.25, section 3.1) (See Attachment A)

b. **TAC**

i. The owner or operator shall not allow emissions of ethyl acrylate to exceed 1.5 lb/hr, 3.6 lb/day, or 1,314 lb/yr.[7] (Regulation 5.21)

ii. The owner or operator shall not allow emissions of methyl methacrylate to exceed 378 lb/hr, or 336,000 lb/yr.[7] (Regulation 5.21)

iii. 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 5.00 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 maintain a record of the start and stop times when VOC emissions are being vented to the RTO, the ATO, or no controls.

ii. For Emission Points 03-810, 04-516, 57-101-89, 58-325, 03-770, 03-771, 03-785, 03-801, 03-850, 03-851, 03-860, 03-880, 03-881, 03-930, 03-931, 04-521, 04-525, 04-880, 13-800, 58-101, 58-108, 58-109, and 58-140, the owner or operator shall calculate the combined monthly and 12 consecutive month VOC emissions for each month.

iii. For emission point E-KB-03-810 when complying with 40 CFR 64: Utilizing control device C-KAC-14-723 (RTO): [8,9]

[6] The barge unloading/line clearing (E-KB-BargeLine) is determined to be an insignificant activity per PTE. Therefore it is de minimis for STAR Program. However, this unit is subject to the 5 tons per 12-month plant-wide VOC limit per Regulation 7.25. A BACT determination is required to be performed for any future construction/modification subject to Regulation 7.25 for any emissions outside of the 5 tpy limit.

[7] The District determined on March 13, 2013 that potential individual TAC emissions of ethyl acrylate and methyl methacrylate were not de minimis uncontrolled, however were de minimis controlled. The limits ensure that the emissions do not exceed de minimis levels.

[8] The source is major for VOC and a control device is needed to achieve compliance with District Regulation 6.24 for Emission Point E-KB-03-810. In accordance with 40 CFR 64, Compliance Assurance Monitoring for Major Stationary Sources, the source was required to propose a CAM plan for VOC, based on current process and control device requirements and practices. The revised CAM plan was received on April 17, 2014.

1) The owner or operator shall measure the combustion temperature, performed when testing the interlock. (40 CFR 64.6(c)(1)(i-ii) and (b)(4))

2) The required temperature must be specified during the required stack testing on an hourly average. (RTO temperature during the last stack test (October 2006) was 1500° F) (40 CFR 64.6(c)(2))

3) If the combustion chamber temperature falls below the hourly average specified, the vent stream may be routed to the ATO or may bypass both control devices. A bypass is only permitted for no more than 72 minutes per day.[10] (40 CFR 64.6(c)(2))

4) The temperature indicator shall be checked per manufacturer's instructions annually. (40 CFR 64.6(b)(3))

iv. For emission point E-KB-03-810 when complying with 40 CFR 64: Utilizing control device C-KAC-14-726 (ATO):[8]

1) The owner or operator shall measure the combustion temperature, performed when testing the interlock. (40 CFR 64.6(c)(1)(i-ii) and (b)(4))

2) The required temperature must be specified during the required stack testing on an hourly average. (ATO temperature during the last stack test (October 2006) was 1367° F) (40 CFR 64.6(c)(2))

3) If the combustion chamber temperature falls below the specified hourly average, the vent stream may be routed to the RTO or may bypass both control devices. A bypass is only permitted for no more than 72 minutes per day. (40 CFR 64.6(a)(2))

4) The temperature indicator shall be checked per manufacturer's instructions annually. (40 CFR 64.6(b)(3))

v. The owner or operator shall maintain daily records of any periods of time where the process E-KB-03-810 was operating and both the control devices RTO and ATO were not operating or a declaration that the control devices operated at all times that day when the process was operating.

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[9] The most recent stack test was performed on the RTO on October 26, 2006 and demonstrated a destruction efficiency of 98.2% at 1500°F.

[10] The 72 minutes per day bypass time applies to all the emission points controlled by the RTO (C-KAC-14-723) or ATO (C-KAC-14-726).

vi. If there is any time that both the control devices RTO and ATO are bypassed or not in operation when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:

1) Date;
2) Start time and stop time;
3) Identification of the control device and process equipment;
4) Total VOC emissions during the bypass event;
5) VOC emissions in lb/hr and lb/day if the bypass event is more than 72 minutes;
6) Summary of the cause or reason for each bypass event;
7) Corrective action taken to minimize the extent or duration of the bypass event; and
8) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.

vii. For Emission Points 03-112, 03-210, 02-010, 02-020, 02-030, 02-040, 02-050, 02-060, 02-070, 02-080, 03-134, 05-690, 05-691, 17-166, 03-290, 03-291, 03-296, 03-300, 09-102, and E-KB-BargeLine, the owner or operator shall, monthly, calculate and record the total VOC emissions in order to demonstrate compliance with S1.a.iv. (See Attachment A)

b. **TAC**

i. The owner or operator shall monthly calculate and record the ethyl acrylate emissions to demonstrate compliance with S1.b.i.

ii. The owner or operator shall monthly calculate and record the methyl methacrylate emissions to demonstrate compliance with S1.b.ii.

iii. 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.

iv. 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.

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:

Reporting Period	Report Due Date
January 1st through June 30th	August 29th
July 1st through December 31st	March 1st

a. **VOC**

i. For Emission Point E-KB-03-810 when controlled by control devices C-KAC-14-723 (RTO) and C-KAC-14-726 (ATO):

1) Emission Unit number and Emission Point number;
2) The beginning and ending date of the reporting period;
3) Identification of the operating parameters being monitored;
4) Date, time, and duration of any excursions. If no excursions occur during the reporting period, the owner or operator shall submit a negative declaration;
5) Description of the corrective action taken for each excursion. If no corrective action was taken during the reporting period, the owner or operator shall submit a negative declaration.

ii. For Emission Point 03-810 (for exceedance):

1) Emission Unit number and Emission Point number;
2) The beginning and ending date of the reporting period;
3) Identification of the operating parameters being monitored;
4) Identification of all periods of exceedance of the VOC limit of S1.a.i. and the operating parameters. If no exceedance occurred during the reporting period, the owner or operator shall submit a negative declaration;
5) Description of any corrective action taken for each exceedance. If no corrective action was taken during the reporting period, the owner or operator shall submit a negative declaration.

iii. For Emission Points 03-810, 04-516, 57-101-89, 58-325, 03-770, 03-771, 03-785, 03-801, 03-850, 03-851, 03-860, 03-880, 03-881, 03-930, 03-931, 04-521, 04-525, 04-880, 13-800, 58-101, 58-108, 58-109, and 58-140, the following shall be reported:

1) Emission Unit number and Control ID number;

2) The beginning and ending date of the reporting period;
3) The monthly and 12 consecutive month VOC emissions and the applicable standard for each month in the reporting period;
4) Description of the corrective action taken for each exceedance.

iv. The owner or operator shall report the following information regarding bypass event in the semi-annual compliance reports.

1) Number of times the VOC vent stream bypasses both control device RTO and ATO for more than 72 minutes each calendar day and is vented to the atmosphere;
2) Duration of each bypass to the atmosphere;
3) Calculated lb/hr and lb/day VOC emissions for each bypass event; or
4) A negative declaration if no bypasses occurred.

v. For Emission Points For Emission Points 03-112, 03-210, 02-010, 02-020, 02-030, 02-040, 02-050, 02-060, 02-070, 02-080, 03-134, 05-690, 05-691, 17-166, 03-290, 03-291, 03-296, 03-300, 09-102, and E-KB-BargeLine:

1) Emission Unit number and Control ID number;
2) The beginning and ending date of the reporting period;
3) The monthly and 12 consecutive month VOC emissions and the applicable standard for each month in the reporting period;
4) Identification of all periods of exceedance of the VOC emission limit and the operating parameters. If no exceedances occur during the reporting period, the owner or operator shall submit a negative declaration
5) Description of the corrective action taken for each exceedance. If no corrective action was taken during the reporting period, the owner or operator shall submit a negative declaration.

b. **TAC**

i. Emission Unit number and Emission Point number for each exceedance;
ii. The beginning and ending date of the reporting period
iii. Identification of all periods of exceedance of Ethyl Acrylate, Methyl Methacrylate or any other TAC limits.
iv. Description of any corrective action taken for each exceedance
v. 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.
vi. 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)

vii. 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.b.iv.

Fee Comment

The permit fees are based on the significant permit revision fee for a Title V source ($2542.40). The total permit fees are $2542.40.

Attachment A – List of Emission Points

Emission Unit	Emission Point ID	Emission Point Description
U-KVK-Misc	02-010	KVK Product Storage Tank 60,000 gal 2001
U-KVK-Misc	02-020	KVK Product Storage Tank 60,000 gal 2001
U-KVK-Misc	02-030	KVK Product Storage Tank 60,000 gal 2001
U-KVK-Misc	02-040	KVK Product Storage Tank 60,000 gal 2001
U-KVK-Misc	02-050	KVK Product Storage Tank 60,000 gal 2001
U-KVK-Misc	02-060	KVK Product Storage Tank 60,000 gal 2001
U-KVK-Misc	02-070	KVK Product Storage Tank 60,000 gal 2001
U-KVK-Misc	02-080	KVK Product Storage Tank 60,000 gal 2001
U-KVK-G&HReact	03-112	"G" Mix Tank 100 gal 1988
U-KVK-Misc	03-134	KVK Process Tank 20 gal 2000
U-KVK-G&HReact	03-210	"H" Mix Tank 100 gal 1988
U-KV2-Feed	03-290	KV2 Feed Tank 25,000 gal 1986
U-KV2-Feed	03-291	KV2 Feed Tank 25,000 gal 1986
U-KV2-Feed	03-296	KV2 Filter
U-KV2-Feed	03-300	KV2 Blend Tank 36,000 gal 1979
U-KB-Tanks1	03-770	KB Mix Tank #1 500 gal 1966
U-KB-Tanks1	03-771	KB Storage Tank 500 gal 1962
U-KB-Tanks1	03-785	KB Mix Tank #3 500 gal 1974
U-KB-Tanks1	03-801	KB Decant Tank 6,600 gal 1962
U-KB-Columns+	03-810	KB Distillation Columns (and process condenser 03-761)
U-KB-Tanks1	03-850	KB Rundown Tank 10,000 gal 1966
U-KB-Tanks1	03-851	KB Rundown Tank 10,000 gal 1966
U-KB-Tanks1	03-860	KB Rundown Tank 10,000 gal 1966
U-KB-Tanks1	03-880	KB Decant Tank 6,600 gal 1962

Emission Unit	Emission Point ID	Emission Point Description
U-KB-Tanks1	03-881	KB Decant Tank 6,600 gal 1962
U-KB-Tanks1	03-930	KB Rundown Tank 7,200 gal 1962
U-KB-Tanks1	03-931	KB Rundown Tank 7,200 gal 1962
U-KB-Columns+	04-516	KB Load Rack
U-KB-Tanks1	04-521	KB Storage Tank 32,600 gal 1966
U-KB-Tanks1	04-525	KB Storage Tank 32,600 gal 1966
U-KB-Tanks1	04-880	KB Storage Tank 30,000 gal 1962
U-KV1-Feed2	05-690	KV1 Feed Tank 14,000 gal 1986
U-KV1-Feed2	05-691	KV1 Feed Tank 14,000 gal 1986
U-KVPA-Dry	09-102	KVPA Filter
U-KB-Tanks1	13-800	KB Storage Tank 96,600 gal 1970
U-KV1-Feed2	17-166	KV1 Vibrating Filter
U-KB-Columns+	57-101-89	KB Railcar Load Rack
U-KB-Tanks1	58-101	KB Storage Tank 1,470,000 gal 1962
U-KB-Tanks1	58-108	KB Storage Tank 1,470,000 gal 1966
U-KB-Tanks1	58-109	KB Storage Tank 1,470,000 gal 1966
U-KB-Tanks1	58-140	KB Storage Tank 1,470,000 gal 1960
U-KB-Columns+	58-325	KB Storage Tank 1,000,000 gal 1997
U-KB-Columns+	BargeLine	KB barge unloading/line clearing operation