



John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Craig W. Butler, Director

8/5/2016

Certified Mail

Mr. RANDY HELMICK  
ASK Chemicals  
2191 WEST 110TH ST  
CLEVELAND, OH 44102

|    |                                    |
|----|------------------------------------|
| No | TOXIC REVIEW                       |
| No | SYNTHETIC MINOR TO AVOID MAJOR NSR |
| No | CEMS                               |
| No | MACT/GACT                          |
| No | NSPS                               |
| No | NESHAPS                            |
| No | NETTING                            |
| No | MODELING SUBMITTED                 |
| No | SYNTHETIC MINOR TO AVOID TITLE V   |
| No | FEDERALLY ENFORCABLE PTIO (FEPTIO) |
| No | SYNTHETIC MINOR TO AVOID MAJOR GHG |

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 1318000303  
Permit Number: P0120955  
Permit Type: Initial Installation  
County: Cuyahoga

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**
- **What should you do if you notice a spill or environmental emergency?**

**How to appeal this permit**

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
77 South High Street, 17th Floor  
Columbus, OH 43215

## **How to save money, reduce pollution and reduce energy consumption**

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: [www.ohioairquality.org/clean\\_air](http://www.ohioairquality.org/clean_air)

## **How to give us feedback on your permitting experience**

Please complete a survey at [www.epa.ohio.gov/survey.aspx](http://www.epa.ohio.gov/survey.aspx) and give us feedback on your permitting experience. We value your opinion.

## **How to get an electronic copy of your permit**

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

## **What should you do if you notice a spill or environmental emergency?**

Any spill or environmental emergency which may endanger human health or the environment should be reported to the Emergency Response 24-HOUR EMERGENCY SPILL HOTLINE toll-free at (800) 282-9378. Report non-emergency complaints to the appropriate district office or local air agency.

If you have any questions regarding your permit, please contact Cleveland Division of Air Quality at (216)664-2297 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael E. Hopkins, P.E.  
Assistant Chief, Permitting Section, DAPC

Cc: CDAQ



**FINAL**

**Division of Air Pollution Control  
Permit-to-Install and Operate  
for  
ASK Chemicals**

|                |                      |
|----------------|----------------------|
| Facility ID:   | 1318000303           |
| Permit Number: | P0120955             |
| Permit Type:   | Initial Installation |
| Issued:        | 8/5/2016             |
| Effective:     | 8/5/2016             |
| Expiration:    | 7/24/2020            |





**Division of Air Pollution Control  
Permit-to-Install and Operate**

for  
ASK Chemicals

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**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0120955  
**Facility ID:** 1318000303  
**Effective Date:** 8/5/2016

## Authorization

Facility ID: 1318000303  
Application Number(s): A0056163  
Permit Number: P0120955  
Permit Description: Initial installation permit for loading rack J006 to allow both loading and unloading of material. This unit was previously determined to be De Minimis, but an adjustment in facility operations has increased emissions enough to require a PTIO. This PTIO does not impact the overall facility-wide emissions.  
Permit Type: Initial Installation  
Permit Fee: \$200.00  
Issue Date: 8/5/2016  
Effective Date: 8/5/2016  
Expiration Date: 7/24/2020  
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

ASK Chemicals  
2191 WEST 110TH ST  
Cleveland, OH 44102

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

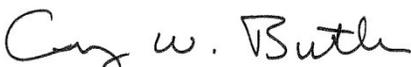
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Cleveland Division of Air Quality  
2nd Floor  
75 Erieview Plaza  
Cleveland, OH 44114  
(216)664-2297

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section 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 described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

  
Craig W. Butler  
Director



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0120955  
**Facility ID:** 1318000303  
**Effective Date:** 8/5/2016

## Authorization (continued)

Permit Number: P0120955

Permit Description: Initial installation permit for loading rack J006 to allow both loading and unloading of material. This unit was previously determined to be De Minimis, but an adjustment in facility operations has increased emissions enough to require a PTIO. This PTIO does not impact the overall facility-wide emissions.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

|                                   |   |
|-----------------------------------|---|
| <b>Emissions Unit ID:</b>         | <b>J006</b>                               |
| Company Equipment ID:             | Bulk Railcar Loading/Unloading Station #2 |
| Superseded Permit Number:         |   |
| General Permit Category and Type: | Not Applicable                            |



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0120955  
**Facility ID:** 1318000303  
**Effective Date:** 8/5/2016

## **A. Standard Terms and Conditions**

**1. What does this permit-to-install and operate ("PTIO") allow me to do?**

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

**2. Who is responsible for complying with this permit?**

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

**3. What records must I keep under this permit?**

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

**4. What are my permit fees and when do I pay them?**

There are two fees associated with permitted air contaminant sources in Ohio:

PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

**5. When does my PTIO expire, and when do I need to submit my renewal application?**

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is

very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

**6. What happens to this permit if my project is delayed or I do not install or modify my source?**

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

**7. What reports must I submit under this permit?**

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

**8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?**

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

**9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?**

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

**10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?**

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the [DO/LAA] in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

**11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?**

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

**12. What happens if one or more emissions units operated under this permit is/are shut down permanently?**

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

**13. Can I transfer this permit to a new owner or operator?**

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

**14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?**

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

**15. What happens if a portion of this permit is determined to be invalid?**

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0120955  
**Facility ID:** 1318000303  
**Effective Date:** 8/5/2016

## **B. Facility-Wide Terms and Conditions**

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

(1) None.

2. Applicable Emission Limitations and/or Control Requirements

a) The specific operation(s), property, and/or equipment that constitute each emissions unit, along with the applicable rules and/or requirements and with the applicable emission limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

|    | Applicable Rules/Requirements                        | Applicable Emission Limitations/ Control Measures   |
|----|--|---|
| a. | OAC rule 3745-31-05(D)(1)<br>FEPTIO to avoid Title V | Volatile Organic Compound (VOC) emissions from the facility shall not exceed 99.5 tons per rolling, 12-month summation.<br><br>See b)(1) and b)(2) below. |

b) Additional Terms and Conditions

(1) The emission of Hazardous Air Pollutants (HAPs) from this facility shall not exceed 9.9 tons for any single HAP and 24.9 tons from any combination of HAPs based on a rolling, 12-month summation of the monthly HAP material usage rates.

(2) The facility-wide VOC and HAP emission limitation shall include the following units: B005 through B007, B008, B009, J001 through J018, P001, P010 to P015, P020, P022, P024, P025, P028, P029, T004, T005, T029, T034 to T046, T049, T050, T057 to T059, T077 - T079, T082 to T084, T086 to T101, T104 to T110, T113, T114, T123 to T140, T148, T149, T152 to T157, and T164 to T167.

c) Operational Restrictions

(1) The maximum annual Triethylamine (TEA), and Dimethylethylamine (DMEA) throughput shall not exceed 890,000-gallons for each amine, based on a rolling, twelve month

summation of usage rates. Based on the facility-wide potential to emit established by the permittee, the maximum of 890,000-gallons of each amine can be unloaded through emissions unit J003 and subsequently packaged into containers through emissions unit J008.

- (2) The maximum annual Dimethylpropylamine (DMPA) and Dimethylisopropylamine (DMIPA) throughput shall not exceed 890,000-gallons combined, based on a rolling, twelve month summation of usage rates. Based on the facility-wide potential to emit established by the permittee, the maximum of 890,000-gallons of combined amines can be unloaded to the bulk storage tanks through J003, and the same 890,000-gallons of combined amines can either be loaded into bulk tank trucks through emissions unit J003 or packaged into containers through emissions unit J008.
- (3) The maximum annual volatile organic material usage for all of the emissions units listed in 2.b)(2) shall not exceed 99.5 tons, based on a rolling, 12-month summation of the volatile organic material usage figures.

d) **Monitoring and Recordkeeping Requirements**

- (1) The permittee shall collect and record the following information each month for this facility:
  - a. the company identification for each VOC-containing material processed;
  - b. the total VOC content of each VOC-containing material processed;
  - c. the amount of each VOC-containing material processed during the previous calendar month;
  - d. the gallons processed, or other emissions determining rationale, of all VOC-emitting sources (i.e. mixing, blending, container filling, loading and unloading);
  - e. the total VOC emissions from all VOC-containing materials processed, in pounds or tons per month; and
  - f. the rolling, 12-month summation of all VOC-emitting sources, in tons.
- (2) The permittee shall collect and record the following information each month for this facility:
  - a. the company identification for each HAP-containing material processed;
  - b. the individual HAP content of each HAP-emitting material processed;
  - c. the total combined HAP content of each HAP-emitting material (i.e. sum of all individual HAP contents from b. above) processed;
  - d. the amount of each HAP-emitting material processed during the previous calendar month;

- e. the gallons processed, or other emissions determining rationale, of all HAP-generating sources (i.e. mixing, blending, container filling, loading and unloading);
  - f. the total individual HAP emissions from all HAP-emitting materials processed and all HAP-generating sources, in pounds or tons per month;
  - g. the total combined HAP emissions from all HAP-emitting materials processed and all HAP-generating sources, in pounds or tons per month;
  - h. the rolling, 12-month summation of individual HAP emissions from all HAP-emitting materials processed and all HAP generating sources, in tons; and
  - i. the rolling, 12-month summation of total combined HAP emissions from all HAP-emitting materials processed, and all HAP-generating sources, in tons.
- (3) The permittee shall collect and record the throughput (in gallons) for each amine identified in c)(1) above.
  - (4) The permittee shall collect and record the combined throughput (in gallons) for the amines identified in c)(2) above.
  - (5) The permittee shall maintain monthly records of the amount of natural gas burned, in mmcf, facility-wide.
- e) Reporting Requirements
- (1) The permittee shall submit quarterly deviation (excursion) reports that identify:
    - a. all deviations (excursions) of the following emission limitations, operational restrictions, and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and that have been detected by the monitoring, recordkeeping, and/or testing requirements in this permit:
      - i. identification of each month during which the rolling, 12-month summation of Triethylamine (TEA), and Dimethylethylamine (DMEA) throughput exceeds 890,000-gallons for each amine;
      - ii. identification of each month during which the rolling, 12-month summation of Dimethylpropylamine (DMPA) and Dimethylisopropylamine (DMIPA) throughput exceeds 890,000-gallons combined;
      - iii. identification of each month during which the rolling, 12-month individual HAP material usage and emissions exceeded 9.9 tons per year;
      - iv. identification of each month during which the rolling, 12-month combined HAP material usage and emissions exceeded 24.9 tons per year;
      - v. identification of each month during which the rolling, 12-month VOC material usage exceeds 99.5 tons, based on a rolling, 12-month summation.

- b. the probable cause for each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or to prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter the permittee shall submit a report that states no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted electronically through Ohio EPA Air Services each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director, the appropriate District Office or Local Air Agency.

- (2) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the emission limitation(s) in b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emissions Limitation:

VOC emissions shall not exceed 99.5 tons per rolling, 12-month summation for this facility.

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping requirements specified in d)(1).

To calculate VOC emission rates, the permittee shall employ the following:

- i. VOC emissions from mixing, blending, container filling, and loading and unloading shall be determined using loading loss calculation equation one (1), from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{SxPxM}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square in absolute (at 70°)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin ( $^{\circ}\text{F} + 460$ )

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = \text{lb VOC}/1,000 \text{ gal}$$

(lb VOC/1,000 gallons) x (total gallons of material transferred/year) = pounds of VOC emitted/year

- ii. VOC emissions from the methanol recovery and purification system were established at the emissions unit's potential to emit as determined by the following calculations:

$$\text{Total VOC} = (\text{VOC distillation column}) + (\text{VOC surge tank}) \times (1 - \text{CE})$$

$$\text{Total VOC} = (0.55 \text{ lb/hr}) + (2.0942 \text{ lbs}/1,000 \text{ gals}) \times (189.2 \text{ gals/hour}) \times (1 - 0.85)$$

Total VOC is the sum of methanol and formaldehyde emissions. Trace amounts of phenol also contribute to the total VOC.

- iii. VOC emissions from reactors equipped with caustic scrubbers shall be calculated as follows:

$$\text{lbs material processed} \times \% \text{ by weight VOC} \times \text{control efficiency of caustic scrubber} \times 1 \text{ ton}/2000 \text{ lbs} = \text{tons VOC/year}$$

- iv. VOC emissions from boilers capable of burning natural gas and/or phenolic resin distillate shall be calculated as follows:

VOC emissions from the combustion of natural gas shall be calculated by multiplying an emission factor of 5.5 lbs VOC/mmscf by the annual amount of natural gas burned then divided by 2000 lbs:

$$5.5 \text{ lbs VOC}/\text{mmscf} \times \text{mmscf}/\text{yr} \times 1 \text{ ton}/2000 \text{ lbs} = \text{tons VOC}/\text{yr}$$

This emission factor is specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-2(1/95).

- v. VOC emissions from storage tanks shall be determined using a current version of U.S. EPA's TANKS software program and the recordkeeping requirements specified in d)(1) above.

b. Emissions Limitation:

Individual HAP emissions shall not exceed 9.9 tons per rolling, 12-month summation for this facility.

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping requirements specified in d)(2).

To calculate the individual HAP emission rates, the permittee shall employ the following:

- i. HAP emissions from mixing, blending, container filling, and loading and unloading shall be determined using loading loss calculation equation one (1), from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square inch absolute (at 70°F)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = \text{lb VOC}/1,000 \text{ gal}$$

(lb VOC/1,000 gallons) x (total gallons of material transferred/year) \* (% by weight individual HAP) \* (1 ton/2000 lbs) = tons individual HAP emitted/year

- ii. HAP emissions from the methanol recovery and purification system were established at the emissions unit's potential to emit as determined by the following calculations:

- (a) Formaldehyde emissions:

This emissions limitation was established at the unit's potential to emit as determined by the following calculations:

Total Formaldehyde = (formaldehyde distillation column) + (formaldehyde surge tank) x (1-CE)

Total Formaldehyde = (0.05 lb/hr) + (1.9931 lbs/1,000 gals) x (189.2 gal/hour) x (1-0.85)

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and

dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitations shall be assumed provided compliance is maintained with the pound per hour limitation.

(b) Methanol emissions:

Total Methanol = (methanol distillation column) + (methanol surge tank) x (1-CE)

Total Methanol = (0.05 lb/hr) + (1.1011 lbs/1,000 gals) x (189.2 gal/hour) x (1-0.85)

The annual emission limitation was established by multiplying the hourly emission rate by 8,760 hours of operation per year and dividing by 2,000 pounds per ton. Therefore, compliance with the annual emission limitations shall be assumed provided compliance is maintained with the pound per hour limitation.

iii. HAP emissions from reactors equipped with caustic scrubbers shall be calculated as follows:

lbs material processed \* % by weight individual HAP \* control efficiency of caustic scrubber \* 1 ton/2000 lbs = tons individual HAP/year

iv. HAP emissions from boilers capable of burning natural gas and/or phenolic resin distillate shall be calculated as follows:

(a) HAP emissions from natural gas combustion:

HAP emissions from combustion of natural gas shall be calculated by multiplying the appropriate HAP emissions factors HAP/mmscf by the annual amount of natural gas burned then divided by 2000 lbs

The emissions factors are specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-3(1/95).

(b) HAP emissions from phenolic resin distillate:

HAP emissions from combustion phenolic resin distillate shall be calculated by multiplying the HAP components of phenolic resin distillate (i.e. phenol and formaldehyde) in percent by weight by the amount in gallons burned annually and divided by 2000 lbs.

v. HAP emissions from storage tanks shall be determined using a current version of U.S. EPA's TANKS software program and the recordkeeping requirements specified in d)(1) above.



c. Emissions Limitation:

Combined HAP emissions shall not exceed 24.9 tons per rolling, 12-month summation for this facility.

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping requirements specified in d)(2).

To determine total combined HAP emissions, sum the calculated annual emission rates for each individual HAP from each source type identified above.

- (2) VOC and HAP emissions were calculated utilizing worst case scenario process data (materials, molecular weights, vapor pressure, etc.) as provided by ASK Chemicals in FEPTIO application A0052480.



**Final Permit-to-Install and Operate**  
ASK Chemicals  
**Permit Number:** P0120955  
**Facility ID:** 1318000303  
**Effective Date:** 8/5/2016

## **C. Emissions Unit Terms and Conditions**

**1. J006, Bulk Railcar Loading/Unloading Station #2**

**Operations, Property and/or Equipment Description:**

Bulk Railcar Station #2 for Loading (150 gallons per minute) and Unloading (200 gallons per minute)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

|    | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures   |
|----|-------------------------------|---|
| a. | OAC rule 3745-31-05(A)(3)     | <p>Volatile organic compound (VOC) emissions shall not exceed 210.2 pounds per month and 1.26 tons per year (TPY) from this emissions unit.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).</p> |
| b. | OAC rule 3745-31-05(D)        | See Section B.  |

(2) Additional Terms and Conditions

a. The emission factors used to calculate the VOC emissions were established by the permittee. Should more accurate emission factors be developed in the future the permittee shall use them, provided the emission factors are mutually agreeable between the Ohio EPA, through the Cleveland Division of Air Quality, and ASK Chemicals.

- b. The pounds of VOC per month and tons per year emissions limitations for this emissions unit were established to reflect the potential to emit.
- c) **Operational Restrictions**
  - (1) This emissions unit shall not transfer more than 31,536,000 gallons of material in any rolling, 12-month period.
  - (2) All leaks in the liquid lines shall be repaired within five days after identification.
  - (3) The permittee shall not permit liquid to be spilled, discarded into sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- d) **Monitoring and/or Recordkeeping Requirements**
  - (1) The permittee shall maintain monthly records of the following information for the VOC-containing materials loaded at this emissions unit:
    - a. the company identification of each material loaded;
    - b. the number of gallons of each VOC-containing material loaded through the emissions unit;
    - c. the molecular weight of each material; and
    - d. the vapor pressure of each material, in pounds per square inch absolute (psia).
  - (2) The permittee shall maintain annual records of the total VOC emissions, in tons (an annual summation of the monthly VOC emissions, in pounds, divided by 2,000 pounds per ton).
- e) **Reporting Requirements**
  - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.
  - (2) The permittee shall include in the Annual PER, any record showing a deviation of the allowable production limitation. Such records shall include the following information:
    - a. an identification of each rolling, 12-month period during which the material transferred exceeded 31,536,000-gallons; and
    - b. a description of any corrective actions taken to address the exceedances identified above.
  - (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

VOC emissions shall not exceed 210.2 pounds per month from this emissions unit.

Applicable Compliance Method:

The loading loss was established using the worst-case liquid in equation one from AP-42, Section 5.2, dated June 2008:

$$L_L = 12.46 \times \frac{S \times P \times M}{T}$$

Where:

$L_L$  = loading loss, pounds per 1,000 gallons (lb/10<sup>3</sup> gal)

S = saturation factor

P = true vapor pressure of liquid loaded, pounds per square inch absolute (at 70°F)

M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)

T = temperature of bulk liquid loaded, in Rankin (°F + 460)

$$L_L = 12.46 \times \frac{S \times P \times M}{530} = 0.0772 \text{ lb VOC/1,000 gal}$$

(0.08 lb VOC/1,000 gallons) x (total gallons of material transferred/month) = pounds of VOC emitted/month

\*Materials transferred shall not exceed 31,536,000 gallons per rolling, 12-month period.

b. Emissions Limitation:

VOC emissions shall not exceed 1.26 TPY from this emissions unit.

Applicable Compliance Method:

Compliance with the annual VOC emissions limitation shall be determined through summation of the total monthly VOC emissions as described in f)(1)a. above, and multiplied by 1 ton/2,000 pounds.

g) Miscellaneous Requirements

- (1) This emissions unit was installed in 1986 and modified in 2016 to include rail car loading with existing unloading capabilities.