John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

5/29/2013

Certified Mail

RAKESH GUPTA
Heraeus Precious Metals North America Daychem, LLC
970 INDUSTRIAL PARK DR
VANDALIA, OH 45377

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

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0857173091
Permit Number: P0113053
Permit Type: OAC Chapter 3745-31 Modification
County: Montgomery

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**

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

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/dapc/permitsurvey.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 by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

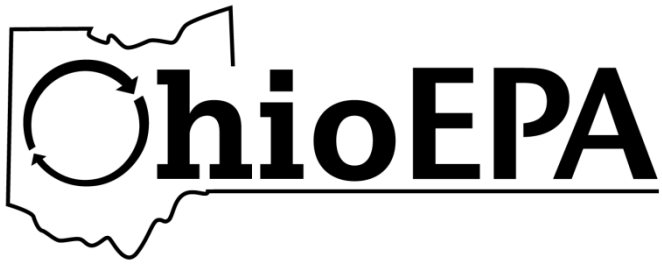
If you have any questions, please contact Regional Air Pollution Control Agency at (937)225-4435or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: RAPCA



FINAL

Division of Air Pollution Control
Permit-to-Install and Operate
for
Heraeus Precious Metals North America Daychem, LLC

Facility ID:	0857173091
Permit Number:	P0113053
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	5/29/2013
Effective:	5/29/2013
Expiration:	5/29/2018

Division of Air Pollution Control
Permit-to-Install and Operate
for
Heraeus Precious Metals North America Daychem, LLC

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Authorization

Facility ID:	0857173091
Application Number(s):	A0045571, A0046533
Permit Number:	P0113053
Permit Description:	Chapter 31 modification to transition from minor source to synthetic minor source for hazardous air pollutants.
Permit Type:	OAC Chapter 3745-31 Modification
Permit Fee:	$200.00
Issue Date:	5/29/2013
Effective Date:	5/29/2013
Expiration Date:	5/29/2018

Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Heraeus Precious Metals North America Daychem, LLC
970 INDUSTRIAL PARK DR
Vandalia, OH 45377

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:

Regional Air Pollution Control Agency
117 South Main Street
Dayton, OH 45422-1280
(937)225-4435

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

Scott J. Nally
Director

Authorization (continued)

Permit Number: P0113053
Permit Description: Chapter 31 modification to transition from minor source to synthetic minor source for hazardous air pollutants.

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

Emissions Unit ID:	**P001**
Company Equipment ID:	300 gallon process mix tank
Superseded Permit Number:	P0107491
General Permit Category and Type:	Not Applicable

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. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement.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 takenby 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 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 Regional Air Pollution Control Agency 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[1] 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 emissions 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.

[1]Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

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.

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. Synthetic Minor HAP Limitations:

   a) The hazardous air pollutant (HAP) emissions from emissions units P001 and P008 shall not exceed 5.68 tons for any individual HAP on a rolling 12-month basis and 8.44 tons for any combination of HAPs on a rolling 12-month basis.

   b) The permittee shall not process more than 40 batches of products containing methylene chloride in emissions units P001 and P008, combined, on a rolling 12-month basis.

   c) The permittee shall keep records each month of the following information for emissions units P001 and P008:

      (1) The solvent composition of each product manufactured;

      (2) The volume, in number of batches, of each product manufactured;

      (3) The individual HAP (i.e., methylene chloride) emissions, in pounds or tons, calculated by multiplying the emission factor, in pounds of individual HAP per batch, by the quantity of batches manufactured for each product.

      (4) The individual HAP emissions factor will be calculated by:

         a. determining the partial pressure for each individual HAP, in mm Hg, according to Equation 2.6 of the EPA Air Pollution Control Cost Manual (EPA/452/B-02-001, January 2002, Section 3.1, Chapter 2);.

         b. using the partial pressure for each individual HAP into an outlet concentration, in parts per million, by dividing the partial pressure from 2.c)(4)a. by 760 mm Hg;

         c. converting the concentration, in parts per million to milligrams per cubic meter, by multiplying the concentration from 2.c)(4)b. by the molecular weight of the compound and dividing by 24.45 liters (molar volume of air);

         d. determine the individual HAP emissions rate in milligams per hour by multiplying the concentration in milligrams per cubic meter from 2.c)(4)c. by the exhaust flow rate from the condenser in cubic meters per hour;

e. convert the individual HAP emissions rate to pounds per hour by multiplying the VOC emissions rate in milligrams per hour from 2.c)(4)d. by 454,000 milligrams per pound;

f. determine the individual HAP emissions rate, in pounds per batch by multiplying the VOC emissions rate, in pounds per batch, by multiplying the individual HAP emissions rate, in pounds per hour, by the length of time, in hours, that individual HAP emissions are vented from the reflux condenser.

(5) The rolling-12 month individual HAP emissions rate, the sum of the individual HAP emissions rates from the 2.c)(3) for the previous 12-months.

(6) The combined HAP emissions rate, in pounds or tons, the sum of all the individual HAP emissions from 2.c)(3) for all HAPs combined.

(7) The rolling-12 month combined HAP emissions rate, the sum of the combined HAPs emissions rates from the 2.c)(6) for the previous 12-months.

d) The permittee shall submit quarterly deviation (excursion) reports that identify:

(1) all deviations (excursions) of the following emission limitations and operational restrictions detected by the monitoring, record keeping and/or testing requirements in this permit:

a. the rolling 12-month individual HAP emissions limitation;

b. the rolling 12-month combined HAP emissions limitation; and

c. the rolling 12-month methylene chloride processing limitation.

d. the probable cause of each deviation (excursion);

e. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

f. 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 that 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).

e) Compliance with the Emissions Limitations specified in 2.a) shall be determined in accordance with the following methods:

(1) Emissions Limitation –

The individual HAP emissions from emissions units P001 and P008 shall not exceed 5.68 tons on a rolling 12-month basis.

Applicable Compliance Method –

Compliance shall be based on the record keeping requirements of 2.c) and the sum of the monthly individual HAP emissions rates for the previous 12-months.

(2) Emissions Limitation –

The combined HAP emissions from P001 and P008 shall not exceed 8.44 tons on a rolling 12-month basis.

Applicable Compliance Method –

Compliance shall be based on the record keeping requirements of 2.c) and the sum of all the combined HAP emissions rates for the previous 12-months.

(3) Emissions Limitation –

The permittee shall not process more than 40 batches of methylene chloride formulations in emissions units P001 and P008, combined, on a rolling 12-month basis.

Applicable Compliance Method –

Compliance shall be based on the record keeping requirements of 2.c) and the sum of all the methylene chloride batches for the previous 12-months.

3. The Ohio EPA has determined that this facility is subject to the requirements of 40 CFR part 63 Subpart VVVVVV, National Emissions Standards for Hazardous Air Pollutants: Area Source Standards for Chemical Manufacturing. Although Ohio EPA has determined that this area source MACT (also known as the GACT) applies, at this time Ohio EPA does not have the authority to enforce this standard. Instead, U.S. EPA has the authority to enforce this standard. Please be advised, that all requirements associated with this rule are in effect and shall be enforced by U.S. EPA.

C. Emissions Unit Terms and Conditions

1. P001, 300 gallon process mix tank

Operations, Property and/or Equipment Description:

300 gallon process mix tank

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. b)(1)b. and b)(1)d.

(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. b)(1)c.

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) As effective 11/30/01	The organic compound (OC) emissions from this emissions unit shall not exceed 285 pounds per batch and 14.8 tons per year. See b)(2)a., b)(2)b., and b)(2)c.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) As effective 12/01/06	See b)(2)a. and b)(2)d.
c.	OAC rule 3745-31-05(D) (synthetic minor to avoid Title V)	See Section B.2., b)(2)a., b)(2)e. and c)(1).
d.	ORC rule 3745-114 and ORC 3704.03(F)	See d)(6) through d)(9) and e)(3).

(2) Additional Terms and Conditions

a. The vents on this emissions unit remain closed during most periods of operation. When the vents on this emissions unit are open they exhaust through a chilled water condenser operated as a reflux condenser with the primary purpose of

capturing and condensing any solvent that is evolved and returning it to the reaction. The solvent reflux serves a vital role by controlling such parameters as reaction time and temperature. The reflux condensers predominantly function to regulate and control the physical and chemical reaction that takes place in the affected equipment.

b. The OC emissions limitations for this emissions unit were established to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to establish monitoring or record keeping for these emissions limitations. This emissions unit employs a variety of OC (including but not limited to acetone, ethyl acetate, and methylene chloride) that are not defined as volatile organic compounds (VOC) and VOC (including but not limited to methanol, heptane and acetonitrile). The hourly and annual emissions limitations are based on methylene chloride (highest vapor pressure for any OC or VOC) as the worst case for air emissions.

c. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio.

Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

d. The BAT requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC emissions from this air contaminant source because the uncontrolled potential to emit for VOC is less than 10 tons/year.

This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.

e. The hazardous air pollutant (HAP) emissions from emissions units P001 and P008 shall not exceed 5.68 tons for any individual HAP on a rolling 12-month basis and 8.44 tons for any combination of HAPs on a rolling 12-month basis.

The record keeping, reporting and testing requirements necessary to comply with the synthetic minor HAP emissions limitations are identified in Section B.2. of this permit.

c) Operational Restrictions

(1) The permittee shall not process more than 40 batches of products containing methylene chloride in emissions units P001 and P008, combined, on a rolling 12-month basis.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain the following monthly records for all chemicals manufactured in this emissions unit:

a. The identification of each product manufactured;

b. The solvent composition of each product manufactured and;

c. The number of batches, of each product manufactured.

(2) The permittee shall collect and record the following information for the purpose of determining annual OC emissions as required for the Synthetic Minor Title V Fee Emissions Report (SMTV FER). The OC emissions shall be determine according to the following procedures:

a. The OC emissions, in pounds or tons, calculated by multiplying the emission factor, in pounds of OC per batch, by the quantity of batches manufactured for each product.

The OC emissions factor will be calculated by:

i. determining the partial pressure for each OC, in mm Hg, according to Equation 2.6 of the EPA Air Pollution Control Cost Manual (EPA/452/B-02-001, January 2002, Section 3.1, Chapter 2);.

ii. using the partial pressure for each OC into an outlet concentration, in parts per million, by dividing the partial pressure from d)(1)d.i. by 760 mm Hg;

iii. converting the concentration, in parts per million to milligrams per cubic meter, by multiplying the concentration from d)(1)d.iii. by the molecular weight of the compound and dividing by 24.45 liters (molar volume of air);

iv. determine the OC emissions rate in milligams per hour by multiplying the concentration in milligrams per cubic meter from d)(1)d.iii. by the exhaust flow rate from the condenser in cubic meters per hour;

v. convert the OC emissions rate to pounds per hour by multiplying the OC emissions rate in milligrams per hour from d)(1)d.iv. by 454,000 milligrams per pound;

vi. determine the OC emissions rate, in pounds per batch by multiplying the OC emissions rate, in pounds per batch, by multiplying the OC emissions rate, in pounds per hour, by the length of time, in hours, that OC emissions are vented from the reflux condenser.

(3) In order to maintain compliance with the applicable emission limitations contained in this permit, the average temperature of the exhaust gases from the condenser, for any 3-hour block of time, shall not be higher than 85 degrees Fahrenheit.

(4) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 5 degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. Following compliance testing, the permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:

a. all 3-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser was greater than 85 degrees Fahrenheit; and

b. A log of the downtime for the capture (collection) system, condenser, and monitoring equipment when the associated emissions unit(s) was/were in operation.

(5) Whenever the monitored temperature of the exhaust gases from the condenser deviates from the limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

f. a description of the corrective action;

g. the date corrective action was completed;

h. the date and time the deviation ended;

i. the total period of time (in minutes) during which there was deviation;

j. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and

k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The exhaust gas temperature limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted exhaust gas temperature limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(6) The PTIO application for this emissions unit, P001, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee. The “Toxic Air Contaminant Statute”, ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled “Review of New Sources of Air Toxic Emissions, Option A”, as follows:

a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):

i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) “Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices”; or

ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) “Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices”; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.

b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).

c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "**X**" hours per day and "**Y**" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

TLV/10 x 8/X x 5/Y = 4 TLV/XY = MAGLC

d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: methylene chloride
TLV (mg/m^3): 174
Maximum Hourly Emission Rate (lbs/hr): 33.5
Predicted 1-Hour Maximum Ground-Level Concentration ($\mu g/m^3$): 7,641
MAGLC ($\mu g/m^3$): 12,406

Toxic Contaminant: methanol
TLV (mg/m^3): 262
Maximum Hourly Emission Rate (lbs/hr): 4.12
Predicted 1-Hour Maximum Ground-Level Concentration ($\mu g/m^3$): 886
MAGLC ($\mu g/m^3$): 18,720

Toxic Contaminant: Acetonitrile
TLV (mg/m^3): 34
Maximum Hourly Emission Rate (lbs/hr): 3.52
Predicted 1-Hour Maximum Ground-Level Concentration ($\mu g/m^3$): 757
MAGLC ($\mu g/m^3$): 2,398

The permittee, has demonstrated that emissions of xylene and toluene, from emissions unit P008, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

(7) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and

c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

(8) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):

a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);

b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);

c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

(9) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

e) Reporting Requirements

(1) The permittee shall submit annual reports which specify the OC and individual HAP emissions rate, in tons, from this emissions unit. These reports shall be submitted by April 15 of each year and shall cover the previous calendar year. This reporting requirement may be satisfied by including and identifying the specific emission data for each emissions unit in the annual Synthetic Minor Title V Fee Emissions Report.

(2) 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 e-Business 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 twelve months for each air contaminant source identified in this permit.

(3) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the annual Permit Evaluation Report (PER). If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

f) Testing Requirements

(1) Compliance with the Emissions Limitations specified in b) shall be determined in accordance with the following methods:

a. Emissions Limitation –

The OC emissions from this emissions unit shall not exceed 285 pounds per batch.

Applicable Compliance Method –

Compliance shall be based on the record keeping requirements of d)(1).

b. Emissions Limitation –

The OC emissions from this emissions unit shall not exceed 14.8 tons per year.

Applicable Compliance Method –

Compliance shall be based on the record keeping requirements of d)(1) and the sum of the monthly OC emissions rates for each calendar year.

c. Emissions Limitation –

The permittee shall not process more than 40 batches of products containing methylene chloride in emissions units P001 and P008, combined, on a rolling 12-month basis.

Applicable Compliance Method –

Compliance shall be based on the record keeping requirements of d)(1) and the sum of all the methylene chloride batches for the previous 12-months.

g) Miscellaneous Requirements

(1) None.