



Mike DeWine, Governor
 Jon Husted, Lt. Governor
 Laurie A. Stevenson, Director

12/16/2021

Darla Rivera
 MCGEAN-ROHCO, INC.
 2910 Harvard Ave.
 Cleveland, OH 44105-3010

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 1318365229
 Permit Number: P0130288
 Permit Type: Renewal
 County: Cuyahoga

Certified Mail

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	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

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install and Operate (PTIO) for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, The Plain Dealer. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically 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. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall
 Permit Review/Development Section
 Ohio EPA, DAPC
 50 West Town Street Suite 700
 PO Box 1049
 Columbus, Ohio 43216-1049

and Cleveland Division of Air Quality
 2nd Floor
 75 Erievue Plaza
 Cleveland, OH 44114

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Cleveland Division of Air Quality at (216)664-2297.

Sincerely,

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

cc: U.S. EPA Region 5 Via E-Mail Notification
 CDAQ; Pennsylvania; Canada

PUBLIC NOTICE

The following matters are the subject of this public notice by the Ohio Environmental Protection Agency. The complete public notice, including any additional instructions for submitting comments, requesting information, a public hearing, or filing an appeal may be obtained at: <http://epa.ohio.gov/actions.aspx> or Hearing Clerk, Ohio EPA, 50 W. Town St., Columbus, Ohio 43215. Ph: 614-644-2129 email: HClerk@epa.ohio.gov

Draft Air Pollution Permit-to-Install and Operate Renewal
MCGEAN-ROHCO, INC.
2910 HARVARD AVE.

Newburgh Heights, OH 44105-3010

ID#: P0130288
Date of Action: 12/16/2021
Permit Desc: PTIO renewal including U.S. EPA Administrative Consent Order requirements for eight (8) multi-purpose reactors with condensers venting to a common scrubber, three (3) chromium chemical manufacturing reactors and a polyvinyl acetate bead reactor.

The permit and complete instructions for requesting information or submitting comments may be obtained at: <http://epa.ohio.gov/dapc/permitsonline.aspx> by entering the ID # or: Timothy Swavely, Cleveland Division of Air Quality, 2nd Floor 75 Erieview Plaza, Cleveland, OH 44114. Ph: (216)664-2297



DRAFT

**Division of Air Pollution Control
Permit-to-Install and Operate
for
MCGEAN-ROHCO, INC.**

Facility ID:	1318365229
Permit Number:	P0130288
Permit Type:	Renewal
Issued:	12/16/2021
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance



Division of Air Pollution Control
Permit-to-Install and Operate
for
MCGEAN-ROHCO, INC.

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Draft Permit-to-Install and Operate

MCGEAN-ROHCO, INC.

Permit Number: P0130288

Facility ID: 1318365229

Effective Date: To be entered upon final issuance

Authorization

Facility ID: 1318365229
Application Number(s): A0069101, A0068995, A0069159, A0069034, A0069093, A0069157
Permit Number: P0130288
Permit Description: PTIO renewal including U.S. EPA Administrative Consent Order requirements for eight (8) multi-purpose reactors with condensers venting to a common scrubber, three (3) chromium chemical manufacturing reactors and a polyvinyl acetate bead reactor.
Permit Type: Renewal
Permit Fee: \$0.00 *DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 12/16/2021
Effective Date: To be entered upon final issuance
Expiration Date: To be entered upon final issuance
Permit Evaluation Report (PER) Annual Date: To be entered upon final issuance

This document constitutes issuance to:

MCGEAN-ROHCO, INC.
2910 HARVARD AVE.
Newburgh Heights, OH 44105-3010

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 Erievue 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

Laurie A. Stevenson
Director



Authorization (continued)

Permit Number: P0130288
 Permit Description: PTIO renewal including U.S. EPA Administrative Consent Order requirements for eight (8) multi-purpose reactors with condensers venting to a common scrubber, three (3) chromium chemical manufacturing reactors and a polyvinyl acetate bead reactor.

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

Emissions Unit ID:	P014
Company Equipment ID:	BRIGHTENER DEPARTMENT - R4, R6, R5,
Superseded Permit Number:	P0128549
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P026
Company Equipment ID:	Spray Dryer & 2 1000 gal. glass lined reactors
Superseded Permit Number:	P0095616
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P036
Company Equipment ID:	R9
Superseded Permit Number:	P0095618
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P038
Company Equipment ID:	R-10
Superseded Permit Number:	P0112866
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P039
Company Equipment ID:	R7
Superseded Permit Number:	P0112874
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P040
Company Equipment ID:	P040
Superseded Permit Number:	P0105685
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P041
Company Equipment ID:	R11
Superseded Permit Number:	P0128549
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P043
Company Equipment ID:	R12
Superseded Permit Number:	P0128549
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P045
Company Equipment ID:	R-14 Multipurpose reactor system
Superseded Permit Number:	P0128549
General Permit Category and Type:	Not Applicable

List of Commonly Used Abbreviations

AP-42 = U.S. EPA's Compilation of Air Pollution Emissions Factors	IBR = Incorporation by Reference	PER = Permit Evaluation Report
ASTM = American Society for Testing and Materials	ID = Identification Number (typically referring to a facility ten-digit ID number)	PM = particulate matter
BACT = Best Available Control Technology	LAER = Lowest Achievable Emission Rate	PM ₁₀ = particulate matter with an aerodynamic diameter less than or equal to 10 microns
BAT = Best Available Technology	lb(s)/hr = pound(s) per hour	PM _{2.5} = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
CAA = Clean Air Act (1955, 70, 77, 80)	LDAR = Leak Detection and Repair	ppb = parts per billion
CAAA = Clean Air Act Amendments (1990)	LPG = liquefied petroleum gas/propane	ppm = parts per million
CAM = Compliance Assurance Monitoring	MACT = Maximum Achievable Control Technology	PSD = Prevention of Significant Deterioration
CEM = Continuous Emissions Monitor	MAGLC = Maximum Acceptable Ground Level Concentration	psi = pounds per square inch
CEMS = Continuous Emissions Monitoring System	mg/m ³ = milligrams per cubic meter	psia = pounds per square inch absolute
CFC = chlorofluorocarbon	MM = million	PTE = Potential-to-Emit
CFR = Code of Federal Regulations	MMBtu = million British Thermal Units	PTI = Permit-to-Install
CH ₄ = methane	MON = Miscellaneous Organic Chemical Manufacturing NESHAP	PTIO = Permit-to-Install and Operate
CI = compression ignition	MSDS = Material Safety Data Sheet	PTO = Permit-to-Operate
CO = carbon monoxide	MSW = Municipal Solid Waste	PWR = process weight rate
CO ₂ = carbon dioxide		RACM = Reasonably Available Control Measures
COM = Continuous Opacity Monitor	NAAQS = National Ambient Air Quality Standard	RACT = Reasonably Available Control Technology
DAPC = Division of Air Pollution Control	NESHAP = National Emission Standard for Hazardous Air Pollutants	RATA = Relative Accuracy Test Audit
DO/LAA = District Office/Local Air Agency	NG = natural gas	RTO = regenerative thermal oxidizer
dscf = dry standard cubic foot	ng/m ³ = nanograms per cubic meter	SB265 = Senate Bill 265
EAC = Emissions Activity Category	NH ₃ = ammonia	scfm = standard cubic feet per minute
eDocs = Electronic Documents Database	NMHC = non-methane hydrocarbons	SI = spark ignition
ERAC = Environmental Review Appeals Commission	NMOC = non-methane organic compound	SIP = State Implementation Plan
ESP = electrostatic precipitator	NNSR = Nonattainment New Source Review	SM = Synthetic Minor
EU = Emissions Unit	NO = nitrogen oxide	SO ₂ = sulfur dioxide
FEPTIO = Federally Enforceable Permit-to-Install and Operate	NO ₂ = nitrogen dioxide	SOB = Statement of Basis
FER = Fee Emissions Report	NO _x = nitrogen oxides	SSMP = Startup, Shutdown and Malfunction Plan
FR = Federal Register	NSPS = New Source Performance Standard	T & C = Term and Condition
GACT = Generally Achievable Control Technology	NSR = New Source Review	TDS = total dissolved solids
GHG = greenhouse gases	NTV = Non-Title V	TLV = Threshold Limit Value
gr = grains	O&M = Operation and Maintenance	TO = thermal oxidizer
gr/dscf = grains per dry standard cubic foot	O ₃ = ozone	TPH = ton(s) per hour
H ₂ S = hydrogen sulfide	OAC = Ohio Administrative Code	TPY = ton(s) per year
H ₂ SO ₄ = sulfuric acid	OC = organic compound	TSP = total suspended particulates
HAP = hazardous air pollutant	OEPA = Ohio Environmental Protection Agency	VE = visible emissions
HCl = hydrochloride	ORC = Ohio Revised Code	VMT = vehicle miles traveled
HF = hydrogen fluoride	Pb = lead	VOC = volatile organic compound
Hg = mercury	PBR = Permit-By-Rule	WPP = Work Practice Plan
HON = Synthetic Organic Chemical Manufacturing NESHAP	PCB = polychlorinated biphenyl	µg/m ³ = micrograms per cubic meter
hp = horsepower	PE = particulate emissions	
HVLP = high volume, low pressure	PEMS = Predictive Emissions Monitoring System	



Draft Permit-to-Install and Operate

MCGEAN-ROHCO, INC.

Permit Number: P0130288

Facility ID: 1318365229

Effective Date: To be entered upon final issuance

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 (either electronically through Ohio

EPA's eBusiness Center: Air Services web service or 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 once by 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 permit evaluation report (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 Cleveland Division of Air Quality 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/her 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 shut down 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, the new owner or operator must follow the procedures in OAC Chapter 3745-31-07, including notifying Ohio EPA or the local air agency of the change in ownership or operator within thirty days of the transfer date. Any transferee of this permit shall assume the responsibilities of the transferor permit holder.



Draft Permit-to-Install and Operate

MCGEAN-ROHCO, INC.

Permit Number: P0130288

Facility ID: 1318365229

Effective Date: To be entered upon final issuance

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.



Draft Permit-to-Install and Operate

MCGEAN-ROHCO, INC.

Permit Number: P0130288

Facility ID: 1318365229

Effective Date: To be entered upon final issuance

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. In accordance with 40 CFR Part 60, Subpart VVa, §60.480a(d)(2), the permittee shall not produce more than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in §60.489 in each reactor. The permittee shall maintain records of the total annual amount of each chemical produced in each reactor as required in §60.486a(i).
3. **The permittee is advised that this facility may be subject to the “Generally Available Control Technology” (GACT) requirements under Title 40 of the Code of Regulations, Part 63, Subpart VVVVVV, the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Chemical Manufacturing at Area Sources. At this time the Ohio EPA is not accepting the delegating authority to enforce the standards promulgated under the Urban Air Toxics Strategy. The requirements of this rule, that are applicable to the area source(s) (for hazardous air pollutants) identified in this permit, shall be enforceable by U.S. EPA, Region 5. The complete requirements of this Subpart (including the Part 63 General Provisions) may be accessed via the Internet from the Electronic code of Federal Regulations (e-CFR) website <http://www.ecfr.gov/> or by contacting the Cleveland Division of Air Quality (Cleveland DAQ).**
4. In accordance with OAC 3745-31-05(F), McGean-Rohco has requested the following voluntary limits on allowable emissions:
 - a) A Facility-wide practically enforceable limit:
 - (1) Limit and averaging period: 12-month rolling average HAP emission limit below 10 tons per year for any HAP and 25 tons per year for any combination of HAPs.
 - (2) Method for determining compliance: For process vents, use an emission factor based on process knowledge and an engineering evaluation. For fugitive emissions, use guidance referenced in subparagraph c., below, for calculating emissions.
 - (3) Monitoring: For process vents, monitor the number of batches or hours of operations on a monthly basis. For fugitive emissions, at a minimum, generally track the number of components, HAP content in the components, in order to conduct calculations. For tanks, monitor all information required to conduct AP-42 analysis.
 - (4) Recordkeeping: Maintain records of all information monitored in paragraph a)(2), above.
 - (5) Reporting: Report 12-month rolling averages in reports submitted under the permit.

- b) A requirement to operate at all times the SCR 001, SCR 002, and SCR 003 control devices used by McGean with good air pollution control practices for minimizing emissions and with an Operations and Maintenance Plan.
- c) A requirement to calculate HAP emissions to demonstrate compliance with the 12-month rolling average HAP emission 3.a). The calculation shall include as follows:
 - (1) Batch process vent emissions from the three controlled point sources (SCR 001, SCR 002, SCR 003) will be calculated by either multiplying the emission factor per “standard” batch by the number of batches produced during the previous 12 months, or by determining an average emission rate per hour for the “standard” batch and multiplying times the number of hours each process unit associated with the “standard” batch has operated during the previous 12 months. The emission factor per “standard” batch (or average emission rate per hour for the “standard” batch) will be determined for batches venting to point sources SCR 001, SCR 002, and SCR 003 using emissions software that incorporates process knowledge and an engineering evaluation. McGean shall not take into account emission reductions from the operation of a control device on an affected CMPU in order to demonstrate that the facility is exempt from Title V permitting.
 - (2) To determine total Facility annual HAP emissions, total HAP emissions calculated in subparagraph c)(1) above shall be added to calculated fugitive HAP emissions from all fugitive emission sources at the Facility including emissions from vents, reactors, distillations columns, storage vessels, process vessels, tanks, furnaces, coating lines, ovens, incinerators, boilers, tanks, bulk storage, pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and wastewater streams not managed in a point source. See the 1995 Protocol for Equipment Leak Emission Estimates for estimating emissions from fugitive sources (EPA-453/R-95-017) and AP 42, Volume I Chapter 7: Liquid Storage Tanks; Fugitive emissions will be calculated on an annual basis and may be assumed to be equally divided among each monthly period in the year.
- d) McGean’s application to Ohio EPA shall request that the conditions listed in paragraphs a) through c) above shall not be removed during future renewals absent U.S. EPA consent. Notwithstanding, if McGean files an application with Ohio EPA that would result in the Facility no longer being an area source of HAPs, then nothing in the Order shall prevent Ohio EPA from removing such conditions.



Draft Permit-to-Install and Operate
MCGEAN-ROHCO, INC.
Permit Number: P0130288
Facility ID: 1318365229
Effective Date: To be entered upon final issuance

C. Emissions Unit Terms and Conditions



1. P014, BRIGHTENER DEPARTMENT - R4, R6, R5,

Operations, Property and/or Equipment Description:

Three 1,000-gallon specialty chemical making vacuum/pressurized multi-purpose reactors and condenser system. Emissions from this system are controlled by a scrubber also attached to EUs P031, P038, P039 and P041.

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)d., d)(3), d)(4), d)(5), d)(6), and e)(3)

(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)(a)(ii)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM ₁₀ and VOC emissions from this emissions unit since the controlled potential to emit is less than 10 tons/year for each pollutant.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average except as provided by rule.
c.	OAC rule 3745-17-11(A)	Particulate emissions (PE) shall not exceed 5.61 lbs/hr.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-114-01	See d)(3) – d)(6), and e)(3) below.

(2) Additional Terms and Conditions

- a. The emissions from this emissions unit shall be vented to the wet scrubber at all times the emissions unit is in operation.
- b. The VOC emissions from this emissions unit shall be vented to a condenser (used for material recovery) at all times the emissions unit is in operation. The condensers are part of the physical and operational design of the three reactors.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber, the liquid flow rate, and the liquid pH shall be based upon the manufacturer’s specifications, with any modifications deemed necessary by the permittee, until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
- (2) The permittee shall properly operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge), the scrubber liquid flow rate (in gallons per minute), and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid’s pH and flow rate on a daily basis. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer’s recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable liquid flow rate and the liquid pH shall be based upon the manufacturer’s specifications, with any modifications deemed necessary by the permittee, until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pressure drop, flow rate, and pH readings 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.

These range(s) and/or limit(s) for the pressure drop, liquid flow rate, and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the permitted range or limit for the pressure drop, liquid flow rate, or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range or 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.

- (3) The permit-to-install and operate (PTIO) application for this emissions unit, P014, was evaluated based on the actual materials and the design parameters of the emissions unit's(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):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- 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: Ammonia

TLV (mg/m³): 17.4 mg/m³

Maximum Hourly Emission Rate (lbs/hr): 0.558 lb/hr

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m³): 3.57ug/m³

MAGLC (ug/m³): 405 ug/m³

The permittee, has demonstrated that emissions of Ammonia, from emissions unit(s) P014, 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).

- (4) 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:
- l. 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;
 - m. 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
 - n. 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.

- (5) 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.
- (6) 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 an annual Permit Evaluation Report (PER) to the Cleveland Division of Air Quality (Cleveland DAQ) 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.
 - (2) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the wet scrubber during the 12-month reporting period for this/these emissions unit(s):
 - a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber, the liquid flow rate, or the liquid pH was outside of the appropriate range or limit specified by the manufacturer, with any modifications deemed necessary by the permittee, and outside of the acceptable range for each parameter following any required compliance demonstration;
 - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
 - c. each incident of deviation described in “a” or “b” (above) where a prompt investigation was not conducted;
 - d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pressure drop, liquid flow rate, or scrubber liquid pH into compliance with the appropriate range or limit contained in this permit, was determined to be necessary and was not taken; and
 - e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of 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.

- (4) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the CDAQ.

- f) Testing Requirements
 - (1) Compliance with the emission limitations in b)(1) of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emission limitation shall be determined through visible emissions observations performed in accordance with U.S. EPA Method 9 of 40 CFR Part 60, Appendix A.

 - b. Emission Limitation:

5.61 lbs/hr of particulate emissions

Applicable Compliance Method:

If required, the permittee shall determine compliance with the lb/hr emission limitation through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

- g) Miscellaneous Requirements
 - (1) This permit renewal supersedes P0128549. The emission unit was initially installed 11/9/1985 and modifications were completed 7/15/2013.

2. P026, Spray Dryer & 2 1000-gallon glass lined reactors

Operations, Property and/or Equipment Description:

Chromium chemical manufacturing process consisting of two reactors, spray dryer equipped with cyclone collector, and evaporator to add reaction capability equipped with two scrubbers

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)e.

(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)	Visible particulate emissions from any stack serving this emissions unit shall not exceed 10% opacity, as a six-minute average. 2.20 lbs/hr and 9.64 tons/year PE/PM ₁₀ emissions 0.43 lb/hr and 1.88 tons/year VOC emissions 1.50 lbs/hr and 6.57 tons/year NO _x emissions See b)(2)a. below.
b.	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
c.	OAC rule 3745-17-11(B)	The particulate emission limitation specified by this rule is less stringent than the particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
d.	OAC rule 3745-21-07(M)(3)(c)(ii)	See b)(2)b. below.
e.	OAC rule 3745-31-05(E) State-only enforceable limitation to avoid modeling	Chromium emissions shall not exceed 0.99 tons per rolling, 12-month period.

(2) Additional Terms and Conditions

- a. The short-term (lb/hr) emissions limitations for PE, PM₁₀, VOC and NO_x emissions were established based on the emissions unit's potential to emit (PTE), therefore no record keeping or reporting is required for these limitations.
- b. The requirement of OAC rules 3745-21-07(M)(3)(a) and (M)(3)(b) do not apply to this emissions unit because the uncontrolled potential to emit for OC emissions is less than 40 pounds per day.

c) Operational Restrictions

- (1) The permittee shall operate the reactor Venturi scrubber to control emissions while either one of the two reactors is in operation or both of the reactors are in operation.
- (2) The permittee shall operate the dryer-cyclone Venturi scrubber to control emissions while the spray dryer-cyclone collector is in operation.
- (3) During the operation of the reactor Venturi scrubber, the pH of the reactor Venturi basic scrubbing liquor or solution shall be maintained at an hourly average of 6.0 or greater. During the operation of the scrubber, the pH system shall be calibrated monthly.
- (4) During the operation of the reactor Venturi scrubber, the scrubbing liquor or solution recirculation flow rate to the reactor Venturi scrubber shall be maintained at twenty (20) gallons per minute or greater. This parameter data will be averaged in 1-hour blocks of time (for a total of 24 blocks per day) while either one of the two reactors are in operation or both of the reactors are in operation.
- (5) During the operation of the dryer-cyclone Venturi scrubber, a scrubbing liquor or solution recirculation flow rate to the dryer-cyclone Venturi scrubber shall be maintained at fifteen

(15) gallons per minute or greater. This parameter data will be averaged in 1-hour blocks of time (for a total of 24 blocks per day) while the spray dryer-cyclone collector is in operation.

- (6) The pressure drop across the dryer-cyclone Venturi scrubber shall not be less than 10 and not more than 20 inches of water column.

d) **Monitoring and/or Recordkeeping Requirements**

(1) **Reactor Venturi Wet Scrubber Monitoring and Recordkeeping Requirements**

The permittee shall properly calibrate, operate, and maintain, in good working condition, system of monitors, in accordance with the manufacturer's recommendations, instructions and operating manuals with any modifications deemed necessary by the permittee. The monitoring devices shall be capable of accurately measuring the desired parameters. The permittee shall monitor and record the pH of the scrubber liquor or solution, and scrubbing solution recirculation flow rate while the emissions unit is in operation.

The permittee shall collect and record the following information each day while the reactor Venturi scrubber is in operation:

- a. the pH of the scrubbing liquor or solution, on a once a day basis;
- b. the scrubbing liquor or solution recirculation flow rate, in gallons per minute, on a once a day basis, in averaged 1-hour blocks; and
- c. the permittee shall record, for each day, all periods of time during which the reactor Venturi scrubber or the monitoring equipment were not in service when either or both of the reactors were in operation and the corrective actions that were taken to resume operation of the control device.

(2) **Dryer-Cyclone Venturi Wet Scrubber Monitoring and Recordkeeping Requirements**

The permittee shall properly calibrate, operate, and maintain, in good working condition, system of monitors, in accordance with the manufacturer's recommendations, instructions and operating manuals with any modifications deemed necessary by the permittee. The monitoring devices shall be capable of accurately measuring the desired parameters. The permittee shall monitor and record the pressure drop across the wet scrubber and the scrubbing liquor or solution recirculation rate while the emissions unit is in operation.

The permittee shall collect and record the following information each day while the dryer-cyclone Venturi scrubber is in operation:

- a. the pressure drop across the dryer-cyclone Venturi scrubber, inches of water, on a once a day basis;
- b. the scrubbing liquor or solution recirculation rate, in gallons per minute, on a once a day basis, in averaged 1-hour blocks; and
- c. the permittee shall record, for each day, all periods of time during which the dryer-cyclone Venturi scrubber or the monitoring equipment were not in service when

spray dryer-cyclone collector was in operation and the corrective actions that were taken to resume operation of the control device.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the CDAQ.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the CDAQ 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.
- (3) The permittee shall include with the annual PER any record showing that the reactor Venturi scrubber was not in service when either or both of the reactors were in operation.
- (4) The permittee shall include with the annual PER any record showing that the dryer-cyclone Venturi scrubber was not in service when the spray dryer-cyclone collector was in operation.
- (5) Reactor Venturi Wet Scrubber Reporting Requirements

The permittee shall include with the annual PER information that identify the following:

- a. all periods of time during which the scrubber liquor or solution pH was less than 6.0 when the reactor Venturi scrubber was operating; and
- b. all scrubbing liquor or solution recirculation flow rate 1-hour block averages* less than 20 gallons per minute when the reactor Venturi scrubber was operating.

The reports shall also document the cause of each deviation (excursion) and an explanation of any corrective actions which have been taken or will be taken to prevent a similar deviation (excursion) in the future.

*Any 1-hour block average containing 15 minutes or less of operating time (when either one of the two reactors is in operation or both of the reactors are in operation) for the entire hour will not be reported as a deviation.

(6) Dryer-Cyclone Venturi Wet Scrubber Reporting Requirements

The permittee shall include with the annual PER information that identify the following:

- a. all periods of time during which the pressure drop across the dryer-cyclone Venturi scrubber was less than 10 or greater than 20 inches of water column when the dryer-cyclone Venturi scrubber was operating; and
- b. all scrubbing liquor or solution recirculation flow rate 1-hour block averages* less than 15 gallons per minute when the dryer-cyclone Venturi scrubber was operating.

The reports shall also document the cause of each deviation (excursion) and an explanation of any corrective actions which have been taken or will be taken to prevent a similar deviation (excursion) in the future.

*Any 1-hour block average containing 15 minutes or less of operating time (when the spray dryer-cyclone collector is in operation) for the entire hour will not be reported as a deviation.

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. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10% opacity, as a 6-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Test Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

b. Emission Limitation:

2.20 lbs/hr PE/PM₁₀ emissions

Applicable Compliance Method:

Compliance with the mass emissions limitation shall be determined by using the following one-time calculation for a product at the worst case scenario for potential to emit:

$$\left(\frac{0.0282 \text{ lbs PE/PM}_{10}}{\text{lb of batch material}} \right) \left(\frac{650 \text{ lbs batch material}}{16.667 \text{ operating hours}} \right) (2 \text{ reactors}) = 2.2 \frac{\text{lbs PE/PM}_{10}}{\text{hr}}$$

If required, compliance shall be demonstrated based on emission testing in accordance with Test Methods 1 through 5 of 40 CFR Part 60, Appendix A and the procedures specified in OAC rule 3745-17-03(B)(9).

c. Emission Limitation:

9.64 tons/year PE/PM₁₀ emissions

Applicable Compliance Method:

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 limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

d. Emission Limitation:

0.43 lb/hr VOC emissions

Applicable Compliance Method:

Compliance with the mass emissions limitation shall be determined by using the following one-time calculation for a product at the worst case scenario for potential to emit:

$$\left(\frac{0.00551 \text{ lbs VOC}}{\text{lb batch material}} \right) \left(\frac{650 \text{ lbs batch material}}{16.667 \text{ operating hours}} \right) (2 \text{ reactors}) = 0.43 \frac{\text{lbs VOC}}{\text{hr}}$$

If required, compliance shall be demonstrated based on emission testing in accordance with Test Methods 1 through 4 and 25, 25A, or 25B of 40 CFR Part 60, Appendix A.

e. Emission Limitation:

1.88 tons/year VOC emissions

Applicable Compliance Method:

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 limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

f. Emission Limitation:

1.50 lbs/hr NOx emissions

Applicable Compliance Method:

Compliance with the mass emissions limitation shall be determined by using the following one-time calculation for a product at the worst case scenario for potential to emit:

$$\left(\frac{0.01923 \text{ lbs NOx}}{\text{lb batch material}} \right) \left(\frac{650 \text{ lbs batch material}}{16.667 \text{ operating hours}} \right) (2 \text{ reactors}) = 1.50 \frac{\text{lbs NOx}}{\text{hr}}$$

If required, compliance shall be demonstrated based on emission testing in accordance with Test Methods 1 through 4 for gas flow characteristics, Test Methods 7, 7A, 7B, 7C, 7D, or 7E for nitrogen oxide emissions, of 40 CFR Part 60, Appendix A.

g. Emission Limitation:

6.57 tons/year NOx emissions

Applicable Compliance Method:

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 limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

h. Emission Limitation:

0.22 lbs/hr and 0.99 tons/year chrome emissions

Applicable Compliance Method:

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 limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

If required, compliance shall be demonstrated based on emission testing in accordance with Test Method 306 Determination of Chromium Emissions from decorative and hard chrome electroplating and chromium anodizing operations - isokinetic method of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install and operate prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install and operate.
- (2) This renewal permit supersedes P0095616. The emission unit was installed 1/1/1976.

3. P036, R9

Operations, Property and/or Equipment Description:

R9 multi-purpose reactor system

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)	0.168 lb OC/hr, 4.03 lbs OC/day, and 0.736 ton OC/year
b.	OAC rule 3745-21-07(M)(3)(c)(ii)	See b)(2)a. below.

(2) Additional Terms and Conditions

a. The requirement of OAC rules 3745-21-07(M)(3)(a) and (M)(3)(b) do not apply to this emissions unit because the uncontrolled potential to emit for OC emissions is less than 40 pounds per day.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly operate and maintain a water flow rate meter which measure the rate of water flowing into the water seal pot associated with the reactor, when the emissions unit is in operation. The water flow rate monitoring equipment shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, operating manual(s) with any modifications deemed necessary by the permittee.

Water flow rate to the water seal pot shall be recorded once within one hour at the start of and within one hour before the end of the batch.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the CDAQ.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the CDAQ 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.
- (3) The permittee shall include in the annual PER information that identify all periods of time during which no water flows into the water seal pot and a copy of such record. If no such instances have occurred during a particular year, this shall be stated in the annual PER.

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. Emission Limitation:

0.168 lb/hr OC emissions

Applicable Compliance Method:

If required, compliance shall be demonstrated based on emission testing in accordance with Test Methods 1 through 4 and 25, 25A, or 25B of 40 CFR Part 60, Appendix A.

b. Emission Limitation:

4.03 lbs /day OC emissions



Draft Permit-to-Install and Operate

MCGEAN-ROHCO, INC.

Permit Number: P0130288

Facility ID: 1318365229

Effective Date: To be entered upon final issuance

Applicable Compliance Method:

The daily emission limitation was established by multiplying the hourly emission rate by 24 hours of operation per day. Therefore, compliance with the daily emission limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

c. Emission Limitation:

0.736 tons/year OC emissions

Applicable Compliance Method:

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 limitation shall be assumed provided compliance is maintained with the pounds per hour limitation.

g) Miscellaneous Requirements

- (1) This renewal permit supersedes P0095618. The emission unit was installed 6/1/1999.



4. P038, R-10

Operations, Property and/or Equipment Description:

R-10 Multi-purpose reactor system equipped w/ condenser and exhausted to centralized facility caustic scrubber, P014 scrubber-positive pressure Ceilcote wet scrubber.

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. g(1).

(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) PTI was issued 3/16/2004	0.10 lb/hr and 0.44 tpy of organic compounds. See b)(2)a. below. See c)(1) through c)(2) below.
b.	OAC rule 3745-21-07(M)(3)(c)(ii)	See b)(2)b. below.

(2) Additional Terms and Conditions

a. Each batch takes a minimum of 61.48 hours to complete. The batch operation takes longer than one day to complete and total OC emissions for the batch are 5.6 lbs. The annual limitation was determined based on a maximum of 142 batches per year.

- b. The requirement of OAC rules 3745-21-07(M)(3)(a) and (M)(3)(b) do not apply to this emissions unit because the uncontrolled potential to emit for OC emissions is less than 40 pounds per day.
- c) **Operational Restrictions**
 - (1) The caustic scrubber (emissions unit P014) shall be operating at all times while the emissions unit is in operation.
 - (2) The permittee shall operate the caustic scrubber with the restrictions as defined in the permit for emissions unit P014 (PTI# 13-04001).
- d) **Monitoring and/or Recordkeeping Requirements**
 - (1) The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop, the water flow rate, the exhaust flow rate, the pH of the scrubber liquor, and the liquor temperature in the caustic scrubber while the emission unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. The scrubber water flow rate, in gallons per minute, on once/shift basis. This shall be accomplished by either visually inspecting the recirculation valve (visual inspections shall be done on once/shift, exceptions are made for holidays) and recording the flow rate of the makeup water or through the use of a PLC for the system.
 - b. The pressure drop on the scrubber, in inches of water, on once/shift basis. This shall be accomplished by either a visual inspection or through the use of a PLC for the system.
 - c. The pH of the scrubber liquor on once/shift basis. This shall be accomplished by either a visual inspection or through the use of a PLC for the system.
 - d. The temperature of the scrubber liquor, in Fahrenheit, on once/shift basis. This shall be accomplished by either a visual inspection or through the use of a PLC for the system.
 - e. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
- (2) The permittee shall collect and record the following information each month:
 - a. the name and identification of each product;
 - b. number of batches;
 - c. the pounds of organic material used per batch and the total pounds of organic material used per month; and,

- d. the organic compound emissions, in lbs/batch, for each batch processed determined in accordance with f)(1)b.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Cleveland Division of Air Quality (CDAQ) 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.
- (3) The permittee shall include in the annual PER information which identify all exceedance of the pound per batch allyl chloride emission limitation.
- (4) The permittee shall include in the annual PER information which identify all exceedance of the pound per batch organic compound emission limitation.
- (5) The permittee shall include in the annual PER information that identify all periods of time during which the following scrubber parameters were not maintained at the required levels (outlined in PTI# 13-01354, for P014):
 - a. the static pressure drop;
 - b. the scrubber water flow;
 - c. the scrubber liquor pH; and
 - d. the scrubber liquor temperature.

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. Emission Limitation:

3.9 lbs/batch OC emissions

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping from d)(2) for each batch processed and the following equations:

$$EF \left(\frac{\text{lb organic material used}}{\text{batch}} \right) * (1 - CE) = \text{OC emissions in } \frac{\text{lbs}}{\text{batch}}$$



Where: *EF* is determined by the facility.

If required, compliance with the organic compound emission limitation shall be determined through emission testing conducted in accordance with Method 25 or 25A of 40 CFR Part 60, Appendix A, or any approved alternative testing method.

b. Emission Limitation:

0.46 tpy OC emissions

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping from d)(2) and the following equations:

$$\frac{EF \left(\frac{\text{lb organic material used}}{\text{year}} \right) * (1 - CE)}{2000} = \text{OC emissions in } \frac{\text{tons}}{\text{year}}$$

Where: *EF* is determined by the facility.

CE = Control efficiency of caustic scrubber.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.
- (2) This renewal permit supersedes P0112866. The emission unit was installed 7/1/2007.



5. P039, R7

Operations, Property and/or Equipment Description:

Multiple purpose 1000-gallon reactor system R7

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. g)(1), g)(2).

(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)(a)(ii)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM ₁₀ and VOC emissions from this emissions unit since the controlled potential to emit is less than 10 tons/year for each pollutant.
b.	OAC rule 3745-17-07(A)(1)(a)	Visible particulate emissions from any stack servicing this emissions unit shall not exceed 20% opacity, as a six-minute average, except as provided by rule.
c.	OAC rule 3745-17-11(A)(2)	Particulate emissions (PE) from wet scrubber (packed tower scrubber) stack



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		shall not exceed 0.817 lb PE/hour.
d.	OAC rule 3745-21-07(M)(3)(c)(ii)	See b)(2)a. below.

(2) Additional Terms and Conditions

- a. The requirement of OAC rules 3745-21-07(M)(3)(a) and (M)(3)(b) do not apply to this emissions unit because the uncontrolled potential to emit for OC emissions is less than 40 pounds per day.
- b. This emissions unit operates using a batch cycle. The average amount of time for one batch cycle is 720 minutes or 12 hours. The batch cycle varies from approximately one hour to 150 hours.
- c. The controlled PE and OC emission rates at potential to emit are less than rule limits; therefore, no monitoring, record keeping or reporting are needed for these limits.

c) Operational Restrictions

- (1) The permittee shall operate a wet scrubber, whenever this air emissions unit is generating particulate emissions and/or organic compounds emissions, while the emissions unit is in operation. If acidic emissions are generated while the air emissions unit is in operation, alkaline (having a pH of more than 7) scrubber liquor shall be used to control acidic emissions. If alkaline emissions are generated while the air emissions unit is in operation, acidic scrubber liquor shall be used to control alkaline emissions.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly operate, and maintain equipment to continuously monitor and record the pH of the recirculating scrubber liquor during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pH of the recirculating scrubber liquor on hourly basis, if needed as a backup.

Whenever the monitored value for the pH of the recirculating scrubber liquor deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and 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 specified below, 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: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pH reading immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does 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 acceptable range for the pH of the recirculating scrubber liquor is between 0 and 7 (including the end values 0 and 7) when alkaline air pollutants are being controlled; and the acceptable range for the pH of the recirculating scrubber liquor is between 7 and 12 (including the end values 7 and 12) when acidic air pollutants are being controlled.

These ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by CDAQ. The permittee may request revisions to the ranges based upon information obtained during future operations of this emissions unit. In addition, approved revisions to the ranges 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.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the Cleveland Division of Air Quality (CDAQ).
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the CDAQ 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. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.
- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the CDAQ that identify the following information concerning the operation of the control equipment during the operation of this emission unit:
 - a. each period of time when the pH of the liquor was outside the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of each deviation described in (a) where prompt corrective action, that would bring the pH into compliance with acceptable range, was determined to be necessary and was not taken; and



- d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.

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:

Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required by Ohio EPA or CDAQ, compliance shall be determined by visible emissions evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using methods and procedures specified in U.S. EPA Reference Method 9.

- b. Emissions Limitation:

Particulate Emissions (PE) from wet scrubber (packed tower scrubber) stack shall not exceed 0.817 lb PE/hr.

Applicable Compliance Method:

The emission limitation is based on the rule. The potential to emit is less than the rule limits; therefore, no recordkeeping and/or reporting requirements are necessary to ensure compliance with this limitation.

R = Ratio of non-OC and non-water raw material to total OC raw material

R = Ratio of uncontrolled PE to uncontrolled OC emissions

$$R = \frac{(\text{lbs of non-OC} + \text{lbs of non-water}) \text{ raw material}}{\text{lbs of total OC raw material}}$$

$$R = \frac{J \text{ lbs of uncontrolled PE}}{\text{lb of uncontrolled OC emissions}} = J \frac{\text{lbs PE}}{\text{lb OC}}$$

UncontPE is pounds of uncontrolled PE per hour, lbs PE/hr

UncontOC is pounds of uncontrolled OC emissions per hour, lbs OC/hr

$$\text{UncontPE} = (R) * (\text{UncontOC} \frac{\text{lbs OC}}{\text{hr}})$$

PECE = Control Efficiency of Wet Scrubber on PE, %

The estimated PE control efficiency is 90% from the scrubber manufacturer.



ActPE is controlled PE or actual PE, lbs PE/hr

$$ActPE = UncontPE * \left(\frac{100-PECE\%}{100}\right)$$

Sample Calculation of R

$$R = \frac{237,092 \text{ lbs of non-OC and non-water raw material}}{196,458 \text{ lbs of OC raw material}}$$

$$R = \frac{1.21 \text{ lbs of uncontrolled PE}}{\text{lb of uncontrolled OC emissions}} = 1.21 \frac{\text{lb PE}}{\text{lb OC}}$$

Sample Calculation of UncontPE, lbs PE/hr

$$UncontPE = \left(1.21 \frac{\text{lb PE}}{\text{lb OC}}\right) * \left(0.839 \frac{\text{lb UncontOC}}{\text{hr}}\right)$$

$$UncontPE = 1.02 \frac{\text{lbs PE}}{\text{hr}}$$

Sample Calculation of actual PE, Act PE, lbs PE/hr

$$ActPE = 1.02 \frac{\text{lbs PE}}{\text{hr}} * \frac{100-PECE\%}{100}$$

$$ActPE = 0.102 \frac{\text{lb PE}}{\text{hr}}$$

Where:

J = pounds of uncontrolled particulate emissions per pound of uncontrolled OC emissions

PECE = particulate emissions control efficiency in percent

c. Emission Limitations:

Less than 10 tons per year for PE and OC each.

Applicable Compliance Method:

Multiplying the PE and OC hourly emission rates by 8760 hours of operation per year and dividing by 2000 pounds per ton results in potential emissions that are less than 10 tons per year for particulate and OC emissions. Therefore, compliance with the annual emission limitation shall be assumed provided compliance is maintained with pounds per hour limitations for PE and OC.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit-to-install and operate prior to making a "modification" as defined

by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit-to-install and operate.

- (2) The actual mass emissions of ammonia shall be determined by using the following calculation for each of the products:

$$\frac{U \text{ lbs of uncontrolled } NH_3 \text{ emissions}}{\text{ton of batch material of } Y \text{ product}} * \frac{\text{tons of batch material of } Y \text{ product}}{\text{batch of } Y \text{ product}} =$$

$$\frac{W \text{ lbs of uncontrolled } NH_3 \text{ emissions}}{\text{batch of } Y \text{ product}}$$

$$\frac{W \text{ lbs of uncontrolled } NH_3 \text{ emissions}}{\text{batch of } Y \text{ product}} * \frac{(100 - \% \text{ Control Efficiency})}{100} =$$

$$\frac{Z \text{ lbs of actual } NH_3 \text{ emissions}}{\text{batch/product}}$$

Summation of actual ammonia emissions in pounds of ammonia per month for all products.

Summation of actual ammonia emissions in pounds of ammonia per year for all products.

The actual annual ammonia emissions in pounds per year divided by 2,000 pounds per ton to give actual ammonia emissions in tons per year.

Where:

U = pounds of uncontrolled ammonia emissions per ton of material generated by a particular product;

W = pounds uncontrolled ammonia emissions per batch of a particular product;

Y = particular product;

Z = pounds of actual ammonia emissions per batch of a particular product; and

Control Efficiency = actual or manufacturer's estimate of control efficiency of the scrubber.

- (3) This permit supersedes P0112874. The emission unit was installed 5/1/2007.

6. P040, P040

Operations, Property and/or Equipment Description:

1,000-gallon, glass lined reactor with condenser and one (1) Venturi scrubber.

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) As effective 11/30/2001	0.18 lb PE/hr and 0.79 tpy 0.05 lb OC/hr and 0.23 tpy
b.	OAC rule 3745-31-05(A)(3)(a)(ii)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM ₁₀ and VOC emissions from this emissions unit since the controlled potential to emit is less than 10 tons/year for each pollutant.
c.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack servicing this emissions unit shall not exceed 20% opacity, as a six-minute average, except as provided by rule.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-17-11(B)	Particulate emissions (PE) from wet scrubber (packed tower scrubber) stack shall not exceed 1.16 lb PE/hour.
e.	OAC rule 3745-21-07(M)(3)(c)(ii)	See b)(2)b. below.

(2) Additional Terms and Conditions

- a. PTIO P0105685 for this air contaminant source takes in to account the use of a wet scrubber system, whenever this air contaminant source is in operation, with a minimum control efficiency of 90%, by weight for PE as a voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3).
- b. The requirement of OAC rules 3745-21-07(M)(3)(a) and (M)(3)(b) do not apply to this emissions unit because the uncontrolled potential to emit for OC emissions is less than 40 pounds per day.
- c. This emissions unit operates using a batch cycle. The average amount of time for one batch cycle is 600 minutes or 10 hours.
- d. The controlled PE and OC emission rates at potential to emit are less than rule limits; therefore, no monitoring, record keeping or reporting are needed for these limits.

c) Operational Restrictions

- (1) The permittee shall operate a wet scrubber, whenever this air emissions unit is generating particulate emissions and/or organic compounds emissions, while the emissions unit is in operation. If acidic emissions are generated while the air emissions unit is in operation, alkaline (having a pH of more than 7) scrubber liquor shall be used to control acidic emissions. If alkaline emissions are generated while the air emissions unit is in operation, acidic scrubber liquor shall be used to control alkaline emissions.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly operate, and maintain equipment to continuously monitor and record the pH of the recirculating scrubber liquor during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pH of the recirculating scrubber liquor on hourly basis, if needed as a backup.

Whenever the monitored value for the pH of the recirculating scrubber liquor deviates from the range specified below, the permittee shall promptly investigate the cause of the

deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and 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 specified below, 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: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pH reading immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does 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 acceptable range for the pH of the recirculating scrubber liquor is between 0 and 7 (including the end values 0 and 7) when alkaline air pollutants are being controlled; and the acceptable range for the pH of the recirculating scrubber liquor is between 7 and 12 (including the end values 7 and 12) when acidic air pollutants are being controlled.

These ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by CDAQ. The permittee may request revisions to the ranges based upon information obtained during future operations of this emissions unit. In addition, approved revisions to the ranges 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.

- (2) The noted records above shall be maintained at the facility for a period of five years from the date the record was created.

e) Reporting Requirements

- (1) The permittee shall include in the annual PER the following information concerning the operation of the control equipment during the operation of this emissions unit:
 - a. each period of time when the pH reading of the liquor was outside of the range specified by the manufacturer;
 - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
 - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pH into compliance with the acceptable range, was determined to be necessary and was not taken; and
 - d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.



- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Cleveland Division of Air Quality (CDAQ) 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. It is recommended that the PER is submitted electronically through the Ohio EPA’s “e-Business Center: Air Services” although PERs can be submitted via U.S. postal service or can be hand delivered.

f) Testing Requirements

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

a. Emission Limitation:

Visible particulate emissions from any stack servicing this emissions unit shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

Applicable Compliance Method:

If required by Ohio EPA or CDAQ, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using methods and procedures specified in U.S. EPA Reference Method 9.

b. Emission Limitations:

Particulate emissions from wet scrubber stack shall not exceed 1.16 lbs PE/hour

Applicable Compliance Method:

The emission limitation is based on the rule. The potential to emit is less than the rule limit; therefore, no record keeping and/or reporting requirements are necessary to ensure compliance with this emission limitation.

R = Ratio of non-OC and non-water raw material to total OC raw material

R = Ratio of uncontrolled PE to uncontrolled OC emissions

$$R = \frac{(\text{lbs of nonOC} + \text{lbs of nonwater}) \text{ raw material}}{\text{lb of total OC raw material}}$$

UncontPE is pounds of uncontrolled PE per hour, lbs PE/hr

UncontOC is the pounds of uncontrolled OC emissions per hour, lbs OC/hr

$$\text{UncontPE} = (R)(\text{UncontOC lbs OC/hr})$$

PECE = Control Efficiency of Wet Scrubber on PE, %

The estimated PE control efficiency is 90% from the scrubber manufacturer.



ActPE is controlled PE or actual PE, lbs PE/hr

$$\text{ActPE} = (\text{UncontPE}) \times ((100 - \text{PECE\%}) / 100)$$

Sample Calculation of R

$$R = \frac{(3,155,142 \text{ lbs of nonOC and nonwater raw material})}{1,490,762 \text{ lbs of OC raw material}}$$

$$R = \frac{(2.12 \text{ lbs of uncontrolled PE})}{\text{lb of uncontrolled OC emissions}} = 2.12 \frac{\text{lb PE}}{\text{lb OC}}$$

Sample Calculation of UncontPE, lbs PE/hr

$$\text{UncontPE} = (2.12 \text{ lb PE/lb OC}) \times (2.49 \text{ lb UncontOC/hr})$$

$$\text{UncontPE} = 5.27 \text{ lbs PE/hr}$$

Sample Calculation of actual PE, lbs PE/hr

$$\text{ActPE} = (5.27 \text{ lbs PE/hr}) \times ((100 - \text{PECE\%}) / 100)$$

$$\text{ActPE} = 0.53 \text{ lb PE/hr}$$

Where:

R is the pounds of uncontrolled particulate emissions per pound of uncontrolled OC emissions

PECE is the particulate emissions control efficiency in percent

The above emission rate is for the total combined emissions from all three reactors (the two existing reactors P026 and P039 plus the new reactor P040). Dividing the above emission rate by 3 gives an actual emission rate of 0.18 lb PE/hr for one reactor.

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with the Ohio EPA's Toxic Air Contaminant Statute, ORC 3704.03(F) was not necessary because the emissions unit's maximum annual emissions for each toxic pollutant will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit to install prior to making a modification as defined by OAC rule 3745-31-01. The permittee is hereby advised that a new permit to install application would be required for an emissions unit if changes in the composition of the materials or use of new materials would cause the emissions of any pollutant that is listed under OAC rule 3745-114-01(A) to increase to above 1.0 ton per year.
- (2) This renewal permit supersedes P0105685. The emission unit was installed 9/1/2008.

7. P041, R11

Operations, Property and/or Equipment Description:

1,000-gallon specialty chemical making vacuum/pressurized multi-purpose reactor (R11) and condenser system. Emissions from this system are controlled by a scrubber also attached to EU P014 & P031

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)d., and g)(1)

(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)(a)(ii)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM ₁₀ and VOC emissions from this emissions unit since the controlled potential to emit is less than 10 tons/year for each pollutant.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average except as provided by rule.
c.	OAC rule 3745-17-11(A)	Particulate emissions (PE) not exceed 2.69 lbs/hr.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-114-01	See g)(1) below.

(2) Additional Terms and Conditions

- a. The emissions from this emissions unit shall be vented to a wet scrubber at all times while the emissions unit is in operation.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber, the liquid flow rate, and the liquid pH shall be based upon the manufacturer’s specifications, with any modifications deemed necessary by the permittee, until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

- (2) The permittee shall properly operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge), the scrubber liquid flow rate (in gallons per minute), and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid’s pH and flow rate on a daily basis. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer’s recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable liquid flow rate and the liquid pH shall be based upon the manufacturer’s specifications, with any modifications deemed necessary by the permittee, until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pressure drop, flow rate, and pH readings 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.

These range(s) and/or limit(s) for the pressure drop, liquid flow rate, and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the permitted range or limit for the pressure drop, liquid flow rate, or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of as administrative modification.

e) Reporting Requirements

- (1) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the appropriate district office or local air agency.
- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Cleveland Division of Air Quality (CDAQ) 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 identify in the annual permit evaluation report the following information concerning the operations of the wet scrubber during the 12-month reporting period for this/these emissions unit(s):

- a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber, the liquid flow rate, or the liquid pH was outside of the appropriate range or limit specified by the manufacturer, with any modifications deemed necessary by the permittee, and outside of the acceptable range for each parameter following any required compliance demonstration;
 - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
 - c. each incident of deviation described in “a” or “b” (above) where a prompt investigation was not conducted;
 - d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pressure drop, liquid flow rate, or scrubber liquid pH into compliance with the appropriate range or limit contained in this permit, was determined to be necessary and was not taken; and
 - e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.
- f) **Testing Requirements**
- (1) Compliance with the emission limitations in b)(1) of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emission limitation shall be determined through visible emissions observations performed in accordance with U.S. EPA Method 9 of 40 CFR Part 60, Appendix A.
 - b. Emission Limitation:

2.69 lbs/hr of particulate emissions

Applicable Compliance Method:

If required, the permittee shall determine compliance with the lb/hr emission limitation through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

g) Miscellaneous Requirements

- (1) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install and operate prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install and operate.
- (2) This renewal permit supersedes P0128549. The emission unit was installed 1/30/2012.

8. P043, R12

Operations, Property and/or Equipment Description:

Specialty chemical making vacuum/pressurized multi-purpose reactor and condenser system. Emissions from this system are controlled by a scrubber also attached to EU P014, P031, P038, P039 and P041

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)d., d)(3), d)(4), d)(5), d)(6), and e)(3).

(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)(a)(ii)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM ₁₀ and VOC emissions from this emissions unit since the controlled potential to emit is less than 10 tons/year for each pollutant.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average except as provided by rule.
c.	OAC rule 3745-17-11(A)	Particulate emissions (PE) shall not exceed 3.98 lbs/hr.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-114-01	See g)(1) below.

(2) Additional Terms and Conditions

- a. The emissions from this emissions unit shall be vented to the wet scrubber at all times the emissions unit is in operation.
- b. The VOC emissions from this emissions unit shall be vented to a condenser (used for material recovery) at all times the emissions unit is in operation. The condenser is part of the physical and operational design of the reactor.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber, the liquid flow rate, and the liquid pH shall be based upon the manufacturer's specifications, with any modifications deemed necessary by the permittee, until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
- (2) The permittee shall properly operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge), the scrubber liquid flow rate (in gallons per minute), and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid's pH and flow rate on a daily basis. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable liquid flow rate and the liquid pH shall be based upon the manufacturer's specifications, with any modifications deemed necessary by the permittee, until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pressure drop, flow rate, and pH readings 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.

These range(s) and/or limit(s) for the pressure drop, liquid flow rate, and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the permitted range or limit for the pressure drop, liquid flow rate, or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range or 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.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Cleveland Division of Air Quality (CDAQ) 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.
- (2) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the wet scrubber during the 12-month reporting period for this/these emissions unit(s):

- a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber, the liquid flow rate, or the liquid pH was outside of the appropriate range or limit specified by the manufacturer, with any modifications deemed necessary by the permittee, and outside of the acceptable range for each parameter following any required compliance demonstration;
 - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
 - c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;
 - d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the pressure drop, liquid flow rate, or scrubber liquid pH into compliance with the appropriate range or limit contained in this permit, was determined to be necessary and was not taken; and
 - e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of 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.
- (4) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the CDAQ.
- f) **Testing Requirements**
- (1) Compliance with the emission limitations in b)(1) of these terms and conditions shall be determined in accordance with the following methods:
- a. Emission Limitation
Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method
If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with U.S. EPA Method 9 of 40 CFR Part 60, Appendix A.
 - b. Emission Limitation
3.98 lbs/hr of particulate emissions

Applicable Compliance Method

If required, the permittee shall determine compliance with the lb/hr emission limitation through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

g) **Miscellaneous Requirements**

- (1) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified PTIO prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.
- (2) This renewal permit supersedes P0128549. The emission unit was installed 4/22/2014.

9. P045, R-14 Multipurpose reactor system

Operations, Property and/or Equipment Description:

Stainless steel reactor vessel for manufacturing specialty chemicals, controlled by a scrubber

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)d., and g)(1).

(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)(a)(ii)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM ₁₀ and VOC emissions from this emissions unit since the controlled potential to emit is less than 10 tons/year for each pollutant.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions from the scrubber stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule.
c.	OAC rule 3745-17-11(B)	Particulate emissions shall not exceed 0.91 lb/hr.
d.	OAC rule 3745-114-01	See g)(1) below.

- (2) Additional Terms and Conditions
 - a. None.
- c) Operational Restrictions
 - (1) The emissions from this emissions unit shall be vented to the wet scrubber at all times the emissions unit is in operation.
 - (2) The permittee shall maintain the scrubber in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
- d) Monitoring and/or Recordkeeping Requirements
 - (1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber, the liquid flow rate, and the liquid pH shall be based upon the manufacturer's specifications, with any modifications deemed necessary by the permittee, until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
 - (2) The permittee shall properly operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge), the scrubber liquid flow rate (in gallons per minute), and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber, the scrubber liquid flow rate, and the scrubber liquid's pH on a daily basis. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable liquid flow rate and the liquid pH shall be based upon the manufacturer's specifications, with any modifications deemed necessary by the permittee, until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pressure drop, flow rate, and pH readings 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.

These range(s) and/or limit(s) for the pressure drop, liquid flow rate, and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the permitted range or limit for the pressure drop, liquid flow rate, or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range or 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.

- (3) The permittee shall maintain records of all maintenance performed on the scrubber that follows the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Cleveland Division of Air Quality (CDAQ) 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.
- (2) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the wet scrubber during the 12-month reporting period for this/these emissions unit(s):

- a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber, the liquid flow rate, or the liquid pH was outside of the appropriate range or limit specified by the manufacturer, with any modifications deemed necessary by the permittee, and outside of the acceptable range for each parameter following any required compliance demonstration;
 - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
 - c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;
 - d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the pressure drop, liquid flow rate, or scrubber liquid pH into compliance with the appropriate range or limit contained in this permit, was determined to be necessary and was not taken; and
 - e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.
- (3) The reports required by this permit may be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal; or they may be mailed as a hard copy to the CDAQ.
- 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. Emission Limitation:

Visible particulate emissions from the stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.
 - b. Emission Limitation:

Particulate emissions shall not exceed 0.91 lb/hr.

Applicable Compliance Method:

If required, compliance shall be determined through stack testing performed in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

(1) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified PTIO prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.

(2) The potential to emit for VOC and particulate emissions was determined as follows:

VOC

The permittee's emission calculations for the process that were included with the application determined a maximum uncontrolled VOC emission rate of 1.4 lbs VOC/hr.

$$\text{Uncontrolled lbs VOC/hr} \times (1 - 0.95 \text{ control efficiency}) = X \text{ lbs VOC/hr}$$

$$1.4 \text{ lbs VOC/hr} \times (1 - 0.95) = 0.07 \text{ lb VOC/hr}$$

$$0.07 \text{ lb VOC/hr} \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} = 0.31 \text{ tpy VOC}$$

Particulate emissions

$$\text{Solids charged per batch} = 7700 \text{ lbs/batch}$$

$$\text{Emission factor} = 3.1 \text{ lbs PE/ton of charge}$$

$$\text{PM/PM}_{10} \text{ emission per batch}$$

$$= (7700 \text{ lbs/batch}) \times (\text{ton}/2000 \text{ lbs}) \times (3.1 \text{ lbs PE/ton charge}) = 11.935 \text{ lbs PE/batch}$$

$$\text{Hourly PM/PM}_{10} \text{ emission at } 36.83 \text{ hrs/batch}$$

$$= (11.935 \text{ lbs PE/batch}) / (36.83 \text{ hrs/batch}) = 0.324 \text{ lb PE/hr}$$

$$0.324 \text{ lb PE/hr} \times (1 - 0.95) = 0.016 \text{ lb PE/hr}$$

$$\text{Annual PM/PM}_{10} = (0.016 \text{ lb PE/hr}) \times (8760 \text{ hrs/yr}) \times (\text{ton}/2000 \text{ lbs}) = 0.07 \text{ TPY PE}$$

(3) This renewal permit supersedes P0128549. The emission unit was installed 09/14/2021.