MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

October 14, 2021

PERMIT TO INSTALL
31-12B

ISSUED TO
Ash Stevens, LLC

LOCATED AT
18665 Krause Street
Riverview, Michigan 48193

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
N7519

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **July 14, 2021**	
DATE PERMIT TO INSTALL APPROVED: **October 14, 2021**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H_2S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO_x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Flexible Group ID
EU-MainBay	Main bay process area. Includes four glass-lined reactors, four process condensers, a 40-inch vertical basket centrifuge (ID C5), and a wet scrubber (ID CS1). Reactors and nominal capacities are: R-4, 100 gallons R-10, 500 gallons R-12, 300 gallons R-15, 100 gallons Process condensers and operating temperatures are: HX-4, 5 degrees C HX-10, 5 degrees C HX-12, 5 degrees C HX-15, 5 degrees C This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-Bay1100	Bay 1100 process area. Includes one glass-lined reactor, one Hastelloy reactor, and three process condensers. Reactors and nominal capacities are: RX-1101, 100 liters RX-1102, 100 liters Process condensers and lowest coolant operating temperatures are: HX-1101, -15 degrees C HX-1102, -15 degrees C HX-1103, -15 degrees C This equipment exhausts to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-Bay300	Bay 300 process area. Includes three glass-lined reactors and three process condensers. Reactors and nominal capacities are: RX-0301, 100 gallons RX-0302, 100 gallons RX-0303, 100 gallons Process condensers and lowest coolant operating temperatures are: HX-0301, -15 degrees C HX-0302, -15 degrees C HX-0303, -15 degrees C This equipment exhausts to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Flexible Group ID
EU-Bay400	Bay 400 process area. Contains a 40-inch vertical basket centrifuge (ID CTFG-0401). This equipment exhausts to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-Bay500	Bay 500 process area. Includes three glass-lined reactors and two process condensers. Reactors and nominal capacities are: RX-0501, 100 gallons RX-0502, 50 gallons RX-0503, 100 gallons Process condensers and lowest coolant operating temperatures are: HX-0501, -15 degrees C HX-0502, -15 degrees C This equipment exhausts to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-Bay600	Bay 600 process area. Includes three glass-lined reactors, four process condensers, a filter dryer with 1.5 square meter filter area (ID FD-0701), and two wet scrubbers (IDs CS2 and SC-2010). Reactors and nominal capacities are: RX-0601, 1000 gallons RX-0602, 750 gallons RX-0603, 500 gallons Process condensers and lowest coolant operating temperatures are: HX-0601, -15 degrees C HX-0602, -15 degrees C HX-0603, -15 degrees C HX-0703, -15 degrees C This equipment exhausts to an emission control condenser with the stated exit temperature: HX-2017, -10 degrees C This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Flexible Group ID
EU-Bay-1400	Bay 1400 process area. Includes two glass-lined reactors, one Hastelloy reactor, a filter dryer with a 1.0 square meter filter area (ID FD01501), and four process condensers. Reactors and nominal capacities are: RX-1401, 1,000 gallons RX-1402, 750 gallons RX-1403, 750 gallons Process condensers and lowest coolant operating temperatures are: HX-1401, -15 degrees C HX-1402, -15 degrees C HX-1403, -15 degrees C HX-1501, -15 degrees C This equipment exhausts to an emission control condenser with the stated exit temperature: HX-3014, -14 degrees C This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-VacOven	Vacuum tray dryer with 7 shelves. This equipment exhausts to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-FilterDryer1	Portable filter dryer FD-01, 0.3 square meter filter area. This equipment may exhaust without emission control or to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-FilterDryer2	Portable filter dryer FD-02, 0.03 square meter filter area. This equipment may exhaust without emission control or to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-FilterDryer3	Portable filter dryer FD-03, 0.3 square meter filter area. This equipment may exhaust without emission control or to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Flexible Group ID
EU-FilterDryer4	Portable Rosenmund filter dryer FD-04, 0.1 square meter filter area. This equipment may exhaust without emission control or to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-FilterDryer5	Portable Rosenmund filter dryer FD-05, 0.3 square meter filter area. This equipment may exhaust without emission control or to an emission control condenser with the stated exit temperature: HX-2014, 6 degrees F HX-2017, 6 degrees F This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-FilterHousng3	Portable Nutsche filter housing FH-03, 0.2 square meter filter area. This equipment exhausts without emission control. This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-ConvOven	Gruenberg convection oven O-20, with 20 trays. This equipment does not exhaust to an emission control device. This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs
EU-MixTank	Portable mixing tank, 100 gallon capacity. This equipment may be subject to 40 CFR Part 63 Subpart VVVVVV when processing HAPs listed in Table 1 of Subpart VVVVVV.	FG-MfgAPIs

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-MfgAPIs	Equipment used to manufacture active pharmaceutical ingredients.	EU-MainBay, EU-Bay1100, EU-Bay300, EU-Bay400, EU-Bay500, EU-Bay600, EU-Bay-1400, EU-VacOven, EU-FilterDryer1, EU-FilterDryer2, EU-FilterDryer3, EU-FilterDryer4, EU-FilterDryer5, EU-FilterHousng3, EU-ConvOven, EU-MixTank

FG-MfgAPIs
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Equipment used to manufacture active pharmaceutical ingredients.

Emission Unit: EU-MainBay, EU-Bay1100, EU-Bay300, EU-Bay400, EU-Bay500, EU-Bay600, EU-Bay-1400, EU-VacOven, EU-FilterDryer1, EU-FilterDryer2, EU-FilterDryer3, EU-FilterDryer4, EU-FilterDryer5, EU-FilterHousng3, EU-ConvOven, EU-MixTank

POLLUTION CONTROL EQUIPMENT

As noted in the Emission Unit Identification Table, some equipment exhausts to condenser HX-2014, HX-2017, or HX-3014. Scrubbers CS1, CS2, SC-2010, and SC-3010 also provide emission control.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC[a]	6 tons per year	12-month rolling time period as determined at the end of each calendar month	FG-MfgAPIs	SC VI.2	R 336.1702(a)
2. Organic compounds that are not VOCs[a]	6 tons per year[1]	12-month rolling time period as determined at the end of each calendar month	FG-MfgAPIs	SC VI.3	R 336.1224
3. Inorganic acids[b]	3 tons per year[1]	12-month rolling time period as determined at the end of each calendar month	FG-MfgAPIs	SC VI.3	R 336.1224
4. Inorganic bases[c]	3 tons per year[1]	12-month rolling time period as determined at the end of each calendar month	FG-MfgAPIs	SC VI.3	R 336.1224
5. PM	Less than 0.14 lb per hr[1]	Hourly	FG-MfgAPIs	SC VI.4	R 336.1225, R 336.1226(a)
6. PM	Less than 10 lbs per month[1]	Each calendar month	FG-MfgAPIs	SC VI.5	R 336.1225, R 336.1226(a)

[a] VOC is defined in Rule 122 (R 336.1122). Methylene chloride and acetone are examples of organic compounds that are not VOCs.
[b] Hydrogen chloride and hydrogen sulfide are examples of inorganic acids.
[c] Ammonia is an example of an inorganic base.

7. The emission from FG-MfgAPIs of each individual toxic air contaminant (TAC) shall not exceed any of the maximum emission rates (MERs) calculated for that TAC according to Appendix A. The MERs are in addition to, and do not replace, any applicable emission limit for combined pollutants in FG-MfgAPIs SC I.1 through I.6. Emissions of any TAC that is also particulate matter are exempt from this requirement unless either of the following is true.[1] **(R 336.1225)**
   a. The TAC is a carcinogen.
   b. The TAC is a high concern TAC listed in Table 20 in Rule 226 (R 336.1226).

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate any equipment in FG-MfgAPIs unless a malfunction abatement plan (MAP) as described in Rule 911(2), for FG-MfgAPIs, has been approved by the AQD and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

2. The permittee shall not operate any process step in FG-MfgAPIs that exhausts to a scrubber unless a scrubber operating plan (scrubber plan) has been approved by the AQD and is implemented and maintained. All scrubber use must comply with the AQD-approved scrubber plan. The permittee shall amend the scrubber plan within 45 days upon request from the AQD District Supervisor. The permittee shall submit any amendments to the scrubber plan to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 60 days of submittal, the amended scrubber plan shall be considered approved. **(R 336.1224, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain scrubbers CS1, CS2, SC-2010, and SC-3010 with liquid flow rate indicators. **(R 336.1910)**

2. The permittee shall equip and maintain condenser HX-2014, condenser HX-2017, and condenser HX-3014 with temperature indicators for the exhaust vapors. **(R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1224, R 336.1225, R 336.1702(a))**

2. The permittee shall calculate the VOC emission rate from FG-MfgAPIs monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1702(a))**

3. Each month, the permittee shall calculate the emission rates of the pollutants listed below from FG-MfgAPIs, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[1] **(R 336.1224)**
   a) Organic compounds that are not VOCs
   b) Inorganic acids
   c) Inorganic bases

4. The permittee shall keep, in a satisfactory manner acceptable to the AQD District Supervisor, a record of the data and calculations used to demonstrate compliance with SC I.5 for each activity generating PM emissions. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1225)**

5. The permittee shall calculate the PM emission rates from FG-MfgAPIs monthly, for the preceding month, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[1] **(R 336.1225, R 336.1225(2))**

6. The permittee shall keep, in a satisfactory manner, a description of each process carried out in FG-MfgAPIs. The description for each process shall include the information listed below and all other information needed to demonstrate how emissions from the process comply with the emission limits in FG-MfgAPIs SC I.1 through I.7. The permittee shall keep all descriptions on file at the facility and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702(a))**
   a) Raw materials used
   b) Products, byproducts, and wastes generated
   c) Process step descriptions
   d) Process operating variable set points
   e) TACs emitted
   f) Emission calculations
   g) The screening levels and associated averaging times that apply to each TAC

7. The permittee shall keep, in a satisfactory manner, monthly records of all processes carried out in FG-MfgAPIs. The records shall include dates and times of operation for each process batch and dates and times when pollutants were emitted. The permittee shall cross-reference these records with the process-specific emission demonstration required by FG-MfgAPIs SC VI.6. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702(a))**

8. The permittee shall maintain a current list of the materials used in FG-MfgAPIs that are determined to be exempt from the health-based screening level requirement of Rule 225. The list shall include the compound name, the compound's CAS number (if available), and a calculation demonstrating the emission rate of each material. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[1] **(R 336.1226(a))**

9. Whenever the permittee operates a process step in FG-MfgAPIs that exhausts to a scrubber, the permittee shall monitor and record, in a satisfactory manner, the process and scrubber settings and variables identified in the approved scrubber plan for that process step, at the frequency described in the approved scrubber plan. **(R 336.1910)**

10. Whenever the permittee operates a process step in FG-MfgAPIs that exhausts to condenser HX-2014, condenser HX-2017, or condenser HX-3014, the permittee shall monitor and record the condenser temperature, in a satisfactory manner, at least once each shift while the process exhausts to one of these condensers. During periods of unattended operation, "once each shift" means monitoring and recording temperatures within one hour of the times the period of unattended operation begins and ends. **(R 336.1910)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FGFACILITY CONDITIONS

DESCRIPTION

The following conditions apply source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Each individual HAP	Less than 9 tons per year	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.2a	R 336.1205(3)
2. Aggregate HAPs	Less than 22.5 tons per year	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.2b	R 336.1205(3)
3. Hydrogen chloride (HCl) before emission control	Less than 9 tons per year	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC II.1, VI.2c	40 CFR 63.11494(e)

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Mass of reactive chlorine atoms[a] fed to reactors	17,000 lb per year	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.1	40 CFR 63.11494(e)

[a] "Reactive chlorine" refers to chlorine atoms with the potential to generate hydrogen chloride gas. Examples include the chlorine in phosphoryl chloride, thionyl chloride, or hydrogen chloride. The chlorine atoms in chlorinated reagents used as the solvent environment for chemical reactions are not subject to this material limit. Methylene chloride is an example of a chlorinated reagent whose chlorine atoms are not subject to this material limit.

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the material feeds listed below. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(40 CFR 63.11494(e))**
   a. The identity and quantity of each reagent containing reactive chlorine fed to reactors in FGFACILITY during each month and 12-month rolling time period
   b. The mass of reactive chlorine atoms fed to reactors in FGFACILITY during each month and 12-month rolling time period

2. Each month, the permittee shall calculate the emission rates listed below for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request.
   a. Each individual HAP, from FGFACILITY **(R 336.1205(3))**
   b. Aggregate HAPs, from FGFACILITY **(R 336.1205(3))**
   c. HCl before emission control, from FGFACILITY, based on a mass balance of reactive chlorine atoms fed to reactors in FGFACILITY **(40 CFR 63.11494(e))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV_EF-4	10	30	R 336.1225, 40 CFR 52.21(c)&(d)
2. SV_EF-5	14	30	R 336.1225, 40 CFR 52.21(c)&(d)
3. SV_V-2014	3	34	R 336.1225, 40 CFR 52.21(c)&(d)
4. SV_V-2017	4	34	R 336.1225, 40 CFR 52.21(c)&(d)
5. SV_V-201020	1.5	30	R 336.1225, 40 CFR 52.21(c)&(d)
6. SV_V-201025	1.5	30	R 336.1225, 40 CFR 52.21(c)&(d)
7. SV_OvenO-20	8	27	R 336.1225, 40 CFR 52.21(c)&(d)
8. SV_3014	4	50	R 336.1225, 40 CFR 52.21(c)&(d)
9. SV_3010	3	50	R 336.1225, 40 CFR 52.21(c)&(d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and VVVVVV, as they apply to the emission units in FGFACILITY. **(40 CFR Part 63 Subparts A & VVVVVV)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

APPENDIX A
Determining Maximum Emission Rates of TACs Emitted from FG-MfgAPIs

Each toxic air contaminant (TAC) emitted from FG-MfgAPIs that is subject to FG-MfgAPIs SC I.7 must meet all the MERs that apply to it. The permittee shall determine the maximum emission rates (MERs) allowed by FG-MfgAPIs SC I.7 as described below.

Steps

1. For each TAC emitted, determine all of the TAC's screening levels and the associated averaging times.
   a. For each TAC, the permittee shall use screening levels listed by the AQD, unless the AQD has not listed any screening levels for the TAC.
   b. If the AQD has not listed any screening levels for a TAC, the permittee may request approval for specified emissions of the TAC, may propose screening levels according to Rules 229, 231, 232, and 233 (R 336.1229, R 336.1231, R 336.1232, and R 336.1233) for AQD review, or may propose for AQD review that the TAC is particulate matter and its emissions meet the criteria of Rule 226(a) (R 336.1226(a)).
      1) The permittee shall submit proposed emission rates and, as applicable, proposed screening levels, supporting data, and a summary of research indicating the TAC is not a carcinogen to the AQD Toxics Unit Supervisor and to the AQD District Supervisor. Proposed emission rates shall include maximum emissions for any one-hour period, any eight-hour period, any 24-hour period, and any month.
      2) The AQD will establish screening levels, concur, or disagree with a proposed Rule 226(a) conclusion, or otherwise determine the acceptability of the proposed emission within 30 days of receipt of the submittal.
2. For each screening level that applies to the TAC, identify which rows of the table must be used: row A for a one-hour averaging time, rows B1 and B2 for an eight-hour averaging time, rows C1 and C2 for a 24-hour averaging time, or rows D1 and D2 for an annual averaging time.
3. For each screening level, calculate each MER that applies.
4. A TAC may have more than one MER for the same time period. For example, there may be more than one MER in pounds per month or pounds per hour. For each time period where more than one MER applies, determine the lowest calculated MER for that time period. This lowest calculated MER is the maximum amount of the TAC that may be emitted during that time period.
5. A TAC may have a screening level note requiring the permittee to determine additional MERs. The screening level note will specify the method of calculation and indicate which TACs are subject to it.
   a. If the screening level note provides a screening level that the combined ambient impact of specified TACs must meet, the permittee must calculate additional MERs using that screening level. The emissions of all TACs with such a screening level note must meet the MERs calculated from their respective screening levels and the combined emissions of the specified TACs must also meet the additional MERs for the emissions of these TACs to comply with FG-MfgAPIs SC I.7.
   b. If the screening level note indicates the combined ambient impact of specified TACs must meet a hazard index, there will be an explanatory footnote. The permittee must follow the Rule 227(1)(a) method in the Hazard Index Calculation Procedure in the explanatory footnote to determine the hazard index for the combined emissions. The emissions of all TACs with such a screening level note must meet their own MERs and the combined emissions of the specified TACs must also meet the hazard index requirement for the emissions to comply with FG-MfgAPIs SC I.7.

   To follow the Rule 227(1)(a) method, use the lowest applicable MER for each specified TAC, for the specified averaging time, in place of the AERs used in the Rule227(1)(a) method described in the explanatory footnote to the screening level note. See Example 4 below for an example hazard index calculation.

Maximum Emission Rate Table (MER Table)

	Averaging Time	Mathematical Statement
A	One hour	$MER\ (in\ lb/hour) \leq [Initial\ Screening\ Level*] \times [0.001]$
B1	Eight hours	$MER\ (in\ lb/8\ hours) \leq [Initial\ Screening\ Level*] \times [0.02]$
B2	Eight hours	$MER\ (in\ lb/hour) \leq [Initial\ Screening\ Level*] \times [0.02]$
C1	24 hours	$MER\ (in\ lb/24\ hours) \leq [Initial\ Screening\ Level*] \times [0.12]$
C2	24 hours	$MER\ (in\ lb/hour) \leq [Initial\ Screening\ Level*] \times [0.05]$
D1	Annual	$MER\ (in\ lb/month) \leq [Initial\ Screening\ Level*] \times [40]$
D2	Annual	$MER\ (in\ lb/hour) \leq [Initial\ Screening\ Level*] \times [0.54]$
	* Secondary risk screening levels shall not be used for this table.	

"*MER*" is in the units given in the mathematical statement. It is the total amount of a pollutant allowed to be emitted over the time specified.

"*Initial Screening Level*" is an Initial Threshold Screening Level or Initial Risk Screening Level that applies to the TAC. Note that some averaging times involve two mathematical statements. Also, a TAC may have more than one initial screening level.

Examples:

Example 1: Pollutant X has two screening levels.

Averaging time	Initial Screening level (µg/m^3)
One hour	200
Annual	5

Therefore, MERs must be calculated from three rows of the MER table: row A for the one-hour averaging time, and both rows D1 and D2 for the annual averaging time.

From row A: the MER is 200 × 0.001 = 0.2 pound per hour
From row D1: the MER is 5 × 40 = 200 pounds per month
From row D2: the MER is 5 × 0.54 = 2.7 pounds per hour

Both row A and row D2 give an MER for a one-hour period. Meeting the lower of the two complies with both. Therefore, Pollutant X must meet two emission limits:

- 0.2 pound per hour (Meeting this MER also meets the row D2 MER of 2.7 pounds per hour.)
- 200 pounds per month.

Example 2: Pollutant Y has three screening levels.

Averaging time	Initial Screening level (µg/m^3)
One hour	400
24-hour	150
Annual	50

Therefore, MERs must be calculated from five rows of the MER table: row A for the one-hour averaging time, rows C1 and C2 for the 24-hour averaging time, and rows D1and D2 for the annual averaging time.

From row A: the MER is 400 × 0.001 = 0.4 pound per hour
From row C1: the MER is 150 × 0.12 = 18 pounds per 24 hours
From row C2: the MER is 150 × 0.05 = 7.5 pounds per hour
From row D1: the MER is 50 × 40 = 2,000 pounds per month
From row D2: the MER is 50 × 0.54 = 27 pounds per hour

Pollutant Y has three one-hour MERs. The lowest one-hour MER is from row A. Therefore, Pollutant Y must meet three emission limits:

- 0.4 pound per hour (Meeting this MER also meets the row C2 and row D2 MERs of 7.5 and 27 pounds per hour.)
- 18 pounds per 24 hours
- 2,000 pounds per month

Example 3: Along with the information in Examples 1 and 2, consider that Pollutant X is a VOC and Pollutant Y is an inorganic acid.

This does not change the results of Examples 1 and 2. The MERs and emission limits calculated there still apply. In addition to those limits for the individual pollutants, each of these pollutants' emissions counts against the allowed total for its category, VOC or inorganic acid, in SC I.1 and I.3.

- Monthly emissions of Pollutant X, a VOC, must be summed with other VOC emissions from that month, and the 12-month rolling time period total must not exceed the limit in SC I.1: 6 tons per year.
- Monthly emissions of Pollutant Y, an inorganic acid, must be summed with other inorganic acid emissions from that month, and the 12-month rolling time period total must not exceed the limit in SC I.3: 3 tons per year.

Example 4: Pollutants A and B have these screening levels.

Pollutant	**Averaging time**	**Initial Screening level (µg/m^3)**
A	One hour	800
B	One hour	400

Both pollutants have a screening level note, 39. Note 39 states that the hazard index for the combined ambient impact of Pollutant A and Pollutant B must not exceed one. Based on the explanatory footnote for note 39, using the Rule 227(1)(a) method with the MERs instead of the AERs, the hazard index (HI) is calculated as follows:

$$HI = \frac{PER_A}{MER_A} + \frac{PER_B}{MER_B}$$

Where PER refers to the "Proposed Emission Rate" or the actual pollutant emission rate. The MER is calculated as directed above. If the estimated emission rate of Pollutant A is 0.37 lb/hr and the estimated emission rate of Pollutant B is 0.21 lb/hr, the Hazard Index is less than one:

$$HI = \frac{0.37\ lb/hr}{0.80\ lb/hr} + \frac{0.21\ lb/hr}{0.40\ lb/hr} = 0.99$$