

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

August 4, 2020

**PERMIT TO INSTALL**  
76-05C

**ISSUED TO**  
Honeywell International, Burdick and Jackson

**LOCATED AT**  
1953 South Harvey Street  
Muskegon, Michigan 49442

**IN THE COUNTY OF**  
Muskegon

**STATE REGISTRATION NUMBER**  
B4303

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: <b>June 15, 2020</b>	
DATE PERMIT TO INSTALL APPROVED: <b>August 4, 2020</b>	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 <sub>2</sub> e	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 <sub>2</sub> S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO <sub>x</sub>	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 <sub>2</sub>	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 conditions 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 (Process Equipment & Control Devices)	Flexible Group ID	Stack Identification
EUBR1	Bottling Room #1 - packaging area where liquid products are charged into product containers.	FGPACKAGING	SV-29
EUBR2	Bottling Room # 2 - packaging area where liquid products are charged into product containers.	FGPACKAGING	SV-30
EUBR3	Bottling Room #3 - packaging area where liquid products are charged into product containers.	FGPACKAGING	SV31
EUCRET	Clean Room Elephant Trunks - packaging area where liquid products are charged into product containers.	FGPACKAGING	SV-32
EUCRWHS	Clean Room Warehouse - packaging area where liquid products are charged into product containers.	FGPACKAGING	SV-33
EUPRR5	Production Room #5 - packaging area where liquid products are charged into product containers.	FGPACKAGING	SV-34
EUPRR3	Production Room #3 - packaging area where liquid products are charged into product containers.	FGPACKAGING	SV-35
EUMETERS	Meters - packaging area where liquid products are charged into product containers.	FGPACKAGING	SV-36
EUR-3REACTOR	300 gallon batch treatment reactor operation used for processing various chemicals at the facility.	NA	SVR-13
EUR-7REACTOR	750 gallon batch reactor operation used for processing various chemicals at the facility.	NA	SVR-7
EUR-8REACTOR	1000 gallon batch reactor operation used for processing various chemicals at the facility.	NA	SVR-9
EUR-9REACTOR	750 gallon batch reactor operation used for processing various chemicals at the facility.	NA	SVR-8
EUS-5STILL	108 gallon batch distillation unit used for processing various chemicals at the facility.	FGSTILLS	SVS-12
EUS-6STILL	216 gallon batch distillation unit used for processing various chemicals at the facility.	FGSTILLS	SVS-14
EUS-7STILL	216 gallon batch distillation unit used for processing various chemicals at the facility.	FGSTILLS	SVS-15
EUS-8STILL	540 gallon batch distillation unit used for processing various chemicals at the facility. Emissions are controlled by a secondary condenser while processing chloroform and 1,4-dioxane.	FGSTILLS	SVS-17a, SVS-17b
EUS-9STILL	540 gallon batch distillation unit used for processing various chemicals at the facility.	FGSTILLS	SVS-18

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID	Stack Identification
EUS-10STILL	1,000 gallon batch distillation unit used for processing various chemicals at the facility.	FGSTILLS	SVS-22
EUS-11STILL	1,000 gallon batch distillation unit used for processing various chemicals at the facility.	FGSTILLS	SVS-21
EUS-12STILL	1,500 gallon batch distillation unit used for processing various chemicals at the facility.	FGSTILLS	SVS-5
EUS-13STILL	1500 gallon batch distillation unit used for processing various chemicals at the facility. Emissions are controlled by a secondary condenser operating at a temperature of -30 deg. C.	FGSTILLS	SVS-2
EUS-14STILL	1500 gallon batch distillation unit used for processing various chemicals at the facility. Emissions are controlled by a secondary condenser operating at a temperature of -25 deg. C.	FGSTILLS	SVS-3
EUBLENDING	High purity (HP) blends I and II. HP I blending occurs in the shipping containers and emissions are vented through the existing snorkel system (part of the existing packaging operations) which vents to stack 33 and the existing waste tank which is vented to stack 37. HP II will include a fixed 300 gallon mix tank that will incorporate solids, acids, and bases in the mixes. HP II will vent to the existing waste tank and to the atmosphere through stack 37.	NA	SV-33, SV-37

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.

**EUBLENDING  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

High purity (HP) blends I and II. HP I blending occurs in the shipping containers and emissions are vented through the existing snorkel system (part of the existing packaging operations) which vents to stack 33 and the existing waste tank which is vented to stack 37. HP II will include a fixed 300 gallon mix tank that will incorporate solids, acids, and bases in the mixes. HP II will vent to the existing waste tank and to the atmosphere through stack 37.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing Monitoring Method	Underlying Applicable Requirements
1. VOC	2.6 tpy	12-month rolling time period as determined	EUBLENDING	SC VI.1, SC VI.3, SCVI.4	R 336.1205, R 336.1225
2. Chloroform	0.77 lb/batch	Test Protocol*	EUBLENDING	GC 13, SC VI.2, SC VI.3	R 336.1205, R 336.1225
	10 lb/month	Monthly Basis			
3. 1,4 dioxane	0.13 lb/batch	Test Protocol*	EUBLENDING	GC 13, SC VI.2, SC VI.3	R 336.1205, R 336.1225
	10 lb/month	Monthly Basis			
4. methylene chloride	0.44 lb/batch	Test Protocol*	EUBLENDING	GC 13, SC VI.2, SC VI.3	R 336.1205, R 336.1225
	10 lb/month	Monthly Basis			
5. tetrahydrofuran	0.44 lb/batch	Test Protocol*	EUBLENDING	GC 13, SC VI.2, SC VI.3	R 336.1205, R 336.1225
	10 lb/month	Monthly Basis			
6. trichloroethylene	0.35 lb/batch	Test Protocol*	EUBLENDING	GC 13, SC VI.2, SC VI.3	R 336.1205, R 336.1225
	10 lb/month	Monthly Basis			
7. triethylamine	0.25 lb/batch	Test Protocol*	EUBLENDING	GC 13, SC VI.2, SC VI.3	R 336.1205, R 336.1225
	10 lb/month	Monthly Basis			

\* Test protocol shall specify averaging time

**II. MATERIAL LIMIT(S)**

<b>Material</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
1. High Purity Blends	150,000 liters per year	12-month rolling time period as determined at the end of each calendar month.	HP I (shipping containers)	SC VI.1	R 336.1205(3), R 336.1225,
2. High Purity Blends	300,000 liters per year	12-month rolling time period as determined at the end of each calendar month.	HP II (300 gallon mix tank)	SC VI.1	R 336.1205(3), R 336.1225
3. Chloroform	12 batches per month	Monthly basis	EUBLENDING	SC VI.2	R 336.1205(3), R 336.1225
4. 1,4 dioxane	31 batches per month	Monthly basis	EUBLENDING	SC VI.2	R 336.1205(3), R 336.1225
5. methylene chloride	6 batches per month	Monthly basis	EUBLENDING	SC VI.2	R 336.1205(3), R 336.1225
6. tetrahydrofuran	23 batches per month	Monthly basis	EUBLENDING	SC VI.2	R 336.1205(3), R 336.1225
7. trichloroethylene	28 batches per month	Monthly basis	EUBLENDING	SC VI.2	R 336.1205(3), R 336.1225
8. triethylamine	31 batches per month	Monthly basis	EUBLENDING	SC VI.2	R 336.1205(3), R 336.1225

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not process more than 100 liters per batch when chloroform, 1,4-dioxane, methylene chloride, tetrahydrofuran, trichloroethylene, or triethylamine is used in a batch for EUBLENDING. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.1901)**

**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, a record of the number of liters processed in EUBLENDING, as required by SC II.1 and II.2 on a monthly and 12 month rolling time period basis as determined at the end of each calendar month. All records shall be kept on file at the facility and made available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901, R 336.1910)**
2. The permittee shall keep, in a satisfactory manner, the number and size (in liters) of batches processed in EUBLENDING containing chloroform, 1,4-dioxane, methylene chloride, tetrahydrofuran, trichloroethylene or triethylamine, as required by SC II.2 through 8 and SC III.1. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1702, R 336.1901, R 336.1910)**

3. The permittee shall keep records of all batches processed in EUBLENDING including the chemicals used, weights and volumes processed, and batch run times. The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file and made available to the Department upon request. **(R 336.1225, R 336.1901, R 336.1702(a))**
4. The permittee shall calculate and keep records of the VOC emissions from EUBLENDING on a monthly and 12-month rolling time period basis as determined at the end of each calendar month. The records shall be kept in a format acceptable to the AQD District Supervisor and using calculation methods acceptable to the AQD District Supervisor. All records shall be kept on file and made available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1901, R 336.1702(a))**

**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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-37	1	32.5	R 336.1225
2. SV-33	6	40.4	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<b>EUR-3REACTOR EMISSION UNIT CONDITIONS</b>
--

**DESCRIPTION**

300 gallon batch treatment reactor operation used for processing various chemicals at the facility.

Flexible Group ID: NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	6.0 pounds per batch	Duration of each batch.	EUR-3REACTOR	SC VI.1, SC VI.2	R 336.1702(a)
2. VOC	0.05 tpy	12-month rolling time period as determine at the end of each calendar month.	EUR-3REACTOR	SC VI.1, SC VI.2	R 336.1702(a)

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not process chloroform, dioxane, or ethylene dichloride in EUR-3REACTOR. (R 336.1225, R 336.1901)

**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 records of all batches processed in EUR-3REACTOR including the chemicals used, weights and volumes processed, and batch run times. The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file and made available to the Department upon request. (R 336.1225, R 336.1901, R 336.1702(a))

2. The permittee shall calculate and keep records of the VOC emissions from EUR-3REACTOR on a monthly and 12-month rolling time period basis as determined at the end of each calendar month. The records shall be kept in a format acceptable to the AQD District Supervisor and using calculation methods acceptable to the AQD District Supervisor. All records shall be kept on file and made available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1901, R 336.1702(a))**

**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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVR-13	1	29.5	R 336.1225, R 336.1901, 40 CFR 52.21 (c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**EUR-7REACTOR  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

750 gallon batch reactor operation used for processing various chemicals at the facility.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Ethylene dichloride	0.61 pph	Test Protocol*	EUR-7REACTOR	GC 13, SC VI.I	R 336.1225
2. Ethylene Dichloride	133 lbs per year	12-month rolling time period as determined at the end of each calendar month.	EUR-7REACTOR	SC VI.3, SC VI.4	R 336.1225, R 336.1227(2), R 336.1901
3. 1,4-dioxane	0.077 pph	Test Protocol*	EUR-7REACTOR	GC 13	R 336.1225, R 336.1901
4. 1,4-dioxane	30 lbs per year	12-month rolling time period as determined at the end of each calendar month.	EUR-7REACTOR	SC VI.3, SC VI.4	R 336.1225
5. VOC	0.38 tpy	12-month rolling time period as determined at the end of each calendar month.	EUR-7REACTOR	SC VI.3, SC VI.4	R 336.1225, R 336.1702(a)

\* Test protocol shall specify averaging time

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not process more than four batches per month and 30 batches per 12-month rolling time period as determined at the end of each calendar month of 1,4-dioxane in EUR-7REACTOR. **(R 336.1225)**
2. The permittee shall not process chloroform in EUR-7REACTOR. **(R 336.1225, R 336.1901).**
3. The permittee shall not process more than 20 batches per 12-month rolling time period as determined at the end of each calendar month of ethylene dichloride in EUR-7REACTOR. **(R 336.1225, R 336.1702(a))**

4. The permittee shall not process 1,4-dioxane in EUR-7REACTOR unless a residual vacuum charging method is applied such that no emissions of 1,4-dioxane are released during charging. **(R 336.1225, R 336.1702(a))**
5. The permittee shall install, maintain, and operate in a satisfactory manner a vapor balance system for any drums used for transfers from the reactor during the processing of ethylene dichloride. The vapor balance system shall include the following:
  - a) The transfer of liquid to the drum(s) shall be carried out during reactor vessel draining so as to prevent emissions of returned vapor from the reactor vessel during the transfer process.
  - b) A vapor tight collection line on any drum used that includes a device to ensure that the vapor collection line shall close upon disconnection so as to prevent the release of organic vapors.
  - c) A device or procedure to accomplish complete drainage before the liquid line is disconnected, or a device or procedure to prevent liquid drainage from the liquid line when not in use. **(R 336.1225, R 336.1702(a), R 336.1910)**
6. The liquid charging/transfer rates to EUR-7REACTOR for processing steps used during ethylene dichloride processing, when the process is venting, shall not exceed an hourly average of 3.0 gallons per minute nor a total of 180 gallons for each hour of operation. **(R 336.1225)**

#### **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 records of the gallons of ethylene dichloride charged or transferred for each hour of operation for each batch processed for EUR-7REACTOR, as required by SC IV.6. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request. **(R 336.1225)**
2. The permittee shall keep records of the number of batches of ethylene dichloride and 1,4-dioxane processed in EUR-7REACTOR on a monthly and 12-month rolling time period basis as determined at the end of each calendar month. The permittee shall keep these records on file and shall make them available to the Department upon request. **(R 336.1225)**
3. The permittee shall keep records of all batches processed in EUR-7REACTOR including the chemicals used, weights and volumes, and process batch run times. The permittee shall keep these records on file and shall make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**
4. The permittee shall calculate and keep records of the VOC, ethylene dichloride, and 1,4-dioxane emissions from EUR-7REACTOR on a monthly basis and 12-month rolling time period basis as determined at the end of each calendar month. The permittee shall keep these records on file and shall make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

#### **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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVR-7	1	29.5	R 336.1225, R 336.1901, 40 CFR 52.21(c)& (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<b>EUR-8REACTOR EMISSION UNIT CONDITIONS</b>
--

**DESCRIPTION**

1000 gallon batch reactor operation used for processing various chemicals at the facility.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period / Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
1. VOC	18.7 pph	Duration of each batch.	EUR-8REACTOR	SC 11.3, SC 11.4	R 336.1702(a)
2. VOC	0.50 tpy	12-month rolling time period as determined at the end of each calendar month.	EUR-8REACTOR	SC 11.3, SC 11.4	R 336.1702(a)

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not process chloroform, dioxane, or ethylene dichloride in EUR-8REACTOR. (R 336.1225, R 336.1901)

**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 records of all batches processed in EUR-8REACTOR including the chemicals used, weights and volumes processed, and batch run times. The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file and made available to the Department upon request. (R 336.1225, R 336.1901, R 336.1702(a))

2. The permittee shall calculate and keep records of the VOC emissions from EUR-8REACTOR on a monthly and 12-month rolling time period basis as determined at the end of each calendar month. The records shall be kept in a format acceptable to the AQD District Supervisor and using calculation methods acceptable to the AQD District Supervisor. All records shall be kept on file and made available to the Department upon request. (R 336.1224, R 336.1225, R 336.1901, R 336.1702(a))

**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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVR-9	1	29.5	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<b>EUR-9REACTOR EMISSION UNIT CONDITIONS</b>
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**DESCRIPTION**

750 gallon batch reactor operation used for processing various chemicals at the facility.

Flexible Group ID: NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. 1,4-dioxane	30 lbs per year	12-month rolling time period as determined at the end of each calendar month.	EUR-9REACTOR	SC III.1, SC VI.1, SC VI.2, SC VI.3	R 336.1225
2. 1,4-dioxane	0.077 pph	Test Protocol*	EUR-9REACTOR	GC 13	R 336.1225, R 336.1901
3. VOC	0.38 tpy	12-month rolling time period as determined at the end of each calendar month.	EUR-9REACTOR	SC 12.5, SC 12.6	R 336.1225, R 336.1702(a)

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not process more than four batches per month and 30 batches per 12-month rolling time period as determined at the end of each calendar month of 1,4-dioxane in EUR-9REACTOR. **(R 336.1225)**
2. The permittee shall not process 1,4-dioxane in EUR-9REACTOR unless a residual vacuum charging method is applied such that no emissions of 1,4-dioxane are released during charging. **(R 336.1225, R 336.1702(a))**
3. The permittee shall not process chloroform or ethylene dichloride in EUR-9REACTOR. **(R 336.1225, R 336.1901)**

**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 records of the number of batches of 1,4-dioxane processed in EUR-9REACTOR on a monthly and 12-month rolling time period basis as determined at the end of each calendar month. The permittee shall keep these records on file and shall make them available to the Department upon request. (R 336.1225)
2. The permittee shall keep records of all batches processed in EUR-9REACTOR including the chemicals used, weights and volumes, and process batch run times. The permittee shall keep these records on file and shall make them available to the Department upon request. (R 336.1225, R 336.1702(a))
3. The permittee shall calculate and keep records of the VOC and 1,4-dioxane emissions from EUR-9REACTOR on a monthly basis and 12-month rolling time period basis as determined at the end of each calendar month. The permittee shall keep these records on file and shall make them available to the Department upon request. (R 336.1225, R 336.1702(a))

**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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVR-8	1	29.5	R 336.1225, R 336.1901, 40 CFR 52.21(c)& (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

### FLEXIBLE GROUP SPECIAL CONDITIONS

#### FLEXIBLE GROUP SUMMARY TABLE

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

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FGPACKAGING	Eight packaging areas where liquid products are charged into product containers.	EUBR1, EUBR2, EUBR3, EUCRET, EUCRWHS, EUPRR5, EUPRR3, EUMETERS
FGSTILLS	Ten various size batch distillation units used for processing various chemicals at the facility.	EUS-5STILL, EUS-6STILL, EUS-7STILL, EUS-8STILL, EUS-9STILL, EUS-10STILL, EUS-11STILL, EUS-12STILL, EUS-13STILL, EUS-14STILL

**FGPACKAGING  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Eight packaging areas where liquid products are charged into product containers.

**Emission Unit:** EUBR1, EUBR2, EUBR3, EUCRET, EUCRWHS, EUPRR5, EUPRR3, EUMETERS

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Chloroform	0.38 pph	Test Protocol*	EUBR1, EUBR2	GC 13	R 336.1225, R 336.1901
2. 1, 4-Dioxane	0.06 pph	Test Protocol*	EUBR1, EUBR2	GC 13	R 336.1225, R 336.1901
3. Ethylene Dichloride	0.14 pph	Test Protocol*	EUBR1, EUBR2	GC 13	R 336.1225, R 336.1901
4. Methylene Chloride	0.66 pph	Test Protocol*	EUBR1, EUBR2	GC 13	R 336.1225, R 336.1901
5. Tetrahydrofuran	0.21 pph	Test Protocol*	EUBR1, EUBR2	GC 13	R 336.1225, R 336.1901
6. Pyridine	0.03 pph	Test Protocol*	EUBR1, EUBR2	GC 13	R 336.1225, R 336.1901
7. Chloroform	2.00 pph	Test Protocol*	EUCRET, EUCRWHS, EUPRR5, EUPRR3, EUMETERS	GC 13	R 336.1225, R 336.1901
8. 1, 4-Dioxane	0.33 pph	Test Protocol*	EUCRET, EUCRWHS, EUPRR5, EUPRR3	GC 13	R 336.1225, R 336.1901
9. Ethylene Dichloride	0.14 pph	Test Protocol*	EUCRET, EUCRWHS, EUPRR5, EUPRR3	GC 13	R 336.1225, R 336.1901
10. Methylene Chloride	3.50 pph	Test Protocol*	EUCRET, EUCRWHS, EUPRR5, EUPRR3	GC 13	R 336.1225, R 336.1901
11. Tetrahydrofuran	1.13 pph	Test Protocol*	EUCRET, EUCRWHS, EUPRR5, EUPRR3, EUMETERS	GC 13	R 336.1225, R 336.1901

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period/ Operating Scenario</b>	<b>Equipment</b>	<b>Testing / Monitoring Method</b>	<b>Underlying Applicable Requirements</b>
12. Pyridine	0.14 pph	Test Protocol*	EUCRET, EUCRWHS, EUPRR5, EUPRR3	GC 13	R 336.1225, R 336.1901
13. Methylene Chloride	6.80 pph	Test Protocol*	EUBR3	GC 13	R 336.1225, R 336.1901
14. Pyridine	0.30 pph	Test Protocol*	EUBR3	GC 13	R 336.1225, R 336.1901
15. Tetrahydrofuran	2.20 pph	Test Protocol*	EUBR3	GC 13	R 336.1225, R 336.1901
16. Ethylene Glycol Dimethyl Ether	1.30 pph	Test Protocol*	EUBR3	GC 13	R 336.1225, R 336.1901
17. Methylene Chloride	3.78 pph	Test Protocol*	EUMETERS	GC 13	R 336.1225, R 336.1901
18. VOC plus methylene chloride#	20.0 tpy	12-month rolling time period as determined at the end of each calendar month.	FGPACKAGING	SC VI.1, SC VI.2 SC VI.3	R 336.1702(a), R 336.1224
19. Chloroform	7,567 pounds per year	12-month rolling time period as determined at the end of each calendar month.	FGPACKAGING	SC VI.1, SC VI.2, SC VI.3, SC VI.4	R 336.1225, R 336.1227(2), R 336.1901
20. 1, 4-Dioxane	1,265 pounds per year	12-month rolling time period as determined at the end of each calendar month.	FGPACKAGING	SC VI.1, SC VI.2, SC VI.3, SC VI.4	R 336.1225, R 336.1227(2), R 336.1901
21. Ethylene Dichloride	614 pounds per year	12-month rolling time period as determined at the end of each calendar month.	FGPACKAGING	SC VI.1, SC VI.2, SC VI.3, SC VI.4	R 336.1225, R 336.1227(2), R 336.1901
22. Methylene Chloride	Less than 18,000 pounds per year	12-month rolling time period as determined at the end of each calendar month.	FGPACKAGING	SC VI.1, SC VI.2, SC VI.3, SC VI.4	R 336.1225, R 336.1227(2), R 336.1901
23. Tetrahydrofuran	375 pounds per year	12-month rolling time period as determined at the end of each calendar month.	EUBR1 and EUBR2 Combined	SC VI.1, SC VI.2, SC VI.3, SC VI.4	R 336.1225, R 336.1227(2), R 336.1901
24. Tetrahydrofuran	3,958 pounds per year	12-month rolling time period as determined at the end of each calendar month.	EUBR3, EUPRR5, EUPRR3, and EUMETERS Combined	SC VI.1, SC VI.2, SC VI.3, SC VI.4	R 336.1225, R 336.1227(2), R 336.1901
25. Tetrahydrofuran	1,979 pounds per year	12-month rolling time period as determined at the end of each calendar month.	EUCRET and EUCRWHS Combined	SC VI.1, SC VI.2, SC VI.3, SC VI.4	R 336.1225, R 336.1227(2), R 336.1901

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
26. Tetrahydrofuran	17.29 lbs/day	Calendar Day	FGPACKAGING	SC V.1, SC VI.1, SC VI.2, SC VI.5	R 336.1225, R 336.1227(2), R 336.1901
27. Pyridine	1.75 lbs/day	Calendar Day	FGPACKAGING	SC V.1, SC VI.1, SC VI.2, SC VI.5	R 336.1225, R 336.1227(2), R 336.1901

\* Test protocol shall specify averaging time  
 # Methylene chloride is a non-VOC compound per Rule 122(f)(liv).

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The following products shall not be packaged in EUMETERS: 1,4-dioxane, ethylene dichloride and pyridine. **(R 336.1225)**
2. No chemicals shall be packaged in EUBR1 or EUBR2 in containers larger than 20 liters. **(R 336.1225)**
3. The permittee shall not package decahydronaphthalene or trichloroethylene in FGPACKAGING. **(R 336.1225)**
4. The permittee shall capture all waste materials and shall store them in closed containers. The permittee shall dispose of all waste materials in an acceptable manner in compliance with all applicable state rules and federal regulations. **(R 336.1224, R 336.1702(a))**
5. The permittee shall not package ethylene dichloride in containers larger than 20 liters. **(R 336.1225)**
6. The permittee shall not package chloroform, 1,3-dichloropropene, 1,4-dioxane, ethylene dichloride, triethylamine, or trifluoroacetic acid in EUBR3. **(R 336.1225)**

**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))**

1. The permittee shall determine the HAP content of any material, as received, and as applied, using manufacturer's formulation data. Upon request of the AQD District Supervisor, the permittee shall verify the manufacturer's HAP formulation data using EPA Test Method 311. **(R 336.1205(3))**

**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 end 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 336.1299, R 336.1702, R 336.1901)**

2. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each material, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by 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 336.1224, R 336.1225, R 336.1702, R 336.1901)**
3. The permittee shall keep the following information on a calendar month basis for FGPACKAGING:
- a) Identification of and volume (Gallons) of each material packaged.
  - b) Vapor pressure and molecular weight for each material packaged in FGPACKAGING, and container size range used for each material packaged for each emission unit.
  - c) VOC plus methylene chloride mass emission calculations determining the monthly emission rate in tons per calendar month.
  - d) VOC plus methylene chloride mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep all records in a format acceptable to the AQD District Supervisor and using calculation methods 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 336.1224, R 336.1702)**

4. The permittee shall keep the following records on a calendar month basis for FGPACKAGING:
- a) Gallons of Chloroform, 1, 4-Dioxane, Ethylene Dichloride, Methylene Chloride, and Tetrahydrofuran packaged per calendar month.
  - b) Chloroform, 1,4-Dioxane, Ethylene Dichloride, Methylene Chloride, and Tetrahydrofuran (for the emission unit groupings specified in SC I.19 through I.25) mass emission calculations determining the monthly emission rate of each in pounds per calendar month.
  - c) Chloroform, 1, 4-Dioxane, Ethylene Dichloride, Methylene Chloride, and Tetrahydrofuran (for each emission unit listed in SC I.19 through I.25), mass emission calculations determining the annual emission rate in pounds per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep all records in a format acceptable to the AQD District Supervisor and using calculation methods 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 336.1225, R 336.1901)**

5. The permittee shall keep the following records on a calendar day basis for FGPACKAGING:
- a) Gallons of tetrahydrofuran and pyridine packaged per each calendar day of the month.
  - b) Tetrahydrofuran and pyridine mass emission calculations determining the calendar day emission rate of each in pounds per calendar day for each calendar day of the month.

The permittee shall keep all records in a format acceptable to the AQD District Supervisor and using calculation methods 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 336.1225, R 336.1901)**

## **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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SV-29	6	33.9	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
2. SV-30	6	33.9	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
3. SV31	6	42.4	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
4. SV-32	6	40.4	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
5. SV-33	6	40.4	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
6. SV-34	6	43.8	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
7. SV-35	6	39.9	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
8. SV-36	5	43.9	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FGSTILLS  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Ten various size batch distillation units used for processing various chemicals at the facility.

**Emission Unit:** EUS-5STILL, EUS-6STILL, EUS-7STILL, EUS-8STILL, EUS-9STILL, EUS-10STILL, EUS-11STILL, EUS-12STILL, EUS-13STILL, EUS-14STILL

**POLLUTION CONTROL EQUIPMENT**

Condensers associated with various stills

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	1.0 tpy (per still listed under equipment)	12-month rolling time period as determined at the end of each calendar month.	EUS-5STILL, EUS-6STILL, EUS-7STILL, EUS-9STILL	SC VI.1, SC VI.2	R 336.1702(a)
2. VOC	1.83 tpy	12-month rolling time period as determined at the end of each calendar month.	EUS-10STILL	SC VI.1, SC VI.2	R 336.1702(a)
3. VOC	0.8 tpy	12-month rolling time period as determined at the end of each calendar month.	EUS-11STILL	SC VI.1, SC VI.2	R 336.1702(a)
4. VOC	3.5 tpy	12-month rolling time period as determined at the end of each calendar month.	EUS-12STILL	SC VI.1, SC VI.2	R 336.1702(a)
5. 1,4-dioxane	0.86 lb per batch	Batch duration	EUS-8STILL	SC VI.5, SC VI.6	R 336.1702(a), R 336.1901
6. 1,4-dioxane	0.347 pph	Test Protocol*	EUS-8STILL	GC 13	R 336.1225, R 336.1901
7. 1,4-dioxane	304 lb per year	12-month rolling time period as determined at the end of each calendar month.	EUS-8STILL	SC VI.5, SC VI.6	R 336.1225, R 336.1227(2), R 336.1901
8. VOC	1.5 tpy	12-month rolling time period as determined at the end of each calendar month.	EUS-8STILL	SC VI.5, SC VI.6	R 336.1702(a)
9. Chloroform	3.46 lbs per batch	Batch duration	EUS-8STILL	SC VI.5, SC VI.6	R 336.1702(a), R 336.1901

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
10. Chloroform	1.61pph	Test Protocol*	EUS-8STILL	GC 13	R 336.1225, R 336.1901
11. Chloroform	1,414 lbs per year	12-month rolling time period as determined at the end of each calendar month.	EUS-8STILL	SC VI.5, SC VI.6	R 336.1225, R 336.1227(2), R 336.1901
12. Methylene chloride	195,000 milligrams per cubic meter, corrected to 70°F and 29.92 inches Hg	Test Protocol*	EUS-13STILL	GC 13, SC VI.8	R 336.1901
13. Methylene chloride	6.9 lbs per batch	Duration of batch	EUS-13STILL	SC VI.8, SC VI.9, SC VI.10	R 336.1901
14. Chloroform	2.5 lbs per batch	Duration of batch	EUS-13STILL	SC VI.8, SC VI.9 SC VI.10, SC VI.11	R 336.1225
15. Chloroform	0.98 lb per hour	Test Protocol*	EUS-13STILL	GC 13, SC VI.8	R 336.1225
16. Chloroform	858.5 lbs per year	12-month rolling time period as determined at the end of each calendar month.	EUS-13STILL	SC VI.8, SC VI.9, SC VI.10, SC VI.11	R 336.1225, R 336.1227(2), R 336.1901
17. VOC (excluding methylene chloride)	12.4 lbs per batch	Duration of batch	EUS-13STILL	SC VI.8, SC VI.9, SC VI.10	R 336.1702(a)
18. Methylene chloride	195,000 milligrams per cubic meter, corrected to 70°F and 29.92 inches Hg	Test Protocol*	EUS-14STILL	GC 13, SC VI.12, SC VI.13, SC VI.14	R 336.1901
19. Methylene chloride	6.9 lbs per batch	Duration of batch	EUS-14STILL	SC VI.12, SC VI.13, SC VI.14	R 336.1901
20. VOC (excluding methylene chloride)	12.4 lbs per batch	Duration of batch	EUS-14STILL	SC VI.12, SC VI.13, SC VI.14	R 336.1702(a)

\* Test protocol shall specify averaging time

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. EUS-5STILL, EUS-6STILL, EUS-7STILL, EUS-9STILL, EUS-10STILL, EUS-11STILL and EUS-12STILL shall not be used to process any compounds other than those listed in permits covering all distillation units at the

Muskegon plant unless a permit revision for such other compounds has been approved by the Air Quality Division. Changes in product mix from one distillation unit to another will not require permit revisions. However, the solvents benzene, carbon tetrachloride, chloroform, 1,4-dioxane, ethylene dichloride, and methylene chloride shall not be processed in EUS-5STILL, EUS-6STILL, EUS-7STILL, EUS-9STILL, EUS-10STILL, EUS-11STILL and EUS-12STILL unless they later become approved by the Air Quality Division for processing in each of the stills. **(R 336.1225, R 336.1901, R 336.1702 (a))**

2. The solvents benzene, carbon tetrachloride, and ethylene dichloride shall not be processed in EUS-8STILL without prior approval of a Permit to Install authorizing such processing. **(R 336.1201, R 336.1225, R 336.1702(a), R 336.1901)**
3. The permittee shall not process any compounds in the EUS-13STILL other than those listed in permits covering all distillation units at the facility except that benzene, carbon tetrachloride, 1,4-dioxane, and ethylene dichloride shall not be processed in the EUS-13STILL. **(R 336.1225, R 336.1702(a), R 336.1901)**
4. The permittee shall not process any compounds in the EUS-14STILL other than those listed in permits covering all distillation units at the facility except that benzene, chloroform, carbon tetrachloride, 1,4-dioxane and ethylene dichloride shall not be processed in the EUS-14STILL. **(R 336.1225, R 336.1702(a), R 336.1901)**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall not operate EUS-5STILL, EUS-6STILL, EUS-7STILL, EUS-9STILL, EUS-10STILL, EUS-11STILL and EUS-12STILL unless the associated temperature indicators on the still pot, fractionation column, and reflux splitter, and the associated pressure indicator on the still pot are installed and operating properly. **(R 336.1225, R 336.1901, R 336.1702(a))**
2. The VOC emissions from EUS-8STILL, when processing chloroform, and 1,4-dioxane shall be vented through a properly operated secondary condenser (mechanical refrigeration unit), then collected in a 3,000 gallon holding tank and discharged unobstructed vertically upwards to the ambient air at a rate of 2,280 actual cubic feet per minute from a stack with a maximum diameter of 6.0 inches at an exit point not less than 40.5 feet above ground level (SVS-17a). **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
3. The permittee shall not operate EUS-8STILL, when processing chloroform and 1,4-dioxane, unless the secondary condenser is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining the secondary condenser exhaust gas temperature at 0°C or less for chloroform and 10°C or less for 1,4-dioxane, when venting through the secondary condenser. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
4. The permittee shall not operate the EUS-13STILL unless the secondary condenser is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining the secondary condenser exhaust gas temperature at -30°C or less, when venting through the secondary condenser. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
5. The permittee shall not operate the EUS-14STILL unless the secondary condenser is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining the secondary condenser exhaust gas temperature at -25°C or less, when venting through the secondary condenser. **(R 336.1225, R 336.1702(a), R 336.1901, 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 keep records of all batches processed in EUS-5STILL, EUS-6STILL, EUS-7STILL, EUS-9STILL, EUS-10STILL, EUS-11STILL and EUS-12STILL including the chemicals used, weights and volumes processed, and batch run times. The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file and made available to the Department upon request. **(R 336.1225, R 336.1901, R 336.1702(a))**
2. The permittee shall calculate and keep records of the VOC emissions from EUS-5STILL, EUS-6STILL, EUS-7STILL, EUS-9STILL, EUS-10STILL, EUS-11STILL and EUS-12STILL on a monthly and 12-month rolling time period basis as determined at the end of each calendar month. The records shall be kept in a format acceptable to the AQD District Supervisor and using calculation methods acceptable to the AQD District Supervisor. All records shall be kept on file and made available to the Department upon request. **(R 336.1225, R 336.1901, R 336.1702(a))**
3. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor the temperature of the secondary condenser exhaust gas on a continuous basis for EUS-8STILL, when venting through the secondary condenser. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
4. The permittee shall, at least once per batch, record the secondary condenser exhaust gas temperature when EUS-8STILL is venting through the secondary condenser. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
5. The permittee shall keep records of all batches processed in EUS-8STILL including the chemicals used, weights and volumes, and process batch run times. The permittee shall keep these records on file and shall make them available to the Department upon request. **(R 336.1205(3), R 336.1225)**
6. The permittee shall calculate and keep records of the VOC, 1,4-dioxane, and chloroform emissions from EUS-8STILL on a batch (with still nitrogen sweeps for vessel agitation or cooling to be accounted for by proration over all batches run for the month), monthly, and 12-month rolling time period basis as determined at the end of each calendar month. The permittee shall keep these records on file and shall make them available to the Department upon request. **(R 336.1205(3), R 336.1225)**
7. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor the temperature of the secondary condenser exhaust gas on a continuous basis for EUS-13STILL, when venting through the secondary condenser. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
8. The permittee shall, at least once per batch, record the secondary condenser exhaust gas temperature when EUS-13STILL is venting through the secondary condenser. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
9. The permittee shall keep current calculations showing the methylene chloride, chloroform, and VOC (excluding methylene chloride) emission rates per batch from EUS-13STILL. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901)**
10. The permittee shall keep records indicating the number of batches per year of each of the solvents processed in the EUS-13STILL. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901)**

11. The permittee shall keep the following information on a calendar month basis for EUS-13STILL:
- Gallons of Chloroform processed per calendar month.
  - Chloroform mass emission calculations determining the monthly emission rate in tons per calendar month.
  - Chloroform mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The records shall be kept in a format acceptable to the AQD District Supervisor and using calculation methods acceptable to the AQD District Supervisor. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **(R 336.1225, R 336.1901)**

12. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor the temperature of the secondary condenser exhaust gas on a continuous basis for EUS-14STILL. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
13. The permittee shall, at least once per batch, record the secondary condenser exhaust gas temperature. All records shall be kept on file and made available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901, R 336.1910)**
14. The permittee shall keep current calculations showing the methylene chloride and VOC (excluding methylene chloride) emission rates per batch. All records shall be kept on file and made available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901)**
15. The permittee shall keep records indicating the number of batches per year of each of the solvents processed in the EUS-14STILL. All records shall be kept on file and made available to the Department upon request. **(R 336.1225, R 336.1702(a), R 336.1901)**

**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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVS-12		29	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
2. SVS-14	NA	29	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
3. SVS-15	NA	29	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
4. SVS-18	NA	29	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
5. SVS-22	1	29.5	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
6. SVS-21	1	29.5	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
7. SVS-5	1.5	30	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
8. SVS-17a	6	40.5	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
9. SVS-17b	1	29.0	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
10. SVS-2	2	40.5	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)
11. SVS-3	2	40.5	R 336.1225, R 336.1901, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> 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 9.0 tpy	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.1, SC VI.2	R 336.1205(3)
2. Aggregate HAPs	Less than 22.5 tpy	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.1, SC VI.2	R 336.1205(3)
3. VOC	Less than 89.0 tpy	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.2, SC VI.3	R 336.1205(3)

#### II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOC	40,000,000 liters per year	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.2	R 336.1205(3)
2. HAP limits: Level 1: acetonitrile methanol methylene chloride	5,000,000 liters per year for each chemical in this level	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.2	R 336.1205(3)
3. HAP limits: Level 2: Hexane Toluene	2,000,000 liters per year for each chemical in this level	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.2	R 336.1205(3)
4. HAP limits: Level 3: All other HAPs	400,000 liters per year for each chemical in this level	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.2	R 336.1205(3)

### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. All waste materials from FGFACILITY shall be captured and stored in closed containers and shall be disposed of in an acceptable manner in compliance with all applicable rules and regulations. **(R 336.1224, R 336.1702(a))**

### **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))**

1. The HAP content of any material as received and as applied, shall be determined using manufacturer's formulation data. Upon request of the AQD District Supervisor, the manufacturer's HAP formulation data shall be verified using EPA Test Method 311. **(R 336.1205(3))**

### **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, individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month, as required by SC I.1 and I.2. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(3))**
2. The permittee shall keep the following information on a monthly and 12-month rolling time period basis for FGFACILITY:
  - a) Liters, gallons or pounds of each HAP and VOC containing material used.
  - b) Where applicable, liters, gallons or pounds of each HAP and VOC containing material reclaimed.
  - c) HAP and VOC content, in pounds per liter, pounds per gallon or pounds per pound, of each HAP and VOC containing material used.

The records shall be kept in a format acceptable to the AQD District Supervisor. All records shall be kept on file at the facility and made available to the Department upon request. **(R 336.1205(3))**

3. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period VOC emission calculation records for FGFACILITY, as required by SC I.3. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(3))**

### **VII. REPORTING**

NA

### **VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

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

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).