

**Commonwealth of Kentucky
Division for Air Quality**

STATEMENT OF BASIS / SUMMARY

Conditional Major, Operating
Permit: F-24-045

Lubrizol Advanced Materials, Inc.
2468 Industrial Parkway
Calvert City, KY 42029

August 20, 2024
Dylan Sears, Reviewer

SOURCE ID: 21-157-00060
AGENCY INTEREST: 46166
ACTIVITY: APE20220001

Table of Contents

SECTION 1 - SOURCE DESCRIPTION 2
SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM 3
SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS 5
SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS 15
SECTION 5 – PERMITTING HISTORY 19
SECTION 6 – PERMIT APPLICATION HISTORY 19
APPENDIX A – ABBREVIATIONS AND ACRONYMS 20

Permit: F-24-045

SECTION 1 - SOURCE DESCRIPTION

SIC Code and description: 2821, Plastics Materials, Synthetic and Resins, and Nonvulcanizable Elastomers

Single Source Det. Yes No If Yes, Affiliated Source AI:

Source-wide Limit Yes No If Yes, See Section 4, Table A

28 Source Category Yes No If Yes, Category: Chemical Process Plant

County: Floyd

Nonattainment Area N/A PM₁₀ PM_{2.5} CO NO_x SO₂ Ozone Lead

If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 250 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) Yes No

If yes, list which pollutant(s): *Benzene, Toluene*

PTE* greater than 25 tpy for combined HAP Yes No

*PTE does not include self-imposed emission limitations.

Description of Facility:

The facility located in Marshall County, produces synthetic thickeners.

Permit: F-24-045

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-24-045

Activity: APE20220001

Application Received: 2/21/2022

Application Complete: 12/5/2022

Permit Action: Initial Renewal Significant Rev. Minor Rev. AdministrativeConstruction/Modification Requested? Yes NoPrevious 502(b)(10) or Off-Permit Changes incorporated with this permit action Yes No**Description of Action:****APE20220001: Permit Renewal**

A renewal application for a Conditional Major, Operating permit, F-17-010 R1, for Lubrizol Advanced Materials, Inc., a specialty chemical manufacturing plant, located at Calvert City, Kentucky, was received on February 2, 2022. Some emission units had requests for equipment items to be modified in the permit either to do modification or corrections. Additional changes were requested in to move emission units to Section C, Insignificant Activities, but denied. In addition, several units have been stated to not exist or be removed from the facility as well as description changes requested for several pieces of equipment.

The following permit actions were submitted since the issuance of F-17-010 R1 and are incorporated in the renewal permit. The Division determined that these changes can be covered pursuant to 401 KAR 52:030 Section 17, Off-Permit and Section 502(b)(10) changes.

- **APE20220002**

The Division received as application on March 28, 2022, the need to replace a glacial acrylic acid storage tank #3 (TK-27B) of higher capacity. There are small emission changes, but no regulatory updates associated with this action. The Division determined that this modification can be covered pursuant to 401 KAR 52:030 Section 17, Off-Permit and Section 502(b)(10) changes.

- **APE20210003**

The Division received as application on December 7, 2021, the need to add a tank TK-24G, part of emission unit C01-05, that was previously removed, back into service and into the permit. There are no emission changes nor regulatory updates associated with this action. The only changes will be in the description of C01-05, which has been incorporated into the renewal permit. The Division determined that this modification can be covered pursuant to 401 KAR 52:030 Section 17, Off-Permit and Section 502(b)(10) changes.

- **APE20210002**

The Division received as application on November 18, 2021, to use a refrigeration truck as a temporary freezer. Though the activity qualifies as an insignificant activity under 401 KAR 52:030 Section 6, the Division will respond with a letter of acknowledgement for each notification of this nature and not add it to the permit.

Permit: F-24-045

- **APE20210001**

The Division received as application on June 17, 2021, to modify a benzene dewatering column system to improve efficiency. There will be no potential emission increases from the benzene dewatering system EU C02-04 as a result of the project. However, there will be increased throughput of the benzene tank TK-238 (EU C02-03) and increased potential emissions from the tank. The Division determined that this modification can be covered pursuant to 401 KAR 52:030 Section 17, Off-Permit and Section 502(b)(10) changes and the permit (F-24-045) has been updated with this change.

F-24-045 Emission Summary		
Pollutant	2023 Actual (tpy)	PTE F-24-045 (tpy)
CO	0.522	16.16
NO _x	0.639	1.896
PT	11.503	11.56
PM ₁₀	11.503	11.56
PM _{2.5}	5.176	5.26
SO ₂	0.004	0.0047
VOC	61.21	791.32
Lead	---	6.56083E-06
Greenhouse Gases (GHGs)		
Carbon Dioxide	745	1,630
Methane	0.020	0.082
Nitrous Oxide	0.001	0.029
CO ₂ Equivalent (CO _{2e})	745	1,641
Hazardous Air Pollutants (HAPs)		
Toluene	0.0659	1.54
Benzene	0.758	0.43
Combined HAPs:	0.824	2.02

Permit: F-24-045

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS**a. Emission Units****CARBOPOL® PROCESS (EMISSION UNITS C01-02 THROUGH C01-03; C01-05 THROUGH C01 07; C01 09 THROUGH C01 010 AND C01 012 THROUGH C01 13)****Emission Unit C01-02**

Description: Eight (8) polymerizers
 Equipment ID: PLY-1N4; PLY-2N4; PLY-21E; PLY-22E; PLY-23E; PLY-24E; PLY-25E; PLY-26E
 Construction Date: 1957-1991
 Control Equipment: Benzene service: Regenerative carbon adsorption system (AC1) and thermal oxidizer (TO)
 Ethyl acetate service: TO
 Cosolvent service: TO

Emission Unit C01-03

Description: Five (5) blow-down tanks
 Equipment ID: TK-5N1; TK-4H; TK-100P; TK-23G; TK-25G
 Construction Date: 1957-1991
 Controls: Benzene service: AC1 and TO
 Ethyl acetate service: TO
 Cosolvent service: TO

Emission Unit C01-05

Description: Four (4) blow-down tanks
 Equipment ID: TK-1N5; TK-21G; TK-22G; TK-24G
 Construction Date: 1957-1991
 Control Equipment: Benzene service: AC1 and TO
 Ethyl acetate service: TO
 Cosolvent service: TO

Emission Unit C01-06

Description: Eight (8) rotary dryers
 Equipment ID: DR-21H; DR-22H; DR-23H; DR-24H; DR-25H; DR-26H; DR-27H; DR-28H
 Construction Date: 1957-1991
 Control Equipment: Benzene service: AC1 and TO
 Ethyl acetate service: TO
 Cosolvent service: TO

Permit: F-24-045

Emission Unit C01-07

Description: Four (4) rotary dryers
Equipment ID: DR-29H; DR-30H; DR-31H; DR-32H
Construction Date: 1957-1991
Control Equipment: Benzene service: AC1 and TO
Ethyl acetate service: TO
Cosolvent service: TO

Emission Unit C01-09

Description: Two (2) polymerizers
Equipment ID: PLY-27E; PLY-28E
Construction Date: 2004
Control Equipment: Ethyl acetate service: TO
Cosolvent service: TO
70/30 cosolvent service: TO

Emission Unit C01-10

Description: Two (2) horizontal dryers
Equipment ID: DR-33H; DR-34H
Construction Date: 2004
Control Equipment: Ethyl acetate service: TO
Cosolvent service: TO
70/30 cosolvent service: TO

Emission Unit C01-12

Description: Four (4) polymerizers
Equipment ID: PLY-29E, PLY-31E, PLY-32E, and PLY-30E
Construction Date: 2011 (Modified 2019)
Control Equipment: Benzene service: AC1 and TO
Ethyl acetate service: TO
Cosolvent service: TO
70/30 cosolvent service: TO

Emission Unit C01-13

Description: Four (4) horizontal dryers
Equipment ID: DR-35H, DR-37H, DR-38H, and DR-36H
Construction Date: 2011 (Modified 2019)
Control Equipment: Benzene service: AC1 and TO
Ethyl acetate service: TO
Cosolvent service: TO
70/30 cosolvent service: TO

Permit: F-24-045

BENZENE STORAGE TANKS (EMISSION UNITS C02-01 THROUGH C02-03 AND C02-14)**Emission Unit C02-01**

Description: One (1) HR HD Benzene Storage Tank
Equipment ID: TK-38B
Design Rate: 15,607,900 gallons per year (shared with emission unit C02-02)
Tank Capacity: 22,936 gallons
Construction Date: 2011
Control Equipment: AC1 and TO

Emission Unit C02-02

Description: One (1) VRTD Benzene Storage Tank
Equipment ID: TK-22B
Design Rate: 15,607,900 gallons per year (shared with emission unit C02-01)
Tank Capacity: 15,310 gallons
Construction Date: Prior to 1984
Control Equipment: AC1 and TO

Emission Unit C02-03

Description: One (1) Wet Benzene Storage Tank
Equipment ID: TK-23B
Design Rate: 10,512,000 gallons per year
Tank Capacity: 6,056 gallons
Construction Date: Prior to 1984
Control Equipment: AC1 and TO

Emission Unit C02-14

Description: Multi-purpose Tank
Equipment ID: TK-34F (optional service)
Design Rate: 7,842,325 gallons per year
Tank Capacity: 1,250 gallons
Construction Date: 2016
Control Equipment: AC1 and TO
Service: Benzene

BENZENE RECOVERY SYSTEM (SUPPORTS CARBOPOL® PROCESS: EMISSION UNITS C01-01 THROUGH C01-03 AND C01-05 THROUGH C01-13)**Emission Unit C02-04**

Description: Benzene Dewatering System (column, condenser, decanter, bottoms pump, bottoms cooler)
Equipment ID: DE-1D
Design Rate: 7,000 tons per year benzene based Carbopol® production
Construction Date: 1957 or later (modified 2021)
Control Equipment: AC1 and TO

Permit: F-24-045

Emission Unit C02-05

Description: Benzene Recovery System
 Equipment ID: TK-21H, TK-21F, TK-40F, TK-35F, DE-21F and TK-39F
 Design Rate: 7,000 tons per year benzene based Carbopol® production
 Construction Date: 1957 or later
 Control Equipment: AC1 and TO

BENZENE UNLOADING STATION**Emission Unit C02-13**

Description: Benzene Unloading Operations
 Equipment ID: BZU-1
 Design Rate: 76,783 gallons per year
 Construction Date: Prior to 1984 (tank truck), 2014 (railcar)
 Control Equipment: AC1 and TO

FUGITIVE EMISSIONS (NOT IN BENZENE SERVICE)**Emission Unit C05-01**

Description: Fugitive Emissions (equipment leaks)
 Equipment ID: F1; F9; and F10
 Ethyl acetate service: 3,191 components
 Cosolvent service: 3,718 components
 Construction Date: 1957 or later

Emission Units C05-03 (in benzene service)

Description: Fugitive Emissions (equipment leaks - components in benzene service)
 Equipment ID: F11
 Benzene service: 6,007 components
 Construction Date: 1957 or later

BENZENE WASTE OPERATIONS (SUPPORTS CARBOPOL® PROCESS: EMISSION UNITS C01-01 THROUGH C01-03 AND C01- C05 THROUGH C01-13)**Emission Unit C06-01**

Description: Wastewater System Tank (Batch Still Feed)
 Equipment ID: V-200
 Design Rate: 10,220,000 gallons per year
 Capacity: 15,862 gallons
 Construction Date: 1957 or later
 Control Equipment: Thermal oxidizer (TO) with carbon canister back-up

Emission Unit C06-02

Description: Batch Still and Decanter
 Equipment ID: C-220 and V-220

Permit: F-24-045

Design Rate: 10,220,000 gallons per year
Construction Date: 1957 or later
Control Equipment: TO with carbon canister back-up

Emission Unit C06-03

Description: Process Stripper
Equipment ID: CL-1F
Design Rate: 8,760 hours per year
Construction Date: 1957 or later
Control Equipment: Regenerative carbon adsorption system (AC1) and TO

Emission Unit C06-04

Description: Wastewater Storage Tank
Equipment ID: TK-1858
Design Rate: 27,685,000 gallons per year
Capacity: 23,029 gallons
Construction Date: 1957 or later
Control Equipment: TO with carbon canister back-up

Emission Unit C06-05

Description: Stripper Feed Tank
Equipment ID: TK-1F
Design Rate: 5,248,652 gallons per year
Capacity: 1,647 gallons
Construction Date: 1957 or later
Control Equipment: AC1 and TO

Emission Unit C06-06

Description: Wastewater Sumps and Four (4) Lift Stations
Equipment ID: N/A
Design Rate: 25,855,000 gallons per year
Construction Date: 1957 or later

Emission Unit C06-07

Description: Contingency Wastewater Storage Tank
Equipment ID: TK-152B
Design Rate: 120,000 gallons per year
Capacity: 39,972 gallons
Construction Date: About 2000
Control Equipment: Carbon canister

Permit: F-24-045

FUGITIVE EMISSION SOURCES NOT IN BENZENE SERVICE**Emission Unit C07-01**

Description: Fugitive emissions (equipment leaks) associated with the acrylic acid storage tanks and the polymer charge lines

Equipment ID: F3
927 Components

Construction Date: 1957 or later

MISCELLANEOUS EMISSION UNITS**Emission Unit C08-01**

Description: Cooling Tower

Equipment ID: CT

Capacity: 630,000 gallon per hour cooling water recirculation rate

Construction Date: 1991

Emission Unit C08-02

Description: Thermal Oxidizer

Equipment ID: TO

Capacity: 3,000,000 Btu per hour
60,000 Btu per hour burner

Construction Date: 1989

Emission Unit: C08-03

Description: GENERAC Emergency Generator (Portable Unit for EHP bunker)
Spark ignition (SI) internal combustion engines (ICE), 4-stroke lean burn

Identification: GN1 005930-0, 005931-0

Capacity: 14.5 HP

Fuel: Gasoline

Fuel input: 0.205 million British thermal units (MMBtu)/hour

Construction date: 2014

Manufacture date: June 10, 2013

Emission Unit: C08-04

Description: GENERAC Emergency Generator (Admin Building), SI ICE
4-stroke lean burn

Identification: GN2 SG035

Capacity: 54 HP

Fuel: Natural gas

Fuel input: 0.704 MMBtu/hour

Construction date: 2016

Manufacture date: September 8, 2016

Permit: F-24-045

Emission Unit: C08-05

Description: GENERAC Emergency Generator (Bulk Freezer), SI ICE 4-stroke lean burn
Identification: SG080 (certified engine)
Capacity: 127 HP
Fuel: Propane
Fuel input: 0.90 MMBtu/hour
Construction date: 2019
Manufacture date: 2016

NON-BENZENE STORAGE TANKS**Emission Unit C09-01**

Description: Recycle ethyl acetate storage tank
Equipment ID: TK-24B
Design Rate: 13,203,500 gallons per year
Tank Capacity: 15,310 gallons per year
Construction Date: 1987 or later
Control Equipment: Thermal oxidizer (TO)

Emission Unit C09-02

Description: 70/30 cosolvent storage tank
Equipment ID: TK-30B
Design Rate: 4,916,284 gallons per year
Tank Capacity: 15,310 gallons per year
Construction Date: 1987 or later
Control Equipment: TO

Emission Unit C09-03

Description: Cosolvent storage tank
Equipment ID: TK-31B
Design Rate: 12,888,437 gallons per year
Tank Capacity: 15,310 gallons
Construction Date: About 1988
Control Equipment: TO

Emission Unit C09-04

Description: Cosolvent storage tank
Equipment ID: TK-32B
Design Rate: 12,888,437 gallons per year
Tank Capacity: 15,310
Construction Date: About 1988
Control Equipment: TO

Permit: F-24-045

Emission Unit C09-05

Description: Allyl chloride storage tank
Equipment ID: TK-33B
Design Rate: 92,000 gallons per year
Tank Capacity: 10,051
Construction Date: 1990 or later
Control Equipment: TO

Emission Unit C09-06

Description: Cyclohexane storage tank
Equipment ID: TK-36B
Design Rate: 223,281 gallons per year
Tank Capacity: 8,972 gallons
Construction Date: 1990 or later
Control Equipment: TO

Emission Unit C09-07

Description: Hazardous waste tank
Equipment ID: V-202
Design Rate: 40,150 gallons per year
Tank Capacity: 2,800 gallons
Construction Date: About 1985
Control Equipment: TO

RECOVERY SYSTEMS**Emission Unit C09-08**

Description: Cosolvent recovery system
(mole sieve decanter
solvent tank)
Equipment ID: TK-34B
Design Rate: N/A
Tank Capacity: 64 gallons
Construction Date: About 1989
Control Equipment: TO

Emission Unit C09-09

Description: Multi-purpose tank
Equipment ID: TK-34F (optional use)
Design Rate: 13,564,478 gallons per year
Tank Capacity: 1,251 gallons
Construction Date: 2016
Control Equipment: TO
Service: Cosolvent
70/30 Cosolvent
Ethyl acetate

Permit: F-24-045

Emission Unit C09-10

Description: Cosolvent recovery system (mole sieve decanter H2O tank)

Equipment ID: TK-35B

Construction Date: About 1990

Control Equipment: TO

Emission Unit C09-11

Description: Cosolvent recovery system (mole sieve regeneration loop depressurizations)

Equipment ID: CSRSD

Construction Date: About 1990

Control Equipment: TO

Emission Unit C09-12

Description: HRHD dryer condensate receivers

Equipment ID: TK-38F, TK-33F

Construction Date: About 1990

Control Equipment: TO

UNLOADING FACILITIES**Emission Unit C09-13**

Description: Ethyl acetate tank truck unloading

Equipment ID: EAU-1

Design Rate: 276,400 gallons per year

Construction Date: N/A

Control Equipment: TO

Emission Unit C09-14

Description: Cyclohexane tank truck unloading

Equipment ID: CHU-1

Design Rate: 223,300 gallons per year

Construction Date: N/A

Control Equipment: TO

Emission Unit C09-15

Description: Hazardous waste tank truck loading

Equipment ID: V-202-L

Design Rate: 40,150 gallons per year

Construction Date: N/A

Control Equipment: TO

Permit: F-24-045

SPECIALTY ADDITIVE WASH TANKS**Emission Unit C09-16**

Description: Specialty additive wash tank
Equipment ID: TK-2J
Design Rate: 365 batches per year
Batch Capacity: 960 gallons
Construction Date: 2003
Control Equipment: TO

Emission Unit C09-17

Description: Specialty additive wash tank
Equipment ID: TK-115J
Design Rate: 365 batches per year
Batch Capacity: 810 gallons
Construction Date: About 1957
Control Equipment: TO

Emission Unit C09-18

Description: Co-solvent storage tank
Equipment ID: TK-39B
Design Rate: 12,888,437 gallons per year
Tank Capacity: 15,310 gallons
Construction Date: 2019
Control Equipment: TO

b. Emission Factors

- (1) The source's potential emissions of air pollutants are based on emission calculations provided in the permit application. The following are references that the permittee used in developing the emissions factors:
 - (i) Equations in Chapter 7 of AP-42 were used for tank working and breathing losses.
 - (ii) Vapor displacement emissions were calculated using equations from 40 CFR 63, Subpart GGG, Section 63.1257(d)(2)(i)(A) Equations 11.
 - (iii) U.S. EPA's WATER9.
 - (iv) AP-42 Chapter 5, Protocol for Equipment Leak Estimates for fugitive component emission calculations were used.
 - (v) Emission calculations for the production units were based on emission factors that were derived from emission factors in chemical engineering references, including Perry's Chemical Engineers' Handbook and AIChE's Chemical Engineering Progress.
- (2) A fugitive emission bagging study (performance test) was conducted and approved by DAQ in December 1995 to develop specific correlation formulae applied to the in-service components. Instead of conducting a new bagging study the permittee will calculate benzene fugitive emissions using correlation equations in AP-42 Chapter 5, Protocol for Equipment Leak Estimates for fugitive component emission calculations were used.

Permit: F-24-045

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS**Applicable Regulations**

- 1) 401 KAR 52:030, Federally-enforceable permits for nonmajor sources, applies source wide.
- 2) 401 KAR 59:010, New process operations, apply to each source which is not subject to another emission standard with respect to particulates, that commenced on or after July 2, 1975.
C08-02 Thermal oxidizer
- 3) 401 KAR 63:010, Fugitive Emissions, applies to the cooling tower operation, because the fugitive emissions from the source are not elsewhere subject to an opacity standard.
C08-01 Cooling tower
- 4) 401 KAR 63:020, Potentially hazardous matter or toxic substances, apply to sources which emit or may emit potentially hazardous or toxic substances.
C01-01 through C01-03 Carbopol® process
C01-05 through C01-13 Carbopol® process
C02-04 and C02-05 Benzene recovery system
C02-13 Benzene unloading station
C07-01 Fugitive equipment leaks
C08-02 Thermal oxidizer
C09-01 through C09-18 non-benzene storage tanks, recovery systems, unloading facilities, and specialty additive wash tanks
- 5) 401 KAR 57:002, Section 2, 40 C.F.R. 61.110 through 61.112 (Subpart J), National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene, applies to the following sources that operate in benzene service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems required by this regulation.
C05-03 Fugitive equipment leaks (benzene service)
- 6) 401 KAR 60:005, Section 2(2)(r), 40 C.F.R. 60.110b through 60.117b (Subpart Kb), Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, is applicable to storage vessels greater than or equal to 75 m³ (19,815 gallons) but less than 151 m³ (39,895 gallons) storing a liquid with a maximum true vapor pressure equal to or greater than 15.0 kPa.
C02-01 Benzene storage tank

Permit: F-24-045

- 7) 401 KAR 57:002, Section 2, 40 C.F.R. 61.240 through 60.247, Tables 1 and 2 (Subpart V), National Emission Standards for Equipment Leaks (Fugitive Emission Sources), is applicable to pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems required by this regulation that are intended to operate in volatile hazardous air pollutant (VHAP) service.

C05-03 Fugitive equipment leaks (benzene service)

- 8) 401 KAR 57:002, Section 2, 40 C.F.R. 61.270 through 61.277 (Subpart Y), National Emission Standard for Benzene Emissions from Benzene Storage Vessels, is applicable to each storage vessel that is storing benzene having a specific gravity within the range of specific gravities specified in ASTM D836–84 for Industrial Grade Benzene, ASTM D835–85 for Refined Benzene-485, ASTM D2359–85a or 93 for Refined Benzene-535, and ASTM D4734–87 or 96 for Refined Benzene-545.

C02-01 through C02-03 Benzene storage tanks

C02-14 Benzene storage tank

- 9) 401 KAR 57:002, Section 2, 40 C.F.R. 61.340 through 61.359, and Appendix A through Appendix E (Subpart FF), National Emission Standards for Benzene Waste Operations, applies to a permittee of a chemical manufacturing plant that include hazardous waste treatment, storage and disposal facilities that treat, store or dispose of benzene containing hazardous waste.

C06-01 and C06-07 Benzene waste operations

- 10) 401 KAR 60:005, Section 2(2)(eeee), 40 C.F.R. 60.4230 through 60.4248, Tables 1 through 4 (Subpart JJJJ), Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

C08-03 GENERAC Emergency Generator

C08-04 GENERAC Emergency Generator

- 11) 401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

C08-03 GENERAC Emergency Generator

C08-04 GENERAC Emergency Generator

C08-05 GENERAC Emergency Generator

Non-Applicable Regulations

- 1) 401 KAR 59:105, New process gas streams. This regulation does not apply with respect to sulfur dioxide (SO₂) emissions because the source does not have a SO₂ PTE greater than 100 tons per year. This regulation does not apply with respect to carbon monoxide (CO) emissions because the source does not have a CO PTE greater than 1,000 tons per year and the source is not located in an area classified nonattainment for CO pursuant to 401 KAR 51:010

Permit: F-24-045

- 2) 401 KAR 63:002, Section 2(4)(j), 40 C.F.R. 63.400 through 63.407, Table 1 (Subpart Q), National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers is not applicable as long as the cooling towers are not operated with chromium based water treatment chemicals.
- 3) 401 KAR 57:002, Section 2, 40 CFR 61.300 through 60.306 (Subpart BB), National Emission Standard for Benzene Emissions from Benzene Transfer Operations. Pursuant to 40 CFR 61.300(a), the loading racks are specifically exempted from this regulation because the benzene waste operations are subject to 40 CFR 61, Subpart FF.
- 4) 401 KAR 60:005, Section 2(2)(ccc), 40 C.F.R. 60.480a through 60.489a (Subpart VVa), Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006, does not apply because the facility does not produce as a product, intermediate, or byproduct, any of the chemicals listed in 40 CFR 60.489.
- 5) 401 KAR 60:005, Section 2(2)(ggg), 40 C.F.R. 60.560 through 60.566 (Subpart DDD), Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry, does not apply because the source does not manufacture polypropylene, polyethylene, polystyrene or poly (ethylene terephthalate), as defined in 40 CFR 60.561.
- 6) 401 KAR 63:002, Section 2(4)(III), 40 C.F.R. 63.2430 through 63.2550, Tables 1 to 12 (Subpart FFFF), National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing, does not apply because the source-wide emissions of hazardous air pollutants are limited to less than ten (10) tons per year for a single hazardous air pollutant (HAP) and less than twenty-five (25) tons per year for combined HAPs.

Precluded Regulations

- 1) The source has elected to accept annual limits in order to preclude the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality.
- 2) The source has elected to accept annual limits in order to preclude the applicability 401 KAR 52:020, Title V permits.

Emission and Operating Caps

a. Source-wide Operating Limitations

The thermal oxidizer shall not be out of operation more than 700 hours, during any twelve (12) month rolling period, while any of the following emission units are in operation using benzene as a carrier:

- (1) Carbopol[®] production process (emission units C01-02, C01-03, C01-05, C01-06, C01-07, C01-08, C01-12 or C01-13);
- (2) Benzene storage tanks (emission units C02-01, C02-02 and C02-03);
- (3) Benzene recovery system (emission units C02-04 and C02-05);
- (4) Benzene unloading (emission unit C02-13); and
- (5) Benzene waste operations (emission units C06-03 and C06-05).

Permit: F-24-045

b. Source-wide Emission Limitations

To preclude the applicability of 401 KAR 51:017 — *Prevention of significant deterioration of air quality* and 401 KAR 52:020 — *Title V permits*, the source-wide emissions shall not equal or exceed the following pollutant emission limitations during any twelve (12) month rolling period:

- (1) VOC emissions 90 tons per year;
- (2) Single HAP emissions 9.0 tons per year; and
- (3) Combined HAP emissions 22.5 tons per year.

c. Operating Limitations Carbopol® Process Emission units C01-01 through C01-13)

In order to make the conditional major/synthetic minor emission limits enforceable as a practical matter, the permittee has voluntarily accepted limits of Carbopol® Production in any twelve (12) month rolling period as follows:

- (1) Benzene service shall not exceed 7,000 tons;
- (2) Ethyl acetate service shall not exceed 6,000 tons; and
- (3) Cosolvent and 70/30 cosolvent service shall not exceed a combined total of 11,278 tons.

Air Toxic Analysis

401 KAR 63:020, Potentially Hazardous Matter or Toxic Substances

The Division for Air Quality (Division) has performed modeling using SCREEN View and AERMOD in December 2011 of potentially hazardous matter or toxic substances (Benzene and Acrylic acid) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination

N/A

Permit: F-24-045

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
F-05-051	Initial Issuance	APE20040001	3/14/2006	1/26/2007	Initial Issuance, Operating, Conditional Major/Synthetic Minor	---
F-05-051 R1	Administrative Revision	APE20060001 APE20070001 APE20080001	8/28/2008	10/2/2008	Name change, revised operating plan and insignificant activities.	F-05-051 R1
F-05-051 R2	Minor Revision	APE20100001	1/10/2011	4/1/2011	Added process equipment and reduced time facility can operate without thermal oxidizer	F-05-051 R2
F-11-060	Renewal	APE20110001	5/22/2011	4/20/2012	Renewal and construction of benzene storage tank	F-11-060
F-11-060 R1	Minor revision	APE20140004	7/22/2015	5/6/2016	Modify emission factors for fugitive emissions	F-11-060 R1
F-17-010	Renewal	APE20160002	2/1/2017	8/31/2017	Conditional major renewal with addition of emergency generators	F-17-010
F-17-010 R1	Minor revision	APE20180002 APE20180003	12/11/2018 1/28/2019	3/20/2019	Addition of new production equipment and an emergency generator	F-17-010 R1

SECTION 6 – PERMIT APPLICATION HISTORY

None.

Permit: F-24-045

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds