

Commonwealth of Kentucky  
Division for Air Quality  
***STATEMENT OF BASIS / SUMMARY***

Conditional Major, Operating  
Permit: F-24-051

Greif Packaging, LLC  
Florence, KY 41042

November 25, 2024  
William Parsons, Reviewer

SOURCE ID: 21-015-00010  
AGENCY INTEREST: 272  
ACTIVITY: APE20240001

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## SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3412 - Metal Shipping Barrels, Drums, Kegs, and Pails

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:

County: Boone

Nonattainment Area  N/A  PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  Ozone  Lead

If yes, list Classification:

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

If yes, for what pollutant(s)?

PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  VOC

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

If yes, for what pollutant(s)?

PM<sub>10</sub>  PM<sub>2.5</sub>  CO  NO<sub>x</sub>  SO<sub>2</sub>  VOC

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

If yes, list which pollutant(s): Glycol Ethers, Phenol

PTE\* greater than 25 tpy for combined HAP  Yes  No

\*PTE does not include self-imposed emission limitations.

### Description of Facility:

Greif Packaging, LLC owns and operates a metal drum manufacturing facility.

**SECTION 2 – CURRENT APPLICATION**

Permit Number: F-24-051

Activities: APE20240001

Received: July 29, 2024

Application Complete Date: September 30, 2024

Permit Action:  Initial  Renewal  Significant Rev  Minor Rev  Administrative

Construction/Modification Requested?  Yes  No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action  Yes  No

**Description of Action:**

*APE20240001, Conditional Major Renewal*

The Division received on July 29, 2024 an application from Greif Packaging, LLC to renew their conditional major permit. No permit changes were requested in the application. Permit language has been updated to be consistent and clear and incorporate any regulatory changes since the last permit action.

F-24-051 Emission Summary		
Pollutant	2023 Actual (tpy)	PTE F-24-051 (tpy)
CO	0.75	5.91
NOx	0.90	7.04
PT	1.90	24.98
PM <sub>10</sub>	1.90	24.98
PM <sub>2.5</sub>	1.90	19.60
SO <sub>2</sub>	0.0054	0.042
VOC	47.41	397.3*
Lead	N/A	3.5E-05
Greenhouse Gases (GHGs)		
Carbon Dioxide	1076	8431
Methane	0.021	0.16
Nitrous Oxide	0.020	0.016
CO <sub>2</sub> Equivalent (CO <sub>2</sub> e)	1082	8440
Hazardous Air Pollutants (HAPs)		
Formaldehyde	0.13	2.22
Glycol Ether	0.32	11.91*
Phenol	3.20	16.50*
Combined HAPs:	3.65	31.06*

\*There are source-wide emission limits for VOC of 99 tons per year, single HAPs of 9 tons per year, and combined HAPs of 22.5 tons per year.

**SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS**

<b>Emission Unit #01 Drum Shell Operations</b>				
<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
VOC	Source-wide 99 tpy	To preclude 401 KAR 52:020	Material Balance & MSDS	Recordkeeping, 12 month rolling total
HAPs	Source-wide 9 tpy individual, 22.5 tpy combined	To preclude 401 KAR 52:020	Material Balance & MSDS	Recordkeeping, 12 month rolling total
PM	2.58 lbs/hr	401 KAR 61:020, Section 3(2)	Material Balance & MSDS	Fabric filters, 90% control
Opacity	40%	401 KAR 61:020, Section 3(1)(a)	N/A	Weekly Visual Observation

**Initial Construction Date:** 10/1969, except MP2 which was constructed in 8/2022

**Process Description:**

- 01(1) uses airless spray guns to apply lining coating to the inside of the drums
- 01(2) Natural gas-fired hi-bake oven that is used to dry the drum lining coatings.
- 01(3) uses airless spray guns to apply coating to the outside of the drums
- 01(4) Natural gas-fired hi-bake oven that is used to dry the assembled drums.

**Applicable Regulations:**

**401 KAR 50:012 Section 1(5)** General application, 401 KAR 50:012, Section 1(5). Except as provided by 401 KAR 50:055, nothing in these administrative regulations shall allow a source to remove control equipment or discontinue procedures previously required in a nonattainment area to achieve the national ambient air quality standards until a state implementation plan containing different requirements has been approved by the U.S. EPA.

**401 KAR 61:020, Existing process operations** is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in Chapter 61, commenced before July 2, 1975.

**State Origin Requirement:**

**401 KAR 63:020**, Potentially hazardous matter or toxic substances

**Comments:**

The steel drum manufacturing line that creates the drum shell starts with steel sheets that are processed through a steel grinder. Next, the sheets are conveyed to the sheet resistance welder. Spray lube is then applied to the drums before being sent to the flanger machine that curves the bottom of the drum. Next, the drums are conveyed to either one or two beader processes that add stability rings to the drums. Next, three horn presses are used and then a mono stress activity is performed. The drum shell is coated on the interior surfaces with lacquer in a spray lining booth. The booth uses airless spray guns which drop down into the

**Emission Unit #01 Drum Shell Operations**

open drum and spray the shell interior surfaces. The coated drum is conveyed to the natural gas-fired hi-bake lining oven where the coating is dried. Next, the bottom of the steel drum for the steel drum part line is applied to the steel drum with a seaming compound at the seamer machine. The drum bottom is rolled along with the flanged part of the drum; the seaming compound is used to prevent leaks. The drum is conveyed to the air test to check for leaks. Then, tight-end drums that require a top will have the top piece added in the seamer machine and then tested again while open-top drums are sent directly from the air test to the drum paint booth.

The drums are then coated on the exterior surfaces with paint in the drum paint booth using airless spray guns. After the drums and tops are painted, they are conveyed into the drum paint oven to dry the coating. If reapplication of paint or lining is necessary, the parts are reintroduced to the line before the spray booth. Otherwise, parts are sent to the seamers or final assembly and then to shipping. Some drums are conveyed to the silk screen machine for further graphics application before being assembled and shipped.

40 CFR 63 Subpart M National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products does not apply because the source has requested emission caps for HAPs below a major source threshold.

Boone County, where the facility is located, was previously a moderate nonattainment area for ozone. When the equipment was installed it was subject to 401 KAR 61:132, Existing Miscellaneous metal parts and products surface coating operations because of the moderate nonattainment status. The current status pursuant to 401 KAR 51:010 (as of permit F-24-051) is that Boone county is attainment for the 2015 Ozone standard. The requirements from 401 KAR 61:132 are carried forward by 401 KAR 50:012, Section 1(5) and cited as such in the permit.

**Emission Unit #02 Drum Parts Operations**

<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
VOC	Source-wide 99 tpy	To preclude 401 KAR 52:020	Material Balance & MSDS	Recordkeeping, 12 month rolling total
HAPs	Source-wide 9 tpy individual, 22.5 tpy combined	To preclude 401 KAR 52:020	Material Balance & MSDS	Recordkeeping, 12 month rolling total
PM	2.58 lbs/hr	401 KAR 61:020, Section 3(2)	Material Balance & MSDS	Fabric filters, 90% control
Opacity	40%	401 KAR 61:020, Section 3(1)(a)	N/A	Weekly Visual Observation

**Emission Unit #02 Drum Parts Operations**

**Initial Construction Date:** 10/1969

**Process Description:**

02(1) uses airless spray guns to apply coating to the inside of the drum parts  
 02(2) Natural gas-fired hi-bake oven that is used to dry the drum parts coatings.

**Applicable Regulations:**

**401 KAR 50:012 Section 1(5)** General application,  
 401 KAR 50:012, Section 1(5). Except as provided by 401 KAR 50:055, nothing in these administrative regulations shall allow a source to remove control equipment or discontinue procedures previously required in a nonattainment area to achieve the national ambient air quality standards until a state implementation plan containing different requirements has been approved by the U.S. EPA.

**401 KAR 61:020**, *Existing process operations* is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in Chapter 61, commenced before July 2, 1975.

**State Origin Requirement:**

**401 KAR 63:020**, Potentially hazardous matter or toxic substances

**Comments:**

The steel drum part line that creates the end pieces to the drums starts with steel sheets that are sent to the cutting presses to be cut to size. Next, the cut sheets are sent to the forming presses where the shape of the steel drum part is made. The formed part is sent to a flash oven that is used to burn off lubricants which adhere to the drum parts. The formed part is coated with either paint or lining material using airless spray guns before baking in the natural gas-fired drum parts oven.

40 CFR 63 Subpart M National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products does not apply because the source has requested emission caps for HAPs below a major source threshold.

Boone County, where the facility is located, was previously a moderate nonattainment area for ozone. When the equipment was installed, it was subject to 401 KAR 61:132, Existing Miscellaneous metal parts and products surface coating operations because of the moderate nonattainment status. The current status pursuant to 401 KAR 51:010 (as of permit F-24-051) is that Boone county is attainment for the 2015 Ozone standard. The requirements from 401 KAR 61:132 are carried forward by 401 KAR 50:012, Section 1(5) and cited as such in the permit.

**Emission Unit #03 Parts Washer**

<b>Pollutant</b>	<b>Emission Limit or Standard</b>	<b>Regulatory Basis for Emission Limit or Standard</b>	<b>Emission Factor Used and Basis</b>	<b>Compliance Method</b>
VOC	Source-wide 99 tpy	To preclude 401 KAR 52:020	Material Balance & MSDS	Recordkeeping, 12 month rolling total

**Emission Unit #03 Parts Washer**

**Initial Construction Date:** 4/2016

**Process Description:**

A Cold Cleaner equipped with tank cover.

**Applicable Regulation:**

**401 KAR 59:185. New solvent metal cleaning equipment**, including Section 4(3) and (4), shall apply to each cold cleaner commenced on or after June 29, 1979 and located in Boone, Campbell, or Kenton counties.

**Comments:**

No control

**SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)**

**Testing Requirements/Results**

N/A



**SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS**

**Table A - Group Requirements:**

<b>Emission and Operating Limit</b>	<b>Regulation</b>	<b>Emission Unit</b>
99 tpy of VOC emissions	To preclude the applicability of 401 KAR 52:020, <i>Title V Permits</i>	Source-wide
9.0 tpy of individual HAP emissions	To preclude major source status for HAP	Source-wide
22.5 tpy of combined HAP emissions	To preclude major source status for HAP	Source-wide

**Table B - Summary of Applicable Regulations:**

<b>Applicable Regulations</b>	<b>Emission Unit</b>
<b>401 KAR 50:012 Section 1(5)</b> , General application	01, 02
<b>401 KAR 59:185</b> , New solvent metal cleaning equipment	03
<b>401 KAR 61:020</b> , Existing process operations	01, 02
<b>401 KAR 63:020</b> , Potentially hazardous matter or toxic substances	01, 02

**Table C - Summary of Precluded Regulations:**

<b>Precluded Regulations</b>	<b>Emission Unit</b>
401 KAR 52:020, <i>Title V Permits</i>	

**Table D - Summary of Non Applicable Regulations:**

N/A

**Air Toxic Analysis**

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

The Division for Air Quality (Division) has performed SCREEN View on August 21, 2019 of potentially hazardous matter or toxic substances (Glycol Ethers, Phenol, Xylene) 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

**SECTION 5 – PERMITTING HISTORY**

<b>Permit</b>	<b>Permit Type</b>	<b>Activity#</b>	<b>Complete Date</b>	<b>Issuance Date</b>	<b>Summary of Action</b>	<b>PSD/Syn Minor</b>
V-99-031	Initial	F459	2/13/1998	8/24/2000	Initial Operating Permit	N/A
V-06-031	Renewal	APE20050002	12/2/2005	12/20/2006	Renewal	N/A
V-11-048	Renewal	APE20110001	7/22/2011	2/7/2012	Renewal	N/A
V-17-004	Renewal	APE20160001	9/20/2016	5/30/2017	Renewal	N/A
F-19-033	Initial	APE20190001	8/14/2019	1/22/2020	Initial Operating Permit	Syn Minor
F-19-033 R1	Renewal	APE20220001	2/23/2022	8/12/2022	Replace lining oven in EU1, source name change	N/A

**SECTION 6 – PERMIT APPLICATION HISTORY**

N/A

## **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 <sub>x</sub>	– Nitrogen Oxides
PM	– Particulate Matter
PM <sub>10</sub>	– Particulate Matter equal to or smaller than 10 micrometers
PM <sub>2.5</sub>	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO <sub>2</sub>	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds
MMBtu/hr	– million BTU per hour