



Louisville Metro Air Pollution Control District  
 701 West Ormsby Avenue, Suite 303  
 Louisville, Kentucky 40203-3137



Permit No.: C-0036-1004-16-V

Plant ID: 0036

Effective Date: 0/00/2014

Expiration Date: 0/00/2015

Owner: Clariant Corporation  
 Source: Clariant Corporation (Louisville West Plant)  
 1227 South 12<sup>th</sup> Street  
 Louisville, KY 40210

is authorized to install the described process equipment by the Louisville Metro Air Pollution Control District. Authorization is based on information provided with the application submitted by the company and in accordance with applicable regulations and the conditions specified herein.

Process equipment description:

Box Dryer HT-203-W23-534, Box Dryer HT-203-W23-542, and Ball Wheel MX-203-W26-003.

Applicable Regulation(s): 2.03, 2.04, 2.05, 2.16, 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 7.08, 7.09, 7.25, & 40 CFR 63 Subpart VVVVVV

Control reference(s): N/A

Application No. 78759, 78758, 79431,  
 79458, & 79459

Application Received: 8/4/2016

Permit Writer: Jenny Rhodes

Date of Public Comment 10/22/2016

{Manager1}  
 Air Pollution Control Officer  
 {date1}

**Construction Permit Revisions/Changes**

<b>Revision No.</b>	<b>Permit No.</b>	<b>Issue Date</b>	<b>Public Notice Date</b>	<b>Change Type</b>	<b>Change Scope</b>	<b>Description</b>
Initial	133-06-C	5/19/2006	NA	Initial	Entire Permit	Box Dryers HT-203-W23-534 & HT-203-W23-542
Initial	C-0036-1004-16-V	xx/xx/2016	10/22/2016	Initial	Entire Permit	Initial Permit Issuance to add two new products to existing Small Quantity Manufacturing (203-W26), #3 Rotary Calciner (201-W09), and Catalyst Drying (203-W23).

This permit covers only the provisions of Kentucky Revised Statutes Chapter 77 Air Pollution Control, the regulations of the Louisville Metro Air Pollution Control District (District) and, where appropriate, certain federal regulations. The issuance of this permit does not exempt any owner or operator to whom it has been issued from prosecution on account of the emission or issuance of any air contaminant caused or permitted by such owner or operator in violation of any of the provisions of KRS 77 or District regulations. The permit contains general permit conditions and specific permit conditions. General conditions are applicable unless a more stringent requirement is specified elsewhere in the permit.

### **General Conditions**

- G1. The owner or operator of the affected facility covered by this permit shall notify the District of any process change, equipment change, material change, or change in method or hours of operation. This requirement is applicable to those changes (except equipment changes) that may have the potential for increasing the emission of air contaminants to a level in excess of the applicable limits or standards specified in this permit or District regulations.
- G2. The owner or operator shall obtain new or revised permits from the District in accordance with District Regulation 2.16 for Title V sources, District Regulation 2.17 for FEDOOP sources or District Regulation 2.03 for other sources including:
- a. The company relocates to a different physical address.
  - b. The ownership of the company is changed.
  - c. The name of the company as shown on the permit is changed.
  - d. Permits are nearing expiration or have expired.
- G3. The owner or operator shall submit a timely application for changes according to G2. Timely renewal is not always achievable; therefore, the company is hereby authorized to continue operation in compliance with the latest District permit(s) until the District issues the renewed permit(s).
- G4. The owner or operator shall not be authorized to transfer ownership or responsibility of the permit. The District may transfer permits after appropriate notification (Form AP-100A) has been received and review has been made.
- G5. The owner or operator shall pay the required permit fees within 45 days after issuance of the SOF by the District, unless other arrangements have been proposed and accepted by the District.
- G6. This permit allows operation 8,760 hours per year unless specifically limited elsewhere in this permit.

- G7. The owner or operator shall submit emission inventory reports as required by Regulation 1.06.
- G8. The owner or operator shall timely report abnormal conditions or operational changes, which may cause excess emissions as required by Regulation 1.07.
- G9. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month.
- G10. If a change in the Responsible Official (RO) occurs during the term of this permit, the owner or operator shall provide written notification (Form AP-100A) to the District within 30 calendar days of the date the RO change occurs.

Emission Point <sup>1</sup>	Description	Construction Date	Applicable Regulations	Control Device	Stack ID
<b>EU 203-W23</b>					
HT-203-W23-534	Box Dryer	Sept. 2003	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23 & 7.25	ED-203-W23-150 SC-203-W23-550	S-203-W23-005
HT-203-W23-542	Box Dryer				
<b>EU 101-W26</b>					
MX-203-W26-003	Ball Wheel	2001	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 7.08 & 7.25	DC-203-W26-001	S-203-W26-001

Control ID	Description	Control Efficiency
ED-203-W23-150	Jet venturi fume scrubber, CR Clean Air, Model 20x24/96V	75% NO <sub>x</sub> & Nitric Acid 0% VOC & SO <sub>2</sub> <sup>2</sup>
SC-203-W23-550	Packed-bed Scrubber with Mesh Pad, Sly, Model 54-72	75% NO <sub>x</sub> & Nitric Acid 0% VOC & SO <sub>2</sub> <sup>2</sup>
DC-203-W26-001	Fabric Filter, Donaldson, Model Torit DFT3-12, Downflo	99.786% PM

<sup>1</sup> There are no new or increased emissions associated with #3 Rotary Calciner.

<sup>2</sup> The company is assuming zero control efficiency for VOCs and SO<sub>2</sub> from these control devices.

### Specific Conditions

#### S1. Standards (Regulation 2.03, section 6.1)

a. **PM/PM<sub>10</sub>/PM<sub>2.5</sub>**

- i. The owner or operator shall not allow or cause the plant-wide emissions of PM/PM<sub>10</sub>/PM<sub>2.5</sub> to equal or exceed 100 tons during any consecutive 12-month period. (Regulations 2.04 and 2.05)
- ii. The owner or operator shall not allow PM emissions to exceed 2.34 lb/hr from MX-203-W26-003 based on actual operating hours in a calendar day. (Regulation 7.08, section 3.1.2)<sup>3</sup>

b. **Opacity**

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

c. **NOx**

The owner or operator shall not allow or cause the plant-wide emissions of NOx to equal or exceed 100 tons during any consecutive 12-month period. (Regulations 2.04 and 2.05)

d. **VOC**

- i. The owner or operator shall not allow or cause the plant-wide emissions of VOC to equal or exceed 100 tons during any consecutive 12-month period. (Regulations 2.04 and 2.05)
- ii. The owner or operator shall not allow or cause plant-wide VOC emissions from all affected facilities subject to Regulation 7.25 to equal or exceed 5 tons during any 12 consecutive month period, unless a BACT is submitted and approved by the District. (Regulation 7.25, section 2.1 and 3.1)

e. **HAP**

- i. The owner or operator shall not allow or cause the plant-wide emissions of any single HAP to equal or exceed 10 tons during any consecutive 12-month period. (Regulations 2.04)
- ii. The owner or operator shall not allow or cause the plant-wide emissions of total HAP to equal or exceed 25 tons during any consecutive 12-month period. (Regulations 2.04)

f. **TAC**

- i. The owner or operator shall not allow emissions of any TAC to exceed environmentally acceptable (EA) levels, whether specifically established by modeling or determined by the District to be *de minimis*. (Regulations 5.00 and 5.21)

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<sup>3</sup> This equipment cannot exceed the PM standard uncontrolled.

- ii. The owner or operator shall not allow emissions of triethylamine to exceed *de minimis* levels. (Regulations 5.00 and 5.21)<sup>4, 5</sup>
- iii. The owner or operator shall limit production from HT-203-W23-534 or HT-203-W23-542 to 369 pounds per hour and 898 hours per 12-consecutive month period to maintain triethylamine emissions below pound per year *de minimis* levels.<sup>6</sup>
- iv. The owner or operator shall not allow emissions of Nitric Acid to exceed 1.44 lb per 8-hour period from each box dryer HT-203-W23-534 and HT-203-W23-542. (Regulation 5.21, section 4.3)<sup>7</sup> (See Comment 1)
- v. The owner or operator shall operate and maintain the control devices ED-203-W23-150 and SC-203-W23-550 at all times an associated emission point is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulations 5.00 and 5.21)

**S2. Monitoring and Record Keeping** (Regulation 2.03, section 6.1)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

**a. PM/PM<sub>10</sub>/PM<sub>2.5</sub>**

The owner or operator shall calculate and record the plant-wide consecutive 12-month PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions for each month in the reporting period. Where appropriate, the specific Emission Point control efficiencies and/or emission factors shall be applied. The calculation shall be performed as follows unless otherwise approved in writing by the District: (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

$$PM/PM_{10}/PM_{2.5} = \sum_1^x [U_x(1 - C_{Conx})] + \sum_i^z U_z + F$$

Where:

- PM/PM<sub>10</sub>/PM<sub>2.5</sub> = Total plant-wide emissions of PM/PM<sub>10</sub>/PM<sub>2.5</sub>
- U<sub>x</sub> = Uncontrolled PM emission from each Emission Point (x)
- C<sub>Conx</sub> = Control Efficiency of each control device for each Emission Point (x)
- U<sub>z</sub> = Uncontrolled PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions from each uncontrolled Emission Point (z) during bypass events
- F = Total plant-wide fugitive PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions

<sup>4</sup> This equipment cannot exceed Antimony *de minimis* levels uncontrolled.

<sup>5</sup> Triethylamine *de minimis* levels are 3,360 lb/year and 3.78 lb/hr with an annual averaging period.

<sup>6</sup> This equipment cannot exceed the 3.78 lb/hr *de minimis* level for Triethylamine uncontrolled. This equipment can exceed the 3,360 lb/year *de minimis* level for Triethylamine uncontrolled. The company is assuming zero control efficiency for Triethylamine for this equipment.

<sup>7</sup> The potential nitric acid emission rate from the EA demonstration submitted September 15, 2016, was modeled controlled by ED-203-W23-150 and SC-203-W23-550 in series.

**b. Opacity**

- i. The owner or operator shall, monthly, conduct a one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall, monthly, maintain records of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

**c. NO<sub>x</sub>**

The owner or operator shall calculate and record the plant-wide consecutive 12-month NO<sub>x</sub> emissions for each month in the reporting period.

$$NOx = \sum_1^x [U_x(1 - C_{Conx})] + \sum_1^z U_z + F$$

Where:

NO <sub>x</sub>	=	Total plant-wide emissions of NO <sub>x</sub>
U <sub>x</sub>	=	Uncontrolled NO <sub>x</sub> emission from each Emission Point (x)
C <sub>Conx</sub>	=	Control Efficiency of each control device for each Emission Point (x)
U <sub>z</sub>	=	Uncontrolled NO <sub>x</sub> emissions from each uncontrolled Emission Point (z) during bypass events
F	=	Total plant-wide fugitive NO <sub>x</sub> emissions

**d. VOC**

- i. The owner or operator shall calculate and record the plant-wide consecutive 12-month VOC emissions for each month in the reporting period.

$$VOC = \sum_1^x [U_x(1 - C_{Conx})] + \sum_1^z U_z + F$$

Where:

VOC	=	Total plant-wide emissions of VOC
U <sub>x</sub>	=	Uncontrolled VOC emission from each Emission Point (x)

- $C_{Conx}$  = Control Efficiency of each control device for each Emission Point (x)  
 $U_z$  = Uncontrolled VOC emissions from each uncontrolled Emission Point (z) during bypass events  
 $F$  = Total plant-wide fugitive VOC emissions

- ii. The owner or operator shall calculate and record the plant-wide consecutive 12-month VOC emissions from all affected facilities subject to Regulation 7.25 for each month in the reporting period.

e. **HAP**

The owner or operator shall monthly calculate and record the plant-wide consecutive 12-month emissions of each single HAP and total HAP for each month in the reporting period. This must include all Emission Points and fugitive sources. Where appropriate, the specific Emission Point control efficiencies and/or emission factors shall be applied. The calculation shall be performed as follows unless otherwise approved in writing by the District: (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

$$HAP_A = \sum_1^x [U_x(1 - C_{Conx})] + \sum_1^z U_z + F$$

Where:

- $HAP_A$  = Total plant-wide emissions of an individual HAP (A)  
 $U_x$  = Uncontrolled HAP emission from each Emission Point (x)  
 $C_{Conx}$  = Control Efficiency of each control device for each Emission Point (x)  
 $U_z$  = Uncontrolled HAP emissions from each uncontrolled Emission Point (z) during bypass events  
 $F$  = Total plant-wide fugitive HAP emissions

f. **TAC**

- i. The owner or operator shall maintain records sufficient to demonstrate environmental acceptability, including, but not limited to MSDS/SDS, analysis of emissions, and/or modeling results.
- ii. The owner or operator shall re-evaluate the environmental acceptability and document the environmentally-acceptable emissions if a new TAC is introduced or the content of a TAC in a raw material increases and emissions exceed *de minimis* levels as a result of this change.
- iii. For HT-203-W23-534 and HT-203-W23-542:
- 1) The owner or operator shall daily record the type and amount of product transferred, and the hours of operation.
  - 2) If the throughput of the materials exceed 369 pound per hour or the hours of operation exceed 898 hours per year, the owner or operator shall calculate and record triethylamine emissions during the 12 consecutive month period to demonstrate that the emissions are below *de minimis* levels.

- iv. If there is any time that control devices ED-203-W23-150 or SC-203-W23-550 are bypassed or not in operation when HT-203-W23-534 or HT-203-W23-542 are operating, then the owner or operator shall keep a record of the following for each bypass event:
  - 1) Date;
  - 2) Start time and stop time;
  - 3) Identification of the control device and process equipment;
  - 4) Nitric acid emissions during the bypass in pound per 8-hour period;
  - 5) Summary of the cause or reason for each bypass event;
  - 6) Corrective action taken to minimize the extent or duration of the bypass event; and
  - 7) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.
- v. The owner or operator shall monitor and record the pressure drop at least once during each operating day to ensure it is maintained within the operating ranges in the table below:

Control ID	Pressure Drop (“ w.c.)
SC-203-W23-550	0.5 – 8.0
DC-203-W26-001	1.0 – 7.0

**S3. Reporting** (Regulation 2.03, section 6.1)

The owner or operator shall submit semi-annual compliance reports that include the information in this section. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall clearly identify any deviation from a permit requirement. The compliance reports shall be postmarked within 60 days following the end of each reporting period. All compliance reports shall include the following certification statement per Regulation 2.16, section 3.5.11.

- “Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete”.
- Signature and title of the responsible official of the company.

The compliance reports are due on or before the following dates of each calendar year:

<u>Reporting Period</u>	<u>Report Due Date</u>
January 1 <sup>st</sup> through June 30 <sup>th</sup>	August 29 <sup>th</sup>
July 1 <sup>st</sup> through December 31 <sup>st</sup>	March 1 <sup>st</sup>

a. **PM/PM<sub>10</sub>/PM<sub>2.5</sub>**

The owner or operator shall report the plant-wide consecutive 12-month emissions of PM/PM<sub>10</sub>/PM<sub>2.5</sub> for each month in the reporting period.

b. **Opacity**

- i. Any deviation from the requirement to perform or record the required monthly visible emissions surveys or Method 9 tests.
- ii. The number, date, and time where visible emissions were observed and the results of the Method 9 test performed.
- iii. Identification of all periods of exceeding the opacity standard.
- iv. Description of any corrective action taken for each exceedance.

c. **NO<sub>x</sub>**

The owner or operator shall report the plant-wide consecutive 12-month emissions of NO<sub>x</sub> for each month in the reporting period.

d. **VOC**

- i. The owner or operator shall report the plant-wide consecutive 12-month emissions of VOC for each month in the reporting period.
- ii. The owner or operator shall report the plant-wide consecutive 12-month emissions of VOC from affected facilities subject to Regulation 7.25 for each month in the reporting period.

e. **HAP**

The owner or operator shall report the plant-wide consecutive 12-month emissions of each single HAP and total HAP for each month in the reporting period. HAP compounds shall be reported in terms of the HAP compound.

f. **TAC**

- i. The owner or operator shall report any conditions that were inconsistent with those conditions analyzed in the most recent Environmental Acceptability Demonstration or a negative declaration stating that operations were within the conditions analyzed. This includes, but is not limited to, control device upset conditions.
- ii. For any conditions outside the analysis, the owner or operator shall re-analyze to determine whether these conditions comply with the STAR program. Changes to the air dispersion modeling program or meteorological data used in the most recent Environmental Acceptability Demonstration do not trigger the requirement to re-analyze. (Regulation 5.21 sections 4.22 – 4.24)
- iii. The owner or operator shall submit the re-evaluated EA demonstration to the District within 6 months after a change of a raw material.

- iv. The owner or operator shall report any exceedence of the 369 pound per hour throughput limit or 898 hours per year operation limit or a negative declaration.
- v. The owner or operator shall report the following information regarding Nitric Acid bypasses in the semi-annual compliance reports:
  - 1) Number of times the Nitric Acid vent stream bypasses the control device and is vented to the atmosphere;
  - 2) Duration of each bypass to the atmosphere;
  - 3) Calculated pound per 8-hour period Nitric Acid emissions for each bypass; or
  - 4) A negative declaration if no bypasses occurred.
- vi. The owner or operator shall report any excursions of the pressure drop range for SC-203-W23-550 or DC-203-W26-001 or a negative declaration if there were none.

**Comment**

- 1. The modeling results of the environmentally acceptable demonstration submitted with the application dated August 3, 2016, updated September 16, 2016:

Nitric Acid	HQ ≤ 3 Industrial Property	HQ ≤ 1 Non-Industrial Property
HT-203-W23-534	1.85	0.48
HT-203-W23-542	1.85	0.48
Individual stationary source, all P/PE <sup>8</sup>	1.85	0.48

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<sup>8</sup> Emission points T-201-W07-500, T-201-W07-501, T-201-W07-505, HT-203-W23-534, HT-203-W23-542, and T-250-W55-102 were modeled together using AERMOD in the EA Demonstration received September 16, 2016.

**Attachment A - Default Emission Factors, Calculation Methodologies, & Stack Tests**

Generally, emissions are calculated by multiplying the throughput (ton, MMCF, gallons, etc) or hours of operation of the equipment by the appropriate emission factor and accounting for any control devices unless otherwise approved in writing by the District. Approved emission factors determined by future stack test can replace the emission factors below:

Emission Point	Description	Emission Factors
<b>EU 203-W23</b>		
HT-203-W23-534	Box Dryer	NOx/SO <sub>2</sub> /VOC/Triethylamine/Nitric Acid % loss based on amount of material throughput converted to Pollutant
HT-203-W23-542	Box Dryer	
<b>EU 101-W26</b>		
MX-203-W26-003	Ball Wheel	1% loss PM (Assuming PM=PM <sub>10</sub> =PM <sub>2.5</sub> ) <sup>9</sup> VOC% loss based on amount of material throughput converted to VOC Antimony/Nitric Acid% loss based on amount of material throughput and 1% solution loss 40.70% loss of Antimony Compounds is Antimony Base Element

<sup>9</sup> The 1% loss for PM is a District default assumption.