

Facility Name: **BASF Corporation – Savannah Operations**

City: Savannah

County: Chatham

AIRS #: 04-13-051-00023

Application #: 917651

Date SIP Application Received: March 27, 2025

Date Title V Application Received: March 27, 2025

Permit No: 3295-051-0023-V-05-1

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Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and proposed operating permit amendment. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1) and 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Existing Permits

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Description
3295-051-0023-V-05-0	October 15, 2023	Title V Permit Renewal

B. Regulatory Status

1. PSD/NSR/RACT

This facility is considered a minor source under PSD regulations. Potential emissions of all criteria pollutants are either less than or limited to less than the PSD major source threshold of 250 tons per year.

Condition 2.1.1 limits the amount of formic acid used in the plant to 2,500,000 pounds per 12 consecutive months. Formic acid (a 16% solution) used in Spray Dryer D1A breaks down to form CO at a ratio of 1.64:1. This annual usage limit was established to limit CO emitted from the formic acid breakdown. The potential CO emitted from fuel combustion plus the CO resulting from the limited formic acid usage totals less than 250 tons per year. The facility's permit has a PSD avoidance limit for CO in the form of limits on formic acid usage.

NO_x emissions from this plant consist of those from fuel combustion and those from the decomposition of nitrates added to certain production processes. Condition 2.1.2 has a PSD avoidance limit of 250 tons per year for NO_x emissions.

Condition 3.2.1 limits particulate matter (PM) from all sources not otherwise specified to 0.02 gr/dscf. This condition is a holdover from when the plant was assumed to be subject to 40 CFR 60 Subpart OOO. The previous owner (Engelhard) appealed that because no grinding of a nonmetallic mineral occurs. It was determined that NSPS Subpart OOO does not apply to this facility. The Permittee accepted the PM emission limit of 0.02 gr/dscf. This limit also helps limit the PM potential emissions from the plant to less than 250 tpy for PSD avoidance.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	yes	✓		
PM ₁₀	yes	✓		
PM _{2.5}	yes	✓		

SIP CONSTRUCTION PERMIT AND TITLE V MINOR MODIFICATION APPLICATION REVIEW

SO ₂	yes			✓
VOC	yes			✓
NO _x	yes	✓		
CO	yes	✓		
TRS	n/a			
H ₂ S	n/a			
Individual HAP	yes			✓
Total HAPs	yes			✓

II. Proposed Modification

A. Description of Modification

In this modification, BASF Corporation – Savannah Operations is requesting the installation of a new dryer to replace existing Rotary Dryer D3. The replacement dryer will have the same heat input capacity, 20 MMBtu/hr, burn natural gas and be equipped with a Low Nox burner. The dryer will use the same existing baghouse as the current rotary dryer. There are no other changes to the existing units and operations. The potential emissions for the facility will not increase as a result of this modification.

B. Emissions Change

The facility is replacing Rotary Dryer D3 with a new dryer with the same heat capacity, thus there is no change in PM emissions. BASF Corporation– Savannah Operations states there will be no increase in potential emissions from material handling and storage, and formic acid usage as result of this modification. The potential NOx and ammonia emissions from processing in the rotary dryer will not change due to the replacement of Rotary Dryer D3.

C. PSD/NSR Applicability

BASF Corporation– Savannah Operations is a minor source under PSD applicability. The facility-wide potential emissions of all criteria pollutants are below the major source threshold of 250 tpy. The proposed modifications will not result in an emissions increase for any PSD pollutants. Therefore, the facility is not subject to NSR/PSD rules.

III. Facility Wide Requirements

There are no changes associated with this modification.

IV. Regulated Equipment Requirements

A. Brief Process Description

The facility manufactures three products: alumina, fluid cracking catalysts, and microspheres. The rotary dryers are used in the production of fluid cracking catalysts. Raw materials are mixed in tanks and then crystallized in reactors. The catalyst then goes through a base exchange process on belt filters, rotary dryers and calciners. The finished catalyst is pneumatically conveyed to storage hoppers. The product is loaded from the hoppers into either railcars, trucks or bagged into supersacks for delivery to oil refineries.

B. Equipment List for the Process

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
D3	Rotary Dryer 20 MMBtu/hr	40 CFR 60 Subpart UUU 391-3-1-.02(2)(e) 391-3-1-.02(2)(g)	CD03	Baghouse with COMS

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards are intended as a compliance tool and may not be definitive.

C. Equipment & Rule Applicability

Emission and Operating Caps –

Condition 3.2.2 limits ammonia emissions from the D3/D10 stack and from D7/D8 stack to ensure that the Georgia EPD's toxic impact assessment guidelines for ammonia will not be violated. The sources of the ammonia emissions are nitrates and ammonia-based compounds used in the processes involved. Ammonia is not a regulated pollutant, and therefore no other regulations apply.

Applicable Rules and Regulations -

Georgia Rule (g) - "Sulfur Dioxide" applies to any fuel burning source at this facility. Rule (g) limits the sulfur content of any fuel used to fire such fuel burning sources to 2.5% by weight. Sources affected are the dryers, calciners, and boilers. Since all of these sources burn exclusively natural gas or propane whose sulfur contents are substantially less than 2.5%, the likelihood of violation of this rule is minimal.

40 CFR 60 Subpart UUU - "Calciners and Dryers in Mineral Industries" applies to dryers and calciners constructed or reconstructed after April 23, 1986. This NSPS standard limits the PM and visible emissions from dryers to 0.025 gr/dscf, and 10% opacity. PM and visible emissions from calciners, and calciners and dryers installed in series are limited to 0.04 gr/dscf and 10% opacity. Monitoring required under this NSPS standard includes a COMS for any baghouse-controlled unit, and pressure drop, water flow and water pressure monitors for those using scrubbers to control emissions. Dryer/Calciner combinations D7/D8, D3/D10, and calciner D6 are subject to the 0.04 gr/dscf PM emission limit.

D. Permit Conditions

The replacement Rotary Dryer D3 is subject to the existing requirements in Conditions 3.2.2 and 3.3.1. These conditions limit the ammonia emissions from the D3/D10 and D7/D8 stack to ensure that the Georgia toxic guidelines for ammonia are not violated and limits the opacity to 10 percent for the dryers.

V. Testing Requirements (with Associated Record Keeping and Reporting)

Not applicable.

VI. Monitoring Requirements (with Associated Record Keeping and Reporting)

The replacement Rotary Dryer D3 is subject to the existing requirements in Conditions 5.2.1, 5.2.8, and 5.2.11. This includes operating a Continuous Opacity Monitoring System, (COMS), to measure and record the opacity of emissions and comply with the Compliance Assurance Monitoring (CAM) Rule.

VII. Other Record Keeping and Reporting Requirements

The replacement Rotary Dryer D3 is subject to the existing requirements in Conditions 6.1.7 and 6.2.2 through 6.2.6. This includes reporting exceedances and recording operating hours and fuel usage of the dryer to be used in calculating monthly and twelve-month rolling NOx emissions.

New Condition 6.2.9 requires the facility to provide written notification of the initial startup date of the replacement Rotary Dryer D3.

VIII. Specific Requirements

A. Operational Flexibility

Not applicable

B. Alternative Requirements

Not applicable

C. Insignificant Activities

Not applicable

D. Temporary Sources

Not applicable

E. Short-Term Activities

Not applicable

F. Compliance Schedule/Progress Reports

Not applicable

G. Emissions Trading

Not applicable

H. Acid Rain Requirements/CAIR/CSPAR

Not applicable

I. Prevention of Accidental Releases

Not applicable

J. Stratospheric Ozone Protection Requirements

Not applicable

K. Pollution Prevention

Not applicable

L. Specific Conditions

Not applicable

Addendum to Narrative

The 45-day EPA review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//