

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 052015-012

Project Number: 2015-02-020
Installation Number: 127-0001

Parent Company: BASF Corporation Agricultural Products

Parent Company Address: P.O. Box 13528, Research Triangle Park, NC 27709-3528

Installation Name: BASF Corporation - Hannibal Site

Installation Address: 3150 Highway JJ, Palmyra, MO 63461

Location Information: Marion County, S14, T53N, R5W

Application for Authority to Construct was made for:

Replacement of existing centrifuges associated with IMI-1. The new centrifuges will result in an increase in production. This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

MAY 20 2015

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "Kya L. Moore", written over a horizontal line.
DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. The permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources' Northeast Regional Office within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060(12)(A)10. "Conditions required by permitting authority."

BASF Corporation - Hannibal Site
Marion County, S14, T53N, R5W

1. **Superseding Condition**
The conditions of this permit supersede all special conditions found in Construction Permits 0885-005A, 0694-008, and 102009-007 previously issued by the Air Pollution Control Program.
2. **Control Device Requirement – Baghouse, HEPA Filters, and Bag Filters**
 - A. BASF Corporation - Hannibal Site shall control emissions from the emission sources in Table 1 using the indicated control device as specified in the permit application. The control devices shall be in operation at all times the associated emission sources are in operation.

Table 1 – Required Particulate Matter Control Devices

Emission Source	Description	Required Control Device(s)
IMI-1 05	Diacid Charge System	Baghouse and HEPA filter
IMI-1 09	Rework Hopper	Baghouse and HEPA filter
	Packaging Operations	Baghouse and HEPA filter
IMI-1 10	Supersack Charging	Baghouse and HEPA filter
IMI-1 12	Solids Handling	Bag filter
IMI-1 22	Product Rework Pneumatic Transfer System	Baghouse
IMI-1 23	Powder Pneumatic Transfer System	Baghouse

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. The baghouses, HEPA filters, and bag filters shall be operated and maintained in accordance with the manufacturer's specifications. Each control device shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters for the baghouses, HEPA filters, and bag filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. BASF Corporation - Hannibal Site shall monitor and record the operating pressure drop across each control device at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's specifications.
 - E. BASF Corporation - Hannibal Site shall maintain a copy of the manufacturer's specification for each baghouse, HEPA filter, and bag filter on site.
 - F. BASF Corporation - Hannibal Site shall maintain an operating and maintenance log for each control device which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
3. Control Device Requirement – PR-47 Incinerator(s)
- A. BASF Corporation - Hannibal Site shall control VOC and HAP emissions from the IMI-1 process using PR-47 Incinerator(s) as specified in the permit application.
 - B. PR-47 Incinerator(s) shall be maintained and operated in accordance with the requirements of 40 CFR Part 63, Subpart EEE.
4. Control Requirement – Leak Detection and Repair (LDAR)
BASF Corporation – Hannibal Site shall control fugitive emissions in accordance with the LDAR requirements of 40 CFR Part 63, Subpart MMM.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

5. **Record Keeping and Reporting Requirements**
BASF Corporation - Hannibal Site shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2015-02-020
Installation ID Number: 127-0001
Permit Number:

BASF Corporation - Hannibal Site
3150 Highway JJ
Palmyra, MO 63461

Complete Date
of Application: March 17, 2015

Parent Company:
BASF Corporation Agricultural Products
P.O. Box 13528
Research Triangle Park, NC 27709-3528

Marion County, S14, T53N, R5W

REVIEW SUMMARY

- BASF Corporation - Hannibal Site has applied for authority to replace the existing centrifuges associated with IMI-1. The new centrifuges will result in an increase in production.
- HAP emissions are expected from the production increase. Toluene (108-88-3), methyl isobutyl ketone (108-10-1), and cyanide compounds (20-09-7) are emitted from the IMI-1 process. Potential emissions of toluene, methyl isobutyl ketone, and cyanide compounds from the IMI-1 process are below their respective SMALs.
- 40 CFR Part 63, Subpart EEE - *National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors* is applicable to PR-47 Incinerator(s). This regulation requires a VOC destruction efficiency of 99.99 percent. As periodic testing of PR-47 Incinerator(s) is required by MACT EEE and included in the installation's operating permit, performance testing of this emission source for this permit was deemed unnecessary.
- 40 CFR Part 63, Subpart MMM – *National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production* is applicable to the IMI-1 process. This regulation requires LDAR; therefore, special conditions to reduce fugitive VOC emissions from this project were deemed unnecessary.
- Air pollution control devices are being employed to reduce emissions from the equipment associated with this project. Table 2 provides a list of required control devices.

Table 2 – Required Control Devices for this Project

Emission Source	Description	Control Device and Efficiency	Pollutant(s) Controlled
IMI-1 05	Diacid Charge System	Baghouse 99% and HEPA filter 99%	PM, PM ₁₀ , and PM _{2.5}
IMI-1 09	Rework Hopper	Baghouse 99% and HEPA filter 99%	PM, PM ₁₀ , and PM _{2.5}
	Packaging Operations	Baghouse 99% and HEPA filter 99%	PM, PM ₁₀ , and PM _{2.5}
IMI-1 10	Supersack Charging	Baghouse 99% and HEPA filter 99%	PM, PM ₁₀ , and PM _{2.5}
IMI-1 12	Solids Handling	Bag Filter 99%	PM, PM ₁₀ , and PM _{2.5}
IMI-1 17	Equipment Leaks	LDAR: For Connectors 93% For Light Liquid Valves 88% For Gas Valves 92% For Relief Valves with Rupture Disks 100%	VOC and HAP
IMI-1 22	Product Rework Pneumatic Transfer System	Baghouse 99%	PM, PM ₁₀ , and PM _{2.5}
IMI-1 23	Powder Pneumatic Transfer System	Baghouse 99%	PM, PM ₁₀ , and PM _{2.5}
-	IMI-1 Process	Incinerator 99.99%	VOC and HAP

- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*. Potential emissions of the project after controls are below de minimis levels. A permit is required to establish federally enforceable control device requirements.
- This installation is located in Marion County, an attainment area for all criteria pollutants.
- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2 Item #9 *Hydrofluoric, sulfuric, or nitric acid plants*. The installation's major source level is 100 tons per year and fugitive emissions count toward major source applicability.
- Ambient air quality modeling of criteria pollutants was not performed since potential emissions of the application are below de minimis levels. Ambient air quality modeling of HAPs was not performed as potential emissions of each individual HAP are below their respective SMALs.
- Emissions testing is not required for the equipment modified by this permit.
- An amendment to Part 70 Operating Permit application, Project 2014-12-035, is required within one year of commencement of operations.

- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

BASF Corporation – Hannibal Site is an agricultural chemical manufacturing installation in Marion County, Missouri. The installation is a major source for both construction permits and operating permits. The installation currently operates under Part 70 operating permit OP2010-064 which expires June 22, 2015. The installation submitted a Part 70 operating permit renewal application, Project 2014-12-035, in December of 2014. If the Part 70 renewal is not issued prior to June 22, 2015, OP2010-064 will remain effective until a renewal is issued.

The following New Source Review permits have been issued to BASF Corporation - Hannibal Site by the Air Pollution Control Program:

Table 3: Permit History

Permit Number	Description
1179-EPA	Major source permit for a nitric acid plant
0380-002	Installation of an animal feed intermediate spray drying system
0385-002	Installation of a solid waste incinerator for herbicide wastes generated during processing
0885-005	Construction of SCEPTER and ARSENAL herbicide production lines
0887-003	Construction of ASSERT herbicide production line
0488-001	Construction of a sulfuric acid regeneration facility
0588-007	Installation of a packaging operation for THIMET and COUNTER insecticides
0988-004	Installation of a back-up flare for odor control
0489-004	Addition of bulk herbicide blending and storage facility
1189-001	Installation of the PROWL – “C” incinerator and waste storage tank
0690-005	Modification of existing equipment to increase PROWL herbicide production
0491-002	Addition of a fermenter to expand pharmaceutical plant
0392-006	Construction of a bulk lime and dicalite handling equipment and storage
0393-001	Modification of existing animal feed intermediate plant
0793-001	Construction of a pellet-coating plant
0694-008	Addition of a centrifuge to increase PROWL herbicide production
0894-010	Modification to increase COUNTER insecticide production
0696-013	Modification to imidazoline (IMI-2) line
122000-003	Addition of pyrrole production plant
0997-003	Modification to increase PROWL herbicide production
062000-019	Modification to increase PROWL herbicide production
082005-014	Modification of IMI-2 to produce three new pesticide active ingredient intermediates for imidazolinone herbicides
022006-005	Modification of the pyrrole/MMPDC facility to produce a new broad-spectrum insecticide, 320I. Installation of a new potassium methoxide scrubber.
102008-001	Production of a new active ingredient, 800H, and increased production of three diacids
062000-019A	Reduce reporting requirements for excess SO ₂ emissions during startup
062000-019B	Account for emissions during cleaning
102009-007	Debottlenecking of imidazolinone production
092009-005	Increase MMPDC production
092010-009	Conversion of a storage tank from herbicide to o-xylene
022011-009	Addition of Intermediate Tank 150-021 to PROWL process
072013-001	Addition of boilers
092014-007	Increase 800H production

PROJECT DESCRIPTION

The installation will be replacing three existing centrifuges on their IMI-1 process. The IMI-1 process is permitted to produce four products: Arsenal[®], Pursuit[®], Raptor[®], and Cadre[®]. The new centrifuges will increase the production rate of the IMI-1 process by reducing batch length. The installation has requested that the maximum hourly design rates of the IMI-1 process remain confidential; therefore, these values are not listed in this permit. The maximum hourly design rates can be obtained from the confidential file, Project 2015-02-021 with consent from the installation. An equipment list for the IMI-1 process is available in Table 4. The new centrifuges are not emission sources; therefore, there are no new emission sources associated with this project. Each emission source listed in Table 4 is an existing emission source which is considered modified by this permit.

Table 4: IMI-1 Process Equipment List

Emission Source	Description	Pollutant(s)
IMI-1 01	Toluene Storage Tank	VOC, HAP, toluene
IMI-1 02	Methyl Isobutyl Ketone Storage Tank	VOC, HAP, methyl isobutyl ketone
IMI-1 03	Acetic Anhydride Storage Tank	VOC
IMI-1 04	Sulfur Acid Storage Tank	None
IMI-1 05	Diacid Charge System	PM, PM ₁₀ , and PM _{2.5}
IMI-1 06A	Emergency Bypass ¹	VOC, HAP, toluene, methyl isobutyl ketone, cyanide compounds
IMI-1 06B		
IMI-1 09	Rework Hopper	PM, PM ₁₀ , PM _{2.5}
	Packaging Operations	PM, PM ₁₀ , PM _{2.5}
IMI-1 10	Supersack Charging	PM, PM ₁₀ , PM _{2.5}
IMI-1 11	Multipurpose Storage Tank	VOC
IMI-1 12	Solids Handling	PM, PM ₁₀ , PM _{2.5}
IMI-1 13	Aqueous Premix Tank	VOC
IMI-1 14	Final Product Storage Tank	VOC
IMI-1 15	Drain Tank	VOC, HAP, toluene
IMI-1 16	Drain Hold Tank	VOC, HAP, toluene
IMI-1 17	Equipment Leaks	VOC, HAP, toluene, methyl isobutyl ketone, cyanide compounds
IMI-1 20	(2) DMSO Storage Tanks	VOC
IMI-1 21	(2) Toximul Storage Tanks	VOC
IMI-1 22	Product Rework Pneumatic Transfer System	PM, PM ₁₀ , PM _{2.5}
IMI-1 23	Powder Pneumatic Transfer System	PM, PM ₁₀ , PM _{2.5}
PR-47	Incinerator(s) ²	VOC, HAP, toluene, methyl isobutyl ketone, cyanide compounds

¹ Operation of the emergency bypass does not occur during normal operation; therefore, emissions from this source were not evaluated as part of this project. The emergency bypass was listed for informational purposes only.

² PR-47 Incinerator(s) are used as a control device to reduce emissions from the IMI-1 process.

EMISSIONS/CONTROLS EVALUATION

In order to determine the potential emission rate of each emission source associated with the IMI-1 process the product with the highest maximum hourly design rate for the emission source was used.

Storage Tanks (IMI-1 01, IMI-1 02, IMI-1 03, IMI-1 11, IMI-1 13, IMI-1 14, IMI-1 15, IMI-1 16, IMI-1 20, & IMI-1 21)

Potential emissions from storage tanks were determined using EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 7.1 "Organic Liquid Storage Tanks" (November 2006).

Material Handling/Transfer (IMI-1 05, IMI-1 09, & IMI-1 10)

As an emission factor specific to the material being handled was unavailable, potential emissions were calculated using an emission factor for lime transfer and conveying, Process SCC 30501615, from FIRE. These emission sources use a negative pressure dust collection system to capture emissions. A capture efficiency of 95% was assumed. Captured emissions are routed to a baghouse with an assumed minimum control efficiency of 99% and then to a HEPA filter with an assumed minimum control efficiency of 99%. As the emission sources are located inside a building, uncaptured emissions were given 3.7% control for enclosure.

Solids Handling (IMI-1 12)

As an emission factor specific to the material being handled was unavailable, potential emissions were calculated using an emission factor for lime transfer and conveying, Process SCC 30501615, from FIRE. This emission source uses a negative pressure dust collection system to capture emissions. A capture efficiency of 95% was assumed. Captured emissions are routed to a baghouse with an assumed minimum control efficiency of 99%. As the emission sources are located inside a building, uncaptured emissions were given 3.7% control for enclosure.

Equipment Leaks (IMI-1 17)

Potential emissions from equipment leaks were determined using equations for the SOCOMI industry from Table 2-3 of EPA document "Protocol for Equipment Leak Emission Estimates" (November 1995). As these sources are subject to the LDAR requirements of MACT MMM, control efficiencies of 93% for connectors, 88% for light liquid valves, 92% for gas valves, 75% for pump and agitator seals, and 100% for relief valves equipped with rupture disks were used in emission calculations and were obtained from Table 5-2 of the same EPA document.

Pneumatic Transfer (IMI-1 22 and IMI-1 23)

As an emission factor specific to the material being handled was unavailable, potential emissions were calculated using an emission factor for lime transfer and conveying, Process SCC 30501615, from FIRE. These materials are transferred pneumatically; therefore, a capture efficiency of 100% was assumed. Captured emissions are routed to a baghouse with an assumed minimum control efficiency of 99%.

IMI-1 Process Vessels

Vapors from the IMI-1 process vessels are captured and routed to PR-47 Incinerator(s). PR-47 Incinerator(s) is regulated by MACT EEE and required to achieve a VOC destruction efficiency of 99.99%.

Project Emissions

This project is a modification of the existing IMI-1 process. As a modification, project emissions from modified sources could be determined as the potential emission rate minus the baseline actual emission rate; however, as the potential emission rate of the project is below de minimis levels, it was determined that calculation of the baseline actual emission rate was unnecessary.

Table 5 provides an emissions summary for this project. Existing actual emissions were taken from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the IMI-1 process, assuming continuous operation (8,760 hours per year).

Table 5: Emissions Summary³ (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application
PM	25.0	Major	N/A	0.69
PM ₁₀	15.0	Major	156.89	0.69
PM _{2.5}	10.0	Major	129.21	0.69
SO _x	40.0	Major	2,556.78	N/A
NO _x	40.0	Major	460.99	N/A
VOC	40.0	Major	28.94	4.43
CO	100.0	Major	141.23	N/A
GHG (CO ₂ e)	75,000	N/D	N/A	N/A
HAPs	25.0	Major	35.60	3.90
Toluene	10.0 ⁴	N/D	3.65	2.54
Methyl isobutyl ketone	10.0 ⁵	N/D	0.50	1.35
Cyanide compounds	10.0 ⁶	N/D	N/D	0.04

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of the project after controls are below de minimis levels. A permit is required to establish federally enforceable control device requirements.

³N/A = Not Applicable; N/D = Not Determined

⁴The SMAL for toluene is 10.0.

⁵The SMAL for methyl isobutyl ketone is 10.0.

⁶The SMAL for cyanide compounds is 0.1.

APPLICABLE REQUIREMENTS

BASF Corporation - Hannibal Site shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- 10 CSR 10-6.065 *Operating Permits*
- 10 CSR 10-6.110 *Submission of Emission Data, Emission Fees and Process Information*
- 10 CSR 10-6.165 *Restriction of Emission of Odors*
- 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*
- 10 CSR 10-6.220 *Restriction of Emission of Visible Air Contaminants*

SPECIFIC REQUIREMENTS

- 10 CSR 10-6.075 *Maximum Achievable Control Technology Regulations*
 - 40 CFR Part 63, Subpart EEE – *National Emission Standards for HAPs from Hazardous Waste Combustors* is applicable to PR-47 Incinerator(s). This regulation requires a VOC destruction efficiency of 99.99 percent. As periodic testing of PR-47 Incinerator(s) is required by MACT EEE and included in the installation's operating permit, performance testing of this emission source for this permit was deemed unnecessary.
 - 40 CFR Part 63, Subpart MMM – *National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production* is applicable to the IMI-1 process. This regulation requires LDAR; therefore, special conditions to reduce fugitive VOC emissions from this project were deemed unnecessary.

NONAPPLICABLE REQUIREMENTS

The following regulations were determined to not be applicable to the equipment associated with this project based on the permit application. Any subsequent changes to the permitted equipment may result in a different determination:

- 10 CSR 10-6.070 *New Source Performance Regulations*
 - 40 CFR Part 60, 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, 198* is not applicable to the IMI-1 process for the following reasons:
 - IMI-1 01, IMI-1 02, IMI-1 03, IMI-1 11, IMI-1 15, IMI-1 16, IMI-1 20, and IMI-1 21 are smaller than 75 m³.
 - IMI-1 13 and IMI-1 14 are smaller than 151 m³ and contain materials with maximum true vapor pressures of less than 15.0 kPa.

- 40 CFR Part 60, Subparts VV, VVa, III, NNN, and RRR – *Standards of Performance for SOCM I Sources* are not applicable to IMI-1 as IMI-1 does not produce, as intermediates or final products, any of the chemicals listed in §60.489.
- 10 CSR 10-6.075 *Maximum Achievable Control Technology Regulations*
 - 40 CFR Part 63, Subparts F, G, and H – *National Emission Standards for Organic HAPs from the SOCM I Industry* are not applicable to IMI-1 as IMI-1 does not produce any of the SOCM I chemicals listed in Table 1 of MACT F.
- 10 CSR 10-6.400 *Restriction of Emission of Particulate Matter From Industrial Processes* is not applicable to the IMI-1 process for the following reasons:
 - IMI-1 05, IMI-1 09, IMI-1 10, IMI-1 12, IMI-1 22, and IMI-1 23 are exempt from this regulation per 10 CSR 10-6.400(1)(B)15 as Special Condition 2 requires the operation of a particulate matter control device system that controls at least 90% of particulate matter emissions.
 - IMI-1 07 is exempt from this regulation per 10 CSR 10-6.400(1)(B)12 as potential particulate matter emissions from the source are below 0.5 pounds per hour.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Alana Hess
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated February 2, 2015, received February 9, 2015, designating BASF Corporation Agricultural Products as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- U.S. EPA document “Protocol for Equipment Leak Emission Estimates” (November 1995).

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Minh Hoac
Senior EHS Specialist
BASF Corporation - Hannibal Site
3150 Highway JJ
Palmyra, MO 63461

RE: New Source Review Permit - Project Number: 2015-02-020

Dear Mr. Hoac:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application, and submittal of an amendment to your Part 70 operating permit application, Project 2014-12-035, is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

If you have any questions regarding this permit, please do not hesitate to contact Alana Hess, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:ahl

Enclosures

c: Northeast Regional Office
PAMS File: 2015-02-020

Permit Number: