

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

March 23, 2018

**PERMIT TO INSTALL  
145-17**

**ISSUED TO**  
BASF Corporation – Chemical Plants

**LOCATED AT**  
1609 Biddle Avenue  
Wyandotte, Michigan

**IN THE COUNTY OF**  
Wayne

**STATE REGISTRATION NUMBER**  
B4359

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: <b>December 1, 2017</b>	
DATE PERMIT TO INSTALL APPROVED: <b>March 23, 2018</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

## PERMIT TO INSTALL

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**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant / Measurement Abbreviations</b>	
AQD	Air Quality Division	BTU	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
CO <sub>2</sub> e	Carbon Dioxide Equivalent	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H <sub>2</sub> S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	kW	Kilowatt
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO <sub>x</sub>	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	PM with aerodynamic diameter ≤10 microns
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	PM with aerodynamic diameter ≤ 2.5 microns
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO <sub>2</sub>	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

\* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
  
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
  
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EUSTEBOILER#1	Boiler #1 and associated stack. 49.9 MM BTU/hr maximum heat input boiler with low NOx burner and natural gas fuel firing	12/1/2016	FG-BOILERS
EUSTEBOILER#2	Boiler #2 and associated stack. 49.9 MM BTU/hr maximum heat input boiler with low NOx burner and natural gas fuel firing	12/1/2016	FG-BOILERS
EUSTEBOILER#3	Boiler #3 and associated stack. 49.9 MM BTU/hr maximum heat input boiler with low NOx burner and natural gas fuel firing	12/1/2016	FG-BOILERS
EUSTEBOILER#4	Boiler #4 and associated stack. 49.9 MM BTU/hr maximum heat input boiler with low NOx burner and natural gas fuel firing	12/1/2016	FG-BOILERS
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.			

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FG-BOILERS	Four natural gas fired boilers. Each boiler is rated at 49.9 MMBtu heat input and is equipped with low NOx burners and fired with natural gas.	EUSTEBOILER#1 EUSTEBOILER#2 EUSTEBOILER#3 EUSTEBOILER#4

**The following conditions apply to: FG-BOILERS**

**DESCRIPTION:** Four natural gas fired boilers. Each boiler is rated at 49.9 MMBtu heat input and is equipped with low NOx burners and fired with natural gas.

**Emission Units:**

**POLLUTION CONTROL EQUIPMENT:** Low NOx burners

**I. EMISSION LIMITS**

Pollutant	Limit*	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NOx	2.4 pounds per hour	Hourly	Each boiler in FG-BOILERS	SC V.1	R 336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d)
2. NOx	0.048 lb/MMBTU	Hourly	Each boiler in FG-BOILERS	SC V.1	R 336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d)
3. NOx	36 tons per year	12 month rolling time period	FGBOILERS	SC VI.2	R 336.1205(1)(a) & (3)
4. CO	19.7 pounds per hour	Hourly	Each boiler in FG-BOILERS	SC V.1	R 336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d)
5. CO	86.4 tons per year	12 month rolling time period	FGBOILERS	SC VI.2	R 336.1205(1)(a) & (3)
6. CO	0.39 lb/MMBTU	Hourly	Each boiler in FG-BOILERS	SC V.1	R 336.1205(1)(a) & (3), 40 CFR 52.21 (c) & (d)

**II. MATERIAL LIMITS**

Material	Limit	Time Period/Operating Scenario	Equipment	Testing/Monitoring Method	Underlying Applicable Requirements
1.Natural gas	1,467 MMSCF	12 month rolling time period	12-month rolling time period	SC VI.1	R 336.1205(1)(a) & (3)

2. The permittee shall burn only pipeline quality natural gas in FG-BOILERS. (R 336.1205, R 336.1225, R 336.1402, 40 CFR 52.21(c) & (d))

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate FG-BOILERS unless each boiler is equipped with low NOx burners. Each low NOx burners shall be installed per manufacturer's instructions and maintained in accordance with the burner manufacturers recommended maintenance requirements. (R 336.1205(1)(a) and (3))

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the natural gas used in FG-BOILERS on a monthly basis. (R 336.1205, R 336.1225, 40 CFR 52.21(c) & (d))

**V. TESTING/SAMPLING**

1. Within 90 days after the notification requirement in SC IX.1, the permittee shall verify CO and NOx emission rates from FG-BOILERS by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in 40 CFR Appendix A. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 45 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (3), R 336.1225)**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner, the amount of natural gas used in FG-BOILERS per month, and per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1205, R 336.1225, 40 CFR 52.21(c) & (d))**
2. The permittee shall calculate annual NOx and CO emissions on a rolling 12-month time period basis. Emissions shall be calculated by multiplying the monthly gas usage by the emission limits specified in special conditions I.3 and I.8. **(R 336.1205(1)(a) & (3))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter/Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVSTEBOILERS	66	150	40 CFR 52.21 (c) & (d)

**IX. OTHER REQUIREMENTS**

1. In the event that the natural gas usage (as determined on a 12-month rolling time period, as determined at the end of each calendar month) from FGBOILERS exceeds 1,100 MMSCF, the permittee shall provide written notification (either letter or e-mail) that natural gas usage has exceeded 1,100 MMSCF, and that stack testing will be performed in accordance with SC V.1. The notification shall transpire no longer than five calendar days after determination of the monthly natural gas usage calculation. **(R 336.1205(1)(a) & (3))**