PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
Permit ID: 9-2911-00381/00002
Mod 0 Effective Date: 11/05/2015 Expiration Date: 11/04/2025

Mod 1 Effective Date: 05/12/2016 Expiration Date: 11/04/2025

Permit Issued To:ASHLAND ADVANCED MATERIALS LLC
6100 NIAGARA FALLS BLVD
NIAGARA FALLS, NY 14304

Contact: MATT REINEKE
ASHLAND ADVANCED MATERIALS
1025 FAULTLESS DR
ASHLAND, OH 44805
(419) 289-6769

Facility: ASHLAND ADVANCED MATERIALS
6100 NIAGARA FALLS BLVD
NIAGARA FALLS, NY 14304

Contact: ROGER GREINERT
ASHLAND ADVANCED MATERIALS LLC
6100 NIAGARA FALLS BLVD
NIAGARA FALLS, NY 14304
(716) 283-6853

Description:

This permit action is a modification to Air State Facility Permit Renewal 1 for the installation of two cartridge baghouse collectors to control dust generated by equipment that sizes and shapes carbon/graphite products, and the installation of an 11-foot diameter gas fired furnace that will replace some process runs of Furnace 310.

Ashland Advanced Materials facility located in Niagara Falls, New York is engaged in the graphitizing of carbon and rayon materials. This Air State Facility permit describes the operation of the associated mixing, drying and furnace processes and the regulatory, source testing, and compliance requirements, including updates reflecting the results of source testing performed in 2010 and 2011. It also describes the operation of the new carbon fiber chlorine purification process and the associated regulatory, source testing, and compliance requirements. It includes the new baghouse collectors which control dust generated by the sizing and shaping of carbon/graphite products. All process emission sources are subject to 6 NYCRR Part 212.

Potential emissions of volatile organic compounds (VOC) and phenol, a hazardous air pollutant (HAP), exceed the major source thresholds of 50 and 10 tons respectively. Therefore, Ashland employs thermal oxidizers to reduce emissions to less than the major source thresholds. A

federally enforceable emissions cap was established through the initial permit for this facility limiting VOC, phenol, and total HAP emissions through control equipment efficiency and production limits. As a minor source the facility is not subject to the Title V permitting requirements of 6NYCRR, Part 201-6 and 40 CFR Part 70 and the New Source Review requirements of 6NYCRR, Part 231-2.

Emission Unit 1-FIBER includes Rigid Carbon Fiber Board (RCFB) production, which consists of mixing raw materials and forming molds which are then heat treated. Three gas-fired and one electric drying oven used to drive off moisture from the molds are vented to emission points EP402, 403, and 404. The material is then carbonized in eight 96" electric induction furnaces of which only two can run concurrently. Volatile emissions from the induction furnaces are directed to the thermal oxidizer identified as THOX1 and emission point EP401, where they are incinerated at a temperature of 1600 degrees F. This emission unit also includes the 50" electric induction furnaces which treat material that has been processed in the sager furnace in EU 1-RAYON. An electric L&L Bake Oven is used to remove a phenolic material that is used as an adhesive for the carbon fiber and carbonize/degas the fiber in single batch runs to 800 degrees C. In addition the L&L Bake Oven may be used to heat-treat cut coated carbon fiber pieces to an approximate temperature of 250 degrees C. The off-gas from the oven (containing phenol and VOCs) is directed to thermal oxidizer THOX1 for destruction.

A Chlorine Purification Process is used to remove metal contaminants from carbon fiber billets and cut pieces produced in other processes at the facility. Several existing induction furnaces have been modified to allow the injection of chlorine gas into the nitrogen injection system and the entry of the nitrogen and chlorine mixture into the active furnace at the appropriate point in processing to purify the carbon fiber products. The metal contaminants are removed as metal chloride salts. Off-gases from the chlorine purification process are fed to a two-stage wet scrubber system for removal of chlorine and particulates and vented through emission point EP405.

As part of this modification a Torit cartridge baghouse (EP 406) will be installed outside of Building #4 to control dust generated inside the building by equipment that sizes and shapes in-process carbon/graphite products, including routers, saws, mills, lathes, and sanders.

New Emission Unit 2-FINIS involves the processing of finished carbon/graphite products. As part of this modification a Torit cartridge baghouse (EP 501) will be moved from the interior of Building #4 to the outside of finishing Building #5 to control dust generated inside Building #5 by finishing equipment that sizes and shapes carbon/graphite products, including mills, sifters, and saws.

Emission Unit 1-RAYON involves the heat treating/carbonizing of rayon material in a two step heating process. The raw material is heat treated in a natural gas fired high temperature sager furnace. Volatile emissions from the sager furnace are incinerated at 1500 degrees F by the thermal oxidizer identified as THOX2 and vented to emission point EP310. From the sager furnace, the rayon is then further treated in sixteen 50" electric induction furnaces (included in EU 1-FIBER) which vent to THOX1. The final product is used as the raw material in the RCFB operation. As part of this modification an 11-foot-diameter gas fired furnace (ES FURN2) will be installed in Building #241. The new furnace (which has two 450,000 BTU/hr burners) will process one Sager unit (i.e., 3,000 pound load) per run, and will replace some of the much larger production runs currently processed in the existing Sager Furnace. Emissions from the new furnace will be ducted to and controlled by existing thermal oxidizer THOX2 (EP 310). This emission unit also includes a natural gas fired emergency backup generator, subject to 40 CFR

60 Subpart JJJJ, Federal New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: DAVID S DENK
DIVISION OF ENVIRONMENTAL PERMITS
270 MICHIGAN AVE
BUFFALO, NY 14203-2915

Authorized Signature: _____ Date: ___ / ___ / _____

Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

LIST OF CONDITIONS

DEC GENERAL CONDITIONS
General Provisions
Facility Inspection by the Department
Relationship of this Permit to Other Department Orders and Determinations
Applications for permit renewals, modifications and transfers
Applications for permit renewals, modifications and transfers
Permit modifications, suspensions or revocations by the Department
Facility Level
Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS

DEC GENERAL CONDITIONS
****** General Provisions ******
GENERAL CONDITIONS - Apply to ALL Authorized Permits.

Condition 1: Facility Inspection by the Department
Applicable State Requirement: ECL 19-0305

Item 1.1:
The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

Item 1.2:
The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

Item 1.3:
A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Condition 2: Relationship of this Permit to Other Department Orders and Determinations
Applicable State Requirement: ECL 3-0301 (2) (m)

Item 2.1:
Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Condition 3: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 3.1:
The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 3.2:
The permittee must submit a renewal application at least 180 days before expiration of permits for Title V Facility Permits, or at least 30 days before expiration of permits for State Facility Permits.

Item 3.3:
Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Condition 4: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 4.1:
The permittee must submit a renewal application at least 180 days before expiration of permits for both Title V and State Facility Permits.

Item 4.3:
Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Condition 5: Permit modifications, suspensions or revocations by the Department
Applicable State Requirement: 6 NYCRR 621.13

Item 5.1:
The Department reserves the right to exercise all available authority to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;
b) failure by the permittee to comply with any terms or conditions of the permit;
c) exceeding the scope of the project as described in the permit application;
d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

****** Facility Level ******

Condition 6: Submission of application for permit modification or renewal-REGION 9 HEADQUARTERS
Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 6.1:
Submission of applications for permit modification or renewal are to be submitted to:
NYSDEC Regional Permit Administrator
Region 9 Headquarters
Division of Environmental Permits
270 Michigan Avenue
Buffalo, NY 14203-2915
(716) 851-7165

Permit Under the Environmental Conservation Law (ECL)

ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY PERMIT

IDENTIFICATION INFORMATION

Permit Issued To:ASHLAND ADVANCED MATERIALS LLC
6100 NIAGARA FALLS BLVD
NIAGARA FALLS, NY 14304

Facility: ASHLAND ADVANCED MATERIALS
6100 NIAGARA FALLS BLVD
NIAGARA FALLS, NY 14304

Authorized Activity By Standard Industrial Classification Code:
3624 - CARBON AND GRAPHITE PRODUCTS

Mod 0 Permit Effective Date: 11/05/2015 Permit Expiration Date: 11/04/2025

Mod 1 Permit Effective Date: 05/12/2016 Permit Expiration Date: 11/04/2025

LIST OF CONDITIONS

FEDERALLY ENFORCEABLE CONDITIONS
Facility Level

1 6 NYCRR Subpart 201-7: Facility Permissible Emissions
*2 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*3 6 NYCRR Subpart 201-7: Capping Monitoring Condition
*4 6 NYCRR Subpart 201-7: Capping Monitoring Condition
5 6 NYCRR 211.1: Air pollution prohibited
6 6 NYCRR 212-1.5 (a): Two or more process emission sources may be simultaneously emitted to the outdoor atmosphere through a single emission point
7 6 NYCRR 212-1.6 (a): Compliance Demonstration
1-1 6 NYCRR 212-2.4 (b): Compliance Demonstration

Emission Unit Level

EU=1-FIBER,Proc=FB2

8 6 NYCRR 212-1.7 (a): Compliance Demonstration
9 6 NYCRR 212-2.1 (b): Compliance Demonstration

EU=1-FIBER,Proc=FB4

10 6 NYCRR 212-2.1 (b): Compliance Demonstration
11 6 NYCRR 212-2.1 (b): Compliance Demonstration
12 6 NYCRR 212-2.4 (b): Compliance Demonstration
13 6 NYCRR 212-2.4 (b): Compliance Demonstration

EU=1-FIBER,EP=EP401

14 6 NYCRR 212-2.4 (b): Compliance Demonstration

EU=1-FIBER,EP=EP401,Proc=FB1,ES=THOX1

15 6 NYCRR 212-1.7 (a): Compliance Demonstration
16 6 NYCRR 212-1.7 (b): Compliance Demonstration
17 6 NYCRR 212-2.1 (b): Compliance Demonstration

EU=1-FIBER,EP=EP405,Proc=FB4

18 6 NYCRR 212-1.7 (a): Compliance Demonstration
19 6 NYCRR 212-2.4 (b): Compliance Demonstration

EU=1-RAYON,Proc=RA1,ES=GN310

20 40CFR 60, NSPS Subpart JJJJ: Compliance Demonstration

EU=1-RAYON,EP=EP310

21 6 NYCRR 212-1.7 (a): Compliance Demonstration
22 6 NYCRR 212-1.7 (b): Compliance Demonstration
1-2 6 NYCRR 212-2.1 (b): Compliance Demonstration
24 6 NYCRR 212-2.4 (b): Compliance Demonstration

STATE ONLY ENFORCEABLE CONDITIONS

Facility Level

25 ECL 19-0301: Contaminant List
26 6 NYCRR 201-1.4: Malfunctions and start-up/shutdown activities
27 6 NYCRR Subpart 201-5: Emission Unit Definition
28 6 NYCRR 201-5.1 (b): Compliance Demonstration
29 6 NYCRR 201-5.2 (c): Renewal deadlines for state facility permits
30 6 NYCRR 201-5.3 (c): Compliance Demonstration
31 6 NYCRR 211.2: Visible Emissions Limited

Emission Unit Level

32 6 NYCRR Subpart 201-5: Emission Point Definition By Emission Unit
33 6 NYCRR Subpart 201-5: Process Definition By Emission Unit

EU=1-FIBER,Proc=FB4

34 6 NYCRR 212-2.3 (b): Compliance Demonstration
35 6 NYCRR 212-2.3 (b): Compliance Demonstration
36 6 NYCRR 212-2.3 (b): Compliance Demonstration
37 6 NYCRR 212-2.3 (b): Compliance Demonstration

NOTE: * preceding the condition number indicates capping.

FEDERALLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: **Sealing - 6 NYCRR 200.5**

The Commissioner may seal an air contamination source to prevent its operation if compliance with 6 NYCRR Chapter III is not met within the time provided by an order of the Commissioner issued in the case of the violation. Sealing means labeling or tagging a source to notify any person that operation of the source is prohibited, and also includes physical means of preventing the operation of an air contamination source without resulting in destruction of any equipment associated with such source, and includes, but is not limited to, bolting, chaining or wiring shut control panels, apertures or conduits associated with such source.

No person shall operate any air contamination source sealed by the Commissioner in accordance with this section unless a modification has been made which enables such source to comply with all requirements applicable to such modification.

Unless authorized by the Commissioner, no person shall remove or alter any seal affixed to any contamination source in accordance with this section.

Item B: **Acceptable Ambient Air Quality - 6 NYCRR 200.6**

Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Item C: **Maintenance of Equipment - 6 NYCRR 200.7**

Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications,

required to operate such device effectively.

Item D: **Unpermitted Emission Sources - 6 NYCRR 201-1.2**

If an existing emission source was subject to the permitting requirements of 6 NYCRR Part 201 at the time of construction or modification, and the owner and/or operator failed to apply for a permit for such emission source then the following provisions apply:

(a) The owner and/or operator must apply for a permit for such emission source or register the facility in accordance with the provisions of Part 201.

(b) The emission source or facility is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing sources or facilities.

Item E: **Recycling and Salvage - 6 NYCRR 201-1.7**

Where practical, any person who owns or operates an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of 6 NYCRR.

Item F: **Prohibition of Reintroduction of Collected Contaminants to the Air - 6 NYCRR 201-1.8**
No person shall unnecessarily remove, handle, or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.

Item G: **Proof of Eligibility for Sources Defined as Exempt Activities - 6 NYCRR 201-3.2 (a)**
The owner and/or operator of an emission source or unit that is eligible to be exempt, may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item H: **Proof of Eligibility for Sources Defined as Trivial**

Activities - 6 NYCRR 201-3.3 (a)
The owner and/or operator of an emission source or unit that is listed as being trivial in 6 NYCRR Part 201 may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item I: **Required Emission Tests - 6 NYCRR 202-1.1**

An acceptable report of measured emissions shall be submitted, as may be required by the Commissioner, to ascertain compliance or noncompliance with any air pollution code, rule, or regulation. Failure to submit a report acceptable to the Commissioner within the time stated shall be sufficient reason for the Commissioner to suspend or deny an operating permit. Notification and acceptable procedures are specified in 6 NYCRR Subpart 202-1.

Item J: **Open Fires Prohibitions - 6 NYCRR 215.2**
Except as allowed by section 215.3 of 6 NYCRR Part 215, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

Item K: **Permit Exclusion - ECL 19-0305**
The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item L: **Federally Enforceable Requirements - 40 CFR 70.6 (b)**

All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

FEDERAL APPLICABLE REQUIREMENTS
The following conditions are federally enforceable.

Condition 1: Facility Permissible Emissions
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 1.1:
The sum of emissions from the emission units specified in this permit shall not equal or exceed the following
Potential To Emit (PTE) rate for each regulated contaminant:

CAS No: 000108-95-2	(From Mod 1)	PTE:	19,000	pounds per year	
Name: PHENOL					
CAS No: 0NY100-00-0	(From Mod 1)	PTE:	49,000	pounds per year	
Name: TOTAL HAP					
CAS No: 0NY998-00-0	(From Mod 1)	PTE:	99,000	pounds per year	
Name: VOC					

Condition 2: Capping Monitoring Condition
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 2.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR 201-6.1

Item 2.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 2.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 2.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 2.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 2.6:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY100-00-0 TOTAL HAP

Item 2.7:
Compliance Demonstration shall include the following monitoring:

Capping: Yes
Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Facility-wide total emissions of total hazardous air pollutants (HAP) are limited to less than 25 tons during any consecutive twelve month period in order to establish the facility as a minor source of total HAP and therefore not subject to the Title V permitting requirements of 6NYCRR, Part 201-6. Compliance with this cap is to be demonstrated as follows:

1.) Maintenance and operation of the thermal oxidizers (THOX1 AND THOX2) as per the conditions established for 6NYCRR, Subparts 212-2.1(b) and 212-1.7.

2.) If stack test results demonstrate that a thermal oxidizer is operating less than the 99.5% control efficiency used to determine actual emissions and it is

determined that the emissions exceed the major source threshold, Ashland must submit a Title V permit application within 30 days after the results of the stack test(s) have been submitted to this Department.

3.) Maintenance and operation of the chlorine purification system and its associated wet scrubber system as per conditions established under 6NYCRR Subparts 212-2.3(b), 212-2.4(b), and 212-1.7(a).

3.) Annual HAP emissions shall be calculated using emissions factors developed from the stack test results and monthly production data and chlorine usage and totaled for each consecutive twelve month period in order to demonstrate on-going compliance with this emissions cap. Records demonstrating that the rolling twelve month total of HAP is less than 25 tons are to be made available to Department representatives on request and kept on-site for a period of 5 years.

Parameter Monitored: TOTAL HAP
Upper Permit Limit: 24.5 tons per year
Monitoring Frequency: MONTHLY
Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 3: Capping Monitoring Condition
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 3.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR 201-6.1

Item 3.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 3.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 3.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an

emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 3.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 3.6:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 000108-95-2 PHENOL

Item 3.7:
Compliance Demonstration shall include the following monitoring:

Capping: Yes
Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Facility-wide total emissions of phenol, a hazardous air pollutant (HAP), are limited to less than 10 tons during any consecutive twelve month period in order to establish the facility as a minor source of an individual HAP and therefore not subject to the Title V permitting requirements of 6NYCRR, Part 201-6. Compliance with this cap is to be demonstrated as follows:

1.) Maintenance and operation of the thermal oxidizers (THOX1 AND THOX2) as per the conditions established for 6NYCRR, Subparts 212-2.1(b) and 212-1.7.

2.) If stack test results demonstrate that a thermal oxidizer is operating less than the 99.5% control efficiency used to determine actual emissions and it is determined that the emissions exceed the major source threshold, Ashland must submit a Title V permit application within 30 days after the results of the stack test(s) have been submitted to this Department.

3.) Annual phenol emissions shall be calculated using emissions factors developed from the stack test results and monthly production data and totaled for each consecutive twelve month period in order to demonstrate on-going compliance with this emissions cap. Records demonstrating that the rolling twelve month total of phenol is less than 10 tons are to be made available to Department representatives on request and kept on-site for

a period of 5 years.

Parameter Monitored: PHENOL
Upper Permit Limit: 9.5 tons per year
Monitoring Frequency: MONTHLY
Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 4: Capping Monitoring Condition
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR Subpart 201-7

Item 4.1:
Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR 201-6.1
6 NYCRR 231-2.2

Item 4.2:
Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 4.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Item 4.4:
On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 4.5:
The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 4.6:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 4.7:
Compliance Demonstration shall include the following monitoring:

Capping: Yes
Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Facility-wide total emissions of volatile organic compounds(VOC) are limited to less than 50 tons during any consecutive twelve month period in order to establish the facility as a minor source of VOC and therefore not subject to the New Source Review (NSR) requirements of 6NYCRR, Part 231-2 and the Title V permitting requirements of 6NYCRR, Part 201-6. Compliance with this cap is to be demonstrated as follows:

1.) Ashland shall maintain and operate the thermal oxidizers (THOX1 AND THOX2) as per the conditions established for 6NYCRR, Subparts 212-2.1(b) and 212-1.7.

2.) If stack test results demonstrate that a thermal oxidizer is operating less than the 99.5% control efficiency used to determine actual emissions and it is determined that the emissions results exceeds the major source threshold, Ashland must submit a proposal to comply with the requirements of Part 231-2 and submit a Title V permit application within 30 days after the results of the stack test(s) have been submitted to this Department.

3.) Annual VOC emissions shall be calculated using emissions factors developed from the most recent stack test results and monthly production data and totaled for each consecutive twelve month period in order to demonstrate on-going compliance with this emissions cap. Records demonstrating that the rolling twelve month total of VOC is less than 50 tons are to be made available to Department representatives on request and kept on-site for a period of 5 years.

Parameter Monitored: VOC
Upper Permit Limit: 49.5 tons per year
Monitoring Frequency: MONTHLY
Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 5: Air pollution prohibited
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 211.1

Item 5.1:
No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

Condition 6: Two or more process emission sources may be simultaneously emitted to the outdoor atmosphere through a single emission point
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-1.5 (a)

Item 6.1:
In instances where air contaminants from two or more process emission sources may be simultaneously emitted to the outdoor atmosphere through a single emission point, the permissible emission rate or degree of air cleaning required is determined by using the sum of the process weights or emission rate potentials for all process emission sources.

Condition 7: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-1.6 (a)

Item 7.1:
The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 7.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Ashland will not cause or allow emissions having an average opacity during any six consecutive minutes of 20 percent or greater from any emission point or emission source.

In the event opacity is observed, plant personnel shall initiate corrective action according to the preventative maintenance plan submitted to this Department.

Parameter Monitored: OPACITY

Upper Permit Limit: 20 percent
Reference Test Method: Method 9
Monitoring Frequency: DAILY
Averaging Method: 6 MINUTE AVERAGE
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 1-1: Compliance Demonstration
Effective between the dates of 05/12/2016 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.4 (b)

Item 1-1.1:
The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: 1-FIBER
Process: BH1

Emission Unit: 1-FINIS
Process: BH2

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 1-1.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Cartridge baghouses are being installed to control dust emissions from shaping and sizing carbon/graphite products in the Main Processing Building (#4) and the Finish Building (#5).

Particulate emissions are restricted as follows:

(1) As required by 6NYCRR Part 212-2.4(b)(1), emissions of solid particulates are limited to less than 0.05 grains of particulates per cubic foot of exhaust gas, expressed at standard conditions on a dry gas basis (grains/dscf).

(2) Daily differential pressure measurements of the cartridge baghouses (Emission Unit 1-FIBER, EP 406, ES BH001 and Emission Unit 1-FINIS, EP 501, ES BH002) shall be completed during normal process operation. The purpose of the daily differential pressure measurements is to detect changes in the long term performance of the control device such as blinding of or holes in the baghouse cartridges. Differential pressure shall be measured between the inlet to and outlet from the control devices.

The dust collectors shall be operated within the differential pressure range specified by the manufacturer, identified in the permit application as 1 to 10 inches of water. The magnehelic differential pressure gauges shall be calibrated annually or as required by the manufacturer.

(3) Daily visible emission observations and inspection of any fall-out from the process and/or dust collector(s) shall be completed by the operators during process operation.

(4) Maintenance staff will inspect the baghouses per manufacturer's instructions on a quarterly basis.

(5) If any visible emissions, particulate fall-out or pressure measurement is recorded outside the manufacturer range, then Ashland shall inspect the source, initiate corrective action, and restore operation of the dust collector(s) and associated capture system(s) to normal operation as expeditiously as practicable.

(6) Records shall be maintained including: (i) a log documenting whether any visible emissions or fall-out were observed, (ii) a log of the daily pressure drop measurements with reference to the allowable differential pressure range, (iii) the date and time of the observation or measurement, (iv) corrective action taken (if any), (v) the cause of any visible emissions, fall-out or pressure measurements outside the allowable range, and (vi) maintenance records. The records shall be kept on-site and be made available to the Department upon request.

(7) Compliance testing shall be conducted at the request of the Department.

Parameter Monitored: PARTICULATES
Upper Permit Limit: 0.05 grains per dscf
Reference Test Method: EPA Method 5
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

****** Emission Unit Level ******

Condition 8: Compliance Demonstration

Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-1.7 (a)

Item 8.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB2

Regulated Contaminant(s):
CAS No: 000108-95-2 PHENOL
CAS No: 0NY998-00-0 VOC

Item 8.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:

Within 60 days after start-up, Ashland was required to conduct a representative stack test to determine the emissions from one of the gas fired drying ovens identified as EP402, EP403, and EP404 using acceptable reference methods pursuant to 6NYCRR, Part 202-1.

When the initial permit was issued, it required that the stack test would determine emissions of carbon monoxide (CO), nitrogen oxides (NOx), sulfur compounds, phenol, napthalene, hydrogen sulfide and volatile organic compounds (VOC). Based on updated process information, it was later determined that stack testing to determine emissions of carbon monoxide, nitrogen oxides, sulfur compounds, phenol, napthalene, and hydrogen sulfide would no longer be required. However, total hydrocarbons concentration would be determined using EPA Reference Method 25A. All hydrocarbon emissions would also be assumed to be phenol.

A stack test protocol was submitted detailing the sampling and analytical methods to be used. The outlet test was required to consist of three separate runs using the applicable reference test methods. The protocol included details describing the operating conditions under which the test would be conducted, including but not limited to production rates. The billet dryer has the ability to operate either in a batch mode or in a continuous mode similar to a tunnel kiln. During the stack test, it was planned that the dryer would be operated as a batch process with the introduction of carts into the drying oven spaced over time, rather than batch loading of the entire drying oven at one time.

The protocol was approved by this Department prior to the commencement of the stack test.

The test was performed on April 18, 2012, and was witnessed by a representative of this Department.

The test report was received by the Department on May 15, 2012. The stack test results indicated a THC emissions average of 0.04 lbs/hr, within permit limits.

If operation of this process (quantities/feed rates/characteristics of feed materials) is modified in such a fashion that emissions of VOCs or other regulated contaminants have the potential to increase, additional stack testing of the gas fired drying ovens may be required by the Department.

If future stack test results indicate emission rates higher than those used in the Part 212 analysis submitted as part of the original permit application, a revised analysis shall be submitted to this Department within 60 days after the completion of the test.

If test results and/or the impact analysis determine that an emissions control device will be required pursuant to 6NYCRR, Subpart 212-2.1(b) and Table 3 of 212-2.3(a) for criteria air contaminants or Table 4 of 212-2.3(b) for non-criteria air contaminants, a permit modification including a proposal for corrective action shall be submitted within 30 days from a written request from this Department.

Parameter Monitored: VOC
Upper Permit Limit: 10 pounds per hour
Reference Test Method: EPA Reference Method 25A
Monitoring Frequency: SINGLE OCCURRENCE
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 9: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.1 (b)

Item 9.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB2

Regulated Contaminant(s):
CAS No: 000108-95-2 PHENOL

Item 9.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:

Ashland shall maintain records of the number of molds made per day, the amount of each phenolic resin product used in each batch prepared for the molds, and a current MSDS for each phenolic resin product used. The concentration of free phenol in each phenolic resin as indicated by the MSDS may not exceed 5.0% by weight. The concentration of free phenol used in calculating emissions from this process shall be as indicated by the MSDS. Ashland shall request annual certifications from the supplier(s) verifying the free phenol content of the phenolic resin products used. These records are to be kept on-site indefinitely and made available to Department representatives on request.

Any increase in the concentration of free phenol in the mixture above 5.0% by weight will require revised emissions data and a Part 212 analysis.

If odors are noted off-site from the drying ovens identified as emission points EP402, EP403, and EP404, Ashland will submit a proposal to address the odors including but not limited to raising the stack heights to increase atmospheric dispersion.

If it is determined that the steam curing operation is a source of fugitive odors, a proposal to address these odors will also be required.

Any odor proposal shall be submitted within 30 days from a written request by this Department.

Parameter Monitored: PHENOL
Upper Permit Limit: 5 percent by weight
Monitoring Frequency: DAILY
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 10: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.1 (b)

Item 10.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB4

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 10.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Chlorine Purification Process. To ensure that uncontrolled chlorine will not be released into the atmosphere from this process, Ashland will design, operate, and maintain the system with appropriate interlocks and operating procedures as described below.

Chlorine may be introduced into only one induction furnace at any given time. The THOX1 exhaust hood which leads to thermal oxidizer THOX1 must be moved from its operating position and the air/chlorine exhaust hood must be moved into its operating position prior to introduction of chlorine.

Only one induction furnace may be ducted to the wet scrubber system at any point in time. The control system shall be designed to lock out chlorine gas inlet solenoids to all other furnaces if one chlorine gas inlet valve is already energized open.

The control interlocks system shall be designed so that any chlorine gas inlet solenoid valve can be opened and remain open only under the following conditions:
i. Corresponding air/chlorine exhaust hood is positioned over the exhaust port and contacts the proximity switch.
ii. Automatic blast gate between the air/chlorine exhaust hood and the air/chlorine header to the wet scrubber system is in the open position.
iii. Chlorine scrubber system is operating within design parameters and ready for air/chlorine exhaust gas.
iv. All other furnace chlorine gas solenoid valves are closed.
v. All other furnace automatic blast gates between the air/chlorine exhaust hoods and the air/chlorine header to the wet scrubber system are closed.
vi. All other air/chlorine exhaust hood proximity

switches are open (no contact).

Records of malfunctions, repairs, and maintenance on the interlock system shall be maintained on-site for a minimum of five years and shall be made available to the Department upon request.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 11: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.1 (b)

Item 11.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB4

Regulated Contaminant(s):

CAS No: 0NY998-00-0	VOC
CAS No: 0NY100-00-0	TOTAL HAP
CAS No: 000108-95-2	PHENOL

Item 11.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

As noted in the FB4 process description, Ashland may opt to take billets which have been heated to 2,000 degrees C in the induction furnaces, cool and cut the billets into customer specification pieces, and coat the pieces by hand-application with either a phenolic coating or methanol coating. The coated pieces will be put back into an induction furnace and again heated to 1,900 to 2,000 degrees C prior to chlorine purification.

Ashland shall maintain records of the number of loads treated in this fashion, the quantity of each coating used, MSDS for each coating used, and calculations of the emissions (phenol, methanol, total HAP, VOC) associated with application of the coatings, as part of compliance with 6NYCRR Subpart 212-2 and with the capping requirements of 6NYCRR Subpart 201-7. These records are to be kept on-site for a minimum of five years and made available to Department representatives upon request.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING

DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 12: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.4 (b)

Item 12.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB4

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 12.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Process and control parameters for the two-stage wet scrubber system used to control chlorine and metal chloride particulate emissions from the Chlorine Purification Process must be monitored to demonstrate that the scrubber system is continuously operated during the purification process and maintained in such a manner as to ensure chlorine emissions from EP405 are controlled to a minimum of 99% and particulate emissions do not exceed 0.050 grains per dry standard cubic foot. A daily log is to be kept on site which will record monitored parameters.

For the Stage 1 packed scrubber, a solution of dilute NaOH and NaHSO3 is recirculated from an integral sump to which fresh water is continuously added, producing an overflow to a floor drain. Chemicals are automatically dosed as need into the liquid recirculation stream based on pH (NaOH) and Oxidation-Reduction Potential or (Na2SO3) control systems. Overflow will be at pH = 9-9.5 and contain roughly 500 ppmw of unused Sulfite. Stage 2 is a high energy venturi scrubber intended primarily for particulate collection. Fresh water is also continuously added to this sump and overflowed to a floor drain.

Stage 1 scrubber pressure drop, sump blowdown flow rate (45 gph), pH, and Oxidation-Reduction Potential and Stage 2 pressure drop and sump blowdown flow rate (30 gph) will be continuously monitored and maintained within

manufacturer's recommended parameter ranges. Operating/monitoring procedures shall be put in place to ensure that the water levels in the sumps are adequate to ensure proper inlet flows to the scrubbers. Operating parameters will be verified during stack testing and may be adjusted as needed based on the test results.

All parameters shall be recorded once per shift. Records will be maintained onsite and provided to the Department upon request.

This condition is for sump blowdown flow rate from the Stage 2 venturi scrubber.

Parameter Monitored: FLOW RATE
Lower Permit Limit: 30 gallons per hour
Monitoring Frequency: PER SHIFT
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE AT ANY TIME
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 13: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.4 (b)

Item 13.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB4

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 13.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Process and control parameters for the two-stage wet scrubber system used to control chlorine and metal chloride particulate emissions from the Chlorine Purification Process must be monitored to demonstrate that the scrubber system is continuously operated during the purification process and maintained in such a manner as to ensure chlorine emissions from EP405 are controlled to a minimum of 99% and particulate emissions do not exceed 0.050 grains per dry standard cubic foot. A daily log is to be kept on site which will record monitored parameters.

For the Stage 1 packed scrubber, a solution of dilute NaOH and NaHSO3 is recirculated from an integral sump to which fresh water is continuously added, producing an overflow to a floor drain. Chemicals are automatically dosed as need into the liquid recirculation stream based on pH (NaOH) and Oxidation-Reduction Potential or (Na2SO3) control systems. Overflow will be at pH = 9-9.5 and contain roughly 500 ppmw of unused Sulfite. Stage 2 is a high energy venturi scrubber intended primarily for particulate collection. Fresh water is also continuously added to this sump and overflowed to a floor drain.

Stage 1 scrubber pressure drop, sump blowdown flow rate (45 gph), pH, and Oxidation-Reduction Potential and Stage 2 pressure drop and sump blowdown flow rate (30 gph) will be continuously monitored and maintained within manufacturer's recommended parameter ranges. Operating/monitoring procedures shall be put in place to ensure that the water levels in the sumps are adequate to ensure proper inlet flows to the scrubbers. Operating parameters will be verified during stack testing and may be adjusted as needed based on the test results.

All parameters shall be recorded once per shift. Records will be maintained onsite and provided to the Department upon request.

This condition is for pressure drop across the Stage 2 venturi scrubber.

Parameter Monitored: PRESSURE DROP
Lower Permit Limit: 10 inches of water
Monitoring Frequency: PER SHIFT
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE AT ANY TIME
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 14: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.4 (b)

Item 14.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER Emission Point: EP401

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 14.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:

Particulate emissions from the thermal oxidizer THOX1 (EP 401) shall not exceed 0.05 grains per cubic foot of exhaust gas, expressed at standard conditions on a dry gas basis.

Compliance shall be demonstrated by a stack test conducted using Method 5 and acceptable procedures as per 6NYCRR, Part 202-1 and 40 CFR Part 60. Test results shall be submitted to this Department within 60 days from the completion of the test.

Upon completion of the test and demonstration of compliance with the standard, compliance will be continued through an established maintenance program on the oxidizer.

Testing was carried out on THOX1 October 19-20, 2010. The test report was sent to the Department under a cover letter from Ashland dated December 31, 2010. The stack test results from three test runs indicated an average outlet particulate concentration of 0.034 grains per dry standard cubic foot of exhaust gas, within permit limits. The test runs were performed with two 96" induction furnaces in operation simultaneously.

During a meeting with Ashland held on February 4, 2011, and documented by letter to Ashland from the Department dated February 14, 2011, these test results were discussed. The results indicated that when multiple furnaces (more than two) are operating with overlapping batches, the semi-continuous nature of the emissions could place them close to the 0.05 gr/dscf limit. It was agreed that a third power pack could be installed without a permit modification or additional testing as long as no more than two furnaces were operating simultaneously on the same cycle. The Department was notified by e-mail from Mr. Scott Hanna of Ashland on March 13, 2012, that a third power supply was being installed and would be rotating into the schedule by the end of March. If facility records indicate that three furnaces are being operated on the same cycle on a routine basis, Ashland may be required to carry out additional particulate emission testing under maximum operating conditions, at the Department's discretion.

Parameter Monitored: PARTICULATES
Upper Permit Limit: 0.05 grains per dscf

Reference Test Method: Method 5
Monitoring Frequency: SINGLE OCCURRENCE
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 15: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-1.7 (a)

Item 15.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER Emission Point: EP401
Process: FB1 Emission Source: THOX1

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 000108-95-2 PHENOL

Item 15.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:

Within 60 days after start-up, Ashland was required to conduct a stack emissions test on the inlet and outlet of the thermal oxidizer (THOX1), emission point 00401, using acceptable reference methods pursuant to 6NYCRR, Part 202-1 in order to determine the control efficiency of the oxidizer.

When the initial permit was issued, it was required that the stack test would also determine emissions of carbon monoxide (CO), particulates, nitrogen oxides (NOx), sulfur compounds, hydrogen sulfide (H2S), phenol, benzene, and volatile organic compounds (VOC). Based on updated process information, it was later determined that stack testing to determine emissions of carbon monoxide, nitrogen oxides, sulfur compounds, hydrogen sulfide, phenol, and benzene would no longer be required. However, particulates would still be evaluated using EPA Reference Method 5, and inlet and outlet total hydrocarbons concentrations would be determined using EPA Reference Method 25A. The hydrocarbon data would be used to calculate destruction removal efficiency (DRE). All hydrocarbon emissions would also be assumed to be phenol.

A stack test protocol was submitted detailing the sampling and analytical methods to be used. The inlet and outlet

tests were required to consist of three separate runs using the applicable reference test methods. The protocol was to be submitted 30 days prior to the source test and was required to include the date and time of the test. The protocol was also to include details describing the operating conditions under which the test would be conducted, including but not limited to production rates, number of furnaces operating, and minimum oxidizer temperature. The source test was required to be representative of worst case (maximum) production rates. Originally the facility was required to perform the test with two 96" and two 50" induction furnaces operating concurrently; however, due to the facility only having installed two power packs to supply electricity to the induction furnaces, and only being able to operate one induction furnace per power pack at a time, it was agreed that the test would be performed with two 96" induction furnaces operating simultaneously with maximum raw material loads. The test protocol was approved by the Department prior to testing.

The test was performed on October 19-20, 2010, and was witnessed by a representative of the Department. Plant operators were required to record the production data and process and control equipment operating conditions during the test. This data, along with strip charts, was to be submitted as part of the test results. Test results were required to be submitted to this Department within 60 days from the completion of the test.

The test report was sent to the Department under a cover letter from Ashland dated December 31, 2010. The stack test results from three test runs indiciated an average outlet emission rate of 0.013 lbs/hr of TNMHC (as carbon). DRE was 99.970% as maximum quantifiable at an average THOX1 combustion temperature of 1600 degrees F. The test runs were performed with two 96" induction furnaces in operation simultaneously.

If operation of this process (quantities/load size/characteristics of feed materials/number of furnaces operating simultaneously) is modified in such a fashion that emissions of VOCs or other regulated contaminants have the potential to increase, additional stack testing of the THOX1 unit may be required by the Department.

If future stack results indicate emission rates greater than those used in the Part 212 analysis submitted as part of the original permit application, a revised analysis shall be submitted to the Department within 60 days after the completion of the test.

If test results and/or the Part 212 analysis indicate that additional emissions control will be required pursuant to 6NYCRR, Subpart 212-2.1(b) and Table 4 of Subpart 212-2.3(b), a permit modification including a proposal for corrective action shall be submitted within 30 days from a written request from this Department.

Parameter Monitored: VOC
Lower Permit Limit: 90 percent reduction
Reference Test Method: Federal Reference Method 25A
Monitoring Frequency: SINGLE OCCURRENCE
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 16: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-1.7 (b)

Item 16.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER Emission Point: EP401
Process: FB1 Emission Source: THOX1

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 16.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:

A continuous temperature recorder will monitor the exhaust gas temperature from the thermal oxidizer, THOX1, emission point EP401.

The operating temperature is to be maintained and alarmed at a minimum of 1600 degrees F, per the results of stack testing performed October 19-20, 2010. If the temperature falls below the minimum, Ashland shall immediately initiate corrective action.

The temperature recorder and oxygen analyzer shall be calibrated annually.

A routine start-up, shut-down and maintenance plan (to include a quality assurance program to calibrate temperature and oxygen controllers) shall be developed

along with an operator training schedule, and submitted to this Department with 60 days after initial permit issuance.

A quarterly exception report shall be submitted to this Department within 30 days after the end of the quarterly calendar period.

Records of maintenance and temperature readings are to be kept on-site in a format easily accessible and made available to Department representatives on request. Records are to be kept on-site for a period of five years.

Manufacturer Name/Model Number: Honeywell DR4500A Truline Circular Chart Recorder
Parameter Monitored: TEMPERATURE
Lower Permit Limit: 1600 degrees Fahrenheit
Monitoring Frequency: CONTINUOUS
Averaging Method: MINIMUM-NOT TO FALL BELOW EXCEPT DURING STARTUP/SHUTDOWN
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2016.
Subsequent reports are due every 6 calendar month(s).

Condition 17: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.1 (b)

Item 17.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER Emission Point: EP401
Process: FB1 Emission Source: THOX1

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC
CAS No: 000108-95-2 PHENOL

Item 17.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Ashland is not limited to using a specific phenolic resin product in the manufacture of RCFB molds but may use phenolic resin products from different suppliers which meet established specifications for free phenol concentration.

When the initial permit was under development, emissions calculations were based on the usage of a specific phenolic resin product, Hexion. The preparation of the mixture for each RCFB mold included 63 pounds of Hexion containing a maximum of 5% by weight phenol (as per MSDS). Assuming a maximum capacity of 16 molds per 96" induction furnace and a maximum of two furnaces operating concurrently, the concentration of phenol which could be potentially driven off in the two furnaces and vented to the thermal oxidizer was estimated at 100 pounds. Volatile emissions were expected to be generated over a 14 hour period, although it was expected that at the 1850 degrees C furnace operating temperature, the greatest portion would be driven off in the first few hours. Therefore, the emission rate potential (ERP) of phenol was expected to be greater than 10 pounds per hour. At that ERP, phenol as a 'B' rated contaminant is required by Table 4 of Subpart 212-2.3(b) to have a minimum of 90% control efficiency. Compliance with 6NYCRR, Subpart 212-2.1(b) and Table 4 of Subpart 212-2.3(b) was required to be demonstrated by a stack emission test.

When the initial permit was issued, a stack test was required on both the inlet and the outlet of the oxidizer THOX1 to verify the ERP of phenol, napthalene, and total volatile organic compounds (VOC) and the degree of emissions control required by Table 4. Based on updated process information, it was later determined that a non-speciated Method 25A test method would be utilized to determine total hydrocarbons concentration. All hydrocarbons would be assumed to be phenol.

The test was performed on October 19-20, 2010, and was witnessed by a representative of the Department. Plant operators were required to record the production data and process and control equipment operating conditions during the test. This data, along with strip charts, was to be submitted as part of the test results. Test results were required to be submitted to this Department within 60 days from the completion of the test.

The test report was sent to the Department under a cover letter from Ashland dated December 31, 2010. The stack test results from three test runs indicated an average outlet emission rate of 0.013 lbs/hr of TNMHC (as carbon). DRE was 99.970% as maximum quantifiable at an average THOX1 combustion temperature of 1600 degrees F. The test runs were performed with two 96" induction furnaces in operation simultaneously.

If operation of this process (quantities/load size/characteristics of feed materials/number of furnaces

operating simultaneously) is modified in such a fashion that emissions of VOCs or other regulated contaminants have the potential to increase, additional stack testing of the THOX1 unit may be required by the Department.

Stack test results indicating a greater ERP and/or a control efficiency of less than the 99.5% used to determine actual emissions will require the facility to submit revised emissions data and impact analysis screening. Any increase in ERP will need to be re-evaluated in terms of Part 212 and the control efficiency of the thermal oxidizer.

Compliance with Subpart 212-2.1(b) will be maintained as follows:

1.) The thermal oxidizer (THOX1) is to operate at all times that material is being processed in either the 96" or 50" induction furnaces.

2.) The oxidizer temperature is to be maintained at a minimum of 1600 degrees F, as demonstrated in the October 2010 stack test.

3.) Operations will be limited to a maximum of three induction furnaces operating concurrently.

Parameter Monitored: PHENOL
Lower Permit Limit: 90 percent reduction
Monitoring Frequency: CONTINUOUS
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 18: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-1.7 (a)

Item 18.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER Emission Point: EP405
Process: FB4

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 18.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:

Chlorine emissions from the Chlorine Purification Process have been assigned an Environmental Rating of B under 6 NYCRR Part 212. As stated in the permit application for this process, chlorine emission rate potential prior to control is 7.3 lbs/hr, and the degree of air cleaning provided by the two-stage wet scrubber system will be a minimum of 99%.

Within 60 days after achieving the maximum production rate but not later than 180 days after initial start-up of the Chlorine Purification Process, Ashland shall conduct a representative stack test on the inlet and outlet of the wet scrubber system (emission sources 00WS1 and 00WS2), emission point EP405, using acceptable reference methods pursuant to 6NYCRR Subpart 202-1 and 40 CFR 60 in order to determine the control efficiency of the wet scrubber system for removal of chlorine and the emission rate for this contaminant. During this test monitoring parameters for the control equipment including pH, ORP, pressure drop across each scrubber stage, and sump blowdown flow rate for each scrubber stage shall be recorded every 15 minutes during the entire period of the performance tests.

A stack test protocol shall be submitted detailing the sampling and analytical methods to be used. The inlet and outlet tests shall each consist of three separate runs using the applicable reference test methods. The protocol is to be submitted 30 days prior to the source test and shall include the date and time of the test. The protocol is also to include details describing the operating conditions under which the test will be conducted, including but not limited to the specific furnace(s) to be used, the size and nature of the load being processed (billets vs. pieces), the time frame in the process during which sampling will be performed (applicant has stated that while chlorine emissions will occur throughout the 6-hour batch run time, particulate emissions will occur during the first half (first 3 hours) of the batch run time), and the feed rate of chlorine during testing (applicant information indicates a maximum chlorine feed rate of 7.3 lbs/hr). The test protocol must be approved by the Department prior to testing. The test is to be witnessed by a representative of the Department.

The source test shall be representative of worst case (maximum) production rates. Plant operators must record the production data and process and control equipment operating conditions during the test, including key operating parameters for the wet scrubber system.

Test results shall be submitted to this Department within 60 days after completion of the test. The report shall include operating parameters recorded during the test. The hourly averages shall be used to confirm/establish the operating limits. The final report must be clear as to how the results correlate with the production and operating data. If the operating limits established during the test differ from the limits proposed in the permit, a permit modification application shall be submitted no later than 90 days after receiving approval of the performance test report proposing updates to the permit limits.

Control efficiencies lower than and/or stack test emission rates higher than those used to determine facility emissions in the application process may require a Part 212 analysis and/or revisions to control parameter operating limits. If test results and/or Part 212 analyses indicate that additional emissions control will be required, a permit modification including a proposal for corrective action shall be submitted within 30 days after a written request from this Department.

Upon completion of the test and demonstration of compliance with the permit limit, operating parameter limits shall be updated as needed and compliance will be continued through an established maintenance and operating program for the scrubber system.

Parameter Monitored: CHLORINE
Lower Permit Limit: 99 percent reduction
Reference Test Method: 40 CFR 60
Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 19: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.4 (b)

Item 19.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER Emission Point: EP405

Process: FB4

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 19.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:

Particulate emissions from the chlorine purification system wet scrubber system (EP405) shall not exceed 0.050 grains per cubic foot of exhaust gas, expressed at standard conditions on a dry gas basis.

Within 60 days after achieving the maximum production rate but not later than 180 days after initial start-up, Ashland shall conduct a representative stack test to determine the particulate emissions from the chlorine purification system wet scrubber system (Emission Point EP405). Compliance shall be demonstrated using Method 5 and acceptable procedures as per 6NYCRR Subpart 202-1 and 40 CFR Part 60. During this test monitoring parameters for the control equipment including pH, ORP, pressure drop across each scrubber stage, and sump blowdown flow rate for each scrubber stage shall be recorded every 15 minutes during the entire period of the performance tests.

A stack test protocol shall be submitted to the Department detailing the sampling and analytical methods to be used. The test shall consist of three separate runs using the applicable reference test methods. The protocol is to be submitted 30 days prior to the source test and shall include the date and time of the test. The protocol is also to include a details describing the operating conditions under which the test will be conducted, including but not limited to the specific furnace(s) to be used, the size and nature of the load being processed (billets vs. pieces), the time frame in the process during which sampling will be performed (applicant has stated that while chlorine emissions will occur throughout the 6-hour batch run time, particulate emissions will occur during the first half (first 3 hours) of the batch run time), and the feed rate of chlorine during testing (applicant information indicates a maximum chlorine feed rate of 7.3 lbs/hr). The protocol must be approved by this Department prior to the commencement of the stack test. The test is to be witnessed by a representative of this Department.

The source test shall be representative of worst case (maximum) production rates. Plant operators must record

the production data and process and control equipment operating conditions during the test, including key operating parameters for the wet scrubber system.

Test results shall be submitted to this Department within 60 days from the completion of the test. The report shall include operating parameters recorded during the test. The hourly averages shall be used to confirm/establish the operating limits. If the operating limits established during the test differ from the limits proposed in the permit, a permit modification application shall be submitted no later than 90 days after receiving approval of the performance test report proposing updates to the permit limits.

If test results indicate that the allowable particulate emissions standard is exceeded, a proposal for corrective action shall be submitted within 30 days after a written request from the Department.

Upon completion of the test and demonstration of compliance with the standard, operating limits shall be updated as needed and compliance will be continued through an established maintenance and operating program for the scrubber system.

Parameter Monitored: PARTICULATES
Upper Permit Limit: 0.050 grains per dscf
Reference Test Method: Method 5
Monitoring Frequency: ONCE DURING THE TERM OF THE PERMIT
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 20: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:40CFR 60, NSPS Subpart JJJJ

Item 20.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-RAYON
Process: RA1 Emission Source: GN310

Item 20.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Facilities that have stationary spark ignition internal

combustion engines must comply with applicable portions of 40 CFR 60 Subpart JJJJ.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 21: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-1.7 (a)

Item 21.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-RAYON Emission Point: EP310

Regulated Contaminant(s):
CAS No: 000108-95-2 PHENOL
CAS No: 0NY998-00-0 VOC
CAS No: 0NY100-00-0 TOTAL HAP

Item 21.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:
Within 60 days after start-up, Ashland was required to conduct a stack emissions test on the inlet and outlet of the thermal oxidizer (THOX2), emission point EP310, using acceptable reference methods pursuant to 6NYCRR, Part 202-1.

When the initial permit was issued, it was required that the source test would determine the control efficiency of the thermal oxidizer and emissions of carbon monoxide (CO), particulates, nitrogen oxides (NOx), sulfur compounds, hydrogen sulfide (H2S), phenol, benzene, styrene, polycyclic aromatic hydrogen compounds(PAH) and volatile organic compounds (VOC). Based on updated process information, it was later determined that stack testing to determine emissions of carbon monoxide, nitrogen oxides, sulfur compounds, hydrogen sulfide, phenol, benzene, styrene, and PAHs would no longer be required. However, particulates would still be evaluated using EPA Reference Method 5, and inlet and outlet total hydrocarbons concentrations would be determined using EPA Reference Method 25A. The hydrocarbon data would be used to calculate destruction removal efficiency (DRE). All hydrocarbon emissions would also be assumed to be phenol.

A stack test protocol was submitted detailing the sampling and analytical methods to be used. The inlet and outlet tests were required to consist of three separate runs using the applicable reference test methods. The protocol was to be submitted 30 days prior to the source test and was required to include the date and time of the test. The protocol was also to include details describing the operating conditions under which the test will be conducted, including but not limited to all sources venting to the THOX2 unit, production rates, and minimum oxidizer temperature. The test protocol was approved by the Department prior to testing.

The source test was required to be representative of worst case (maximum) production rates.

The initial test was performed on October 26 and November 1 and 4, 2010, and was witnessed by a representative of the Department. Plant operators were required to record the production data and process and control equipment operating conditions during the test. This data, along with temperature strip charts, was to be submitted as part of the test results. Test results were required to be submitted to the Department within 60 days after completion of the test.

The test report was sent to the Department under a cover letter from Ashland dated December 31, 2010. The stack test results from three test runs indicated an average outlet emission rate of 0.040 lbs/hr of TNMHC (as Carbon). DRE was 99.991% as measured at an average THOX2 combustion temperature of 1500 degrees F. The test runs were performed with a 90,000 pound charge of material contained in 30 cans in the Sager furnace. Particulate testing resulted in a three-run average of 0.121 gr/dscf, in exceedance of the standard. Ashland linked this situation to corrosion in the THOX2 stack and was subsequently required to clean the system and re-test. A re-test was performed June 16-17, 2011, and indicated compliance with the particulate standard, with a three-run average of 0.0056 gr/dscf.

A Method 9 opacity test was conducted concurrent with the initial performance test and showed compliance.

Within 60 days after increasing production in the Sager furnace to its full production load of 180,000 pounds, Ashland will be required to conduct a re-test of hydrocarbon emissions from the THOX2 unit and determination of DRE. Particulate testing may also be required.

If future stack test results indicate emission rates greater than those used in the Part 212 analysis submitted as part of the original permit application, a revised analysis shall be submitted to the department within 60 days after the completion of the test.

If stack test results and/or a Part 212 analysis of the results indicate additional controls or limits on production are required to achieve compliance with 6NYCRR, Subpart 212-2.1(b) and Table 4 of Subpart 212-2.3(b), a permit modification including a proposal for corrective action must be submitted within 30 days from a written request from this Department.

Parameter Monitored: TOTAL HAP
Lower Permit Limit: 99 percent reduction
Reference Test Method: FRM 18 or Method 25A
Monitoring Frequency: SINGLE OCCURRENCE
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 22: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-1.7 (b)

Item 22.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-RAYON Emission Point: EP310

Regulated Contaminant(s):
CAS No: 0NY100-00-0 TOTAL HAP
CAS No: 0NY998-00-0 VOC

Item 22.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The exhaust gas temperature of the thermal oxidizer, THOX2, emission point EP310, is to be continuously monitored and recorded. The temperature is to be maintained and alarmed at a minimum of 1500 degrees F per the results of stack testing performed in 4th Quarter 2010.

The temperature recorder and oxygen analyzer shall be

calibrated annually.

A routine start-up, shut-down and maintenance plan (to include a quality assurance program to calibrate temperature and oxygen controllers) shall be developed along with an operator training schedule, and submitted to this Department with 60 days after initial permit issuance.

A quarterly exception report shall be submitted to this Department within 30 days after the end of the quarterly calendar period.

Records of maintenance and temperature readings are to be kept on-site in a format easily accessible and made available to Department representatives on request. Records are to be kept on-site for a period of five years.

Manufacturer Name/Model Number: Honeywell DR4500A Truline Circular Chart Recorder
Parameter Monitored: TEMPERATURE
Lower Permit Limit: 1500 degrees Fahrenheit
Monitoring Frequency: CONTINUOUS
Averaging Method: MINIMUM-NOT TO FALL BELOW EXCEPT DURING STARTUP/SHUTDOWN
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 1/30/2016.
Subsequent reports are due every 6 calendar month(s).

Condition 1-2: Compliance Demonstration
Effective between the dates of 05/12/2016 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.1 (b)

Replaces Condition(s) 23

Item 1-2.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-RAYON Emission Point: EP310

Regulated Contaminant(s):
CAS No: 0NY998-00-0 VOC

Item 1-2.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The emission rate of volatile organic compounds (VOC) from the sager furnace, emission point EP310, has been

calculated using a maximum load of 210,000 pounds of rayon and 99.5% destruction efficiency. The emission rate potential (ERP) directed to the thermal oxidizer (THOX2) based on the volatile concentration of the rayon material is 284 pounds per hour. Since, it is unknown at this time what percentage of volatiles may be an 'A' rated contaminant such as benzene, the volatile portion will be assigned an environmental rating of 'A' and as specified in Table 4 of 6NYCRR, Subpart 212-2.3(b), a minimum of 99% control or Best Available Control Technology (BACT) will be required.

1. Thermal oxidizer THOX2 is to operate at all times that material is being processed in sager furnace.

2. The oxidizer temperature is to be maintained at a minimum of 1500 degrees F.

3. The ERP and actual emissions calculations are based on (and input will be limited to) a maximum load of 210,000 pounds and a 20% volatile portion. Stack test results indicating a greater ERP and/or a control efficiency of less than the 99.5% used to determine actual emissions will require the facility to submit revised emissions data and Part 212 analysis.

4. When the initial permit was issued, a stack test was required on both the inlet and the outlet of the oxidizer to verify the emission rate potential of benzene, phenol, and volatile organic compounds (VOC) and the degree of emissions control required by Part 212. Based on updated process information, it was later determined that a non-speciated Method 25A test method would be utilized ot determine total hydrocarbons concentrations. All hydrocarbons would be assumed to be phenol. Stack testing was performed in 4th Quarter 2010 on a 90,000 lb load in the sager furnace. DRE was determined to be in compliance. When Ashland increases production to a full 180,000 pound load, additional stack testing will be required. If stack test results and/or a Part 212 analysis of the results indicate additional controls are required to achieve compliance with 6NYCRR, Subpart 212-2.1(b) and Table 4 of Subpart 212-2.3(b), a permit modification including a proposal for corrective action must be submitted within 30 days from a written request from this Department.

5. As part of REN1 MOD 1 an 11-foot-diameter gas fired furnace (ES FURN2) will be installed in Building #241. The new furnace (which has two 450,000 BTU/hr burners) will process one Sager unit (i.e., 3,000 pound load) per run, and will replace some of the much larger production

runs currently processsed in the existing Sager Furnace. Emissions from the new furnace will be ducted to and controlled by existing thermal oxidizer THOX2 (EP 310). The facility will continue to track the loads that are processed in Emission Unit 1-RAYON and will ensure that combined production in new ES FURN2 and existing ES SAGER shall not exceed 90,000 lbs per total batch.

Parameter Monitored: VOC
Lower Permit Limit: 99 percent degree of air cleaning or greater
Monitoring Frequency: CONTINUOUS
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 24: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable Federal Requirement:6 NYCRR 212-2.4 (b)

Item 24.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-RAYON Emission Point: EP310

Regulated Contaminant(s):
CAS No: 0NY075-00-0 PARTICULATES

Item 24.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:

Particulate emissions from the thermal oxidizer (THOX2, EP310) associated with the sager furnace shall not exceed 0.05 grains per cubic foot of exhaust gas, expressed at standard conditions on a dry gas basis.

Compliance shall be demonstrated by a stack test conducted using Method 5 and using acceptable procedures as per 6NYCRR, Part 202-1 and 40 CFR Part 60. Test results shall be submitted to this Department within 60 days from the completion of the test.

Upon competion of the test and demonstration of compliance with the standard, compliance will be continued through an established maintenance program on the oxidizer.

Testing was carried out on THOX2 October 26 and November 1 and 4, 2010 at a production load in the sager furnace of

90,000 pounds. The test report was sent to the Department under a cover letter from Ashland dated December 31, 2010. The stack test results from three test runs indicated an average outlet particulate concentration of 0.121 gr/dscf, in exceedance of the standard. Ashland linked this situation to corrosion in the THOX2 stack and was subsequently required to clean the system and re-test. A re-test was performed June 16-17, 2011, and indicated compliance with the particulate standard, with a three-run average of 0.0056 gr/dscf. Within 60 days after increasing production in the sager furnace to its full production load of 180,000 pounds, Ashland will be required to conduct a re-test of hydrocarbon emissions from the THOX2 unit. Particulate testing may also be required upon request by the Department.

Parameter Monitored: PARTICULATES
Upper Permit Limit: 0.05 grains per dscf
Reference Test Method: Method 5
Monitoring Frequency: SINGLE OCCURRENCE
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

STATE ONLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Emergency Defense - 6 NYCRR 201-1.5

An emergency, as defined by subpart 201-2, constitutes an affirmative defense to penalties sought in an enforcement action brought by the Department for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An emergency occurred and that the facility owner or operator can identify the cause(s) of the emergency;
(2) The equipment at the permitted facility causing the emergency was at the time being properly operated and maintained;
(3) During the period of the emergency the facility owner or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
(4) The facility owner or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

Item B: **Public Access to Recordkeeping for Facilities With State Facility Permits - 6 NYCRR 201-1.10 (a)**
Where facility owners and/or operators keep records pursuant to compliance with the requirements of 6 NYCRR Subpart 201-5.4, and/or the emission capping requirements of 6 NYCRR Subpart 201-7, the Department will make such records available to the public upon request in accordance with 6 NYCRR Part 616 - Public Access to Records.

Facility owners and/or operators must submit the records required to comply with the request within sixty working days of written notification by the Department.

Item C: **General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5**
Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

STATE ONLY APPLICABLE REQUIREMENTS
The following conditions are state only enforceable.

Condition 25: Contaminant List
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:ECL 19-0301

Item 25.1:
Emissions of the following contaminants are subject to contaminant specific requirements in this permit(emission limits, control requirements or compliance monitoring conditions).

CAS No: 000108-95-2
Name: PHENOL

CAS No: 007782-50-5
Name: CHLORINE

CAS No: 0NY075-00-0
Name: PARTICULATES

CAS No: 0NY100-00-0

Name: TOTAL HAP

CAS No: 0NY998-00-0
Name: VOC

Condition 26: Malfunctions and start-up/shutdown activities
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 201-1.4

Item 26.1:
(a) The facility owner or operator shall take all necessary and appropriate actions to prevent the emission of air pollutants that result in contravention of any applicable emission standard during periods of start-up, shutdown, or malfunction.

(b) The facility owner or operator shall compile and maintain records of all equipment malfunctions, maintenance, or start-up/shutdown activities when they can be expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the department when requested to do so, or when so required by a condition of a permit issued for the corresponding air contamination source. Such reports shall state whether any violations occurred and, if so, whether they were unavoidable, include the time, frequency and duration of the maintenance and/or start-up/shutdown activities, and an estimate of the emission rates of any air contaminants released. Such records shall be maintained for a period of at least five years and made available for review to department representatives upon request. Facility owners or operators subject to continuous stack monitoring and quarterly reporting requirements need not submit additional reports for equipment maintenance or start-up/shutdown activities for the facility to the department.

(c) In the event that emissions of air contaminants in excess of any emission standard in this Subchapter occur due to a malfunction, the facility owner or operator shall compile and maintain records of the malfunction and notify the department as soon as possible during normal working hours, but not later than two working days after becoming aware that the malfunction occurred. When requested by the department, the facility owner or operator shall submit a written report to the department describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates.

(d) The department may also require the owner or operator to include, in reports described under Subdivisions (b) and (c) of this Section, an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions.

(e) A violation of any applicable emission standard resulting from start-up, shutdown, or malfunction conditions at a permitted or registered facility may not be subject to an enforcement action by the department and/or penalty if the department determines, in its sole discretion, that such a violation was unavoidable. The actions and recordkeeping and reporting requirements listed above must be adhered to in such circumstances.

Condition 27: Emission Unit Definition
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 27.1(From Mod 1):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-FIBER
Emission Unit Description:
Rigid Carbon Fiber Board (RCFB) Insulation production. Raw materials consisting of carbonized materials are mixed, placed in molds, steam cured, and heat dried in walk-in drying ovens. The molds are then transferred to 96" electric induction furnaces (8) where the materials are carbonized. Emissions of volatile organic compunds (VOC), phenol, and hazardous air pollutants (HAP) released from these furnaces are vented to thermal oxidizer THOX1 for destruction.
As part of Permit Renewal 1 the facility installed an L&L Bake Oven, which is an electric furnace, used to remove a phenolic material that is used as an adhesive for the carbon fiber and carbonize/degas the fiber in single batch runs to 800 degrees C. In addition the L&L Bake Oven may be used to heat-treat cut coated carbon fiber pieces to an approximate temperature of 250 degrees C. The off-gas from the oven (containing phenol and VOCs) is directed to natural gas-fired thermal oxidizer THOX1 (EP 401) for destruction.

Chlorine Purification Process. As part of Permit Renewal 1 the facility installed a Chlorine Purification Process to remove metal contaminants from carbon fiber billets and cut pieces produced in other processes at the facility. Several existing induction furnaces will be modified to allow the injection of chlorine gas into the nitrogen injection system and the entry of the nitrogen and chlorine mixture into the active furnace at the appropriate point in processing to purify the carbon fiber products. The metal contaminants are removed as metal chloride salts. Off-gases from the chlorine purification process are fed to a two-stage wet scrubber system for removal of chlorine and particulates and vented through emission point EP405.

Cartridge Baghouse for Dust Removal. As part of this modification a Torit cartridge baghouse (EP 406) will be installed outside of Building #4 to control dust generated inside the building by equipment that sizes and shapes in-process carbon/graphite products, including routers, saws, mills, lathes, and sanders.

There are six emission points associated with this emission unit: EP 401-the thermal oxidizer; EP 402, 403 & 404-natural gas fired drying ovens; EP 405- the chlorine purification process; and EP 406 - the cartridge baghouse exhaust. In addition, sixteen (16) 50" induction

furnaces (ES50001 thru ES50016), eight (8) 96" induction furnaces (ES96001 thru ES96008), and one (1) 25" induction furnace (ES25001) vent to a common header and to the thermal oxidizer stack EP 401. The wet scrubber system for the chlorine purification system vents through EP405.

Building(s): 4

Item 27.2(From Mod 1):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-FINIS
Emission Unit Description:
Cartridge Baghouse for Dust Removal. As part of this modification a Torit cartridge baghouse (EP 501) will be moved from the interior of Building #4 to the outside of finishing Building #5 to control dust generated inside Building #5 by finishing equipment that sizes and shapes carbon/graphite products, including mills, sifters, and saws.

Building(s): 5

Item 27.3(From Mod 1):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-RAYON
Emission Unit Description:
The process consists of heat treating/carbonizing rayon material in a two step heating process. The first step is to place the rayon in a natural gas fired Sager furnace (ES SAGER) at temperatures up to 800 degrees C. The second step is to carbonize/graphitize the rayon in an electric induction furnace at 1850 degrees C. Emissions from the Sager furnace are controlled by thermal oxidizer THOX2 (EP 310) . A natural-gas fired emergency generator has been added to maintain the THOX2 unit in the event of a power outage.
As part of this modification an 11-foot-diameter gas fired furnace (ES FURN2) will be installed in Building #241. The new furnace (which has two 450,000 BTU/hr burners) will process one Sager unit (i.e., 3,000 pound load) per run, and will replace some of the much larger production runs currently processed in the existing Sager Furnace. Emissions from the new furnace will be ducted to and controlled by existing thermal oxidizer THOX2 (EP 310).

Building(s): 241

Condition 28: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 201-5.1 (b)

Item 28.1:
The Compliance Demonstration activity will be performed for the Facility.

Item 28.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Ashland shall not construct any new stationary sources or modify existing sources without first obtaining a permit modification unless the proposed changes meet the criteria of 6 NYCRR Sections 201-5.4(c) or (e).

If required, Ashland shall submit a complete permit modification application along with the appropriate technical background data and process emissions evaluation as defined in 6 NYCRR Part 212 for each contaminant to be emitted 90 days in advance of the start-up of any proposed new source project.

ASHLAND SHALL NOTIFY THIS DEPARTMENT AT THE TIME OF START-UP OF NEW OR MODIFIED OPERATIONS.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 29: Renewal deadlines for state facility permits
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 201-5.2 (c)

Item 29.1:
The owner or operator of a facility having an issued state facility permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit expiration for permit renewal purposes.

Condition 30: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 201-5.3 (c)

Item 30.1:
The Compliance Demonstration activity will be performed for the Facility.

Item 30.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

Any reports or submissions required by this permit shall be submitted to the Regional Air Pollution Control Engineer (RAPCE) at the following address:

Division of Air Resources
NYS Dept. of Environmental Conservation
Region 9
270 Michigan Ave.
Buffalo, NY 14203

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 31: Visible Emissions Limited
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 211.2

Item 31.1:
Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

****** Emission Unit Level ******

Condition 32: Emission Point Definition By Emission Unit
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 32.1(From Mod 1):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 1-FIBER

Emission Point: EP406
Height (ft.): 18 Diameter (in.): 28
NYTMN (km.): 4778.704 NYTME (km.): 174.925 Building: 4

Item 32.2(From Mod 1):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 1-FINIS

Emission Point: EP501
Height (ft.): 4 Length (in.): 39 Width (in.): 23
NYTMN (km.): 4778.704 NYTME (km.): 174.925 Building: 5

Item 32.3(From Mod 1):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 1-RAYON

Emission Point: EP310
Height (ft.): 48 Diameter (in.): 48
NYTMN (km.): 4778.6 NYTME (km.): 174.9 Building: 241

Item 32.4(From Mod 0):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 1-FIBER

Emission Point: EP401
Height (ft.): 40 Diameter (in.): 36
NYTMN (km.): 4778.6 NYTME (km.): 174.9 Building: 4

Emission Point: EP402
Height (ft.): 40 Diameter (in.): 10
NYTMN (km.): 4778.6 NYTME (km.): 174.9 Building: 4

Emission Point: EP403
Height (ft.): 40 Diameter (in.): 10
NYTMN (km.): 4778.6 NYTME (km.): 174.9 Building: 4

Emission Point: EP404
Height (ft.): 40 Diameter (in.): 10
NYTMN (km.): 4778.6 NYTME (km.): 174.9 Building: 4

Emission Point: EP405
Height (ft.): 57 Diameter (in.): 6
NYTMN (km.): 4778.6 NYTME (km.): 174.9 Building: 4

Condition 33: Process Definition By Emission Unit
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 33.1(From Mod 1):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-FIBER
Process: BH1
Process Description:
The cartridge type baghouse controls dust generated by equipment that sizes and shapes carbon/graphite in-process products, most of which undergo further processing, located in Building #4. The in-process sizing and shaping equipment includes mills, routers, saws, sanders, and lathes. Operations include the use of three vacuum ports on the baghouse to clean the floor of Building #4.

Emission Source/Control: BH001 - Control

Control Type: FABRIC FILTER

Emission Source/Control: MS001 - Process

Item 33.2(From Mod 1):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-FINIS
Process: BH2
Process Description:
The cartridge type baghouse controls dust generated by finishing equipment that sizes and shapes carbon/graphite products, located in Building #5. The finishing sizing and shaping equipment includes mills, sifters, and saws.

Emission Source/Control: BH002 - Control
Control Type: FABRIC FILTER

Emission Source/Control: MILL1 - Process

Item 33.3(From Mod 1):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-RAYON
Process: RA1
Process Description:
Heat treating/carbonizing rayon material in two step heating process consisting of a natural gas fired sager furnace and an electric induction furnace. Volatile emissions from the sager furnace are then directed to a natural gas-fired thermal oxidizer THOX2 (EP 310) for destruction. A natural gas fired emergency generator has been added to maintain the THOX2 unit in the event of a power outage.

An 11-foot-diameter gas fired furnace (ES FURN2) will be installed in Building #241. The new furnace (which has two 450,000 BTU/hr burners) will process one Sager unit (i.e., 3,000 pound load) per run, and will replace some of the much larger production runs currently processsed in the existing Sager Furnace. Emissions from the new furnace will be ducted to and controlled by existing thermal oxidizer THOX2 (EP 310).

Emission Source/Control: GN310 - Combustion
Design Capacity: 85 kilowatts

Emission Source/Control: THOX2 - Control
Control Type: THERMAL OXIDATION

Emission Source/Control: FURN2 - Process
Design Capacity: 3,000 pounds per load

Emission Source/Control: SAGER - Process

Item 33.4(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-FIBER
Process: FB1
Process Description:
Eight 96 " induction furnaces (96001 thru 96008), sixteen 50" induction furnaces (ES 50IND includes furnaces ES50001 through ES50010 and ES 50NEW includes furnaces ES50011 through ES50016), and one 25" induction furnace in which graphite/carbon/rayon materials are graphitized/carbonized. Volatile emissions from the process are then directed to a natural gas-fired thermal oxidizer (EP 401) for destruction.

Emission Source/Control: THOX1 - Control
Control Type: THERMAL OXIDATION

Emission Source/Control: 25001 - Process

Emission Source/Control: 50IND - Process
Design Capacity: 600 kilowatts

Emission Source/Control: 50NEW - Process
Design Capacity: 600 kilowatts

Emission Source/Control: 96001 - Process
Design Capacity: 4,000 kilowatts

Emission Source/Control: 96002 - Process
Design Capacity: 4,000 kilowatts

Emission Source/Control: 96003 - Process
Design Capacity: 4,000 kilowatts

Emission Source/Control: 96004 - Process
Design Capacity: 4,000 kilowatts

Emission Source/Control: 96005 - Process
Design Capacity: 4,000 kilowatts

Emission Source/Control: 96006 - Process
Design Capacity: 4,000 kilowatts

Emission Source/Control: 96007 - Process
Design Capacity: 4,000 kilowatts

Emission Source/Control: 96008 - Process
Design Capacity: 4,000 kilowatts

Item 33.5(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-FIBER
Process: FB2
Process Description:
Three natural gas fired drying ovens used to drive off moisture from the cured fiberboard molds. These ovens are vented to emission points EP402, EP403, and EP404. An electric drying oven is not vented to the atmosphere. From the drying ovens the molds are transferred to the 96 " induction furnaces described in process FB1.

Emission Source/Control: ES402 - Combustion

Emission Source/Control: ES403 - Combustion

Emission Source/Control: ES404 - Combustion

Item 33.6(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-FIBER
Process: FB3
Process Description:
As part of Permit Renewal 1 the facility is installing an L&L Bake Oven, which is an electric furnace, used to remove a phenolic material that is used as an adhesive for the carbon fiber and carbonize/degas the fiber in single batch runs (approximately 200 cu. ft. of material per batch) to 800 degrees C. In addition the L&L Bake Oven may be used to heat-treat cut coated carbon fiber pieces to an approximate temperature of 250 degrees C. The off-gas from the oven (containing phenol and VOCs) will be directed to natural gas-fired thermal oxidizer THOX1 (EP 401) for destruction.

Emission Source/Control: THOX1 - Control
Control Type: THERMAL OXIDATION

Emission Source/Control: 001LL - Process
Design Capacity: 235 cubic feet

Item 33.7(From Mod 0):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-FIBER
Process: FB4
Process Description:
Chlorine Purification Process: As part of Permit Renewal 1 the facility is installing a Chlorine Purification

Process to remove metal contaminants from carbon fiber billets and cut pieces produced in other processes at the facility. Several existing induction furnaces (1B-96", 1C-96", 1D-96", 2C-52", 2D-52", 2E-52", 1A-25", 1B-25D, and 1C-30") will be modified to allow the injection of chlorine gas into the nitrogen injection system and the entry of the nitrogen and chlorine mixture into the active furnace at the appropriate point in processing to purify the carbon fiber products. Chlorine may only be introduced into one induction furnace at any given time. The metals (such as iron, aluminum, vanadium, zinc, etc.) are removed as metal chloride salts. Prior to the introduction of chlorine, the off-gases from the furnace will be automatically switched over from exhausting into the THOX1 thermal oxidizer collection hood to exhausting into a collection hood that draws in room air and feeds through a header into a wet scrubber system. The two-stage wet scrubbing system includes a first stage packed tower scrubber using a solution of dilute NaOH and NaHSO3 to control chlorine emissions and a second stage high energy venturi scrubber using water to control particulate emissions. Scrubbed gases will be emitted through emission point EP405.

Additional Process Information: There will be at least two methods for purifying the carbon fiber billets/pieces in the induction furnaces using chlorine. During the first method the billets are put into the active induction furnace and brought to between 1,900 and 2,000 degrees C while the off-gas is sent to thermal oxidizer THOX1 for destruction of organics. Once the furnace reaches 1,900 to 2,000 degrees C the wet scrubber system will be activated, the chlorine gas will be introduced into the system, and the billets will be purified. The second method allows for the billets to reach 2,000 degrees C (driving off organics to THOX1), the induction furnace to cool, and the billets to be removed from the furnace. The billets are then cut into customer specification pieces and coated by hand-application with either a phenolic coating or methanol coating. The cut pieces are then put back into an induction furnace and taken back up to 1,900 to 2,000 degrees C (driving off organics associated with the hand-applied coatings). When the pieces reach 1,900 to 2,000 degrees C the wet scrubber system will be activated, the chlorine gas will be introduced into the system, and the cut pieces will be purified.

Emission Source/Control: 00WS1 - Control
Control Type: PACKED GAS ABSORPTION SYSTEM, GAS SCRUBBER (GENERAL, NOT CLASSIFIED)

Emission Source/Control: 00WS2 - Control

Control Type: VENTURI SCRUBBER

Emission Source/Control: 96001 - Process
Design Capacity: 4,000 kilowatts

Condition 34: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 212-2.3 (b)

Item 34.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB4

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 34.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:
Process and control parameters for the two-stage wet scrubber system used to control chlorine and metal chloride particulate emissions from the Chlorine Purification Process must be monitored to demonstrate that the scrubber system is continuously operated during the purification process and maintained in such a manner as to ensure chlorine emissions from EP405 are controlled to a minimum of 99% and particulate emissions do not exceed 0.050 grains per dry standard cubic foot. A daily log is to be kept on site which will record monitored parameters.

For the Stage 1 packed scrubber, a solution of dilute NaOH and NaHSO3 is recirculated from an integral sump to which fresh water is continuously added, producing an overflow to a floor drain. Chemicals are automatically dosed as need into the liquid recirculation stream based on pH (NaOH) and Oxidation-Reduction Potential or ORP (Na2SO3) control systems. Overflow will be at pH = 9-9.5 and contain roughly 500 ppmw of unused Sulfite. Stage 2 is a high energy venturi scrubber intended primarily for particulate collection. Fresh water is also continuously added to this sump and overflowed to a floor drain.

Stage 1 scrubber pressure drop, sump blowdown flow rate (45 gph), pH, and Oxidation-Reduction Potential and Stage

2 pressure drop and sump blowdown flow rate (30 gph) will be continuously monitored and maintained within manufacturer's recommended parameter ranges. Operating/monitoring procedures shall be put in place to ensure that the water levels in the sumps are adequate to ensure proper inlet flows to the scrubbers. Operating parameters will be verified during stack testing and may be adjusted as needed based on the test results.

All parameters shall be recorded once per shift. Records will be maintained onsite and provided to the Department upon request.

This condition is for pressure drop across the Stage 1 packed tower scrubber.

Parameter Monitored: PRESSURE DROP
Upper Permit Limit: 11 inches of water
Monitoring Frequency: PER SHIFT
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 35: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 212-2.3 (b)

Item 35.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB4

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 35.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Process and control parameters for the two-stage wet scrubber system used to control chlorine and metal chloride particulate emissions from the Chlorine Purification Process must be monitored to demonstrate that the scrubber system is continuously operated during the purification process and maintained in such a manner as to ensure chlorine emissions from EP405 are controlled to a minimum of 99% and particulate emissions do not exceed 0.050 grains per dry standard cubic foot. A daily

log is to be kept on site which will record monitored parameters.

For the Stage 1 packed scrubber, a solution of dilute NaOH and NaHSO3 is recirculated from an integral sump to which fresh water is continuously added, producing an overflow to a floor drain. Chemicals are automatically dosed as need into the liquid recirculation stream based on pH (NaOH) and Oxidation-Reduction Potential or ORP (Na2SO3) control systems. Overflow will be at pH = 9-9.5 and contain roughly 500 ppmw of unused Sulfite. Stage 2 is a high energy venturi scrubber intended primarily for particulate collection. Fresh water is also continuously added to this sump and overflowed to a floor drain.

Stage 1 scrubber pressure drop, sump blowdown flow rate (45 gph), pH, and Oxidation-Reduction Potential and Stage 2 pressure drop and sump blowdown flow rate (30 gph) will be continuously monitored and maintained within manufacturer's recommended parameter ranges. Operating/monitoring procedures shall be put in place to ensure that the water levels in the sumps are adequate to ensure proper inlet flows to the scrubbers. Operating parameters will be verified during stack testing and may be adjusted as needed based on the test results.

All parameters shall be recorded once per shift. Records will be maintained onsite and provided to the Department upon request.

This condition is for Oxidation-Reduction Potential in the Stage 1 packed tower scrubber.

Parameter Monitored: OXIDATION REDUCTION POTENTIAL
Upper Permit Limit: 600 millivolts
Monitoring Frequency: PER SHIFT
Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 36: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 212-2.3 (b)

Item 36.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB4

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 36.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:

Process and control parameters for the two-stage wet scrubber system used to control chlorine and metal chloride particulate emissions from the Chlorine Purification Process must be monitored to demonstrate that the scrubber system is continuously operated during the purification process and maintaned in such a manner as to ensure chlorine emissions from EP405 are controlled to a minimum of 99% and particulate emissions do not exceed 0.050 grains per dry standard cubic foot. A daily log is to be kept on site which will record monitored parameters.

For the Stage 1 packed scrubber, a solution of dilute NaOH and NaHSO3 is recirculated from an integral sump to which fresh water is continuously added, producing an overflow to a floor drain. Chemicals are automatically dosed as need into the liquid recirculation stream based on pH (NaOH) and Oxidation-Reduction Potential or (Na2SO3) control systems. Overflow will be at pH = 9-9.5 and contain roughly 500 ppmw of unused Sulfite. Stage 2 is a high energy venturi scrubber intended primarily for particulate collection. Fresh water is also continuously added to this sump and overflowed to a floor drain.

Stage 1 scrubber pressure drop, sump blowdown flow rate (45 gph), pH, and Oxidation-Reduction Potential and Stage 2 pressure drop and sump blowdown flow rate (30 gph) will be continuously monitored and maintained within manufacturer's recommended parameter ranges. Operating/monitoring procedures shall be put in place to ensure that the water levels in the sumps are adequate to ensure proper inlet flows to the scrubbers. Operating parameters will be verified during stack testing and may be adjusted as needed based on the test results.

All parameters shall be recorded once per shift. Records will be maintained onsite and provided to the Department upon request.

This condition is for sump blowdown flow rate from the Stage 1 packed tower scrubber.

Parameter Monitored: FLOW RATE
Lower Permit Limit: 45 gallons per hour
Monitoring Frequency: PER SHIFT
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE AT ANY TIME
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 37: Compliance Demonstration
Effective between the dates of 11/05/2015 and 11/04/2025

Applicable State Requirement:6 NYCRR 212-2.3 (b)

Item 37.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-FIBER
Process: FB4

Regulated Contaminant(s):
CAS No: 007782-50-5 CHLORINE

Item 37.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
Process and control parameters for the two-stage wet scrubber system used to control chlorine and metal chloride particulate emissions from the Chlorine Purification Process must be monitored to demonstrate that the scrubber system is continuously operated during the purification process and maintained in such a manner as to ensure chlorine emissions from EP405 are controlled to a minimum of 99% and particulate emissions do not exceed 0.050 grains per dry standard cubic foot. A daily log is to be kept on site which will record monitored parameters.

For the Stage 1 packed scrubber, a solution of dilute NaOH and NaHSO3 is recirculated from an integral sump to which fresh water is continuously added, producing an overflow to a floor drain. Chemicals are automatically dosed as need into the liquid recirculation stream based on pH (NaOH) and Oxidation-Reduction Potential or ORP (Na2SO3) control systems. Overflow will be at pH = 9-9.5 and contain roughly 500 ppmw of unused Sulfite. Stage 2 is a high energy venturi scrubber intended primarily for particulate collection. Fresh water is also continuously added to this sump and overflowed to a floor drain.

Stage 1 scrubber pressure drop, sump blowdown flow rate (45 gph), pH, and Oxidation-Reduction Potential and Stage 2 pressure drop and sump blowdown flow rate (30 gph) will be continuously monitored and maintained within manufacturer's recommended parameter ranges. Operating/monitoring procedures shall be put in place to ensure that the water levels in the sumps are adequate to ensure proper inlet flows to the scrubbers. Operating parameters will be verified during stack testing and may be adjusted as needed based on the test results.

All parameters shall be recorded once per shift. Records will be maintained onsite and provided to the Department upon request.

This condition is for pH for the Stage 1 packed tower scrubber.

Parameter Monitored: PH
Lower Permit Limit: 8.0 pH (STANDARD) units
Monitoring Frequency: PER SHIFT
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE AT ANY TIME
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY