



PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
Permit ID: 3-3354-00483/00001
Mod 0 Effective Date: 06/04/2001 Expiration Date: No expiration date.
Mod 1 Effective Date: 05/18/2006 Expiration Date: No expiration date.
Mod 2 Effective Date: 11/16/2009 Expiration Date: No expiration date.

Permit Issued To: ZIRCAR ZIRCONIA INC
87 MEADOW RD
FLORIDA, NY 10921

Contact: H CRAIG HAMLING
ZIRCAR ZIRCONIA INC
PO BOX 287 87 MEADOW RD
FLORIDA, NY 10921-0287
(845) 651-3040

Facility: ZIRCAR ZIRCONIA INC
87 MEADOW RD
FLORIDA, NY 10921

Description:

This permit is for the air emissions from Zircar Zirconia. Processes at the facility from which there are emissions include solution #1 make-up, extraction, drying, dry rolling, conversion, charring ovens, firing furnaces, and a natural gas fired furnace. There are eight emission points for venting these processes. The pollutants emitted are hydrogen chloride, ammonia, carbon monoxide, nitrogen oxides, particulates, and volatile organic compounds.

The regulations that apply to the facility include 6NYCRR Parts 200, 201, 202, 211, and 212. Based on Table 2 of Part 212, The Department has determined that the three scrubbers utilized by the facility shall meet an air cleaning efficiency of at least 90 percent for hydrogen chloride.

Modification #1 of the permit was for changes associated with disconnecting the exhaust of the three drying rooms from Scrubber #1 and venting them directly to the outside through separate stacks. This modification also involved enhancements to some of the permit conditions.

Modification #2 is for changing Scrubber #2 to Stripper #1, renaming ovens and furnaces, and revising the affected permit conditions. This modification also



involved enhancements to permit conditions which pertain to monitoring the scrubbers.

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: KENNETH R GRZYB
 NYSDEC REGION 3
 21 S PUTT CORNERS RD
 NEW PALTZ, NY 12561

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 and Modifications
 - Permit modifications, suspensions or revocations by the Department
 - Applications for Permit Renewals and Modifications
 - Permit Modifications, Suspensions and Revocations by the Department
 - Permit Modifications, Suspensions, and Revocations by the Department

Facility Level

- Submission of Applications for Permit Modification or Renewal-REGION 3 HEADQUARTERS
- Submission of application for permit modification or renewal-REGION 3 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 2-1: Applications for permit renewals, modifications and transfers

Applicable State Requirement: 6 NYCRR 621.11

Item 2-1.1:

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 2-1.2:

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 2-1.3:

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 1-1: Applications for Permit Renewals and Modifications
Applicable State Requirement: 6 NYCRR 621.13

Item 1-1.1:

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 1-1.2:

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 1-1.3:

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 2-2: Permit modifications, suspensions or revocations by the Department

Applicable State Requirement: 6 NYCRR 621.13

Item 2-2.1:

The Department reserves the right 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.

Condition 3: Applications for Permit Renewals and Modifications

Applicable State Requirement: 6 NYCRR 621.13 (a)

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.

Condition 1-2: Permit Modifications, Suspensions and Revocations by the Department



Applicable State Requirement: 6 NYCRR 621.14

Item 1-2.1:

The Department reserves the right 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.

Condition 4: Permit Modifications, Suspensions, and Revocations by the Department
Applicable State Requirement: 6 NYCRR 621.14

Item 4.1:

The Department reserves the right to modify, suspend, or revoke this permit. The grounds for modification, suspension or revocation include:

- a) the scope of the permitted activity is exceeded or a violation of any condition of the permit or provisions of the ECL and pertinent regulations is found;
- b) the permit was obtained by misrepresentation or failure to disclose relevant facts;
- c) new material information is discovered; or
- d) environmental conditions, relevant technology, or applicable law or regulation have materially changed since the permit was issued.

**** Facility Level ****

Condition 5: Submission of Applications for Permit Modification or Renewal-REGION 3 HEADQUARTERS
Applicable State Requirement: 6 NYCRR 621.5 (a)

Item 5.1:

Submission of applications for permit modification or renewal are to be submitted to:
NYSDEC Regional Permit Administrator
Region 3 Headquarters
Division of Environmental Permits
21 South Putt Corners Road
New Paltz, NY 12561-1696
(845) 256-3054

Condition 2-3: Submission of application for permit modification or renewal-REGION 3 HEADQUARTERS



Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 2-3.1:

Submission of applications for permit modification or renewal are to be submitted to:
NYSDEC Regional Permit Administrator
Region 3 Headquarters
Division of Environmental Permits
21 South Putt Corners Road
New Paltz, NY 12561-1696
(845) 256-3054

New York State Department of Environmental Conservation

Permit ID: 3-3354-00483/00001

Facility DEC ID: 3335400483



Permit Under the Environmental Conservation Law (ECL)

**ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY
PERMIT**

IDENTIFICATION INFORMATION

Permit Issued To: ZIRCAR ZIRCONIA INC
87 MEADOW RD
FLORIDA, NY 10921

Facility: ZIRCAR ZIRCONIA INC
87 MEADOW RD
FLORIDA, NY 10921

Authorized Activity By Standard Industrial Classification Code:
3297 - NONCLAY REFRACTORIES

Mod 0 Permit Effective Date: 06/04/2001
date.

Permit Expiration Date: No expiration

Mod 1 Permit Effective Date: 05/18/2006
date.

Permit Expiration Date: No expiration

Mod 2 Permit Effective Date: 11/16/2009
date.

Permit Expiration Date: No expiration



LIST OF CONDITIONS

FEDERALLY ENFORCEABLE CONDITIONS

Emission Unit Level

EU=1-00025

- 2-1 6 NYCRR 212.4 (a): Compliance Demonstration
- 2-2 6 NYCRR 212.4 (a): Compliance Demonstration
- 2-3 6 NYCRR 212.4 (a): Compliance Demonstration

EU=1-00025,EP=00004

- 17 6 NYCRR 212.6 (a): Compliance Demonstration

STATE ONLY ENFORCEABLE CONDITIONS

Facility Level

- 1-2 ECL 19-0301: Contaminant List
- 2-4 6 NYCRR 201-1.4: Unavoidable noncompliance and violations
- 18 6 NYCRR Subpart 201-5: General Provisions
- 19 6 NYCRR Subpart 201-5: Permit Exclusion Provisions
- 20 6 NYCRR Subpart 201-5: Emission Unit Definition
- 2-5 6 NYCRR 211.2: Air pollution prohibited
- 23 6 NYCRR 211.2: Compliance Demonstration

Emission Unit Level

- 24 6 NYCRR Subpart 201-5: Emission Point Definition By Emission Unit
- 25 6 NYCRR Subpart 201-5: Process Definition By Emission Unit



FEDERALLY ENFORCEABLE CONDITIONS
****** Emission Unit 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: Emergency Defense - 6 NYCRR 201-1.5

An emergency constitutes an affirmative defense to an action brought 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 and/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;
- (3) During the period of the emergency the facility owner and/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 and/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 and/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 F: 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 G: 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 H: 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 I: 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 J: 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 K: Visible Emissions Limited - 6 NYCRR 211.3

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.

Item L: Open Fires - 6 NYCRR Part 215

No person shall burn, cause, suffer, allow or permit the burning in an open fire of garbage, rubbish for salvage, or rubbish generated by industrial or commercial activities.

Item M: 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 N: 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 2-1: Compliance Demonstration
Effective between the dates of 11/16/2009 and Permit Expiration Date

Applicable Federal Requirement: 6 NYCRR 212.4 (a)

Item 2-1.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 1-00025

Regulated Contaminant(s):

CAS No: 007647-01-0 HYDROGEN CHLORIDE

Item 2-1.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

Scrubber #4 shall achieve a 90 percent removal efficiency for hydrogen chloride.

Monitoring of differential pressure across the scrubber will be used to demonstrate compliance with this reduction limit. The differential pressure shall be read and recorded daily if any of the associated processes are in operation. The pressure is limited to a maximum of 2.0 inches of water. The packing material in the scrubber will be cleaned monthly or when the pressure reaches the maximum limit. In addition, the scrubber must be inspected if the maximum pressure is reached, and any problems found must be corrected and documented.

Parameter Monitored: PRESSURE CHANGE

Upper Permit Limit: 2.0 inches of water

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING
DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE -
SEE MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 2-2: Compliance Demonstration
Effective between the dates of 11/16/2009 and Permit Expiration Date



Applicable Federal Requirement:6 NYCRR 212.4 (a)

Item 2-2.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 1-00025

Regulated Contaminant(s):
CAS No: 007647-01-0 HYDROGEN CHLORIDE

Item 2-2.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

Scrubber #3 shall achieve a 90 percent removal efficiency
for hydrogen chloride.

Monitoring of differential pressure across the scrubber
will be used to demonstrate compliance with this reduction
limit. The differential pressure shall be read and
recorded daily if any of the associated processes are in
operation. The pressure is limited to 2.0 inches of
water. The packing material in the scrubber will be
cleaned monthly or when the pressure reaches the maximum
limit. In addition, the scrubber must be inspected if the
maximum pressure is reached, and any problems found must
be corrected and documented.

Parameter Monitored: PRESSURE CHANGE

Upper Permit Limit: 2.0 inches of water

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING
DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE -
SEE MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 2-3: Compliance Demonstration
Effective between the dates of 11/16/2009 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR 212.4 (a)

Item 2-3.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 1-00025

Regulated Contaminant(s):
CAS No: 007647-01-0 HYDROGEN CHLORIDE



Item 2-3.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

Scrubber #1 shall achieve a 90 percent removal efficiency for hydrogen chloride.

Monitoring of differential pressure across the scrubber will be used to demonstrate compliance with this reduction limit. The differential pressure shall be read and recorded daily if any of the associated processes are in operation. The pressure is limited to a maximum of 2.0 inches of water. The packing material in the scrubber will be cleaned monthly or when the pressure reaches the maximum limit. In addition, the scrubber must be inspected if the maximum pressure is reached, and any problems found must be corrected and documented.

Parameter Monitored: PRESSURE CHANGE

Upper Permit Limit: 2.0 inches of water

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 17: Compliance Demonstration

Effective between the dates of 06/04/2001 and Permit Expiration Date

Applicable Federal Requirement:6 NYCRR 212.6 (a)

Item 17.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 1-00025

Emission Point: 00004

Item 17.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING

Monitoring Description:

No person will cause or allow emissions having an average opacity during any six consecutive minutes of 20 percent or greater from any process emission source, except only the emission of uncombined water. The Department reserves the right to perform or require the performance of a Method 9 opacity evaluation at any time during facility operation.

Parameter Monitored: OPACITY

New York State Department of Environmental Conservation

Permit ID: 3-3354-00483/00001

Facility DEC ID: 3335400483



Upper Permit Limit: 20 percent

Reference Test Method: Method 9

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING

DESCRIPTION

Averaging Method: 6-MINUTE AVERAGE (METHOD 9)

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY



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: Public Access to Recordkeeping for Facilities With State Facility Permits - 6 NYCRR 201-1.10 (a)

Where emission source owners and/or operators keep records pursuant to compliance with the operational flexibility requirements of 6 NYCRR Subpart 201-5.4(b)(1), and/or the emission capping requirements of 6 NYCRR Subparts 201-7.2(d), 201-7.3(f), 201-7.3(g), 201-7.3(h)(5), 201-7.3(i) and 201-7.3(j), the Department will make such records available to the public upon request in accordance with 6 NYCRR Part 616 - Public Access to Records. Emission source owners and/or operators must submit the records required to comply with the request within sixty working days of written notification by the Department of receipt of the request.

Item B: 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 1-2: Contaminant List

Effective between the dates of 05/18/2006 and Permit Expiration Date

Applicable State Requirement:ECL 19-0301

Item 1-2.1:

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

CAS No: 007647-01-0

Name: HYDROGEN CHLORIDE

Condition 2-4: Unavoidable noncompliance and violations

Effective between the dates of 11/16/2009 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 201-1.4

Replaces Condition(s) 1-3

Item 2-4.1:

At the discretion of the commissioner a violation of any applicable emission standard for necessary scheduled equipment maintenance, start-up/shutdown conditions and malfunctions or upsets may be excused if such violations are unavoidable. The following actions and recordkeeping and reporting requirements must be adhered to in such circumstances.

(a) The facility owner and/or operator shall compile and maintain records of all equipment 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 commissioner's representative when requested to do so in writing or when so required by a condition of a permit issued for the corresponding air contamination source except where conditions elsewhere in this permit which contain more stringent reporting and notification provisions for an applicable requirement, in which case they supercede those stated here. Such reports shall describe why the violation was unavoidable and shall include the time, frequency and duration of the maintenance and/or start-up/shutdown activities and the identification of air contaminants, and the estimated emission rates. If a facility owner and/or operator is subject to continuous stack monitoring and quarterly reporting requirements, he need not submit reports for equipment maintenance or start-up/shutdown for the facility to the commissioner's representative.

(b) In the event that emissions of air contaminants in excess of any emission standard in 6 NYCRR Chapter III Subchapter A occur due to a malfunction, the facility owner and/or operator shall report such malfunction by telephone to the commissioner's representative as soon as possible during normal working hours, but in any event not later than two working days after becoming aware that the malfunction occurred. Within 30 days thereafter, when requested in writing by the commissioner's representative, the facility owner and/or operator shall submit a written report to the commissioner's representative describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates. These reporting requirements are superceded by conditions elsewhere in this permit which contain reporting and notification provisions for applicable requirements more stringent than those above.



(c) The Department may also require the owner and/or operator to include in reports described under (a) and (b) above an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions depending on the deviation of the malfunction and the air contaminants emitted.

(d) In the event of maintenance, start-up/shutdown or malfunction conditions which result in emissions exceeding any applicable emission standard, the facility owner and/or operator shall take appropriate action to prevent emissions which will result in contravention of any applicable ambient air quality standard. Reasonably available control technology, as determined by the commissioner, shall be applied during any maintenance, start-up/shutdown or malfunction condition subject to this paragraph.

(e) In order to have a violation of a federal regulation (such as a new source performance standard or national emissions standard for hazardous air pollutants) excused, the specific federal regulation must provide for an affirmative defense during start-up, shutdowns, malfunctions or upsets.

Condition 18: General Provisions
Effective between the dates of 06/04/2001 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 18.1:

This section contains terms and conditions that are not federally enforceable and are not required under the Act or under any of its applicable requirements. Terms and conditions so designated are not subject to the requirements of Section 201-6.4 of Part 201.

Item 18.2:

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.

Item 18.3:

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.

Condition 19: Permit Exclusion Provisions
Effective between the dates of 06/04/2001 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 19.1:

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 currently pending or future legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant

New York State Department of Environmental Conservation

Permit ID: 3-3354-00483/00001

Facility DEC ID: 3335400483



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 by the Department and the receipt thereof by the Applicant does not supercede, revoke or rescind an order or modification thereof on consent or determination by the Commissioner issued heretofore by the Department or any of the terms, conditions or requirements contained in such order or modification thereof unless specifically intended by this permit.

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 the right of the Department to bring any future action, or pursue any pending action, either administrative or judicial, to required remediation, contribution for costs incurred or funds expended, for any violations, past, present or future, known or unknown, of applicable federal law, the ECL, or the rules and regulations promulgated thereunder, or conditions contained in any other licenses or permits issued to the Applicant and not addressed in this permit.

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 the right of the Department to pursue any claims for natural resource damages against the Applicant.

Condition 20: Emission Unit Definition
Effective between the dates of 06/04/2001 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 20.1(From Mod 2):

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: 1-00025

Emission Unit Description:

The emission unit is the entire facility (Building 25) and includes eight emission points. Emission points #1, 3, and 4 are preceded by a wet scrubber. Emission point #1 exhausts emissions from solution #1, extraction, dry rolling, and firing. Emission point #2 exhausts emissions from the conversion process and a gas stripper. Emission point #3 exhausts emissions from the charring ovens. Emission point #4 exhausts emissions from a natural gas firing furnace. Emission point #5 exhausts emissions from the belt oven. Emission points #6, 7, and 8 exhaust emissions each from one of three drying rooms.

Building(s): 25

Condition 2-5: Air pollution prohibited
Effective between the dates of 11/16/2009 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 211.2

Replaces Condition(s) 22



Item 2-5.1:

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 23: Compliance Demonstration
Effective between the dates of 06/04/2001 and Permit Expiration Date

Applicable State Requirement:6 NYCRR 211.2

Item 23.1:

The Compliance Demonstration activity will be performed for the Facility.

Item 23.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

If the Department determines that odors are a problem, an odor surveillance shall be performed at least once on every day the facility is in operation by checking for odors around the entire perimeter of the facility, upon written notification from the Department to do such. If surveillances are required, the results of each surveillance must be recorded and surveillances will continue until the Department determines they are no longer necessary. If any odors are detected during the surveillance, the appropriate corrective action must be taken to eliminate the odors and such action documented.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

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

Condition 24: Emission Point Definition By Emission Unit
Effective between the dates of 06/04/2001 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 24.1(From Mod 0):

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 1-00025

Emission Point: 00001



| | | |
|-----------------------|--------------------|--------------|
| Height (ft.): 32 | Diameter (in.): 16 | |
| NYTMN (km.): 4576.3 | NYTME (km.): 552.5 | Building: 25 |
| Emission Point: 00002 | | |
| Height (ft.): 37 | Diameter (in.): 16 | |
| NYTMN (km.): 4576.3 | NYTME (km.): 552.5 | Building: 25 |
| Emission Point: 00003 | | |
| Height (ft.): 32 | Diameter (in.): 16 | |
| NYTMN (km.): 4576.3 | NYTME (km.): 552.5 | Building: 25 |
| Emission Point: 00004 | | |
| Height (ft.): 30 | Diameter (in.): 15 | |
| NYTMN (km.): 4576.3 | NYTME (km.): 552.5 | Building: 25 |
| Emission Point: 00005 | | |
| Height (ft.): 27 | Diameter (in.): 10 | |
| NYTMN (km.): 4576.3 | NYTME (km.): 552.5 | Building: 25 |
| Emission Point: 00006 | | |
| Height (ft.): 29 | Diameter (in.): 8 | |
| NYTMN (km.): 4576.3 | NYTME (km.): 552.5 | Building: 25 |
| Emission Point: 00007 | | |
| Height (ft.): 29 | Diameter (in.): 8 | |
| NYTMN (km.): 4576.3 | NYTME (km.): 552.5 | Building: 25 |
| Emission Point: 00008 | | |
| Height (ft.): 28 | Diameter (in.): 8 | |
| NYTMN (km.): 4576.3 | NYTME (km.): 552.5 | Building: 25 |

Condition 25: Process Definition By Emission Unit
Effective between the dates of 06/04/2001 and Permit Expiration Date

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 25.1(From Mod 2):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-00025
 Process: 001 Source Classification Code: 6-49-200-12
 Process Description:
 SOLUTION #1 MAKE-UP: IMPREGNATION
 SOLUTION IS A 91% ZIRCONIUM OXYCHLORIDE AND
 9% YTTRIUM CHLORIDE SOLUTION THAT IS MADE
 IN A BATCH PROCESS BY DISSOLVING ZIRCONIUM
 CARBONATE AND YTTRIUM OXIDE IN AN AQUEOUS
 SOLUTION OF HYDROCHLORIC ACID. THERE IS
 SOME LOSS OF HYDROGEN CHLORIDE DUE TO VAPOR
 PRESSURE AND THE EXOTHERMIC REACTION. THIS
 CLOSED OPERATION IS VENTED TO SCRUBBER #1
 AND ONCE THE OPERATION IS COMPLETED, THEN



THERE IS NO APPARENT EVAPORATION OF
HYDROGEN CHLORIDE FROM THE VESSEL.

Emission Source/Control: SCRB1 - Control
Control Type: WET SCRUBBER

Emission Source/Control: VESS1 - Process
Design Capacity: 1,000 gallons

Item 25.2(From Mod 2):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-00025

Process: 006

Source Classification Code: 6-49-200-34

Process Description:

CONVERSION: THE DRIED SHEETS ARE INTRODUCED ONE AT A TIME, TO A BATH OF AQUEOUS AMMONIA, TO CONVERT THE DRIED CHLORIDE SALT TO THE HYDROXIDE. THIS REACTION IS DONE IN A SHALLOW, OPEN TANK, WHICH IS SITUATED UNDER A FUME HOOD. AMMONIA EVAPORATES FROM THE OPEN TANK AND IS EXHAUSTED OUT OF THE PLANT. THE AQUEOUS AMMONIA IS DRAINED FROM THE TANK AND WATER IS PUMPED INTO THE TANK TO RINSE THE SHEETS, WHICH ARE THEN SENT THROUGH NIP ROLLERS AND DRIED TO REMOVE THE AMMONIA AND CHLORIDES. AQUEOUS AMMONIA FROM THE TANK IS TRANSFERRED TO A STORAGE TANK AND THEN TO A STRIPPER, WHERE THE AMMONIA IS REMOVED AND RELEASED TO THE ATMOSPHERE.

Emission Source/Control: CONVN - Process

Emission Source/Control: STRP1 - Process

Item 25.3(From Mod 2):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-00025

Process: 007

Source Classification Code: 6-49-310-31

Process Description:

CHARRING: CLOTH AND FELT SHEETS ARE INDIVIDUALLY LOADED ONTO SHELVES OF A BATCH OVEN OR CONTINUOUSLY FED INTO A MOVING-BELT OVEN. DURING THE CHARRING, THE RAYON IS DECOMPOSED, LEAVING THE CERAMIC MATERIAL BEHIND. DECOMPOSITION GASES INCLUDE HYDROCHLORIC ACID, CARBON MONOXIDE, AND VOLATILE ORGANIC COMPOUNDS. THESE GASES ARE VENTED TO SCRUBBERS #3 AND #4.



Emission Source/Control: SCRB3 - Control
Control Type: WET SCRUBBER

Emission Source/Control: SCRB4 - Control
Control Type: WET SCRUBBER

Emission Source/Control: BELTO - Process

Emission Source/Control: HTP04 - Process

Emission Source/Control: HTP26 - Process

Emission Source/Control: HTP3D - Process

Emission Source/Control: LPT25 - Process

Emission Source/Control: LTP24 - Process

Item 25.4(From Mod 2):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-00025

Process: 008

Source Classification Code: 6-49-310-31

Process Description:

FIRING: THE CHARRED SHEETS ARE STACKED FOR HIGH FIRING TO SINTER THE CERAMIC TO ITS FINAL DENSITY. CARBON MONOXIDE AND VOLATILE ORGANIC COMPOUNDS ARE VENTED TO SCRUBBER #1.

Emission Source/Control: SCRB1 - Control
Control Type: WET SCRUBBER

Emission Source/Control: FIR16 - Process

Emission Source/Control: FIR23 - Process

Emission Source/Control: FIR2P - Process

Emission Source/Control: FIR32 - Process

Emission Source/Control: FIRZ3 - Process

Emission Source/Control: FR32N - Process

Item 25.5(From Mod 1):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-00025

Process: 003

Source Classification Code: 6-49-200-01

Process Description:

EXTRACTION: THE FULLY IMBIBED RAYON IN THE

New York State Department of Environmental Conservation

Permit ID: 3-3354-00483/00001

Facility DEC ID: 3335400483



IMPREGNATION VATS IS MOVED FROM THE
IMPREGNATION ROOM TO THE NIP ROLLS FOR
EXTRACTION. THE WEB OF RAYON IS SQUEEZED
BY RUBBER-COATED ROLLS UNDER HIGH PRESSURE
AND ROLLED UP ON A TAKE ROLL. EMISSIONS
ARE VENTED TO SCRUBBER #1.

Emission Source/Control: SCRB1 - Control
Control Type: WET SCRUBBER

Emission Source/Control: NIPRL - Process

Item 25.6(From Mod 1):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-00025

Process: 004

Source Classification Code: 6-49-200-01

Process Description:

DRYING: THE IMPREGNATED, EXTRACTED RAYON
IS CUT INTO INDIVIDUAL SHEETS ABOUT FOUR
FEET SQUARE. THE INDIVIDUAL SHEETS ARE
HUNG IN ONE OF THREE ACID-PROOF,
TEMPERATURE AND HUMIDITY CONTROLLED DRYING
ROOMS. EMISSIONS OF HYDROCHLORIC ACID FROM
THE THREE DRYING ROOMS ARE VENTED DIRECTLY
TO THE OUTSIDE. EACH DRYING ROOM HAS A
SEPARATE STACK.

Emission Source/Control: DRRM1 - Process

Emission Source/Control: DRRM2 - Process

Emission Source/Control: DRRM3 - Process

Item 25.7(From Mod 1):

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-00025

Process: 005

Source Classification Code: 6-49-200-01

Process Description:

DRY ROLLING: THE DRIED SHEETS ARE USUALLY
STIFF AND REQUIRE LOW-PRESSURE DRY ROLLING
THROUGH THE NIP ROLLS. EMISSIONS ARE
VENTED TO SCRUBBER #1.

Emission Source/Control: SCRB1 - Control
Control Type: WET SCRUBBER

Emission Source/Control: NIPRL - Process

Item 25.8(From Mod 1):

This permit authorizes the following regulated processes for the cited Emission Unit:

New York State Department of Environmental Conservation

Permit ID: 3-3354-00483/00001

Facility DEC ID: 3335400483



Emission Unit: 1-00025

Process: 009

Source Classification Code: 1-02-006-03

Process Description:

THE COMBUSTION OF NATURAL GAS ASSOCIATED WITH THE FURNACE. EMISSIONS FROM THIS PROCESS INCLUDE OXIDES OF NITROGEN, PARTICULATES, CARBON MONOXIDE, AND VOLATILE ORGANIC COMPOUNDS.

Emission Source/Control: FIRGS - Process

Design Capacity: 1 million Btu per hour

