

14 May 2012

Mr. Randy D. Shamblen
Vice President and General Manager
Rhodes Technologies
498 Washington Street
Coventry, RI 02816

Dear Mr. Shamblen:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your request for a minor source permit for a new pharmaceutical process resulting in an increase in emissions at your 498 Washington Street, Coventry, Rhode Island location.

Enclosed is a minor source permit issued pursuant to our review (Approval No. 2166).

I can be reached at 401-222-2808, extension 7028 if you have any questions.

Very truly yours,

Aleida M. Whitney
Senior Air Quality Specialist
Office of Air Resources

cc: Coventry Building Official
Robert Deady, Rhodes Technologies
Kelly A. Cowan, Woodard and Curran

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

MINOR SOURCE PERMIT

RHODES TECHNOLOGIES

APPROVAL NO. 2166

Pursuant to the provisions of Air Pollution Control Regulation No. 9, this minor source permit is issued to:

Rhodes Technologies

For the following:

Increase in isopropyl alcohol (IPA) emissions from a new pharmaceutical process in Building 5

called Project M. Methyl chloride and hydrogen chloride (HCl) emissions from Project M will be

exhausted to the existing methyl chloride scrubber (Approval No. 2084) for treatment. Methanol,

IPA and other VOC emissions from Project M will be exhausted to the existing Hasbrouck "house"

scrubber (Approval No. 551) or the methyl chloride scrubber for treatment.

Located at: *498 Washington Street, Coventry*

This permit shall be effective from the date of its issuance and shall remain in effect until revoked by or surrendered to the Department. This permit does not relieve *Rhodes Technologies* from compliance with applicable state and federal air pollution control rules and regulations. The design, construction and operation of this equipment shall be subject to the attached permit conditions and emission limitations.

Douglas L. McVay, Acting Chief
Office of Air Resources

Date of issuance

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES**

Permit Conditions and Emission Limitations

RHODES TECHNOLOGIES

APPROVAL NO. 2166

A. Emission Standards

1. Methyl chloride

- a. Methyl chloride emissions generated from the Project M process shall be reduced by 50% or greater on average before discharge to the atmosphere. The averaging period shall be the duration of each batch of the Project M process.
- b. The total quantity of methyl chloride emissions discharged to the atmosphere from the entire facility shall not exceed 400 pounds in any consecutive 12-month period.

2. Isopropyl alcohol

The total quantity of IPA emissions discharged to the atmosphere from the entire facility shall not exceed 36.59 pounds per hour.

3. Volatile Organic Compounds (VOCs)

- a. The total quantity of VOC emissions discharged to the atmosphere from the methyl chloride scrubber (Approval No. 2084) shall not exceed 15 pounds per day.
- b. The total quantity of VOC emissions discharged to the atmosphere from the Hasbrouck Plastics house scrubber (Approval No. 551) shall not exceed 15 pounds per day.
- c. The total quantity of VOC emissions discharged to the atmosphere from the entire facility shall not exceed 8167 pounds of VOC per calendar month based upon a 12 month rolling average.

4. Hazardous Air Pollutants (HAPs)

The total quantity of HAP emissions discharged to the atmosphere from the entire facility shall not exceed 1500 pounds of any one (1) HAP or 4000 pounds of any combination of HAPs per calendar month based upon a 12 month rolling average.

Hazardous Air Pollutant shall mean an air pollutant which has been listed pursuant to Section 112(b) of the Clean Air Act Amendments of 1990.

5. Listed Toxic Air Contaminants

The total quantity of emissions discharged to the atmosphere from the entire facility, of any listed toxic air contaminant, with the exception of hydrazine, methylene chloride, methyl chloride and isopropyl alcohol, shall not exceed the minimum quantity for that contaminant as specified in Appendix A of Air Pollution Control Regulation No. 9, during a calendar year. Emissions from activities exempted from the provisions of APC Regulation No. 22 in subsection 22.2.2 are not included in this limitation.

6. Opacity

There shall be no visible emissions from the methyl chloride scrubber and the Hasbrouck Plastics house scrubber exhaust. Visible emissions are to be determined per the Code of Federal Regulations, Title 40, Part 60, Appendix A, Method 22, Section 11. If there are any visible emissions, opacity will be determined per the Code of Federal Regulations, Title 40, Part 60, Appendix A, Method 9. Where the presence of uncombined water is the only reason for failure to meet this requirement, such failure shall not be a violation of this requirement.

B. Operating Requirements

1. Methyl chloride and hydrogen chloride emissions generated from the Project M process shall be captured, contained and routed to the methyl chloride scrubber for treatment prior to discharge into the atmosphere.
2. Isopropyl alcohol, methanol and all other VOC emissions generated from the Project M process shall be captured, contained and routed to the Hasbrouck Plastics house scrubber or methyl chloride scrubber for treatment prior to discharge into the atmosphere.

C. Monitoring

1. Methyl chloride scrubber (Approval No. 2084)
 - a. The owner/operator shall determine the molar amount of amine salts generated during the reaction between halides and monoethanolamine in the scrubber solution to confirm methyl chloride emissions are reduced by 50% or greater before discharge to the atmosphere during the use of the scrubber. The date, time and determination shall be recorded in the batch record.
 - b. The liquid level in the scrubber vessel (K2305) shall be continuously recorded in the site distributed control system (DCS) and be available for reference.

- c. The outlet gas temperature from the scrubber shall be continuously recorded in the site distributed control system (DCS) and be available for reference.
 - d. The monitoring devices used for the measurement of the outlet gas temperature shall be calibrated periodically consistent with the manufacturer's recommendations.
 2. Hasbrouck Plastics house scrubber (Approval No. 551)
 - a. The scrubber liquid flow rate shall be monitored and indicated continuously. The owner/operator shall record the scrubber liquid flow rate a minimum of once per day. The date, time and measurement shall be recorded.
 - b. The pressure drop across the Hasbrouck Plastics house scrubber shall be monitored and indicated continuously. The owner/operator shall record the Hasbrouck Plastics house scrubber pressure drop a minimum of once per day. The date, time and measurement shall be recorded.
 3. The methyl chloride scrubber and the Hasbrouck Plastics house scrubber shall be operated according to their design specifications whenever the emission points vented to each control system are emitting air contaminants.

D. Stack Testing

1. Within 180 days of the initial startup of Project M, performance testing shall be conducted on the house scrubber and methyl chloride scrubber to demonstrate that the overall percent reduction for isopropyl alcohol and methanol assumed in the emission calculations in the permit application is being achieved.
2. An emissions testing protocol shall be submitted to the Office of Air Resources for review at least 30 days prior to the performance of any emissions test. The owner/operator shall provide the Office of Air Resources at least 30 days prior notice of the performance test.
3. The owner/operator shall install any and all test ports or platforms necessary to conduct the required emissions testing, provide safe access to any platforms and provide the necessary utilities for sampling and testing equipment.
4. All testing shall be conducted under operating conditions deemed acceptable and representative for the purpose of assessing compliance with the applicable emissions limitations.
5. A final report of the results of stack testing shall be submitted to the Office of Air Resources no later than 60 days following completion of testing.

6. All emissions testing must be observed by the Office of Resources or its authorized representatives to be considered acceptable, unless the Office of Air Resources provides authorization to the owner/operator to conduct the testing without an observer present.

E. Record Keeping and Reporting

1. The owner/operator shall maintain the following records:
 - a. The types and amounts of VOCs and HAPs used in each batch of the Project M process.
 - b. The types and amounts of VOCs and HAPs emitted from the methyl chloride scrubber.
 - c. The types and amounts of VOCs and HAPs emitted from the Hasbrouck Plastics house scrubber.
 - d. The number of batches per month for the Project M process and the uncontrolled and controlled emissions per batch.
 - e. Mass balance data and calculations to determine the moles of amine salts in the methyl chloride scrubber solution and, through conservative theoretical estimation, the scrubber efficiency for reducing methyl chloride emissions.
 - f. The date, time and number of batches run when the methyl chloride scrubber solution is drained and new solution is added.
 - g. The methyl chloride scrubber vessel (K2305) liquid level determination and outlet gas temperature for the process/amine scrubber.
 - h. The daily recording of scrubber liquid flow rate and pressure drop of the Hasbrouck Plastics house scrubber.
2. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine the total quantity of methyl chloride discharged to the atmosphere from the entire facility. Monthly and 12-month rolling averages shall be calculated. The 12-month rolling average shall be used for comparison with emission limitations. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
3. The owner/operator shall notify the Office of Air Resources in writing, within 15 days, whenever the total quantity of methyl chloride emissions discharged to the atmosphere from the entire facility exceeds 400 pounds in any consecutive 12-month period.

4. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine the total quantity of isopropyl alcohol discharged to the atmosphere from the entire facility. Hourly emission averages shall be calculated. These hourly averages shall be used for comparison to emission limitations. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
5. The owner/operator shall notify the Office of Air Resources in writing, within 15 days, whenever the total quantity of isopropyl alcohol emissions discharged to the atmosphere from the entire facility exceeds 36.59 pounds per hour.
6. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine the total quantity of VOC discharged to the atmosphere from the methyl chloride scrubber and the house scrubber. Daily emission averages shall be calculated. These averages shall be used for comparison to emission limitations. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
7. The owner/operator shall notify the Office of Air Resources in writing, within 15 days, whenever the total quantity of VOC emissions discharged to the atmosphere from the methyl chloride scrubber or the house scrubber exceeds 15 pounds per day.
8. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine the total quantity of VOCs and the total quantity of HAPs discharged to the atmosphere from the entire facility. Monthly and 12-month rolling averages shall be calculated. The 12-month rolling average shall be used for comparison with emission limitations. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
9. The owner/operator shall notify the Office of Air Resources in writing, within 15 days, whenever the quantity of VOCs discharged to the atmosphere from all operations at this facility exceeds 8167 pounds per calendar month (12-month rolling average).
10. The owner/operator shall notify the Office of Air Resources, within 15 days, whenever the quantity of HAPs discharged to the atmosphere from all operations at this facility exceeds 1500 pounds of any one (1) HAP or 4000 pounds of any combination of HAPs per calendar month (12-month rolling average).
11. The owner/operator shall, for each calendar year, determine the total quantity of each listed toxic air contaminant in Appendix A of Air Pollution Control Regulation No. 9 discharged to the atmosphere from all operations for the entire facility with the exception of hydrazine, methylene chloride, methyl chloride and isopropyl alcohol. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.

12. The owner/operator shall notify the Office of Air Resources in writing, by April 15th of each year, whenever the total quantity of emissions discharged to the atmosphere from the entire facility, of any listed toxic air contaminant, with the exception of hydrazine, methylene chloride, methyl chloride and isopropyl alcohol, exceeds the minimum quantity for that contaminant as specified in Appendix A of Air Pollution Control Regulation No. 9. In accordance with Air Pollution Control Regulation No 22, this notification shall be included in the annual air pollution inventory.
13. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine the total quantity of hydrazine, methylene chloride, methyl chloride and isopropyl alcohol discharged to the atmosphere from all operations for the entire facility. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
14. The owner/operator shall notify the Office of Air Resources in writing, within 15 days, whenever the total quantity of hydrazine, methylene chloride, methyl chloride and isopropyl alcohol discharged to the atmosphere from the entire facility, exceeds the emission limitations as specified in Section A of this minor source permit.
15. For any leak detected pursuant to the LDAR program, the owner/operator shall record the following information:
 - a. The name of the leaking equipment;
 - b. The date and time the leak is detected;
 - c. The action taken to repair the leak;
 - d. The date and time the leak is repaired.
16. For any leak inspection conducted pursuant to the LDAR program during which no leaks are detected, the owner/operator shall record the following information:
 - a. A record that the inspection was performed;
 - b. The date and time of the inspection;
 - c. A statement that no leaks were detected
17. The owner/operator shall notify the Office of Air Resources, in writing, of the date of actual initial start-up of the Project M process no later than fifteen days after such date.
18. The owner/operator shall notify the Office of Air Resources in writing of any planned physical or operational change to any equipment that would:

- a. Change the representation of the facility in the application.
- b. Alter the applicability of any state or federal air pollution rules or regulations.
- c. Result in the violation of any terms or conditions of this permit.
- d. Qualify as a modification under APC Regulation No. 9.

Such notification shall include:

- Information describing the nature of the change.
- Information describing the effect of the change on the emission of any air contaminant.
- The scheduled completion date of the planned change.

Any such change shall be consistent with the appropriate regulation and have the prior approval of the Director.

19. The owner/operator shall notify the Office of Air Resources of any anticipated noncompliance with the terms of this permit or any other applicable air pollution control rules and regulations.
20. The owner/operator shall notify the Office of Air Resources, in writing, of any noncompliance with the terms of this permit within 30 calendar days of becoming aware of such occurrence and supply the Director with the following information:
 - a. The name and location of the facility;
 - b. The subject source(s) that caused the noncompliance with the permit term;
 - c. The time and date of first observation of the incident of noncompliance;
 - d. The cause and expected duration of the incident of noncompliance;
 - e. The estimated rate of emissions (expressed in lbs/hr or lbs/day) during the incident and the operating data and calculations used in estimating the emission rate.
 - f. The proposed corrective actions and schedule to correct the conditions causing the incidence of noncompliance.

21. All records required in this permit shall be maintained for a minimum of five years after the date of each record and shall be made available to representatives of the Office of Air Resources upon request.

F. Malfunctions

1. Malfunction means a sudden and unavoidable breakdown of process or control equipment. In the case of a malfunction of any air pollution control system, all reasonable measures shall be taken to assure resumption of the designed control efficiency as soon as possible. In the event that the malfunction of an air pollution control system is expected or may reasonably be expected to continue for longer than 24 hours and if the owner/operator wishes to operate the source on which it is installed at any time beyond that period, the Director shall be petitioned for a variance under Section 23-23-15 of the General Laws of Rhode Island, as amended. Such petition shall include, but is not limited to, the following:
 - a. Identification of the specific air pollution control system and source on which it is installed;
 - b. The expected period of time that the air pollution control system will be malfunctioning or out of service;
 - c. The nature and quantity of air contaminants likely to be emitted during said period;
 - d. Measures that will be taken to minimize the length of said period;
 - e. The reasons that it would be impossible or impractical to cease the source operation during said period.
2. The owner/operator may seek to establish that a malfunction of any air pollution control system that would result in noncompliance with any of the terms of this permit or any other applicable air pollution control rules and regulations was due to unavoidable increases in emissions attributable to the malfunction. To do so, the owner/operator must demonstrate to the Office of Air Resources that:
 - a. The malfunction was not attributable to improperly designed equipment, lack of preventative maintenance, careless or improper operation or operator error;
 - b. The malfunction is not part of a recurring pattern indicative of inadequate design, operation or maintenance;
 - c. Repairs were performed in an expeditious fashion.

- d. All reasonable steps were taken to minimize emissions during the period of time that repairs were performed.
- e. Emissions during the period of time that the repairs were performed will not:
 - (1) Cause and increase in the ground level ambient concentration at or beyond the property line in excess of that allowed by Air Pollution Control Regulation No. 22 and any Calculated Acceptable Ambient Levels; and
 - (2) Cause or contribute to air pollution in violation of any applicable state or national ambient air quality standard.
- f. The reasons that it would be impossible or impractical to cease the source operation during said period.
- g. The owner/operator's actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence.

This demonstration must be provided to the Office of Air Resources within two working days of the time when the malfunction occurred and contain a description of the malfunction, any steps taken to minimize emissions and corrective actions taken.

The owner/operator shall have the burden of proof in seeking to establish that noncompliance was due to unavoidable increases in emissions attributable to the malfunction.

G. Other Permit Conditions

- 1. To the extent consistent with the requirements of this permit and applicable federal and state laws, the facility shall be designed, constructed and operated in accordance with the representation of the facility in the permit application.
- 2. There shall be no bypassing of the methyl chloride scrubber during times when air contaminants are being discharged to the device.
- 3. There shall be no bypassing of the Hasbrouck Plastics house scrubber during times when air contaminants are being discharged to the device.
- 4. The emission and dispersion characteristics of all sources of isopropyl alcohol at the facility shall be consistent with the parameters used in the air quality modeling to demonstrate that the emissions of isopropyl alcohol do not cause an impact, at or beyond the property line of the facility, which exceeds the Acceptable Ambient Level for that substance. The Office of Air Resources, in its sole discretion, may

reopen this minor source permit if it determines that the emission and dispersion characteristics have changed significantly and that emission limitations must be revised and/or added to this permit to ensure compliance with Air Pollution Control Regulation No. 22.

5. Employees of the Office of Air Resources and its authorized representatives shall be allowed to enter the facility at all times for the purpose of inspecting any air pollution source, investigation any condition it believes may be causing air pollution or examining any records required to be maintained by the Office of Air Resources.
6. At all times, including periods of startup, shutdown and malfunction, the owner/operator shall, to the extent practicable, maintain and operate the facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Office of Air Resources, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures and inspection of the source.