



The State of New Hampshire
Department of Environmental Services



Robert R. Scott, Commissioner

August 28, 2018

Richard Randall, Operations Director
Polyonics, Inc.
28 Industrial Park Drive
Westmoreland, NH 03467

**Re: Amended Volatile Organic Compound (VOC)
Reasonably Available Control Technology (RACT) Order ARD07-004
Polyonics, Inc., 867 Route 12, Unit 4, Westmoreland, New Hampshire
Facility Identification #3300590276, Application #18-0118**

Dear Mr. Randall:

Please find enclosed the Amended VOC RACT Order (Order) issued by the New Hampshire Department of Environmental Services, Air Resources Division (NHDES), to Polyonics, Inc. (Polyonics), located in Westmoreland, New Hampshire. The final Order is being issued in accordance with the New Hampshire Code of Administrative Rules Env-A 1205, *RACT Procedures*.

On June 11, 2018, Polyonics submitted an application requesting that its Order be amended for discrete emission reduction credits generated after August 31, 2018, be made available for sale to other entities within the State of New Hampshire. Condition D.9. has been added to the order to allow for this change.

If you have any questions, please contact Barbara Dorfschmidt of the Air Resources Division, Permitting and Environmental Health Bureau at (603) 271-6796 or via e-mail at barbara.dorfschmidt@des.nh.gov.

Sincerely,

Craig A. Wright
Director
Air Resources Division

CAW/bdd

By certified mail #7011 3500 0001 0293 1791

Enclosure: Final RACT Order ARD07-004

cc: Timothy Drew, PIP Office
Bob McConnell, USEPA

cc: Town of Westmoreland
(all w/enclosure)

www.des.nh.gov

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Polyonics, Inc.]	Proposed RACT ORDER
867 Route 12, Unit 4]	December 28, 2007
Westmoreland, NH 03467]	ARD07-004
]	Amended August 28, 2018
]	

A. Introduction

This RACT Order is issued by the New Hampshire Department of Environmental Services, Air Resources Division, to Polyonics, Inc., pursuant to RSA 125-C.

B. Parties

1. The New Hampshire Department of Environmental Services, Air Resources Division (DES), is a duly constituted administrative agency of the State of New Hampshire having its principal offices at 29 Hazen Drive, Concord, NH 03302, telephone number (603) 271-1370.
2. Polyonics, Inc. (Polyonics) is a New Hampshire corporation doing business at the mailing address of 867 Route 12, Unit 4, Westmoreland, NH 03467, telephone number (603) 352-1415.

C. Statements of Fact and Law

1. Polyonics owns and operates a facility located on Route 12 in Westmoreland, NH primarily engaged in the manufacturing of pressure sensitive tagging and labeling materials. In 2007, the coating process consisted of two 12-inch web coaters that applied coatings onto non-paper webs.
2. Effective December 31, 2002, DES re-adopted the New Hampshire Code of Administrative Rules Env-A 1204, *Stationary Sources of Volatile Organic Compounds (VOCs)* with amendments. This part defines the sources that are subject to Reasonably Available Control Technology (RACT) requirements and specifies the RACT requirements.
3. Env-A 1204.10, *Applicability Criteria and Compliance Standards for Coating of Paper, Fabric, Film and Foil Substrates*, applied to any source whose paper, fabric, film, or foil coating operations, including specialty printing, had a combined potential to emit, during any consecutive 12-month period, of at least 10 tons of VOC.
4. In 2001, Polyonics had estimated that the Facility had a potential to emit approximately 30 tons of VOCs per year.
5. In the cover letter to the permit application received by DES on May 8, 2001, Polyonics requested an annual facility-wide limit of 10 tons of VOC emissions.
6. On February 20, 2002, DES issued State Permit to Operate No. FP-S-0171 to Polyonics for a five-year term. Condition V of the permit exempts Polyonics from the requirements of Env-A 1204.10 provided that the combined, actual VOC emissions from all coating operations do not exceed 10 tons during any consecutive 12-month period.
7. From the time that Polyonics started operating in 1996 to August 2006, actual VOC emissions have been less than 10 tpy.
8. Polyonics' actual VOC emissions exceeded the 10 ton permit limit at the end of August 2006, making them subject to Env-A 1204.10.

9. On May 1, 2007, DES and Polyonics executed an Administrative Order by Consent (AOC) No. ARD 07-002 (as amended on July 16, 2007). The AOC, as amended, required Polyonics to purchase and retire Discrete Emission Reductions (DERs) for excess emissions in 2006 and for estimated excess emissions that would occur in 2007. The AOC also listed compliance deadlines for the installation of pollution control equipment.
10. On May 10, 2007, Polyonics submitted an application for the installation of a catalytic oxidizer. The application also served as an application for a VOC RACT Order that will allow for the generation and use of DERs for VOC RACT compliance.
11. On July 18, 2007, DES issued Temporary Permit, FP-T-0152, which allowed Polyonics to install and operate a catalytic oxidizer to control VOC emissions from its two web gravure coaters.
12. On October 17, 2008, DES issued Temporary Permit, TP-BP-0720, which allowed Polyonics to install a third coater and a second catalytic oxidizer. With the installation of the third coater, potential, uncontrolled emissions of VOC were estimated to exceed 50 tons per year. The Temporary Permit included a facility-wide emissions cap of 50 tons per year for VOCs.
13. On April 6, 2009, DES issued State Permit to Operate, SP-0024 for the devices covered under Temporary Permit FP-T-0152. The permit included a facility-wide emissions cap of 50 tons per year for VOCs.
14. On November 17, 2011, State Permit to Operate, SP-0024 was amended to include devices covered under TP-BP-0720.
15. Effective Jun 1, 2011, DES readopted Env-A 1200 (formerly Env-A 1204) with amendments.
16. On October 16, 2015, State Permit to Operate, SP-0024 was amended to include a VOC emission limit on the coaters of 25 tons per year. This permit condition exempts Polyonics from the requirements of Env-A 1207.03(c) which would be in effect on January 1, 2016.
17. Pursuant to Env-A 1207.03, Polyonics shall comply with the following emission limit for each coating used: 2.9 pounds of VOC per gallon of Coating as applied, excluding water and exempt compounds.
18. On June 11, 2018, Polyonics submitted a request to revise this RACT Order in order to allow Polyonics to sell future Discrete Emission Reductions that are generated from the over-control of VOC emissions from the coating process.

D. Order

Based on the statements of fact and law, DES hereby orders Polyonics, effective upon issuance of this Order, to comply with the following requirements as RACT:

1. Alternative Methods of Complying with Env-A 1207.03

As an alternative to the emission rate limit in Env-A 1207.03, Polyonics may use add-on controls, bubbling, DERs or any combination of the previous methods, and comply with a solids-based emission rate limit as calculated in D.3.

2. Catalytic Oxidizer Operation

Plyonics shall operate a catalytic oxidizer (oxidizer) at all times that the coaters are in operation except during times of malfunction or maintenance. The oxidizer shall be operated pursuant to the following conditions:

- (i) The oxidizer shall be operated at a minimum combustion chamber temperature of 650°F, based on an hourly average;
- (ii) The oxidizer shall be maintained in a manner consistent with the manufacturer's recommendations; and
- (iii) Polyonics shall operate and maintain equipment to continuously monitor and record the temperature of the oxidizer's combustion chamber and the exhaust.

3. Calculation of Emission Standard On a Solids Basis

The emission rate limit shall be determined on a solids basis, as specified below:

- (i) "S" means the VOC emission standard in terms of pounds VOC per gallon of coating solids;
- (ii) "E_c" means the VOC emission limit as stated in Env-A 1207.03; and
- (iii) "d_A" means the actual mass density of the VOC in the applied surface coating formulation in terms of lb VOC/gal VOC; and
- (iv) S shall be equal to E_c divided by the difference between one and the quotient of E_c and d_A, as in the following equation:

$$S = \frac{E_c}{[1 - E_c / d_A]}$$

4. Calculation of Allowable VOC Emissions per Coating

The allowable VOC emissions shall be calculated for each coating as follows:

- (i) "E_{al}" means the allowable VOC emission rate of a given coating in units of lb/day or kg/day;
- (ii) "S" means the VOC emission standard in terms of lb VOC/gal or kg VOC/l of coating solids, as calculated in Part D.3, above;
- (iii) "W" means the weight of coating or dilution solvent used in the coating line on a given day in units of lb/day or kg/day;
- (iv) "D" means the density of the coating or dilution solvent in units of lb/gal coating, or kg/l coating as determined from Method 24 or 24A analysis;
- (v) "V_S" means the volume fraction solids content of the coating, in units of gal solids/gal coating or l solids/l coating as determined by calculation using the formulation; and
- (vi) "E_{al}" shall be equal to the product of S, V_S and W divided by D for each coating or dilution solvent used, as in the following equation:

$$E_{al} = S * V_S * (W/D)$$

5. Calculation of Actual VOC Emissions per Coating

The VOC emissions shall be calculated for each coating as follows:

- (i) "E_{unc}" means the actual, uncontrolled VOC emission rate of a given coating in units of lb/day;
- (ii) "W" means the weight of coating or dilution solvent used in the coating line on a given day in units of lb/day;

- (iii) “W_v” means the weight fraction of VOC content of the coating, in units of lb VOC/lb coating as determined by calculation using the formulation; and
- (iv) “E_{unc}” shall be equal to the product of W and W_v, as in the following equation:
$$E_{unc} = W * W_v$$
- (v) “E_c” means the actual, controlled VOC emission rate of a given coating in units of lb/day;
- (vi) “DRE” means the destruction removal efficiency of the pollution control device as measured during the most recent emissions testing of the unit.¹
- (vii) “E_c” shall be equal to the product of E_{unc} and one minus the DRE, as in the following equation:

$$E_c = E_{unc} * (1 - DRE)$$

6. Emission Credit Use and Generation Calculations

The calculations for generation or use of DERs shall be done on a daily basis.

(i) Control Device Operating - Generation of DERs:

a. Compliant Coatings:

When a coating that meets the emission limits of Env-A 1207.03 is in use, emission credits may only be generated for the amount of emissions that are controlled by the control device. The amount of credits generated for a compliant coating shall equal the difference between the actual uncontrolled and controlled emission rates as calculated in D.5, above (E_{unc} – E_c).

b. Non-Compliant Coatings:

When a coating is used that does not meet the emission limits of D.1, the amount of credits generated shall equal the difference between the actual, controlled emissions and the allowable emissions (E_{al} – E_c).

c. Calculation of DERs:

DERs shall be calculated by multiplying the total amount of credited emissions calculated for the individual coatings by a safety factor of 0.9.

(ii) Control Device Not Operating – Bubble and Use of DERs:

For times that the control device is shut down due to malfunction or maintenance, Polyonics shall be allowed to bubble the emissions from multiple coatings and/or use DERs to offset excess emissions.

Excess emissions shall be calculated for each coating by subtracting the actual emissions from the allowable emissions (E_{al} – E_{unc}). The excess emissions from all the coatings shall be added together (bubbling), and based on the results, one of the following shall be required:

- a. If the result of the bubble calculation is a positive number, then the source is in compliance with the emission limits and no further action is required.

¹ Prior to the initial compliance test of the control device, DRE shall be equal to 99.0%.

- b. If the result of the bubble calculation is a negative number, then actual emissions exceed the allowable emission rates and need to be offset with the use of credits. The actual DERs required shall be calculated by taking the absolute value of the total excess emissions and dividing by an environmental benefit factor of 0.9.

7. Recordkeeping Requirements

Polyonics shall maintain the following records in order to demonstrate compliance with this order. Each record shall be kept for a period of at least five years.

(i) Records of all air pollution control equipment activities, including:

- a. Records of temperature readings taken on the oxidizer;
- b. A log of operating times of the oxidizer; and
- c. All pollution control equipment maintenance records, including preventative maintenance and annual visual inspections. Records shall include the date and duration of any outages.

(ii) Polyonics shall maintain all records of the calculations related to the generation and use of DERs as specified in Condition D.6.

8. Reporting Requirements

Polyonics shall submit the following reports to demonstrate compliance with this Order:

(i) Annually by November 30, Polyonics shall submit a report to DES on the projected use of credits for the upcoming year. This report shall meet the requirements of Env-A 3104.08, *Notice of Intent to Use DERs*, including the following information:

- a. The name and location of the user;
- b. A copy of the Notice and Certification of Generation submitted by the generator source to the State (for paperwork reduction purposes, a certified statement that the notice is on file with DES will suffice);
- c. The protocol used to document the amount of DERs needed to demonstrate compliance; and
- d. Information documenting that Polyonics is in compliance with Env-A 1400, *Regulated Toxic Air Pollutants*.

(ii) Annually by April 15, Polyonics shall submit a report to DES on the balance of credits for the previous calendar year. This report shall meet the requirements of Env-A 3103.08, *Notice and Certification of Generation* and Env-A 3104.09, *Notice and Certification of Use*, including the following information:

- a. The name and location of the owner or operator of the source;
- b. A brief description of the generation activity;
A list of the source's applicable allowable emission rates;
- c. The amount of DERs generated each month;
- d. A calculation of the amount of DERs generated;
- e. The amount of DERs used each month;

- f. A calculation of the amount of DERs required to demonstrate compliance with the emission limits stated in Part D, above;
- g. A statement that the reductions were calculated in accordance with Env-A 3103.07;
- h. A statement that the DERs were not generated in whole or in part from actions prohibited pursuant to Env-A 3103.07;
- i. A statement that due diligence was made to verify that the DERs were not previously used, and not generated as a result of actions prohibited under the regulations or other provisions of law;
- j. A statement that the DERs were not used in a manner prohibited under the regulation or other provisions of law; and
- k. The report shall contain a certification by a responsible official that states:
 - (1) Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete; and
 - (2) The user source is in compliance with all National Ambient Air Quality Standards, except ground level ozone, and all Ambient Air Limits for Regulated Toxic Air Pollutants.

9. Creditable Emissions Reductions

This Order grants approval to Polyonics to quantify any DERs that are generated after August 31, 2018, in accordance with this Order, as being available to sell to other entities within the State of New Hampshire.

Please address any correspondence and communication in reference to this Order to the following:

Air Permits Program Manager
NHDES, Air Resources Division
Permitting and Environmental Health Bureau
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095
(603) 271-6796



Craig A. Wright
Director
Air Resources Division

cc: Timothy Drew, PIP Office
David Conroy, USEPA
Town of Westmoreland