

A. Applicable Emission Limitations and/or Control Requirements

1. The total combined emissions from emissions units K001, K002, K004, R006, R007, R009, R010, R011, and R012 shall not exceed the following:

- a. 45.38 tons OC per year as a rolling, 12-month summation; and,
- b. 77.3 pounds OC per hour.*

* The combined hourly OC emission limit is based on the emissions units' potential to emit. Therefore, no hourly record keeping, deviation reporting, or compliance method calculations are required to demonstrate compliance with this limit.

The facility has submitted previous reports which will allow compliance to be determined with the rolling, 12-month limit upon startup.

2. The organic compounds emitted from emissions units K001, K002, K004, R006, R007, R009, R010, R011, and R012 shall be vented to a control device with a minimum overall control efficiency of 85.5 percent by weight.

B. Operational Restrictions

- 1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when emissions units K001, K002, K004, R006, R007, R009, R010, R011, and/or R012 are in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions units were in compliance.
- 2. The temperature of the air flow leaving the oxidizer to begin the desorption cycle shall not be less than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions units were in compliance.
- 3. The time period for the adsorption/desorption (regeneration) cycle shall be within 5% of the average cycle demonstrated during the most recent emission test

that demonstrated the emissions units were in compliance.

4. The dryers and hoods associated with printing lines K001, K002, K004, R006, R007, R009, R010, R011, and R012 shall be vented directly to the control device.
5. The room housing printing lines K001, K002, K004, R006, R007, R009, R010, R011, and R012 shall be maintained at a negative pressure. All ventilation exhausts shall be vented through the control device.

C. Monitoring and Recordkeeping Requirements

1. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units K001, K002, K004, R006, R007, R009, R010, R011, and R012:
 - a. The name and identification of each liquid organic compound contained in coatings, adhesives, and cleanup materials employed;
 - b. The amount of each liquid organic compound employed in coatings, adhesives, and cleanup materials, in gallons;
 - c. The OC content of each liquid organic compound employed in coatings, adhesives, and cleanup materials, in lbs OC/Gallon;
 - d. The total combined monthly OC emissions (the summation of line (b) multiplied by line (c) for each organic compound employed in coatings, adhesives, and cleanup materials multiplied by the overall control efficiency established during the most recent emission test that demonstrated the emissions units were in compliance); and
 - e. The rolling, twelve-month summation of OC emissions (the summation of the current months emission total and the previous eleven months emissions totals).

This information does not have to be kept on a line-by-line basis.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the thermal incinerator is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.
3. The permittee shall collect and record the following information for each day:
 - a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the thermal incinerator was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions units were in compliance.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions units were in operation.
4. The permittee shall collect and record the time period of the regeneration cycle of the control device on a daily basis.
5. The permittee shall verify the room housing emissions units K001, K002, K004, R006, R007, R009, R010, R011, and R012 is maintained under negative pressure on a daily basis. This testing shall be performed by the use of a velocity meter. Both the air speed and direction shall be collected and recorded.
6. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created, unless otherwise specified in this permit. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for

continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify the following information:
 - a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified in T&C B.1. and B.2.;
 - b. All days in which the regeneration cycle does not comply with the requirements specified in T&C B.3.;
 - c. Any monthly record which shows an exceedence of the rolling, twelve-month summation limitation specified in T&C A.1.a; and
 - d. Any daily record which shows that the room housing emissions units K001, K002, K004, R006, R007, R009, R010, R011, and R012 was not maintained under negative pressure.
2. The permittee shall submit annual reports which specify the total combined OC emissions for emissions units K001, K002, K004, R006, R007, R009, R010, R011, and R012 for the previous calendar year. These reports shall be submitted by January 30 of each year and cover the previous calendar year.
3. The permittee shall submit required reports in the following manner:
 - a. Reports of any required monitoring and/or record keeping information shall be submitted to the Hamilton County Department of Environmental Services.
 - b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations,

operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Hamilton County Department of Environmental Services. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 30, April 30, July 30, and October 30 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

E. Compliance Methods/Testing Requirements

1. Compliance with the emission limits in Term A.1.a shall be demonstrated by the record keeping in Terms C.1.
2. The permittee shall conduct, or have conducted, emission testing for these emissions units in accordance with the following requirements:
 - a. The emission testing shall be conducted within 90 days of the installation and start up of the control device.
 - b. The emission testing shall be conducted to demonstrate compliance with the 85.5 % overall control efficiency.
 - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR Part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the USEPA's Guidelines for Determining

Capture Efficiency, dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or the approved alternative test protocol (e.g., the mass balance protocol approved on 10/25/95). The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d. The test(s) shall be conducted while the emissions units are operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s).

Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the

operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

F. Miscellaneous Requirements

1. This Permit To Install (PTI) supersedes the following PTI's for the respective emissions unit:

PTI 14-3294, for emissions unit K001;
PTI 14-3294, for emissions unit K002;
PTI 14-3294, for emissions unit K004;
PTI 14-1951, for emissions unit R006;
PTI 14-2166, for emissions unit R007;
PTI 14-3475, for emissions unit R009;
PTI 14-4345, for emissions unit R010; and
PTI 14-4408, for emissions unit R011.

2. This permit allows the use of the coatings and cleanup materials specified by the permittee in the application for PTI number 14-4563. In conjunction with the best available technology requirements of OAC rule 3745-31-05, the OC emission limitation(s) specified in this permit was (were) established in accordance with the Ohio EPA's "Air Toxics Policy" and is (are) based on both the coating and cleanup material formulation data and the design parameters of the emissions units' exhaust system, as specified in the application. Compliance with the Ohio EPA's "Air Toxics Policy" was demonstrated for each pollutant based on the Screen3 model and a comparison of the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground Level Concentration (MAGLC). The following summarizes the results of the modeling for each

pollutant:
Polymark Corporation
PTI 14-4563
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Pollutant: Cyclohexanone

TLV (ug/m3): 100,000
Maximum Hourly Emission Rate (lbs/hr): 11.98
Predicted 1-Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 336
Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 2381

Any of the following changes may be deemed a "modification" to the emissions unit and, as such, prior notification to and approval from the appropriate Ohio EPA District Office or local air agency is required, including the possible issuance of modifications to PTI number 14-4563 and the operating permit:

- a. Any changes in the composition of the coatings or cleanup materials, or the use of new coatings or cleanup materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value specified in the above table.
- b. Any change to the emissions units or their exhaust parameters (e.g., increased emission rate, reduction of exhaust gas flow rate, and decreased stack height) that would result in an exceedance of any MAGLC specified in the above table.
- c. Any change to the emissions units or their method of operation that would either require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01.

Permit Review Narrative
PTI 14-4563

Polymark Corp.
750 Redna Terrace
Cincinnati, OH 45215

Premise Number: 1431483249

Polymark Corp. was required in Findings and Orders signed on March 26, 1998 to install a control device with a minimum 85.5% overall destruction efficiency. Eight-existing (K001, K002, K004, R006, R007, R009, R010, and R011) and one-new (R012) silk screen printing lines are covered under this PTI application.

The control device installed is an adsorber with a regenerative thermal oxidizer. There are six separate (sealed) adsorber beds in this unit. A rotary valve on a timer directs the OC laden inlet air for adsorbtion and the heated air from the thermal oxidizer for desorbtion to the various beds. Five of the beds are in the adsorbtion mode while the sixth bed is in the desorbtion.

BAT is satisfied by the use of a control device with an overall control efficiency of 85.5% and compliance with Ohio EPA's air toxic policy.

The applicable regulations are 3745-31-05, 3745-15-07 and 3745-21-07(G).

This PTI is being issued as a synthetic minor. The facility's potential to emit, based on maximum uncontrolled operating conditions, are calculated at 2,257.16 TPY. The potential to emit for each emissions unit is greater than the allowable emissions, therefore, individual emission rate limits are not identified for each emissions unit. The allowable emissions for the 9 printing lines covered under this PTI will be 45.38 TPY. An actual emissions decrease will take place as a result of this PTI issuance.

The permit fee is: \$1800 (\$200 each based on max PWR)

Prepared by: Mike Kramer
Date prepared: May 7, 1998

Synthetic Minor Determination
PolyMark Corp.
PTI 14-4563

A. Emissions Units Description

This Permit to Install (PTI) covers eight-existing and one-new silk screen printing lines. All of these printing lines are controlled by an adsorber with a thermal oxidizer used for regeneration and destruction. The Ohio EPA ID numbers for these print lines are K001, K002, K004, R006, R007, R009, R010, R011, and R012. The control device for this emissions unit was required under Findings and Orders issued by Ohio EPA on March 25, 1998 to address previous compliance issues.

B. Facility Emissions and Attainment Status

Polymark Corp. is located in Hamilton County, Ohio. Hamilton County is designated a moderate non-attainment area for ozone, non-attainment for NOx for NSR purposes, and attainment for all other criteria pollutants. Polymark Corporation will be a non-major source of organic compounds (OC) emissions. This permit will incorporate federally enforceable limitations, limiting the facility to 46.6 TPY of OC. Facility emissions will be reduced as a result of this PTI (emission units previously uncontrolled).

C. Source Emissions

Potential emissions were calculated based on maximum coverage, worse case OC inks, and printing lines operating at full capacity at 8760 hrs/yr of operation. The potential emissions from these emissions units in the absence of control equipment and federally enforceable PTI limitations would be 2,257.16 TPY (actual emissions are less than 40 TPY). The emission limitations outlined in this PTI will result in a facility-wide emission rate allowable of 46.6 TPY. This facility total is the synthetic minor limitation of 45.38 TPY OC contained in this PTI plus the potential OC emissions of 1.22 TPY from the ink mixing operation. The ink mixing operation is the only other source of OC emissions at the facility.

D. Conclusion

The terms and conditions in this PTI will limit the potential emissions to less than 100 TPY. The permittee will maintain records, perform source testing, comply with

parametric monitoring requirements, and submit reports as outlined in the additional terms and conditions for the emissions units listed in this PTI to demonstrate compliance with the allowable emission rate. Because the allowable emission rate is less than 100 TPY of OC, the facility will not be subject to Title V permitting requirements.

Prepared by: Mike Kramer

Date prepared: May 6, 1998