



John R. Kasich, Governor  
 Mary Taylor, Lt. Governor  
 Craig W. Butler, Director

9/19/2016

Certified Mail

Mr. Doug Richard  
 DAP Inc.  
 875 North Third Street  
 Tipp City, OH 45371-3014

|     |                                    |
|-----|------------------------------------|
| No  | TOXIC REVIEW                       |
| No  | SYNTHETIC MINOR TO AVOID MAJOR NSR |
| No  | CEMS                               |
| No  | MACT/GACT                          |
| No  | NSPS                               |
| No  | NESHAPS                            |
| No  | NETTING                            |
| No  | MODELING SUBMITTED                 |
| No  | SYNTHETIC MINOR TO AVOID TITLE V   |
| Yes | FEDERALLY ENFORCABLE PTIO (FEPTIO) |
| No  | SYNTHETIC MINOR TO AVOID MAJOR GHG |

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0855130356  
 Permit Number: P0121018  
 Permit Type: Initial Installation  
 County: Miami

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install and Operate (PTIO) for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, Troy Daily News. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall  
 Permit Review/Development Section  
 Ohio EPA, DAPC  
 50 West Town Street Suite 700  
 PO Box 1049  
 Columbus, Ohio 43216-1049

and Regional Air Pollution Control Agency  
 117 South Main Street  
 Dayton, OH 45422-1280

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Regional Air Pollution Control Agency at (937)225-4435.

Sincerely,

Michael E. Hopkins, P.E.  
 Assistant Chief, Permitting Section, DAPC

Cc: U.S. EPA Region 5 Via E-Mail Notification  
 RAPCA; Indiana



## Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

DAP Incorporated (DAP) operates a paint and adhesives manufacturing facility. DAP currently operates with a Federally Enforceable Permit to Install and Operate (PTIO) P0106246 that was issued on May 12, 2011. DAP has applied for the installation of a new Thermoplastic Resin Mixing Vessel with condenser and dust collector and is requesting a federally enforceable restriction on Volatile Organic Compound (VOC) and Hazardous Air Pollutants (HAP) emissions to avoid being a major Title V source.

3. Facility Emissions and Attainment Status:

DAP is located in Tipp City, Ohio which is in Miami County. Miami County is in attainment for all criteria pollutants. DAP currently operates under PTIO P0106246 with a federally enforceable restriction on VOC emissions, individual HAP (9.9 tons per rolling 12-month period), and combined HAP (24.9 tons per rolling 12-month period) making the facility Synthetic Minor (SM) for VOC and HAPs to avoid Title V permitting which includes SM VOC restrictions on emissions units groups.

This FEPTIO is an initial installation and includes federally enforceable requirements to maintain the SM requirements for VOC and HAPs to avoid Title V permitting. After this installation of emissions unit P051, DAP will have a new facility wide potential to emit (PTE) of 76.22 TPY VOC.

4. Source Emissions:

This FEPTIO is an initial installation for a thermoplastic resin mixing vessel with condenser and dust collector. The potential VOC emissions for this line are 11.09 tons. The facility requested a federally enforceable restriction to limit the VOC emissions for this source to 2.72 TPY. These emissions limitations would be maintained by using the water condenser that reduces VOC emissions by 76%.

Based on the restriction contained in this FEPTIO the maximum facility wide emissions will be, 76.22 tons VOC per year, 9.9 tons single HAP per rolling, 12-month period, and 24.9 tons combined HAPs per rolling, 12-month period. Monitoring, recordkeeping, and reporting requirements are included in the permit to ensure enforceability of the emission unit limitations.

There are a small amount of particulate emissions associated with material handling operation of raw materials that result in 0.14 TPY of controlled emissions.

5. Conclusion:

With the federally enforceable VOC emission restriction and limitations contained in this FEPTIO, the facility will be SM for HAP emissions and below Title V permitting thresholds.

6. Please provide additional notes or comments as necessary:

None



7. Total Permit Allowable Emissions Summary (for informational purposes only):

| <u>Pollutant</u>  | <u>Tons Per Year</u> |
|-------------------|----------------------|
| Organic compounds | <u>2.72</u>          |
| Single HAP        | <u>9.9</u>           |
| Combined HAPs     | <u>24.9</u>          |
| Particulate       | <u>0.14</u>          |

## PUBLIC NOTICE

The following matters are the subject of this public notice by the Ohio Environmental Protection Agency. The complete public notice, including any additional instructions for submitting comments, requesting information, a public hearing, or filing an appeal may be obtained at: <http://epa.ohio.gov/actions.aspx> or Hearing Clerk, Ohio EPA, 50 W. Town St., Columbus, Ohio 43215. Ph: 614-644-2129 email: [HClerk@epa.ohio.gov](mailto:HClerk@epa.ohio.gov)

Draft Air Pollution Permit-to-Install and Operate Initial Installation  
DAP Inc.

875 North Third Street., Tipp City, OH 45371-3014

ID#:P0121018

Date of Action: 9/19/2016

Permit Desc:Initial installation of Thermoplastic Resin Mixing Vessel with condenser and dust collector. This permit includes federally enforceable restriction on VOC and HAP emissions to avoid being a major Title V source..

The permit and complete instructions for requesting information or submitting comments may be obtained at: <http://epa.ohio.gov/dapc/permitsonline.aspx> by entering the ID # or: Cathy Oneill, Regional Air Pollution Control Agency, 117 South Main Street, Dayton, OH 45422-1280. Ph: (937)225-4435





**DRAFT**

**Division of Air Pollution Control  
Permit-to-Install and Operate  
for  
DAP Inc.**

|                |                                   |
|----------------|-----------------------------------|
| Facility ID:   | 0855130356                        |
| Permit Number: | P0121018                          |
| Permit Type:   | Initial Installation              |
| Issued:        | 9/19/2016                         |
| Effective:     | To be entered upon final issuance |
| Expiration:    | To be entered upon final issuance |





**Division of Air Pollution Control**  
**Permit-to-Install and Operate**  
for  
DAP Inc.

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**Draft Permit-to-Install and Operate**  
DAP Inc.

**Permit Number:** P0121018

**Facility ID:** 0855130356

**Effective Date:** To be entered upon final issuance

## Authorization

Facility ID: 0855130356  
Application Number(s): A0055995  
Permit Number: P0121018  
Permit Description: Initial installation of Thermoplastic Resin Mixing Vessel with condenser and dust collector. This permit includes federally enforceable restriction on VOC and HAP emissions to avoid being a major Title V source.  
Permit Type: Initial Installation  
Permit Fee: \$200.00 *DO NOT send payment at this time, subject to change before final issuance*  
Issue Date: 9/19/2016  
Effective Date: To be entered upon final issuance  
Expiration Date: To be entered upon final issuance  
Permit Evaluation Report (PER) Annual Date: To be entered upon final issuance

This document constitutes issuance to:

DAP Inc.  
875 North Third Street  
Tipp City, OH 45371-3014

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Regional Air Pollution Control Agency  
117 South Main Street  
Dayton, OH 45422-1280  
(937)225-4435

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and Federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Craig W. Butler  
Director



**Draft Permit-to-Install and Operate**  
DAP Inc.

**Permit Number:** P0121018

**Facility ID:** 0855130356

**Effective Date:** To be entered upon final issuance

## Authorization (continued)

Permit Number: P0121018

Permit Description: Initial installation of Thermoplastic Resin Mixing Vessel with condenser and dust collector. This permit includes federally enforceable restriction on VOC and HAP emissions to avoid being a major Title V source.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| <b>Emissions Unit ID:</b>         | <b>P051</b>                       |
| Company Equipment ID:             | Thermoplastic Resin Mixing Vessel |
| Superseded Permit Number:         |                                   |
| General Permit Category and Type: | Not Applicable                    |



**Draft Permit-to-Install and Operate**

DAP Inc.

**Permit Number:** P0121018

**Facility ID:** 0855130356

**Effective Date:** To be entered upon final issuance

## **A. Standard Terms and Conditions**

**1. What does this permit-to-install and operate ("PTIO") allow me to do?**

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

**2. Who is responsible for complying with this permit?**

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

**3. What records must I keep under this permit?**

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

**4. What are my permit fees and when do I pay them?**

There are two fees associated with permitted air contaminant sources in Ohio:

PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

**5. When does my PTIO expire, and when do I need to submit my renewal application?**

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is

very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

**6. What happens to this permit if my project is delayed or I do not install or modify my source?**

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

**7. What reports must I submit under this permit?**

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

**8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?**

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

**9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?**

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

**10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?**

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Regional Air Pollution Control Agency in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

**11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?**

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

**12. What happens if one or more emissions units operated under this permit is/are shut down permanently?**

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

**13. Can I transfer this permit to a new owner or operator?**

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

**14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?**

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

**15. What happens if a portion of this permit is determined to be invalid?**

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



**Draft Permit-to-Install and Operate**

DAP Inc.

**Permit Number:** P0121018

**Facility ID:** 0855130356

**Effective Date:** To be entered upon final issuance

## **B. Facility-Wide Terms and Conditions**

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
  - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
    - (1) None.
  - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
    - (1) Sections B.2. through B.7.
2. The emissions of hazardous air pollutants (HAPs), as defined in Section 112(b) of Title III of the Clean Air Act, from all the emissions units at this facility, shall not exceed 9.9 TPY for any individual HAP, as a rolling, 12-month sum, and 24.9 TPY for any combination of HAPs, as a rolling 12-month sum.
3. The following calculations shall be performed for each batch of paint, adhesive and thermoplastic resin that is processed at the facility:
  - a) The HAP emissions from material additions (displacement losses) to the paint and adhesive mixers (emissions units P012, P014, P015, P016, P017, P018, P020, P021, P022, and P023) and from transfers to the let-down tanks (emissions unit P005), work-in-progress tanks (emissions units P024, P025, P026, P027, P028, P029, P030, P031, P032, P033, P034, P035, and P036), packaging equipment (emissions units P041, P042, P043, P044, P045, and P046) and thermoplastic resin mixing vessel (emissions unit P051), shall be calculated according to 7.a).
  - b) The HAP emissions due to surface evaporation from the paint and adhesive mixers (emissions units P012, P014, P015, P016, P017, P018, P020, P021, P022, and P023), let-down tanks (emissions unit P005), work-in-progress tanks (emissions units P024, P025, P026, P027, P028, P029, P030, P031, P032, P033, P034, P035, and P036) and thermoplastic resin mixing vessel (emissions unit P051), shall be calculated according to 7.b).
  - c) The HAP emissions from heat-up caused by internal friction (no heat is applied and no exothermic reactions occur) during the mixing process in the paint and adhesive mixers (emissions units P012, P014, P015, P016, P017, P018, P020, P021, P022, and P023) let-down tanks (emissions unit P005), and thermoplastic resin mixing vessel (emissions unit P051), shall be calculated according to 7.c).
  - d) For any emissions unit that has a condenser, the actual emission rate shall be determined by multiplying the uncontrolled HAP emission rate (calculated according to 3.a), 3.b) or 3.c)) by the control efficiency determined according to a condenser design evaluation completed according to the equations found in 40 CFR 63.1257(d) as follows:
    - (1) 76% for the chilled water condensers and non-methylene-chloride formulations on emissions units P022, P023 and P051 (sum of uncontrolled HAP emissions x (1-0.76)).

- (2) 99% for the combination of chilled water and glycol condensers with an activated carbon canister (with a removal efficiency of 18 pounds of methylene chloride per 180 pounds of activated carbon as specified by the activated carbon manufacturer) for methylene-chloride formulations on emissions unit P023 (sum of uncontrolled HAP emissions x (1-0.99)).
    - (3) 82% for chilled water condensers on emissions units P020 and P021 (sum of uncontrolled HAP emissions x (1-0.82)),
    - (4) 75% for the glycol condensers on emissions units P024 - P036 (sum of uncontrolled HAP emissions x (1-0.75)).
  - e) The HAP emissions from bulk liquid storage of raw materials shall be calculated using the latest version of the U.S. EPA, TANKS program or equivalent calculations from U.S. EPA publication AP-42, Chapter 7 on a monthly basis.
4. The permittee shall keep records for the entire facility each month of the following information:
  - a) The identification of each HAP processed.
  - b) The quantity, in pounds or tons, of each HAP processed.
  - c) The quantity, in pounds or tons, of all the HAPs processed.
  - d) The total facility-wide emissions (and associated calculations) for each individual HAP, in tons, (calculated by the sum of the individual HAP emission rates from all the emissions units at the facility calculated according to 3.a) through 3.d)).
  - e) The total facility-wide emissions (and associated calculations) for all combined HAPs, in tons, (calculated by summing all combined HAPs emission rates from all the emissions units at the facility calculated according to 3.a) through 3.d)).
  - f) The rolling 12-month sum of the total individual HAP emissions rates for each HAP from all the emissions units at the facility, in tons (the sum of individual HAP emissions rates calculated according to 4.d) for the previous 12 months).
  - g) The rolling 12-month sum of the total combined HAP emissions rates from all the emissions units at the facility, in tons, (the sum of combined HAP emissions rates calculated according to 4.e) for the previous 12 months).
5. The permittee shall submit quarterly deviation (excursion) reports, in accordance with Part I of the Standard Terms and Conditions, of this permit, of the following information:
  - a) An identification of each month during which the rolling, 12-month individual HAP emissions rate (from the facility) exceeded 9.9 tons, and the actual rolling, 12-month sum of each individual HAP emissions rate (from the facility) for each such month.
  - b) An identification of each month during which the rolling, 12-month combination of all HAP emissions rates (from the facility) exceeded 24.9 tons, and the actual rolling, 12-month sum of the combination of all HAP emissions rates (from the facility) for each such month.

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency). Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

6. The permittee shall submit annual reports that summarize the annual emissions of each individual HAP and the combined emissions of all the HAPs for the facility. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Synthetic Minor Title V Fee Emission Report.
7. The determination of VOC and organic HAP emissions, in pounds, from the displacement, evaporation, heat up losses from mixing and/or point source losses for each batch of solvent based adhesive or coating/paint processed shall be determined in accordance with the formulas and assumptions listed below. (Reference: derivation of all the following equations can be found in "US EPA Emission Inventory Improvement Program (EIIP) Volume II: Chapter 8, Preferred and Alternative Methods for Estimating Air Emissions from Paint and Ink Manufacturing Facilities", updated February 2005).

- a) Displacement losses shall be determined according to equation 8.4-1:

$$E_d = 0.01246 \times ((S \times P \times MW \times Q) \div T)$$

where:

$E_d$  = Vapor displacement losses due to material transfer (lb/batch)

$P$  = vapor pressure of material loaded (psia)

$S$  = saturation factor, dimensionless, 1.0, on the basis that the vapor space is saturated with vapors, submerged fill

$MW$  = vapor molecular weight (lb/lb-mole)

$Q$  = volume of material loaded (gallons)

$T$  = temperature ( $^{\circ}R$ )

- b) Evaporation losses shall be determined according to equation 8.4-22:

$$E_e = (MW \times K \times A \times P \times 3,600 \times H) \div (R \times T)$$

where:

$E_e$  = Vapor loss due to evaporation (lb/batch)

$MW$  = Vapor Molecular Weight (lb/lb-mole)

$K = (0.00438) \times (U^{0.78}) \times [(18/MW)^{0.33}]$ , gas phase mass transfer coefficient (ft/sec)

$U = 0.1$  mile per hour, from USEPA's example for indoor equipment

$A$  = open area of tank (ft<sup>2</sup>)

$P$  = vapor pressure pure chemical or partial pressure of chemical for mixture (psia)

3600 = 3,600 seconds/hour

$H$  = Batch Time (hours/batch)

$R$  = universal gas constant, [(10.73 psia)(ft<sup>3</sup>)/(lb-mole)( $^{\circ}R$ )]

- c) Heat up losses shall be determined according to equation 8.4-10:

$$E_H = \{[(P_x)_{T1} \div (14.7 - \sum(P_x)_{T1})] + [(P_x)_{T2} \div [(14.7 - \sum(P_x)_{T2})] \div 2\} \times n \times MW$$

where:

$E_H$  = Vapor loss due to temperature increase during processing (lb/batch)

$(P_x)_{T1}$  = partial pressure of each VOC in vessel head space at initial gas temperature (psia)

$(P_x)_{T2}$  = partial pressure of each VOC in vessel head space at final gas temperature (psia)

$n$  = lb-moles of gas displaced,  $[(V/R) \times (P_{a1}/T_1 - P_{a2}/T_2)]$

$V$  = vessel head space (ft<sup>3</sup>)

$P_{a1}$  = initial gas pressure in vessel (psia), calculated as  $(14.7 - P_x T_1)$

$P_{a2}$  = final gas pressure in vessel (psia), calculated as  $(14.7 - P_x T_2)$

$R$  = universal gas constant,  $[(10.73 \text{ psia})(\text{ft}^3)/(\text{lb-mole})(^\circ\text{R})]$

$T_1$  = initial gas temperature ( $^\circ\text{R}$ )

$T_2$  = final gas temperature ( $^\circ\text{R}$ )

$MW$  = Vapor Molecular Weight (lb/lb-mole)

- d) Point source losses shall be determined according to the following equation:

$$E_p = (E_d) \times (Q_{ex}) \times (T_{ex}) \div (\text{Batch volume})$$

where:

$E_p$  = point source loss (lb/day)

$E_d$  = Vapor displacement losses due to material transfer (lb/batch)

$Q_{ex}$  = volumetric exhaust rate (24.23 gallons/minute)

$T_{ex}$  = the length of time the exhaust fan is running during dry material addition (assume 5 minutes per batch)

8. The Ohio EPA has determined that this facility is subject to the requirements of 40 CFR part 63 Subpart CCCCCC, National Emissions Standards for Hazardous Air Pollutants: Area Source Standards for Paints and Allied Products Manufacturing. Although Ohio EPA has determined that this area source MACT (also known as the GACT) applies, at this time Ohio EPA does not have the authority to enforce this standard. Instead, U.S. EPA has the authority to enforce this standard. Please be advised, that all requirements associated with this rule are in effect and shall be enforced by U.S. EPA.



**Draft Permit-to-Install and Operate**

DAP Inc.

**Permit Number:** P0121018

**Facility ID:** 0855130356

**Effective Date:** To be entered upon final issuance

## **C. Emissions Unit Terms and Conditions**

**1. P051, Thermoplastic Resin Mixing Vessel**

**Operations, Property and/or Equipment Description:**

Thermoplastic Resin Mixing Vessel with condenser and dust collector.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

|    | Applicable Rules/Requirements                              | Applicable Emissions Limitations/Control Measures  |
|----|--|--|
| a. | OAC rule 3745-31-05(A)(3) and ORC 3704.03(T)               | The requirements of this rule are equivalent to the emission limitation established by OAC rule 3745-31-05(D) for volatile organic compound (VOC) emissions.<br>Install a dust collector with a design efficiency of at least 99.9% control of particulate emissions (PE). |
| b. | OAC rule 3745-31-05(D)<br>Synthetic minor to avoid Title V | VOC emissions from this emissions unit shall not exceed 2.72 tons per year (TPY) based on 12-month summation of monthly emissions.<br><br>See b)(2)a., b)(2)b. and Section B.2. through B.7.   |
| c. | OAC rule 3745-17-07(A)(1)                                  | Visible PE from the stack serving this emissions unit shall not exceed 20 percent opacity as a six minute average, except as provided by rule.   |



|    | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures                            |
|----|-------------------------------|--|
| d. | OAC rule 3745-17-11(B)        | PE from the stacks serving this emissions unit shall not exceed 2.14 lbs/hr. |

(2) Additional Terms and Conditions

- a. All of the VOC emissions from this emissions unit shall be vented to a condenser that shall meet the operational, monitoring, and record keeping requirements of this permit, when the emissions unit is in operation.
- b. The emissions of VOC from this emissions unit shall not exceed 2.72 tons per year, based upon a rolling, 12-month summation of the monthly emissions. To ensure enforceability during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

| Month(s) | Maximum Allowable<br>Cumulative Emissions of VOC<br>(Tons) |
|----------|--|
| 1        | 0.23   |
| 1-2      | 0.45   |
| 1-3      | 0.68   |
| 1-4      | 0.91   |
| 1-5      | 1.13   |
| 1-6      | 1.36   |
| 1-7      | 1.59   |
| 1-8      | 1.81   |
| 1-9      | 2.04   |
| 1-10     | 2.26   |
| 1-11     | 2.49   |
| 1-12     | 2.72   |

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual emission

limitation for VOC shall be based upon a rolling, 12-month summation of the monthly emissions.

- c. The particulate emissions from this emissions unit shall be vented to a baghouse at all times the emissions unit is in operation.

c) Operational Restrictions

- (1) The permittee shall not process methylene chloride formulations in this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information on a daily basis for all VOC containing material in this emissions unit:

- a. The company identification for each batch of product mixed.
- b. The volume, in gallons, of each batch mixed.
- c. The calculated vapor pressure of the material produced in each batch (psia).
- d. The calculated vapor molecular weight of the material produced in each batch (lb/lb-mole).
- e. The average temperature of the mixer when in operation ( $^{\circ}$ R).
- f. The batch time (hours/batch).
- g. The open area of the mixer (square feet).
- h. The partial pressure of each VOC in each mixer head space (psia).
- i. The calculated gas vapor pressure in each mixer (psia).
- j. The average initial and final gas temperatures ( $^{\circ}$ R).
- k. The determination of the displacement, evaporation, and heat up VOC losses mixed/stored in the mixer for each batch, in pounds, according to the equations listed in Section B.7.a), B.7.b) and B.7.c) of this permit.
- l. The total calculated before-control VOC emission rate for this emissions unit [the sum of the displacement, evaporation, and heat up VOC losses for all batches], in pounds.
- m. The total calculated controlled VOC emission rate for this emissions unit, in pounds:
  - i. the value in (l) multiplied by 1 minus the overall condenser control efficiency determined by the condenser design evaluation conducted according to equations in 40 CFR 63.1257(d).

- (a) 76% for chilled water condensers and non-methylene-chloride formulations ( $I \times (1-0.76)$ ),
  - n. Identification of any products mixed in any of these emissions units that contain methylene chloride.
- (2) The permittee shall collect and record the following information each month for this emissions unit:
  - a. The VOC emission rate for each month of operations, in tons, (the sum of the daily VOC emissions rates (calculated according to d)(1)m. divided by 2,000 lb/ton);
  - b. Beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the VOC emissions.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative VOC emissions for each calendar month.
- (3) The average temperature of the exhaust gases from the chilled water condensers, for any 3-hour block of time shall not exceed 65 °F.
- (4) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the temperature of the exhaust gases from the condenser when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within  $\pm 1$  percent of the temperature being measured or  $\pm 5$  degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. Following compliance testing, the permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:
  - a. All 3-hour blocks of time, when the emissions unit(s) controlled by the condenser was/were in operation, during which the average temperature of the exhaust gases from the condenser exceeded the range established during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and
  - b. A log of the downtime for the capture (collection) system, condenser, and monitoring equipment when the associated emissions unit(s) was/were in operation.

These records shall be maintained at the facility for a period of 5 years.

- (5) Whenever the monitored temperature of the exhaust gases from the condenser deviates from the range/limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
  - b. the magnitude of the deviation at that time;
  - c. the date the investigation was conducted;
  - d. the name(s) of the personnel who conducted the investigation; and
  - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was deviation;
- j. the temperature readings of the exhaust gas from condenser immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The exhaust gas temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted exhaust gas temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the exhaust gas temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (6) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the baghouse is between 1 to 6 inches of water.
- (7) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the baghouse when the controlled emissions unit(s) is/are in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the baghouse on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

Whenever the monitored value for the pressure drop deviates from the limit or range established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the pressure drop readings immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

- (8) This range or limit on the pressure drop across the baghouse is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

e) Reporting Requirements

- (1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify:

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
- i. all exceedances of the rolling, 12-month emission limitation for VOCs and, for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative emission levels;
  - ii. each period of time (start time and date, and end time and date) when the average temperature of the exhaust gases from the condenser was outside of the range specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;
  - iii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the condenser;
- b. the probable cause of each deviation (excursion);

- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

- (3) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be submitted by the due date identified in the Authorization section of this permit. The PER shall cover a reporting period of no more than twelve months for each air contaminant source identified in this permit.
- (4) The permittee shall identify in the annual PER the following information concerning the operations of the baghouse during the 12-month reporting period for this/these emissions unit(s):
  - a. each period of time (start time and date, and end time and date) when the pressure drop across the baghouse was outside of the acceptable range;
  - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the baghouse;
  - c. each incident of deviation described in "a" (above) where a prompt investigation was not conducted;
  - d. each incident of deviation described in "a" where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and
  - e. each incident of deviation described in "a" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.
  - f. Unless other arrangements have been approved by the Director, the PER shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- f) Testing Requirements
  - (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emission Limitation:

VOC emissions shall not exceed 2.72 TPY based on 12-month summation of monthly emissions.

Applicable Compliance Method:

Compliance shall be based upon the record keeping requirements of d)(2).

b. Emission Limitation:

The opacity of the visible particulate emissions from this emissions unit shall not exceed 20% opacity, as a 6-minute average.

Applicable Compliance Method:

If requested, compliance shall be demonstrated by stack testing according to the procedures outlined in OAC rule 3745-17-03(B)(1) and U.S. EPA Reference Method 9.

c. Emission Limitation:

PE from the stacks serving this emissions unit shall not exceed 2.14 lbs/hr.

Applicable Compliance Method:

The above hourly emission limitation was established by the following equation:

$$(E) = 4.10 \times (P)^{0.67}$$

Where:

(E) = Allowable rate of particulate emissions, in pounds per hour, (from OAC rule 3745-17-11 Appendix "Table I"); and

(P) = Process Weight At Maximum Capacity, in tons per hour, (757 pounds per hour / 2,000 = 0.38 tons per hour, from application).

If requested, compliance shall be determined through emissions testing performed in accordance with OAC rule 3745-17-03(B)(10) and U.S. EPA Reference Method 5.

g) Miscellaneous Requirements

(1) None.