

Permit To Install Synthetic Minor Write-Up

Reactor R-4

A. Source Description: Capital Resins (CRC) submitted PTI applications requesting federally enforceable production restrictions to limit methanol, formaldehyde, toluene and organic compound emissions below 10 ton per year for each HAP and 25 ton per year for combined HAPS. The application submitted on August 29, 1996 included 7 resin reactors, 2 acid sulfonators, 1 methanol blend tank, 6 load racks, 113 storage tanks, a resin chill tank, an isocyanate blend tank, and a sulfonic acid blend tank. CRC operates a formaldehyde plant (P010) with federally enforceable limits under the Ohio Administrative Code Sections 3745-21-09 (DD) and (EE). CRC demonstrated compliance with the 98% methanol and formaldehyde destruction efficiency requirement during a June 1998 emission test.

B. Facility Emissions and Attainment Status: CRC is an existing facility located in the City of Columbus, Franklin County. Franklin County is attainment for ozone. CRC produces three resin blends in reactor r-4 and used batch act equations in an emission master spread sheet to calculate organic compound emissions during reactor charge, heat, addition and distillation phase of resin production. Maximum hourly and batch organic compound emissions occurred during acetone-formaldehyde resin production at 0.40 lb/hour and 0.33 lb/batch. Maximum formaldehyde emissions CRC presented an actual emission summary for 1995, 1996, and 1997 listing maximum emissions of 2.7 tons formaldehyde, 1.58 tons methanol, and 1.13 tons toluene, 1.08 tons phenol, 7.0 tons total HAPs and 32.1 tons OC in any one year. CRC believes these emissions fall under the transition policy and would not be subject to HON MACT applicability. Table 1 presents CRC FESOP strategy listing potential uncontrolled HAP emissions with federally enforceable controlled rates. CRC proposes to implement the restrictions identified in the FESOP Special Terms and Conditions to maintain emissions at the levels identified in

Table 1.

Table 1

Pollutant	Potential to Emit (tons/year)	Proposed Restricted Emissions (tons/year)
Criteria Pollutants		
Particulate Matter, (PM)	1.05	
Nitrogen Oxides, (NOX)	3.86	
Carbon Monoxide, (CO)	8.16	
Sulfur Dioxide, (SO ₂)	0.65	
Organic Compounds (OC)	86.4	74.9
Hazardous Air Pollutants (HAP)	61.5	21.4
Methanol	18.4	9.5
Formaldehyde	22.7	6.1
Phenol	0.6	2.2
Toluene	6.0	1.5

C. Conclusions: The limitations outlined in section "B" will result in annual facility-wide restricted emissions of 74.9 tons of OC, 9.5 tons of methanol, 6.1 tons of formaldehyde, 2.2 tons phenol, 1.5 tons toluene and 21.4 tons total HAP emissions. Since the Organic Compound emissions do not exceed 100 tons per year, no single HAP exceeds 10 tons per year, and total HAP emissions do not exceed 25 tons per year, Capital Resins will not be considered a major source subject to the provisions of Title V and 40 CFR part 70.



State of Ohio Environmental Protection Agency

Street Address:

Mailing Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Lazarus Gov.
Center

**RE: DRAFT PERMIT TO INSTALL
FRANKLIN COUNTY
Application No: 01-08136**

CERTIFIED MAIL

DATE: 8/3/2000

Capital Resin Corp
Michael Black
324 Dering Ave
Columbus, OH 43207-2956

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on 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 proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$600** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Very truly yours,

Thomas G. Rigo, Manager
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA

CDO

Mid-Ohio Reg Plan Com



**Permit To Install
Terms and Conditions**

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

DRAFT PERMIT TO INSTALL 01-08136

Application Number: 01-08136
APS Premise Number: 0125040238
Permit Fee: **To be entered upon final issuance**
Name of Facility: Capital Resin Corp
Person to Contact: Michael Black
Address: 324 Dering Ave
Columbus, OH 432072956

Location of proposed air contaminant source(s) [emissions unit(s)]:
**324 Dering Ave
Columbus, Ohio**

Description of proposed emissions unit(s):
Reactor number 4.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Capital Resin Corp
PTI Application: 01-08136

Facility ID: 0125040238

Issued: To be entered upon final issuance

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements Related to Monitoring and Recordkeeping Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- 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 recordkeeping 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 appropriate Ohio EPA District Office or local air agency. 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 31, April 30, July 31, and October 31 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.)

3. Records Retention Requirements

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. 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.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any

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information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance

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that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities prove to be inadequate or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit to Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within thirty (30) days after

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commencing operation of the emissions unit(s) covered by this permit.

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14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

**SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons Per Year</u>
PM	0.26
OC	1.6
Formaldehyde	0.8

**Capital
PTI**

Emissions Unit ID: **P008**

Issued: To be entered upon final issuance

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P008 - Resin reactor R-4 for melamine resin production w/condenser, cyclone, weigh tank w/vapor balance and chill tank (3,500 gallon connected to emergency containment system) Modification of PTI 01-1164.	OAC rule 3745-17-11(A)(2) OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)
	OAC rule 3745-35-07(B)
	OAC rule 3745-15-06

**Capital
PTI**

Emissions Unit ID: **P008**

Issued: To be entered upon final issuance

Applicable Emissions
Limitations/Control Measures

Organic compound emissions shall not exceed 2.21 pound per hour and 1.64 ton per rolling twelve-month period. See A.2.a., below.

Formaldehyde emissions shall not exceed 0.55 pound per batch and 0.8 ton per rolling twelve-month period. See A.2.a. and B. below.

Particulate emissions shall not exceed 0.08 pound per hour and 0.26 ton per year.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(2) and 3745-17-11(A).

The total facility-wide emissions shall not exceed 74.9 ton organic compound, 9.9 ton individual HAPs, 24.9 combined HAPs per year.
See A.2.a. below.

See A.2.c. below.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a This permit supercedes PTI 01-1162 issued April 23, 1986 and represents a net allowable decrease of 0.4 ton organic compounds/year. The facility-wide individual and combined hazardous air pollutant (HAP) emissions shall not exceed 9.9 tons and 24.9 tons per rolling 12-month period, respectively, by limiting the total HAP emissions from all emissions units. To date this would also include P019, P020, P021, P023, P024, P025 and P026. The permittee shall restrict total organic compound emissions to less than 74.9 ton per rolling twelve month period.

2.b The short term limitations of 0.55 lb formaldehyde/batch, 2.2 lb OC/hr and 0.08 lb PM/hr were established for PTI purposes reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with this limit.

2.c The permittee shall, prior to production, ensure that this reactor is connected to an Emergency Containment System and that it is functional.

If any event causes a rupture disc to open, releasing material to the emergency containment system, all resin production shall be stabilized and no new batches will be started or restarted until any necessary repairs are made. The emergency containment system shall be drained and prepared for normal kettle operation prior to production restart.

2.d The permittee shall prepare and maintain a preventative maintenance and malfunction abatement plan (PMMAP), that is subject to review by the Director. The approved PMMAP shall be implemented as a condition for operation of this emission unit. and operated according to an approved Preventative Maintenance and Malfunction Abatement Plan (PMMAP).

B. Operational Restrictions

1. The average temperature of the exhaust gases from the condenser *on the reactor*, for any period of time, shall not be more than 77 degrees Fahrenheit.
2. The permittee shall maintain vapor balance on the weigh tank to eliminate air emission of organic compounds, while charging liquid formaldehyde.
3. The permittee shall not complete during any daily period more than either:
 - a. Eight (8) batches of melamine-formaldehyde resins; or

Capital**Permit****Issued: To be entered upon final issuance**Emissions Unit ID: **P008**

- b. Four (4) batches of either urea-formaldehyde or acetone-formaldehyde resins.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain the following information for each day of resin production in a monthly record, to be completed during the first week of the following month:
 - a. the identification and date of completion for each batch produced;
 - b. a summation of the number of each batch completed during the monthly period; and
 - c. the summation of the number of each type of batch completed during the previous rolling 12-month period.
2. The permittee shall 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 is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within ± 1 percent of the temperature being measured or ± 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 operating manuals.
3. The permittee shall collect and record the following information each day of resin production:
 - a. the temperature of the exhaust gases from the condenser during each period of time; and
 - b. a log or record of downtime for the control device and monitoring equipment, when the the associated emissions unit is in operation.
4. The permit to install for this emissions unit P008 was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Acetone

Capital Resin Corp
 PTI
 Issue

Facility ID: 0125040238

Emissions Unit ID: P008

Maximum Hourly Emission Rate (lbs/hr): 2.12

TLV (mg/m3): 1,782

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 702

MAGLC (ug/m3): 42,428

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new 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 previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

- a. a description of the parameters changed (composition of materials, new pollutants emitted,

**Capital
PTI**

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change in stack/exhaust parameters, etc.);

- b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

D. Reporting Requirements

1. In accordance with paragraph A. 2. b. of the General Terms and Conditions, the permittee shall submit quarterly deviation (excursion) reports of the following:
 - a. identify all periods of time during which the temperature of the exhaust gases from the condenser exceeded the temperature limitation specified in B.1., above;
 - b. identify any exceedances of the daily batch production rate specified in B.3., above; and
 - c. each quarterly report shall include the date of each exceedance, the type of exceedance and the resultant increase in organic compound emissions, as well as any corrective actions that were taken to return to compliance.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1. shall be determined in accordance with the following methods:
 - a. Emission Limitation:
Formaldehyde emissions shall not exceed 0.55 pound per batch;

Applicable Compliance Method:
Compliance is based on formulation data and batch act equations from USEPA 450/R-94-020 February 1994 document for melamine-formaldehyde production;
 - b. Emission Limitation:
Formaldehyde emissions shall not exceed 0.8 ton per rolling twelve month period;

Applicable Compliance Method:
Compliance is based on batch restrictions and record keeping specified in (C)(1) & (3) above;

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PTI

Emissions Unit ID: **P008****Issued: To be entered upon final issuance**

(0.55 lb formaldehyde/batch * 8 batch/day * 31 day * 12 month * 1 ton/2,000 lb = 0.8 ton);

c. Emission Limitation:

Organic compound emissions shall not exceed 2.21 pound per hour;

Applicable Compliance Method:

Compliance is based on formulation data and batch act equations from USEPA 450/R-94-020 February 1994 document due to displacement emissions during acetone charge for acetone-formaldehyde resin production;

d. Emission Limitation:

Organic compound emissions shall not exceed 1.64 ton organic compound emissions per year.

Applicable Compliance Method:

Compliance is based on batch restrictions and record keeping in (C)(1) & (2) above; (2.21 lb acetone/batch * 4 batch/day * 31 day * 12 month * 1 ton/2,000 lb = 1.64 ton);

e. Emission Limitation:

Particulate emissions shall not exceed 0.08 pound per hour.

Applicable Compliance Method:

Compliance is based on emission Master calculations for melamine resin production.

f. Emission Limitations:

Particulate emissions shall not exceed 0.26 ton per year.

Applicable Compliance Method:

Compliance shall be determined by batch restrictions and record keeping specified in Section C.1.;

(0.18 lb/batch * 8 batches * 31 days * 12 months * 1 ton/2,000 lb = 0.26 ton)

F. Miscellaneous Requirements

None

NEW SOURCE REVIEW FORM B

PTI Number: 01-08136 Facility ID: 0125040238

FACILITY NAME Capital Resin Corp

FACILITY DESCRIPTION Reactor number 4. CITY/TWP Columbus

SIC CODE 2869 SCC CODE 4-07-008-02 EMISSIONS UNIT ID P008

EMISSIONS UNIT DESCRIPTION Resin Reactor R-4 (3,500 gallon) w/condenser, weigh tanks, cyclone, chill tank, chill tank condenser. Melamine-formaldehyde resin production.

DATE INSTALLED 7/86

EMISSIONS: (Click on bubble help for Air Quality Descriptions)

Pollutants	Air Quality Description	Actual Emissions Rate		PTI Allowable	
		Short Term Rate	Tons Per Year	Short Term Rate	Tons Per Year
Particulate Matter	Attainment			0.08	0.26
PM ₁₀					
Sulfur Dioxide					
Organic Compounds	Attainment			2.21	1.64
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics	Acetone			2.2	1.64

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

WHAT IS THE BAT DETERMINATION, AND WHAT IS THE BASIS FOR THE DETERMINATION?

Enter Determination: Daily batch restriction, temperature restriction on condenser, and compliance with Ohio EPA toxic policyIS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? yes

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$

TOXIC AIR CONTAMINANTS

Ohio EPA's air toxics policy applies to contaminants for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a listed threshold limit value.

AIR TOXICS MODELING PERFORMED*? Y YES NOIDENTIFY THE AIR CONTAMINANTS: Acetone

NEW SOURCE REVIEW FORM B

PTI Number: 01-08136 Facility ID: 0125040238

FACILITY NAME Capital Resin Corp

FACILITY DESCRIPTION Reactor number 4.

CITY/TWP Columbus

Please describe any hard copy information is being submitted with this recommendation (Please send hard copy information to Pam McGraner, DAPC Central Office - Air Quality Modeling and Planning):

Screen 3 modeling for acetone.

Please provide any additional permit specific notes as you deem necessary:

**CDO NEW SOURCE REVIEW DISCUSSION
Melamine-Formaldehyde Resin Reactor R-4 (P008)
A. General Information**

Capital Resin Corporation (CRC) produces melamine-formaldehyde, urea-formaldehyde and acetone-formaldehyde resins during batch cycles of 4 to 11 hours in resin reactor R-4 (P008). Ohio EPA issued PTI 01-1162 on April 23, 1986 requiring compliance with OAC rule 3745-21-07(G)(1) and limiting annual emissions to 2.0 ton OC/yr in the 3,500 gallon reactor. It was placed on registration status on August 26, 1988.

CRC submitted a facility-wide permit to install in September 1996 for all emission units as the facility to obtain a synthetic minor status to avoid Title V. For this reactor, CRC used an emission master program to calculate individual emissions from each phase of resin production. Based on these calculations, CRC is proposing a maximum emission rate of 2.2 lb OC/hr and proposes to limit annual OC emissions to 1.64 ton per year. These maximum allowable emission are based on acetone-formaldehyde resin production with 4 batches per day restriction (2.2 lb OC/batch * 4 batches * 31 day/month * 12 month/yr * 1 ton/2,000 lbs = 1.64 ton OC/yr).

For synthetic minor purposes, CRC proposes to limit formaldehyde emissions to 0.55 pounds per batch and 0.8 ton per year by restricting production to eight batches per day of melamine-formaldehyde production (8 batches * 0.55 lb formaldehyde/batch * 365 day/2,000 pounds = 0.8 ton formaldehyde).

B. Applicable Rules

OAC rule 3745-31-05 - CRC proposes to restrict batch production; use vapor balance on the liquid formaldehyde weigh tank, require continuous monitoring of the condenser outlet temperature during cook and reflux phases of urea-formaldehyde and acetone formaldehyde resin production. Emission Master software calculated a maximum hourly emission rate of 2.21 lbs OC/hour during acetone charge and 0.55 lb formaldehyde during depressurization of melamine-formaldehyde resin.

OAC rule 3745-21-07(G)(2): Emission limitations under OAC rule 3745-31-05(A)(3) are more stringent. the hourly and daily emission limitations should not be exceeded.

OAC rule 3745-15-06: CRC installed a containment system for accidental releases and will be required to prepare a Preventative Maintenance and Malfunction Abatement Plan to ensure that the system is properly maintained. This reactor is now tied into the containment system.

OAC rule 3745-17-11: The uncontrolled particulate emission from a 6,000 lb melamine charge to the reactor is less

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PTI Number: 01-08136 Facility ID: 0125040238

FACILITY NAME Capital Resin Corp

FACILITY DESCRIPTION Reactor number 4. CITY/TWP Columbus

stringent than that calculated using table 1 (8.56 lb/hr).

C. Miscellaneous**D. Fee**

Resin reactor R-4 is operated under SIC code 2869 at a process weight rate of 7,974 lbs/hr which would require a fee of \$600.

Calculations

USEPA Batch Act equations based on organic compound vapor pressure, condenser temperatures and batch weights were used to calculate air emissions for each step of resin production. Maximum organic compound emissions of organic compounds occurred during acetone charge for acetone-formaldehyde resin production and during melamine-formaldehyde resin cook phase.

Acetone-Formaldehyde Resin / Urea-Formaldehyde Resin/Melamine-Formaldehyde Resin

Process	Acetone	Formaldehyde	OC	NH4	Formaldehyde	OC	Melamine	Formaldehyde	OC
Charge	2.12	0.02	2.14	0.0	0.027	0.027	0.0	0.016	0.016
Heat	0.02	0.000	0.020	0.01	0.0	0.0	0.0	0.0	0.0
Caustic	0.004	0.0003	0.0043	0.0	0.0	0.0	0.0	0.0	0.0
Charge	0.0	0.0	0.0	0.36	0.014	0.014	0.022	0.002	0.002
Caustic	0.014	0.0001	0.014	0.14	0.0	0.0	0.0	0.006	0.006
Heat	0.0027	0.0	0.0027	0.00	0.0	0.0	0.071	0.534	0.534
lb/batch	2.1607	0.021	2.205	0.51	0.041	0.041	0.09	0.558	0.558

Permit To Install Synthetic Minor Write-Up

Reactor R-4

A. Source Description: Capital Resins (CRC) submitted PTI applications requesting federally enforceable production restrictions to limit methanol, formaldehyde, toluene and organic compound emissions below 10 ton per year for each HAP and 25 ton per year for combined HAPS. The application submitted on August 29, 1996 included 7 resin reactors, 2 acid sulfonators, 1 methanol blend tank, 6 load racks, 113 storage tanks, a resin chill tank, an isocyanate blend tank, and a sulfonic acid blend tank. CRC operates a formaldehyde plant (P010) with federally enforceable limits under the Ohio Administrative Code Sections 3745-21-09 (DD) and (EE). CRC demonstrated compliance with the 98% methanol and formaldehyde destruction efficiency requirement during a June 1998 emission test.

B. Facility Emissions and Attainment Status: CRC is an existing facility located in the City of Columbus, Franklin County. Franklin County is attainment for ozone. CRC produces three resin blends in reactor r-4 and used batch act equations in an emission master spread sheet to calculate organic compound emissions during reactor charge, heat, addition and distillation phase of resin production. Maximum hourly and batch organic compound emissions occurred during acetone-formaldehyde resin production at 0.40 lb/hour and 0.33 lb/batch. Maximum formaldehyde emissions

NEW SOURCE REVIEW FORM B

PTI Number: 01-08136

Facility ID: 0125040238

FACILITY NAME Capital Resin Corp

FACILITY DESCRIPTION Reactor number 4.

CITY/TWP Columbus

CRC presented an actual emission summary for 1995, 1996, and 1997 listing maximum emissions of 2.7 tons formaldehyde, 1.58 tons methanol, and 1.13 tons toluene, 1.08 tons phenol, 7.0 tons total HAPs and 32.1 tons OC in any one year. CRC believes these emissions fall under the transition policy and would not be subject to HON MACT applicability. Table 1 presents CRC FESOP strategy listing potential uncontrolled HAP emissions with federally enforceable controlled rates. CRC proposes to implement the restrictions identified in the FESOP Special Terms and Conditions to maintain emissions at the levels identified in Table 1.

Table 1

Pollutant	Potential to Emit (tons/year)	Proposed Restricted Emissions (tons/year)
Criteria Pollutants		
Particulate Matter, (PM)	1.05	
Nitrogen Oxides, (NOX)	3.86	
Carbon Monoxide, (CO)	8.16	
Sulfur Dioxide, (SO2)	0.65	
Organic Compounds (OC)	86.4	74.9
Hazardous Air Pollutants (HAP)	61.5	21.4
Methanol	18.4	9.5
Formaldehyde	22.7	6.1
Phenol	0.6	2.2
Toluene	6.0	1.5

C. Conclusions: The limitations outlined in section "B" will result in annual facility-wide restricted emissions of 74.9 tons of OC, 9.5 tons of methanol, 6.1 tons of formaldehyde, 2.2 tons phenol, 1.5 tons toluene and 21.4 tons total HAP emissions. Since the Organic Compound emissions do not exceed 100 tons per year, no single HAP exceeds 10 tons per year, and total HAP emissions do not exceed 25 tons per year, Capital Resins will not be considered a major source subject to the provisions of Title V and 40 CFR part 70.

Please fill in the following for this permit:

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
PM	0.26
OC	1.6
Formaldehyde	0.8

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