



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: 01-08083**

**CERTIFIED MAIL**

**DATE: 6/7/00**

Capital Resin Corp  
Todd A Trowbridge  
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 **\$800** 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



STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**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 01-08083**

Application Number: 01-08083  
APS Premise Number: 0125040238  
Permit Fee: **To be entered upon final issuance**  
Name of Facility: Capital Resin Corp  
Person to Contact: Todd A Trowbridge  
Address: 324 Dering Ave  
Columbus, OH 43207-2956

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

Description of proposed emissions unit(s):  
**Production restrictions on resin reactors R-1 and R-2 for synthetic minor purposes.**

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

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Director

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

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lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance 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 commencing operation of the emissions unit(s) covered by this permit.

**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>
Methanol	0.2
Formaldehyde	0.6
Organic Compounds	11.6

Capital

PTI

Issued: To be entered upon final issuance

Emissions Unit ID: P004

## 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>	<u>Applicable Emissions Limitations/Control Measures</u>
P004 - Resin reactor R-1w/vapor balance on weigh tank and condenser for phenolic resin and w/thermal incinerator and scrubber for alkyd resin production (2,500 gallon connected to emergency containment). Modification of PTI 01-394.	OAC rule 3745-31-05(A)(3)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(2). See A.2.d. below.  Phenolic resin production: methanol emissions shall not exceed 0.14 lb per batch and 0.1 ton per rolling twelve-month period and formaldehyde emissions shall not exceed 0.4 lb per batch and 0.3 ton per rolling twelve-month period. See A.2.b. and A.2.c. below.
	OAC rule 3745-21-07(G)(2)	Phenolic and alkyd resin production: organic compound emissions shall not exceed 5.8 ton per rolling twelve month period. See A.2.a. and B.3. below.
	OAC rule 3745-15-06(D)	Organic compound emissions shall not exceed 8 lb/hour and 40 lb/day.  See A.2.e. and A.2.f., below.

**Issued: To be entered upon final issuance****2. Additional Terms and Conditions**

- 2.a** This permit supercedes PTI 01-394 issued June 15, 1981 and represents a net allowable increase of 1.5 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 include P006, P010, P013, P014, P018, P020, P022, and P025. The permittee shall restrict total organic compound emissions to less than 99.9 ton per rolling twelve month period.
- 2.b** The short term limitations of 0.14 lb methanol/batch, 0.4 lb formaldehyde/batch and 8 lb organic compound per hour 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 these limits.
- 2.c** The permittee shall maintain vapor balance on the weigh tank to eliminate air emission of each respective organic compound, while charging liquid formaldehyde and phenol.
- 2.d** During the alkyd resin cook phase, organic compound emissions shall be vented to the thermal incinerator which shall achieve a minimum 95% destruction efficiency at the outlet of the incinerator.
- 2.e** The permittee shall, prior to production, ensure that this emissions unit is connected to the Emergency Containment System and that the Emergency Containment System 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.f** 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.

**B. Operational Restrictions**

1. The average temperature of the exhaust gases from the condenser, for any period of time during phenolic and furan resin production, shall not be more than 77 degrees Fahrenheit.

2. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation during alkyd resin production, shall not be less than 932 degrees Fahrenheit or more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. Prior to alkyd resin production, the pH of the scrubber liquor shall be equal to or less than 3.0.
4. The permittee shall not complete more than four (4) batches of phenolic or alkyd resins or any combination that totals more than 4 batches in reactor R-1 during any daily period.

**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 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 operating manuals.

The permittee shall collect and record the following information for each day during phenol-formaldehyde 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 associated emissions unit is in operation.
3. The permittee shall operate and maintain during alkyd resin production a continuous temperature

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monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit 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.

- a. All three hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was less than 932 degrees Fahrenheit during alkyd resin cook phase.
- b. A log or record of the downtime for the control device and monitoring equipment, when the associated emissions unit was in alkyd resin cook phase.

4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information for each batch of alkyd resin:

- a. The pH of the scrubber liquor, on per batch basis.
- b. A log or record of down time for the capture system, control device, monitoring equipment, and the associated emissions unit.

**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 all periods of time during which the combustion temperature within the thermal incinerator during alkyd resin production does not comply with the temperature limitation specified in B.2., above;
  - c. identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above, and any actions taken to return to a compliance .

- d. identify any exceedances of the daily batch production rate specified in B.4., above; and
- e. 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 limitation of these terms and conditions shall be determined in accordance with the following method(s):
  - a. Emission Limitation:  
During phenolic resin production, methanol emissions shall not exceed 0.14 pound per batch;  
  
Applicable Compliance Method:  
Compliance had been demonstrated during emission testing on November 20, 1997 for phenolic resin production.
  - b. Emission Limitation:  
Methanol emissions shall not exceed 0.1 ton per rolling twelve-month period, resulting from phenolic resin production;  
  
Applicable Compliance Method:  
Compliance shall be determined by record keeping specified in (C)(1) & (2) above;  
(0.14 lb methanol/batch \* 4 batches \* 31 days \* 12 months \* 1 ton/2,000 lb = 0.1 ton)
  - c. Emission Limitation:  
During phenolic resin production, formaldehyde emissions shall not exceed 0.4 pound per batch;  
  
Applicable Compliance Method:  
Compliance had been demonstrated during emission testing on November 20, 1997 during phenolic resin production;
- d. Emission Limitation:  
Formaldehyde emissions shall not exceed 0.3 tons per rolling twelve month period, resulting from phenolic and furan resin production;  
  
Applicable Compliance Method:

Capi

PTI

Emissions Unit ID: P004

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Compliance shall be determined by record keeping specified in (C)(1) & (2) above;  
(0.4 lb formaldehyde/batch \* 4 batches \* 31 days \* 12 months \* 1 ton/2,000 lb = 0.3 ton)

e. Emission Limitation:

Organic compound emissions shall not exceed 8 lb/hour and 40 lb/day.

Applicable Compliance Method:

Compliance had been demonstrated based on emission test data during alkyd resin production from March 1993 Method 25 test using a maximum incinerator inlet concentration of 11 lb OC/hr \* (1- 0.95) = 0.55 lb OC/hr at the incinerator outlet plus a scrubber outlet concentration of 0.41 lb OC/hr = 0.96 lb OC/hr \* 8 hr cook phase = 7.6 lb plus a calculated 0.2 lb OC from mineral spirits charge equals 7.8 lb OC/batch (alkyd resins) \* 4/day = 31.2 lb OC/day and phenol-formaldehyde resin production using maximum condenser outlet concentration from November 1997 Method 25a emission test to derive 0.22 lb OC/hr \* 6 hr batch = 1.3 lb OC/batch \* 4 batches/day = 5.2 lb OC/day.

f. Emission Limitation:

Organic compound emissions shall not exceed 5.8 tons OC per year;

Applicable Compliance Method:

Compliance shall be determined by record keeping specified in (C)(1) & (3);  
7.8 lb OC/alkyd resin batch and/or 1.3 lb OC/phenolic resin batch:  
7.8 lb/batch \* 4 batches/day \* 31 days/yr \* 12 months/yr \* 1 ton/2,000 lb = 5.8 ton OC/yr)

g. Emission Limitation:

The thermal incinerator shall achieve a minimum 95% reduction of organic compound emissions during the cook phase of alkyd resin production.

Applicable Compliance Method:

The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- i. The emission testing shall be conducted within 3 months of initiating alkyd resin production.
- ii. The emission testing shall be conducted to demonstrate compliance with the 95% destruction efficiency across the thermal incinerator.
- iii. The following test method(s) shall be employed to demonstrate compliance with

Emissions Unit ID: **P004**

the allowable mass emission rate(s): 40CFR Part60 Appendix A Method 25 - if applicable. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- iv. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA Central District Office.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit 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 Central District Office refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Central District Office 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 Ohio EPA Central District Office 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 Ohio EPA Central District Office.

## **F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's Air Toxic Policy was not necessary since the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

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**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>	<u>Applicable Emissions Limitations/Control Measures</u>
P016 - Resin reactor R-2 w/vapor balance on weigh tank and condenser for phenolic and furan resin production (2,500 gallon connected emergency containment system). Modification of PTI 01-5797.	OAC rule 3745-31-05(A)(3)	Methanol emissions shall not exceed 0.14 lb per batch and 0.1 ton per rolling twelve-month period. Formaldehyde emissions shall not exceed 0.4 lb per batch and 0.3 ton per rolling twelve-month period. See A.2.b. and A.2.c. below.
	OAC rule 3745-21-07(G)(2)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(2).  Organic compound emissions shall not exceed 5.8 ton/yr. See A.2.a. and B.2., below.
	OAC rule 3745-15-06(D)	Organic compound emissions shall not exceed 8 lb/hour and 40 lb/day. See A.2.b. below
		See A.2.d. and A.2.e. below.

**2. Additional Terms and Conditions**

- 2.a This permit supercedes PTI 01-5797 issued September 27, 1995 and represent a net

Emissions Unit ID: **P016**

allowable decrease of 1.18 ton organic compound/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 include P006, P010, P013, P014, P018, P020, P022, and P025. The permittee shall restrict total organic compound emissions to less than 99.9 ton per rolling twelve month period.

- 2.b** The batch limits of 0.14 lb methanol, 0.4 lb formaldehyde and 8 lb organic compound per hour were established for PTI purposes to 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** During phenolic resin and furan resin production while charging liquid formaldehyde and phenol, the permittee shall maintain vapor balance on the weigh tank to eliminate air emission of each respective organic compound.
- 2.d** The permittee shall, prior to production, ensure that this emissions unit is connected to the 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.e** 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.

## **B. Operational Restrictions**

1. The average temperature of the exhaust gases from the condenser, for any period of time during phenolic resin or furan resin production, shall not be more than 77 degrees Fahrenheit or 11 degrees Fahrenheit above the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
2. The permittee shall not complete more than four (4) batches of phenolic or furan resins or any combination that totals more than 4 batches in reactor R-2 during any daily period.

## **C. Monitoring and/or Recordkeeping Requirements**

**Issued: To be entered upon final issuance**

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 number of each type of batch completed during the monthly period; and
  - c. the summation of 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  $\pm 1$  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 operating manuals.

**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 monthly batch production rate specified in B.2., 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 limitation of these terms and conditions shall be determined in accordance with the following method(s):
  - a. Emission Limitation:

Emissions Unit ID: P016

During phenolic production, methanol emissions shall not exceed 0.14 pound per batch;

Applicable Compliance Method:

Compliance had been demonstrated during phenolic resin production emission testing of P016 on November 20, 1997 and with .

b. Emission Limitation:

During phenolic resin production, methanol emissions shall not exceed 0.1 ton methanol per rolling twelve-month period;

Applicable Compliance Method:

Compliance shall be determined by record keeping specified in (C)(1) & (2) above; (0.14 lb methanol/batch \* 4 batches \* 31 days \* 12 months \* 1 ton/2,000 lb = 0.1 ton)

c. Emission Limitation:

During phenolic and furan resin production, formaldehyde emissions shall not exceed 0.4 pound per batch;

Applicable Compliance Method:

Compliance had been demonstrated during emission testing on November 20, 1997 resulting in 0.001 lb/phenolic resin batch and with USEPA Batch Act emission calculations resulting in 0.023 lb/furan resin batch;

d. Emission Limitation:

During phenolic and furan resin production, formaldehyde emissions shall not exceed 0.3 tons per rolling twelve-month period;

Applicable Compliance Method:

Compliance shall be determined by record keeping specified in (C)(1) & (2) above; (0.4 lb formaldehyde/batch \* 4 batches \* 31 days \* 12 months \* 1 ton/2,000 lb = 0.29 ton)

e. Emission Limitation:

Organic compound emissions shall not exceed 8 lb/hour and 40 lb/day.

Applicable Compliance Method:

Compliance had been demonstrated during emission testing on November 20, 1997-1.3 lb OC/phenolic resin batch \* 4 batch/day = 5.2 lb OC/day and with Batch Act emission calculations yielding 0.27 lb OC/batch furan resin \* 4 batch/day = 1.1 lb OC/day

f. Emission Limitation:

Organic compound emissions shall not exceed 5.8 tons OC/year;

**Cap**

**PTI**

Emissions Unit ID: **P016**

**Issued: To be entered upon final issuance**

Applicable Compliance Method:

Compliance shall be determined by record keeping specified in (C)(1) & (2);

1.3 lb OC/phenolic resin batch or 0.27 lb OC/furan resin batch):

1.3 lb OC/batch \* 4 batches/day \* 31 days/yr \* 12 mon/yr \* 1 ton/2,000 lb <= 5.8 ton  
OC/yr

## **F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's Air Toxic Policy was not necessary since the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**NEW SOURCE REVIEW FORM B**

PTI Number: 01-08083 Facility ID: 0125040238

FACILITY NAME Capital Resin Corp

FACILITY DESCRIPTION Organic Chemical Manufacture CITY/TWP Columbus

Emissions Unit ID: P016

SIC CODE 2869 SCC CODE 3-01-840-01 EMISSIONS UNIT ID P004

EMISSIONS UNIT DESCRIPTION Resin Reactor R-1w/condenser, weigh tank, and emergency containment for phenolic and alkyd resins (2,500 gallons)

DATE INSTALLED 07/31/81

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					
PM <sub>10</sub>					
Sulfur Dioxide					
Organic Compounds	Attainment	1.3	5.8	8 lb/hr, 40 lb/hr	5.8
Nitrogen Oxides					
Carbon Monoxide					
Lead					
Other: Air Toxics	Methanol Formaldehyde			0.1 lb/batch 0.4 lb/batch	0.1 ton/yr 0.3 ton/yr

APPLICABLE FEDERAL RULES:

NSPS? NESHAP? PSD? OFFSET POLICY?

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

**Enter Determination** Use of vapor balance on weigh tank, connection to emergency containment system, use of condenser, compliance with applicable rules and operating restrictions.

IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? No  
OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? \$ 20,000.00

**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\*? YES x NO

IDENTIFY THE AIR CONTAMINANTS:



**2 NEW SOURCE REVIEW FORM B**

PTI Number: 01-08083

Facility ID: 0125040238

FACILITY NAME Capital Resin Corp

FACILITY DESCRIPTION Organic Chemical Manufacture

CITY/TWP Columbus

Emissions Unit ID: **P016**

**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):**

## CDO NEW SOURCE REVIEW DISCUSSION

### Reactor R-1(P004) & Reactor R-2(P016)

#### A. General Information

Capital Resin Corporation (CRC) installed resin reactor R-1 (P004) in July 1981 under PTI 01-394 issued June 15, 1981 for alkyd resin production with no limits on organic compound emissions. CRC installed resin reactor R-2 (P016) in 1988, however PTI 01-5797 was not issued until September 27, 1995 limiting emissions to 4.56 lb OC/hr and 6.98 ton OC/yr for phenolic resin production. Reactors R-1 and R-2 are both 2,500 gallon reactors that share a common weigh tank and individual condensers. Each reactor is currently permitted to emit organic compounds with no restriction on methanol and formaldehyde emitted during reactor charging and refluxing.

CRC proposes to limit annual emissions to 0.1 ton methanol and 0.3 ton formaldehyde from each reactor by restricting production to four batches per day. CRC installed vapor balance on weigh tank for formaldehyde eliminating methanol and formaldehyde emissions from charging. Because each reactor shares a similar working volume and condenser design, methanol and formaldehyde data from testing on reactor R-2 were used to establish batch emission rates for both reactors. During emission testing on November 20, 1997, CRC recovered maximum hourly emissions of 0.01 pound methanol and 0.37 pound formaldehyde. CRC calculated a batch emission rate of 0.03 pound methanol and 0.4 pound formaldehyde by summing the individual emission rates during the 9 hour batch cycle. Furan resin production in R-2 results in batch emissions calculated to be 0.39 pound formaldehyde and 0.64 pound organic compound.

CRC demonstrated compliance with OAC rule 3745-21-07(G)(2) in reactor R-1 by demonstrating more than 90% control efficiency across the thermal incinerator during alkyd resin production. R-1 will be able to meet the 8 lb OC/day limitation based on calculated and tested emission rates during alkyd resin production in R-1 at 7.8 lb OC during an 8 hour batch cycle. For phenolic resin production in R-2, CRC calculated a batch emission rate of 1.3 pound organic compound had based on a response factor for methanol applied to emission testing in September 1996. CRC calculated an emission rate of 0.64 pound organic compound per batch during furan resin production in R-2. At a restriction of 4 resin batches per day, both reactors will be able to comply with the 40 pound OC per day limitation.

#### B. Applicable Rules

OAC rule 3745-31-05: CRC proposes to restrict production to 4 batches per day both reactor R-1 (P004) and reactor R-2 (P016); use vapor balance on the liquid formaldehyde weigh tank, require continuous monitoring of the condenser outlet temperature to ensure proper cooling of the vapors during cook and reflux phases of phenol-formaldehyde resin production.

OAC rule 3745-21-07(G)(2): Based on emission calculations and testing and operating restrictions on each

reactor, the hourly and daily emission limitations should not be exceeded. During alkyd resin production in reactor R-2 (P004), CRC requires continuous monitoring of the thermal incinerator bed temperature to ensure 90% destruction efficiency of organic compounds across the bed.

OAC rule 3745-15-06: The R-2 reactor lost containment in 1995 with release of reactor content to the atmosphere. 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. Both reactors are now tied into the containment system.

### C. Miscellaneous

The maximum process weight rate is 1.2 ton/hr for P004, 1.25 ton/hr for P016

### D. Fee

Each reactor would be assessed a fee of \$400.00 based on the process weight rate under SIC code 2869.

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

## Permit To Install Synthetic Minor Write-Up

### Reactor R-1 (P004) & Reactor R-2 (P016)

- 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. During alkyd resin production in reactor R-1, CRC conducted Method 25 testing in March 1993 showing that organic compound emission had been reduced to 0.459 lb/hr over three test runs. As a result of Method 25a testing in reactor R-2 in November, 1996, CRC determined that methanol and formaldehyde emissions would be reduced by installing vapor balance on the weigh tank. Phenol and formaldehyde solutions are weighed in a vapor-balanced tank used for Reactor R-1 and R-2. CRC tested the R-2 reactor on November 20, 1997 and determined the maximum hourly formaldehyde emission at 0.37 lb OC/hr during formaldehyde

**NEW SOURCE REVIEW FORM B**

PTI Number: 01-08083

Facility ID: 0125040238

FACILITY NAME Capital Resin Corp

FACILITY DESCRIPTION Organic Chemical Manufacture

CITY/TWP Columbus

Emissions Unit ID: P016

loading. 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 FESOP Emissions (tons/year)
<b>Criteria Pollutants</b>		
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 potential to emit of 74.9 tons of OC, 9.5 tons of methanol, 6.1 tons of formaldehyde, 1.5 tons toluene and 19.3 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.

25 NEW SC

PTI Num

FACILITY

FACILITY DESCRIPTION Organic Chemical Manufacture

Emissions Unit ID: **P016** \_\_\_\_\_  
CITY/TWP Columbus

Please fill in the following for this permit:

**TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS**

<u>Pollutant</u>	<u>Tons Per Year</u>
Methanol	0.2
Formaldehyde	0.6
Organic Compounds	11.6