State of Ohio Environmental Protection Agency

**RE: PERMIT TO INSTALL DIRECT FINAL** **CERTIFIED MAIL**
**SUMMIT COUNTY**

Street Address: Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329 Mailing Address: Lazarus Gov. Center

**Application No: 16-1924**

**DATE:** June 3, 1999

Goodyear Tire & Rubber Company
Norman L Cable
142 Goodyear Boulevard
Akron, OH 44305

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, buy 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.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo

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

**cc: USEPA**
**AKRON REG AIR QUALITY MGMT**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**Permit To Install**

| Terms and Conditions | Issue Date: June 3, 1999<br>Effective Date: June 3, 1999 |
|---|---|

**DIRECT FINAL PERMIT TO INSTALL 16-1924**

| | |
|---|---|
| Application Number: | 16-1924 |
| APS Premise Number: | 1677010192 |
| Permit Fee: | **$600** |
| Name of Facility: | Goodyear Tire & Rubber Company |
| Person to Contact: | Norman L Cable |
| Address: | 142 Goodyear Boulevard<br>Akron, OH 44305 |

Location of proposed air contaminant source(s) [emissions unit(s)]:
**142 Goodyear Boulevard**
**Akron**, **OHIO**

Description of proposed emissions unit(s):
**THREE IDENTICAL BATCH DRYING UNITS TO DRY EXPERIMENTAL POLYMER SAMPLES.**

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

## 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 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 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**

| Pollutant | Tons Per Year |
|---|---|
| Photochemically reactive VOC's | 0.90 |
| Organic HAP's | 0.70 |
| Carbon monoxide | 2.00 |
| Nitrogen oxides | 1.00 |

**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.

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| Batch drying unit #1 to dry experimental polymer samples | OAC rule 3745-31-05 | See A.2.a.i and A.2.a.ii below. |
| | OAC rule 3745-21-07(G) | See A.2.c below. |
| | OAC rule 3745-35-07 | See A.2.b below. |

**2. Additional Terms and Conditions**

**2.a** The permittee shall vent the emissions of organic compounds from P072, P073, and P074 to a thermal oxidizer control system, located at the Goodyear Tire and Rubber Company's Research Facility at 142 Goodyear Boulevard in Akron, Ohio, which meets the following requirements:

**i.** Hourly emissions from the thermal oxidizer shall not exceed the following limits:

aa. photochemically reactive VOC's, 2.95 pounds per hour;
ab. organic HAP's, 2.27 pounds per hour;
ac. carbon monoxide, 0.46 pound per hour;
ad. nitrogen oxides, 0.23 pound per hour;

**ii.** Annual emissions from the thermal oxidizer shall not exceed the following limits:

aa. photochemically reactive VOC's, 0.90 ton per year;
ab. organic HAP's, 0.70 ton per year;
ac. carbon monoxide, 2.00 tons per year;

ad. nitrogen oxides, 1.00 ton per year;

**2.b** The emissions of hazardous air pollutants (HAPs) from this facility, as identified in Section 112(b) of Title III of the Clean Air Act, shall not exceed 10 TPY for any single HAP and 25 TPY for any combination of HAPs.

**2.c** The emissions limit based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05.

## B. Operational Restrictions

**1.** Each dryer (P072, P073, and P074) shall be totally closed and vented to the common thermal oxidizer, which shall be operated whenever organic compounds may be vented to it.

**2.** The exit temperature of each dryer (P072, P073, and P074) shall not exceed 200 degrees Fahrenheit.

**3.** The average temperature of the exhaust gases from the enclosed combustion device as measured at the thermocouple, for any 3-hour block of time, shall not be less than 1450 degrees Fahrenheit.

## C. Monitoring and/or Recordkeeping Requirements

**1.** The permittee shall operate and maintain a continuous temperature monitor and recorder which measures at the thermocouple location and records the temperature of the exhaust gases from the enclosed combustion device when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be specified by the manufacturer to be within (+) or (-) 1 percent of the temperature being measured or (+) 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.

The permittee shall record the following information for each day when the enclosed combustion device is in operation:

**a.** the average temperature of the exhaust gases from the enclosed combustion device during each of the eight 3-hour blocks of time during the day;

**b.** a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit; and,

**c.** requirements C.1.a and C.1.b above shall be satisfied by maintaining (1) a continuous paper chart temperature record of specified accuracy with date/time reference points or (2) a digital average temperature log for each three hour time block for each day of operation.

**2.** The permittee shall collect and record the following information for each day for the control equipment:

**a.** A log of the downtime for the capture (collection) system and control device when the associated emissions unit was in operation.

**b.** All 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than 1450 degrees Fahrenheit.

## D. Reporting Requirements

**1.** The permittee shall submit semi-annual temperature deviation (excursion) reports that identify all 3-hour blocks of time during which the average temperature of the exhaust gases from the enclosed combustion device does not comply with the temperature limitation specified in C.2 above. The reports shall be submitted by January 31 and July 31 of each year, and shall cover the previous six calendar months.

**2.** The permittee shall submit an annual summary of the log or record of operating time for the capture (collection) system, control device, and the associated emissions unit. The report shall be submitted by January 31 of each year and shall cover the operations for the previous twelve calendar months (January through December).

**3.** The permittee shall submit quarterly reports which include a log of the downtime for the capture (collection) system, control equipment, and temperature monitoring device, when the associated emissions unit was in operation (date, time, duration and reason), along with any corrective action(s) taken. The total operating time for the emissions unit shall also be included in the quarterly report. The reports shall be submitted by January 31, April 30, July 31, and October 31 of each year, and shall cover the previous calendar quarter.

**4.** The permittee shall submit an annual report of the following information for this emissions unit:

**a.** the number of polymer samples processed for this emission unit during the calendar year;

**b.** the actual emissions of VOC for the calendar year; and,

**c.** the actual emissions of total HAPs for the calendar year.

The report shall be submitted by January 31 of each year and shall cover the operations for the previous twelve calendar months (January through December).

## E. Testing Requirements

**1.** Compliance with the emission limitation(s) in A.2 above shall be determined in accordance with the following method(s):

**a.** Emission Limitation

2.95 pounds of photochemically reactive VOC's per hour and 0.90 ton of photochemically reactive VOC's per year.

Applicable Compliance Method

Compliance shall be based on the maximum safe drying capacity of three equal size batch drying units (P072, P073, and P074) operating at a maximum operating temperature, the effect of a regenerative thermal oxidizer which is guaranteed by the manufacturer to provide a 98% minimum VOC destruction efficiency, and an assumed 97% minimum capture efficiency.

To comply with the ton per year limitation, multiply the maximum safe drying unit loading for flammable volatiles of 57.71 pounds per batch per drying unit by the maximum amount of units drying simultaneously, 3, by the maximum operating hours of 8760 per year, by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]), and divide by the product of 2000 pounds per ton by the minimum batch drying cycle time of 42 hours.

The maximum hourly emissions rate is derived from the highest observed emissions rate data point in a set of experimental drying data for polymer solution samples which are representative of the type of samples which will be processed in these drying units. To comply with the pound per hour limitation, multiply the maximum hourly weight loss of flammable volatiles from three drying units of 59.07 pounds per hour by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]).

**b.** Emission Limitation

2.27 pounds of organic HAP's per hour and 0.70 ton of organic HAP's per year.

Applicable Compliance Method

Compliance shall be based on the maximum safe drying capacity of three equal size batch drying units (P072, P073, and P074) operating at a maximum operating temperature, the effect of a regenerative thermal oxidizer which is guaranteed by the manufacturer to provide a 98% minimum VOC destruction efficiency, and an assumed 97% minimum capture efficiency.

Organic HAPS emissions are based on supplier information which indicates that the organic solvent which is used to prepare the polymer solutions may contain up to 77% total HAPS.

To comply with the ton per year limitation, multiply 77% by the maximum safe drying unit

loading for flammable volatiles of 57.71 pounds per batch per drying unit by the maximum amount of units drying simultaneously, 3, by the maximum operating hours of 8760 per year, by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]), and divide by the product of 2000 pounds per ton by the minimum batch drying cycle time of 42 hours.

The maximum hourly emissions rate is derived from the highest observed emissions rate data point in a set of experimental drying data for polymer solution samples which are representative of the type of samples which will be processed in these drying units. To comply with the pound per hour limitation, multiply 77% by the maximum hourly weight loss of flammable volatiles from three drying units of 59.07 pounds per hour by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]).

**c.** Emission Limitation

0.46 pound of carbon monoxide per hour and 2.00 tons of carbon monoxide per year.

Applicable Compliance Method

Compliance shall be based on the manufacturer's performance guarantee that the regenerative thermal oxidizer will limit the discharge of carbon monoxide to 20 parts per million volume, and no volume correction for combustion products.

To comply with the ton per year limitation, multiply the volume limitation of 0.000020 by the maximum drying unit exhaust flow rate into the thermal oxidizer control device of 4800 actual cubic feet per minute by the quotient of the melting point (492, in degrees Rankine) divided by the incinerator inlet gas temperature (590, in degrees Rankine), by the molecular weight of 28 pounds per pound mole, by the conversion factor of 60 minutes per hour, by the maximum operating hours of 8760 per year, and divide by the product of the conversion factor of 2000 pounds per ton and the conversion factor of 359 standard cubic feet per pound mole at the melting point, and round upward to the nearest whole ton.

To comply with the pound per hour limitation, multiply the ton per year limitation by the conversion factor of 2000 pounds per ton, and divide by the maximum operating hours of 8760 per year.

**d.** Emission Limitation

0.23 pound of nitrogen oxides per hour and 1.00 ton of nitrogen oxides per year.

Applicable Compliance Method

Compliance shall be based on the manufacturer's performance guarantee that the regenerative thermal oxidizer will limit the discharge of nitrogen oxides to 5 parts per

million volume, and no volume correction for combustion products.

To comply with the ton per year limitation, multiply the volume limitation of 0.000005 by the maximum drying unit exhaust flow rate into the thermal oxidizer control device of 4800 actual cubic feet per minute by the quotient of the melting point (492, in degrees Rankine) divided by the incinerator inlet gas temperature (590, in degrees Rankine), by the molecular weight of 46 pounds per pound mole, by the conversion factor of 60 minutes per hour, by the maximum operating hours of 8760 per year, and divide by the product of the conversion factor of 2000 pounds per ton and the conversion factor of 359 standard cubic feet per pound mole at the melting point, and round upward to the nearest whole ton.

To comply with the pound per hour limitation, multiply the ton per year limitation by the conversion factor of 2000 pounds per ton, and divide by the maximum operating hours of 8760 per year.

## F. Miscellaneous Requirements

**1.** Pursuant to Engineering Guide #69, 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.

Emissions Unit ID: **P073**

## PART II: SPECIAL TERMS AND CONDITIONS

### 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.

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| Batch drying unit #2 to dry experimental polymer samples | OAC rule 3745-31-05 | See A.2.a.i and A.2.a.ii below. |
| | OAC rule 3745-21-07(G) | See A.2.c below. |
| | OAC rule 3745-35-07 | See A.2.b below. |

**2. Additional Terms and Conditions**

**2.a** The permittee shall vent the emissions of organic compounds from P072, P073, and P074 to a thermal oxidizer control system, located at the Goodyear Tire and Rubber Company's Research Facility at 142 Goodyear Boulevard in Akron, Ohio, which meets the following requirements:

**i.** Hourly emissions from the thermal oxidizer shall not exceed the following limits:

aa. photochemically reactive VOC's, 2.95 pounds per hour;
ab. organic HAP's, 2.27 pounds per hour;
ac. carbon monoxide, 0.46 pound per hour;
ad. nitrogen oxides, 0.23 pound per hour;

**ii.** Annual emissions from the thermal oxidizer shall not exceed the following limits:

aa. photochemically reactive VOC's, 0.90 ton per year;
ab. organic HAP's, 0.70 ton per year;
ac. carbon monoxide, 2.00 tons per year;
ad. nitrogen oxides, 1.00 ton per year;

**2.b** The emissions of hazardous air pollutants (HAPs) from this facility, as identified in Section 112(b) of Title III of the Clean Air Act, shall not exceed 10 TPY for any single HAP and 25 TPY for any combination of HAPs.

**2.c** The emissions limit based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05.

## B. Operational Restrictions

**1.** Each dryer (P072, P073, and P074) shall be totally closed and vented to the common thermal oxidizer, which shall be operated whenever organic compounds may be vented to it.

**2.** The exit temperature of each dryer (P072, P073, and P074) shall not exceed 200 degrees Fahrenheit.

**3.** The average temperature of the exhaust gases from the enclosed combustion device as measured at the thermocouple, for any 3-hour block of time, shall not be less than 1450 degrees Fahrenheit.

## C. Monitoring and/or Recordkeeping Requirements

**1.** The permittee shall operate and maintain a continuous temperature monitor and recorder which measures at the thermocouple location and records the temperature of the exhaust gases from the enclosed combustion device when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be specified by the manufacturer to be within (+) or (-) 1 percent of the temperature being measured or (+) 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.

The permittee shall record the following information for each day when the enclosed combustion device is in operation:

**a.** the average temperature of the exhaust gases from the enclosed combustion device during each of the eight 3-hour blocks of time during the day;

**b.** a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit; and,

**c.** requirements C.1.a and C.1.b above shall be satisfied by maintaining (1) a continuous

paper chart temperature record of specified accuracy with date/time reference points or (2) a digital average temperature log for each three hour time block for each day of operation.

**2.** The permittee shall collect and record the following information for each day for the control equipment:

**a.** A log of the downtime for the capture (collection) system and control device when the associated emissions unit was in operation.

**b.** All 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than 1450 degrees Fahrenheit.

## D. Reporting Requirements

**1.** The permittee shall submit semi-annual temperature deviation (excursion) reports that identify all 3-hour blocks of time during which the average temperature of the exhaust gases from the enclosed combustion device does not comply with the temperature limitation specified in C.2 above. The reports shall be submitted by January 31 and July 31 of each year, and shall cover the previous six calendar months.

**2.** The permittee shall submit an annual summary of the log or record of operating time for the capture (collection) system, control device, and the associated emissions unit. The report shall be submitted by January 31 of each year and shall cover the operations for the previous twelve calendar months (January through December).

**3.** The permittee shall submit quarterly reports which include a log of the downtime for the capture (collection) system, control equipment, and temperature monitoring device, when the associated emissions unit was in operation (date, time, duration and reason), along with any corrective action(s) taken. The total operating time for the emissions unit shall also be included in the quarterly report. The reports shall be submitted by January 31, April 30, July 31, and October 31 of each year, and shall cover the previous calendar quarter.

**4.** The permittee shall submit an annual report of the following information for this emissions unit:

**a.** the number of polymer samples processed for this emission unit during the calendar year;

**b.** the actual emissions of VOC for the calendar year; and,

**c.** the actual emissions of total HAPs for the calendar year.

The report shall be submitted by January 31 of each year and shall cover the operations for the previous twelve calendar months (January through December).

## E. Testing Requirements

**1.** Compliance with the emission limitation(s) in A.2 above shall be determined in accordance with the following method(s):

**a.** Emission Limitation

2.95 pounds of photochemically reactive VOC's per hour and 0.90 ton of photochemically reactive VOC's per year.

Applicable Compliance Method

Compliance shall be based on the maximum safe drying capacity of three equal size batch drying units (P072, P073, and P074) operating at a maximum operating temperature, the effect of a regenerative thermal oxidizer which is guaranteed by the manufacturer to provide a 98% minimum VOC destruction efficiency, and an assumed 97% minimum capture efficiency.

To comply with the ton per year limitation, multiply the maximum safe drying unit loading for flammable volatiles of 57.71 pounds per batch per drying unit by the maximum amount of units drying simultaneously, 3, by the maximum operating hours of 8760 per year, by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]), and divide by the product of 2000 pounds per ton by the minimum batch drying cycle time of 42 hours.

The maximum hourly emissions rate is derived from the highest observed emissions rate data point in a set of experimental drying data for polymer solution samples which are representative of the type of samples which will be processed in these drying units. To comply with the pound per hour limitation, multiply the maximum hourly weight loss of flammable volatiles from three drying units of 59.07 pounds per hour by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]).

**b.** Emission Limitation

2.27 pounds of organic HAP's per hour and 0.70 ton of organic HAP's per year.

Applicable Compliance Method

Compliance shall be based on the maximum safe drying capacity of three equal size batch drying units (P072, P073, and P074) operating at a maximum operating temperature, the effect of a regenerative thermal oxidizer which is guaranteed by the manufacturer to provide a 98% minimum VOC destruction efficiency, and an assumed 97% minimum capture efficiency.

Organic HAPS emissions are based on supplier information which indicates that the organic solvent which is used to prepare the polymer solutions may contain up to 77% total HAPS.

To comply with the ton per year limitation, multiply 77% by the maximum safe drying unit

loading for flammable volatiles of 57.71 pounds per batch per drying unit by the maximum amount of units drying simultaneously, 3, by the maximum operating hours of 8760 per year, by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]), and divide by the product of 2000 pounds per ton by the minimum batch drying cycle time of 42 hours.

The maximum hourly emissions rate is derived from the highest observed emissions rate data point in a set of experimental drying data for polymer solution samples which are representative of the type of samples which will be processed in these drying units. To comply with the pound per hour limitation, multiply 77% by the maximum hourly weight loss of flammable volatiles from three drying units of 59.07 pounds per hour by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]).

**c.** Emission Limitation

0.46 pound of carbon monoxide per hour and 2.00 tons of carbon monoxide per year.

Applicable Compliance Method

Compliance shall be based on the manufacturer's performance guarantee that the regenerative thermal oxidizer will limit the discharge of carbon monoxide to 20 parts per million volume, and no volume correction for combustion products.

To comply with the ton per year limitation, multiply the volume limitation of 0.000020 by the maximum drying unit exhaust flow rate into the thermal oxidizer control device of 4800 actual cubic feet per minute by the quotient of the melting point (492, in degrees Rankine) divided by the incinerator inlet gas temperature (590, in degrees Rankine), by the molecular weight of 28 pounds per pound mole, by the conversion factor of 60 minutes per hour, by the maximum operating hours of 8760 per year, and divide by the product of the conversion factor of 2000 pounds per ton and the conversion factor of 359 standard cubic feet per pound mole at the melting point, and round upward to the nearest whole ton.

To comply with the pound per hour limitation, multiply the ton per year limitation by the conversion factor of 2000 pounds per ton, and divide by the maximum operating hours of 8760 per year.

**d.** Emission Limitation

0.23 pound of nitrogen oxides per hour and 1.00 ton of nitrogen oxides per year.

Applicable Compliance Method

Compliance shall be based on the manufacturer's performance guarantee that the regenerative thermal oxidizer will limit the discharge of nitrogen oxides to 5 parts per

million volume, and no volume correction for combustion products.

To comply with the ton per year limitation, multiply the volume limitation of 0.000005 by the maximum drying unit exhaust flow rate into the thermal oxidizer control device of 4800 actual cubic feet per minute by the quotient of the melting point (492, in degrees Rankine) divided by the incinerator inlet gas temperature (590, in degrees Rankine), by the molecular weight of 46 pounds per pound mole, by the conversion factor of 60 minutes per hour, by the maximum operating hours of 8760 per year, and divide by the product of the conversion factor of 2000 pounds per ton and the conversion factor of 359 standard cubic feet per pound mole at the melting point, and round upward to the nearest whole ton.

To comply with the pound per hour limitation, multiply the ton per year limitation by the conversion factor of 2000 pounds per ton, and divide by the maximum operating hours of 8760 per year.

## F. Miscellaneous Requirements

**1.** Pursuant to Engineering Guide #69, 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.

Emissions Unit ID: **P074**

## PART II: SPECIAL TERMS AND CONDITIONS

### 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.

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| Batch drying unit #3 to dry experimental polymer samples | OAC rule 3745-31-05 | See A.2.a.i and A.2.a.ii below. |
| | OAC rule 3745-21-07(G) | See A.2.c below. |
| | OAC rule 3745-35-07 | See A.2.b below. |

**2. Additional Terms and Conditions**

**2.a** The permittee shall vent the emissions of organic compounds from P072, P073, and P074 to a thermal oxidizer control system, located at the Goodyear Tire and Rubber Company's Research Facility at 142 Goodyear Boulevard in Akron, Ohio, which meets the following requirements:

**i.** Hourly emissions from the thermal oxidizer shall not exceed the following limits:

aa. photochemically reactive VOC's, 2.95 pounds per hour;
ab. organic HAP's, 2.27 pounds per hour;
ac. carbon monoxide, 0.46 pound per hour;
ad. nitrogen oxides, 0.23 pound per hour;

**ii.** Annual emissions from the thermal oxidizer shall not exceed the following limits:

aa. photochemically reactive VOC's, 0.90 ton per year;
ab. organic HAP's, 0.70 ton per year;
ac. carbon monoxide, 2.00 tons per year;
ad. nitrogen oxides, 1.00 ton per year;

**2.b** The emissions of hazardous air pollutants (HAPs) from this facility, as identified in Section 112(b) of Title III of the Clean Air Act, shall not exceed 10 TPY for any single HAP and 25 TPY for any combination of HAPs.

**2.c** The emissions limit based on this applicable rule is less stringent than the limit established pursuant to OAC rule 3745-31-05.

## B. Operational Restrictions

**1.** Each dryer (P072, P073, and P074) shall be totally closed and vented to the common thermal oxidizer, which shall be operated whenever organic compounds may be vented to it.

**2.** The exit temperature of each dryer (P072, P073, and P074) shall not exceed 200 degrees Fahrenheit.

**3.** The average temperature of the exhaust gases from the enclosed combustion device as measured at the thermocouple, for any 3-hour block of time, shall not be less than 1450 degrees Fahrenheit.

## C. Monitoring and/or Recordkeeping Requirements

**1.** The permittee shall operate and maintain a continuous temperature monitor and recorder which measures at the thermocouple location and records the temperature of the exhaust gases from the enclosed combustion device when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be specified by the manufacturer to be within (+) or (-) 1 percent of the temperature being measured or (+) 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.

The permittee shall record the following information for each day when the enclosed combustion device is in operation:

**a.** the average temperature of the exhaust gases from the enclosed combustion device during each of the eight 3-hour blocks of time during the day;

**b.** a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit; and,

**c.** requirements C.1.a and C.1.b above shall be satisfied by maintaining (1) a continuous

paper chart temperature record of specified accuracy with date/time reference points or (2) a digital average temperature log for each three hour time block for each day of operation.

**2.** The permittee shall collect and record the following information for each day for the control equipment:

**a.** A log of the downtime for the capture (collection) system and control device when the associated emissions unit was in operation.

**b.** All 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than 1450 degrees Fahrenheit.

## D. Reporting Requirements

**1.** The permittee shall submit semi-annual temperature deviation (excursion) reports that identify all 3-hour blocks of time during which the average temperature of the exhaust gases from the enclosed combustion device does not comply with the temperature limitation specified in C.2 above. The reports shall be submitted by January 31 and July 31 of each year, and shall cover the previous six calendar months.

**2.** The permittee shall submit an annual summary of the log or record of operating time for the capture (collection) system, control device, and the associated emissions unit. The report shall be submitted by January 31 of each year and shall cover the operations for the previous twelve calendar months (January through December).

**3.** The permittee shall submit quarterly reports which include a log of the downtime for the capture (collection) system, control equipment, and temperature monitoring device, when the associated emissions unit was in operation (date, time, duration and reason), along with any corrective action(s) taken. The total operating time for the emissions unit shall also be included in the quarterly report. The reports shall be submitted by January 31, April 30, July 31, and October 31 of each year, and shall cover the previous calendar quarter.

**4.** The permittee shall submit an annual report of the following information for this emissions unit:

**a.** the number of polymer samples processed for this emission unit during the calendar year;

**b.** the actual emissions of VOC for the calendar year; and,

**c.** the actual emissions of total HAPs for the calendar year.

The report shall be submitted by January 31 of each year and shall cover the operations for the previous twelve calendar months (January through December).

## E. Testing Requirements

**1.** Compliance with the emission limitation(s) in A.2 above shall be determined in accordance with the following method(s):

**a.** Emission Limitation

2.95 pounds of photochemically reactive VOC's per hour and 0.90 ton of photochemically reactive VOC's per year.

Applicable Compliance Method

Compliance shall be based on the maximum safe drying capacity of three equal size batch drying units (P072, P073, and P074) operating at a maximum operating temperature, the effect of a regenerative thermal oxidizer which is guaranteed by the manufacturer to provide a 98% minimum VOC destruction efficiency, and an assumed 97% minimum capture efficiency.

To comply with the ton per year limitation, multiply the maximum safe drying unit loading for flammable volatiles of 57.71 pounds per batch per drying unit by the maximum amount of units drying simultaneously, 3, by the maximum operating hours of 8760 per year, by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]), and divide by the product of 2000 pounds per ton by the minimum batch drying cycle time of 42 hours.

The maximum hourly emissions rate is derived from the highest observed emissions rate data point in a set of experimental drying data for polymer solution samples which are representative of the type of samples which will be processed in these drying units. To comply with the pound per hour limitation, multiply the maximum hourly weight loss of flammable volatiles from three drying units of 59.07 pounds per hour by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]).

**b.** Emission Limitation

2.27 pounds of organic HAP's per hour and 0.70 ton of organic HAP's per year.

Applicable Compliance Method

Compliance shall be based on the maximum safe drying capacity of three equal size batch drying units (P072, P073, and P074) operating at a maximum operating temperature, the effect of a regenerative thermal oxidizer which is guaranteed by the manufacturer to provide a 98% minimum VOC destruction efficiency, and an assumed 97% minimum capture efficiency.

Organic HAPS emissions are based on supplier information which indicates that the organic solvent which is used to prepare the polymer solutions may contain up to 77% total HAPS.

To comply with the ton per year limitation, multiply 77% by the maximum safe drying unit

loading for flammable volatiles of 57.71 pounds per batch per drying unit by the maximum amount of units drying simultaneously, 3, by the maximum operating hours of 8760 per year, by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]), and divide by the product of 2000 pounds per ton by the minimum batch drying cycle time of 42 hours.

The maximum hourly emissions rate is derived from the highest observed emissions rate data point in a set of experimental drying data for polymer solution samples which are representative of the type of samples which will be processed in these drying units. To comply with the pound per hour limitation, multiply 77% by the maximum hourly weight loss of flammable volatiles from three drying units of 59.07 pounds per hour by the overall control efficiency, which is the product of the 98% minimum destruction efficiency and the 97% minimum capacity (1 - [0.98 x 0.97]).

**c.** Emission Limitation

0.46 pound of carbon monoxide per hour and 2.00 tons of carbon monoxide per year.

Applicable Compliance Method

Compliance shall be based on the manufacturer's performance guarantee that the regenerative thermal oxidizer will limit the discharge of carbon monoxide to 20 parts per million volume, and no volume correction for combustion products.

To comply with the ton per year limitation, multiply the volume limitation of 0.000020 by the maximum drying unit exhaust flow rate into the thermal oxidizer control device of 4800 actual cubic feet per minute by the quotient of the melting point (492, in degrees Rankine) divided by the incinerator inlet gas temperature (590, in degrees Rankine), by the molecular weight of 28 pounds per pound mole, by the conversion factor of 60 minutes per hour, by the maximum operating hours of 8760 per year, and divide by the product of the conversion factor of 2000 pounds per ton and the conversion factor of 359 standard cubic feet per pound mole at the melting point, and round upward to the nearest whole ton.

To comply with the pound per hour limitation, multiply the ton per year limitation by the conversion factor of 2000 pounds per ton, and divide by the maximum operating hours of 8760 per year.

**d.** Emission Limitation

0.23 pound of nitrogen oxides per hour and 1.00 ton of nitrogen oxides per year.

Applicable Compliance Method

Compliance shall be based on the manufacturer's performance guarantee that the regenerative thermal oxidizer will limit the discharge of nitrogen oxides to 5 parts per

million volume, and no volume correction for combustion products.

To comply with the ton per year limitation, multiply the volume limitation of 0.000005 by the maximum drying unit exhaust flow rate into the thermal oxidizer control device of 4800 actual cubic feet per minute by the quotient of the melting point (492, in degrees Rankine) divided by the incinerator inlet gas temperature (590, in degrees Rankine), by the molecular weight of 46 pounds per pound mole, by the conversion factor of 60 minutes per hour, by the maximum operating hours of 8760 per year, and divide by the product of the conversion factor of 2000 pounds per ton and the conversion factor of 359 standard cubic feet per pound mole at the melting point, and round upward to the nearest whole ton.

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## F. Miscellaneous Requirements

**1.** Pursuant to Engineering Guide #69, 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.