

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**BTR Antivibration Systems USA
U.S. Highway 31 and County Road 100N
Peru, Indiana 46970**

is hereby authorized to construct

a modification to the existing automobile vibration isolation rubber components manufacturing plant, consisting of the following equipment:

- (a) one (1) primer spray booth, using a high volume low pressure (HVLP) spray application system, coating a maximum of 1800 metal or rubber antivibration components per hour, with dry filters for particulate matter overspray control, exhausting through one (1) stack (Stack No. 1);
- (b) one (1) adhesive spray booth, using a high volume low pressure (HVLP) spray application system, coating a maximum of 1800 metal or rubber antivibration components per hour, with dry filters for particulate matter overspray control, exhausting through one (1) stack (Stack No. 2); and
- (c) three (3) electric infrared ovens, each rated at 30 kilowatts (KW), two (2) of which are used for drying the primer and adhesive and one (1) of which is used to preheat the molded rubber parts when a water based adhesive is used, all exhausting through one (1) stack (Stack No. 3).

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-103-9550-00021	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees)
 - (e) The Permittee has submitted their Part 70 permit application (T-103-7638-00021) on December 13, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
 - (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
 - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
 - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
 - (a) In the event that ownership of this automobile vibration isolation rubber components manufacturing operation is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
 - (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
 - (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:
 - (a) Violation of any conditions of this permit.

- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM or other public official having jurisdiction.

Annual Emission Reporting

7. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

Opacity Limitations

8. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:
- (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
 - (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

Fugitive Dust Emissions

9. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].
10. That pursuant to 326 IAC 6-3 (Process Operations):
- (a) The dry filters for particulate matter overspray control shall be in operation at all times when the primer spray booth and the adhesive spray booth are in operation.

- (b) The two (2) spray booths shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour,} \\ P = \text{process weight in tons per hour.}$$

- (c) Daily inspections shall be performed to verify the placement, integrity and particulate loading of the filters.
- (d) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

BACT/MACT Condition

11. That pursuant to 326 IAC 8-1-6 and 326 IAC 2-1-3.4, the Best Available Control Technology (BACT) and Maximum Achievable Control Technology (MACT) for the coating of rubber parts in the primer spray booth and the adhesive spray booth is no VOC control with the following work place practices:

- (a) BTR will apply all coatings utilizing a spray gun with HVLP or air atomization spray applicators.
- (b) All operators will be trained on proper application, cleanup, and equipment use.
- (c) Storage containers - when such containers are used for VOC and HAPs or VOC and HAP containing materials, they will be kept covered when not in use.

The HVLP spray equipment and the work practices listed above shall be used at all times that the primer spray booth and the adhesive spray booth are in operation. The total amount of VOC delivered to the applicators in the primer spray booth and the adhesive spray booth shall not exceed 30.1 tons per twelve (12) consecutive month period, rolled on a monthly basis.

Open Burning

12. That the permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

Emergency Reduction Plans

13. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on June 11, 1997.
- (b) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM shall supply such a plan.
- (c) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (d) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

- (e) Upon direct notification by IDEM, OAM that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

Recordkeeping Requirements

- 14. A log of information necessary to document compliance with operation condition no. 11 shall be maintained. These records shall be kept for at least the past 36 month period and made available upon request to the Office of Air Management (OAM). These records shall include the coating, thinner and clean up solvent usage in the primer spray booth and the adhesive spray booth, material safety data sheet (MSDS) and the date of use.

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: BTR Antivibration Systems USA
 Source Location: U.S. Highway 31 and County Road 100 North
 Peru, Indiana 46970
 County: Miami
 Construction Permit No.: CP-103-9550-00021
 SIC Code: 3069
 Permit Reviewer: Trish Earls/EVP

The Office of Air Management (OAM) has reviewed an application from BTR Antivibration Systems USA relating to the construction and operation of a modification to the existing automobile vibration isolation rubber components manufacturing plant, consisting of the following equipment:

- (a) one (1) primer spray booth, using a high volume low pressure (HVLP) spray application system, coating a maximum of 1800 metal or rubber antivibration components per hour, with dry filters for particulate matter overspray control, exhausting through one (1) stack (Stack No. 1);
- (b) one (1) adhesive spray booth, using a high volume low pressure (HVLP) spray application system, coating a maximum of 1800 metal or rubber antivibration components per hour, with dry filters for particulate matter overspray control, exhausting through one (1) stack (Stack No. 2); and
- (c) three (3) electric infrared ovens, each rated at 30 kilowatts (KW), two (2) of which are used for drying the primer and adhesive and one (1) of which is used to preheat the molded rubber parts when a water based adhesive is used, all exhausting through one (1) stack (Stack No. 3).

Note: The two (2) surface coating spray booths are replacing an existing spray coater and dip coater which are currently listed in the Part 70 Permit application (T-103-7638-00021) submitted by BTR Antivibration Systems USA on December 13, 1996.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
1	Primer Booth	46	1.5	7,642	75
2	Adhesive Booth	46	1.5	8,189	75
3	IR Ovens	46	1.5	22,800	150

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on March 10, 1998.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations (2 pages).

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	--	5.17
Particulate Matter (PM10)	--	5.17
Sulfur Dioxide (SO ₂)	--	0.0
Volatile Organic Compounds (VOC)	--	30.06
Carbon Monoxide (CO)	--	0.0
Nitrogen Oxides (NO _x)	--	0.0
Single Hazardous Air Pollutant (HAP)	--	8.71
Combination of HAPs	--	30.06

- (a) The potential emissions before control are used for the permitting determination.
- (b) Allowable emissions (as defined in the Indiana Rule) of VOC are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.
- (c) Allowable emissions (as defined in the Indiana Rule) of any combination of the HAPs are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, a construction permit is required.

However, this construction permit is required because of the requirements of 326 IAC 2-1, Sections 1 and 3.

County Attainment Status

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Miami County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Miami County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD Definition (emissions after controls, based on existing permits, CP 103-1960-00021 issued on September 27, 1991, CP 103-3016-00021 issued on January 14, 1994, Registered Letter CP 103-2979-00021, and CP 103-8682-00021 issued on November 17, 1997):

Pollutant	Emissions (ton/yr)
PM	27.8
PM10	27.6
SO ₂	0.1
VOC	120.2
CO	2.8
NO _x	13.1

- (a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification	0.78	0.78	0.0	30.06	0.0	0.0
PSD Threshold Level	250	250	250	250	250	250

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-103-7638-00021) application on December 13, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63, applicable to this facility.

State Rule Applicability

326 IAC 2-1-3.4 (New Source Toxics Control)

326 IAC 2-1-3.4 applies to new or reconstructed facilities with potential emissions of any single HAP equal or greater than ten (10) tons per year and potential emissions of a combination of HAPs greater than or equal to twenty-five (25) tons per year. The primer spray booth and the adhesive spray booth are in series and are considered one facility. Potential emissions of the combination of HAPs from these two (2) spray booths is greater than 25 tons per year, therefore, this rule applies to these two (2) booths. Pursuant to this rule, HAP emissions from the primer spray booth and the adhesive spray booth, which is a major facility for HAPs, must be controlled consistent with Maximum Achievable Control Technology (MACT). BTR Antivibration Systems USA has submitted a BACT/MACT analysis for the primer spray booth and the adhesive spray booth to satisfy the requirements of this rule and 326 IAC 8-1-6 (New Facilities, General Reduction Requirements). The control technology determined to be MACT must achieve a level of control at least as stringent as the emission control that is achieved in practice by the best controlled similar source. Pursuant to 326 IAC 2-1-3.4(c)(3)(A) and 40 CFR 63.43(d), a search of state and federal control technology determinations was initiated. No federal or state determinations applicable to this facility were found. Therefore, the BACT determination submitted with this application will also serve as MACT. MACT for the two (2) spray booths has been determined to be no VOC emission control with the following work practices:

- (a) BTR will apply all coatings utilizing a spray gun with HVLP or air atomization spray applicators.
- (b) All operators will be trained on proper application, cleanup, and equipment use.
- (c) Storage containers - when such containers are used for HAP or HAP containing materials, they will be kept covered when not in use.

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 100 tons per year of VOC. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions shall meet the following, unless otherwise stated in this permit:

- (a) Visible emissions shall not exceed an average of forty percent (40%) opacity in twenty-four (24) consecutive readings as determined by 326 IAC 5-1-4,
- (b) Visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) overspray from the primer spray booth and the adhesive spray booth shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

This source will comply with the requirements of 326 IAC 6-3-2 by using dry filters for PM overspray control in each of the spray booths.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)

The coating of metal or rubber parts in the primer spray booth and the adhesive spray booth are subject to the provisions of 326 IAC 8-1-6. This rule requires all facilities constructed after January 1, 1980, which have potential VOC emission rates of 25 or more tons per year, and which are not otherwise regulated by other provisions of 326 IAC 8, to reduce VOC emissions using Best Available Control Technology (BACT). Potential VOC emissions from the primer spray booth and the adhesive spray booth are 30.06 tons per year. Since the potential VOC emissions are greater than 25 tons per year, the requirements of 326 IAC 8-1-6 apply.

BTR Antivibration Systems USA has submitted a BACT analysis as part of this permit application.

The options considered in the BACT analysis for the primer spray booth and the adhesive spray booth are:

- (1) Thermal Incineration
- (2) Catalytic Incineration
- (3) Regenerative Thermal Oxidation
- (4) No Control With Work Place Practices

The above control options, which were the only options found to be technically feasible, were analyzed based on an air flow requirement of 38,000 cfm to adequately capture VOC emissions. The costs associated with the control technologies were obtained from the "Office of Air Quality Planning and Standards (OAQPS) Cost Manual, Fifth Edition, EPA 453/B-96-001, February 1996." The costs are 1988 prices so the figures were adjusted for inflation and then utilized. A cost analysis was performed to determine the economic feasibility of the above listed control technologies for the VOC emissions from the primer spray booth and the adhesive spray booth. The cost analysis is based on potential VOC emissions of 30.06 tons per year.

The tables below show the results of the cost analysis.

(A)

Capital Cost

Option	Base Price	Direct Cost	Indirect Cost	Total
Thermal Incineration	720,000	936,000	133,200	1,789,200
Catalytic Incineration	1,074,509	1,396,861	198,784	2,670,154
Regenerative Thermal Oxidation	1,128,234	1,466,704	208,723	2,803,661
No Control w/ Work Practices	0	0	0	0

(B)

Annual Operating, Maintenance & Recovery Cost

Option	Direct Cost	Indirect Cost ⁽¹⁾	Capital Recovery Cost	Total
Thermal Incineration	13,100	1,202,400	1,069,200	1,215,500
Catalytic Incineration	13,100	1,794,430	1,595,646	2,007,530
Regenerative Thermal Oxidation	13,100	1,884,150	1,675,427	1,897,250
No Control w/ Work Practices	0	0	0	0

(1) Indirect Cost includes Capital Recovery Cost

(C) Evaluation

Option	Potential Emissions (tons/yr)	Emissions Removed (tons/yr)	Control Efficiency (%)	\$/ton Removed
Thermal Incineration	30.1	28.6	95	42,500
Catalytic Incineration	30.1	28.6	95	70,193
Regenerative Thermal Oxidation	30.1	28.6	95	66,337
No Control w/ Work Practices	30.1	0	0	0

Methodology:

Emissions removed = (limited potential emissions from warehouse) * (control efficiency)

\$/ton removed = total annual cost / emissions removed

The cost breakdown is as follows:

1. Capital Cost
 - a) Base price: purchase price, auxiliary equipment, instruments, controls, taxes and freight.
 - b) Direct installation cost: foundations/supports, erection/handling, electrical, piping, insulation, painting, site preparation and building/facility.
 - c) Indirect installation cost: engineering, supervision, construction/filed expenses, construction fee, start up, performance test, model study and contingencies.

2. Annual Cost
 - a) Direct operating cost: operating labor (operator, supervisor), labor and material maintenance, operating materials, utilities (electricity, gas).
 - b) Indirect operating cost: overhead, property tax, insurance, administration and capital recovery cost (for 10 years life of the system at 10% interest rate).

Based on the above cost analysis, thermal incineration, catalytic incineration, and regenerative thermal oxidation were found to be economically infeasible. Therefore, BACT for the coating of metal or rubber parts in the primer spray booth and the adhesive spray booth is no VOC control with the following work place practices:

- (a) BTR will apply all coatings utilizing a spray gun with HVLP or air atomization spray applicators.
- (b) All operators will be trained on proper application, cleanup, and equipment use.
- (c) Storage containers - when such containers are used for VOC or VOC containing materials, they will be kept covered when not in use.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

The coating of metal parts in the primer spray booth and the adhesive spray booth is not subject to the requirements of 326 IAC 8-2-9, because the spray booths, which are classified under the Standard Industrial Classification (SIC) code 3069, do not coat metal parts or products under the SIC codes of major groups #33, #34, #35, #36, #37, #38, and #39.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 189 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) This proposed modification will emit levels of air toxics greater than those that constitute major source applicability according to Section 112 of the Clean Air Act. The concentrations of these air toxics were modeled and found to be (in worst case possible) as follows: The concentrations of these air toxics were compared to the Permissible Exposure Limits (PEL) developed by the Occupational Safety and Health Administration (OSHA).

Air Toxics Analysis

Pollutant	Rate (lb/hr)	Rate @ 8,760 hr/yr (ton/yr)	Modeled Concentration (Fg/m ³)	OSHA PEL (Fg/m ³)	% OSHA PEL
Ethylbenzene	0.29	1.29	6.77	435,000	0.00
Xylene	1.55	6.77	35.49	435,000	0.01
MIBK	1.09	4.78	26.04	410,000	0.01
Formaldehyde	0.02	0.08	0.44	930	0.05
MEK	1.99	8.71	47.46	590,000	0.01
Toluene	1.92	8.43	43.82	752,000	0.01

Methodology:

Rate ton/yr = (rate lb/hr)*(hr/yr of operation)*(ton/2000 lbs)

- (b) See attached spreadsheets for detailed air toxic calculations (Page 2 of 2 TSD App. A)

Conclusion

The construction of this modification consisting of the addition of two (2) spray booths and three (3) IR ovens will be subject to the conditions of the attached proposed **Construction Permit No. CP-103-9550-00021**.

Appendix A: Emission Calculations VOC and Particulate From Surface Coating

Company Name: BTR Antivibration Systems USA
Address City IN Zip: U.S. Highway 31 and County Road 100N, Peru, IN 46970
CP: 103-9550
Plt ID: 103-00021
Reviewer: Trish Earls
Date: March 31, 1998

State Potential Emissions (uncontrolled):																	
Material (as applied)	Density (Lb/Gal)	Weight % Volatile (H2O& Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential ton/yr	lb VOC /gal solids	Transfer Efficiency	
Primer Booth																	
Chemlok 205	7.27	87.85%	0.0%	87.9%	0.0%	7.50%	0.00030	1800.0	6.39	6.39	3.43	82.22	15.01	1.87	85.16	10%	
Adhesive Booth																	
Chemlok 6887-35	7.97	80.42%	0.0%	80.4%	0.0%	15.90%	0.00030	1800.0	6.41	6.41	3.44	82.51	15.06	3.30	40.31	10%	
Total State Potential Emissions:											6.86	164.73	30.06	5.17			
Federal Potential Emissions (controlled):																	
										Control Efficiency:		Controlled VOC lbs per Hour	Controlled VOC lbs per Day	Controlled VOC tons per Year	Controlled PM tons/yr		
										VOC	PM						
Total Federal Potential Emissions:										N/A	85.00%	6.86	164.73	30.06	0.78		

Methodology:

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)

Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)

Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids) * Transfer Efficiency

Total = Sum of all coatings used

Controlled emission rate = uncontrolled emission rate * (1 - control efficiency)

**Appendix A: Emission Calculations
HAP Emission Calculations**

Company Name: BTR Antivibration Systems USA
Address City IN Zip: U.S. Highway 31 and County Road 100N, Peru, IN 46970
CP: 103-9550
Pit ID: 103-00021
Reviewer: Trish Earls
Date: March 31, 1998

Material	Booth I.D.	Density (Lb/Gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Weight % Ethylbenzene	Weight % Xylene	Weight % MIBK	Weight % Formaldehyde	Weight % MEK	Weight % Toluene	Ethylbenzene Emissions (ton/yr)	Xylene Emissions (ton/yr)	MIBK Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	MEK Emissions (ton/yr)	Toluene Emissions (ton/yr)
Chemlok 205	Primer Booth	7.27	0.00030	1800.00	1.40%	6.99%	27.99%	0.47%	51.00%	0.00%	0.24	1.19	4.78	0.08	8.71	0.00
Chemlok 6887-35	Adhesive Booth	7.97	0.00030	1800.00	5.60%	29.81%	0.00%	0.00%	0.00%	45.01%	1.05	5.58	0.00	0.00	0.00	8.43
											1.29	6.78	4.78	0.08	8.71	8.43

30.06

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs
 Total = Sum of all coatings used.