



**State of Ohio Environmental Protection Agency**

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Ted Strickland  
**Governor**

**Director**

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**EVALUATION OF INFECTIOUS WASTE TREATMENT TECHNOLOGY  
INFORMATION REQUEST FORM**

Please complete the following application and return it to the Ohio EPA, Division of Solid and Infectious Waste Management, Infectious Waste Unit, P.O. Box 1049 Columbus, Ohio 43216-1049. Along with this information request form, please include any additional support data which may be applicable. Use additional paper if necessary and reference the information with the related section and number.

**APPLICANT:**

Name of contact person		
Name of Company		
City	State	Zip
Telephone number		

**TREATMENT UNIT:**

Trade name of treatment unit	Model number
Method of treatment	
Capacity	

**OFFICE USE ONLY:**

Date received	Initial review	Secondary review	Date completed
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**A. GENERAL**

1. Is the alternative treatment technology best suited for on-site use at the point of generation, or is it adaptable for use as a commercial or regional infectious waste treatment facility recycling waste from multiple generators?

On-site                       Off-site (Commercial)                       Both

2. Is this treatment technology specified for use at small generator facilities such as physician, dental, or veterinary offices or clinics?

Yes                       No

3. Has this alternative treatment technology been approved, disapproved, or is currently under consideration in any other State? If so, please also indicate which states have issued a decision and submit copies or approvals, disapprovals, correspondence and the name of the contact person in each state.

4. It is the applicant's responsibility to obtain information regarding permitting requirements. Have the permit sections of the following Ohio EPA divisions been contacted regarding permit requirements?

- a. Division of Air Pollution Control (614-644-2270)                       No                       Yes
- b. Division of Surface Water (614-644-2001)                       No                       Yes
- c. Division of Hazardous Waste Management (614-644-2917)                       No                       Yes

\* If yes to any of the above, please indicate the Office location, Division, and the name of your contact person.

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5. Does the treated infectious waste meet the definition of solid waste as defined in Paragraph (III) of Chapter 3745-27-01 of the Ohio Administrative Code and not contain residual liquids as determined by the paint filter test, Method 9095 in US EPA: "Test methods for Evaluating Solid Wastes, Laboratory Manual Physical/Chemical Methods"; SW-846, Vol 1B."?

No                       Yes

6. Have any citations of violation been issued by OSHA, NRC, or other regulating agency to any owner/operator, in any state, due to by-products, end-products, treated waste, or off-gases of treatment technology for non-compliance with the respective regulations.

No                       Yes. Please provide copy(ies) of citation(s).

**B. LEVEL OF TREATMENT:**

1. Does the level of microbial inactivation achieved by this treatment process meet Ohio's infectious waste treatment standard of either the:

a. Site-specific approval requirement of 4 log<sub>10</sub> reduction of a challenge population of Bacillus spp. spores.

\_\_\_\_\_ No                      \_\_\_\_\_ Yes

b. Statewide approval requirement of a 4 log<sub>10</sub> reduction of a challenge population of bacterial spores and a 5 log<sub>10</sub> reduction of a challenge population of mycobacteria.

\_\_\_\_\_ No                      \_\_\_\_\_ Yes

If No to either of the above, specify where the definition is unfulfilled. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**C. CHARACTERIZATION OF PROPOSED TREATMENT PROCESS:**

1. Please check the appropriate categories that best describe the methods of this proposed technology. Proposed treatment technologies may incorporate several of the categories listed below.

- |                                      |                                      |                   |
|--------------------------------------|--------------------------------------|-------------------|
| _____ Chemical                       | _____ Dry Heat                       | _____ Plasma Arc  |
| _____ Encapsulation                  | _____ Moist Heat                     | _____ Irradiation |
| _____ Pressurized                    | _____ Non-ionizing Radiation (macro) | _____ Shredder    |
| _____ Mechanical                     | _____ Hammermill                     | _____ Grinder     |
| _____ Non-ionizing radiation (micro) | _____ Other _____                    |                   |

**D. WASTE COMPATIBILITY WITH PROPOSED TREATMENT PROCESS:**

Please identify if the proposed system is compatible or non-compatible with the following types of waste.

Type of Waste	Compatible	Non-compatible
1. Cultures and stocks of infectious agents and associated biologicals	_____	_____
2. Liquid human and animal blood, blood products, and body fluids	_____	_____
3. Human and animal pathological wastes, including carcasses	_____	_____
4. Contaminated animal bedding, feed, and excreta from animals	_____	_____
5. Sharps	_____	_____

\* Please refer to Ohio's Infectious Waste Regulations, Chapter 3745-27-30 thru 3745-27-37 of the Ohio Administrative Code (OAC), for further definition of the infectious waste categories and prescribed infectious waste management requirements.

6. What waste characteristics present the most challenge to the proposed treatment process?

\_\_\_\_\_ Organic materials                      \_\_\_\_\_ Liquids                      \_\_\_\_\_ Density/compaction  
\_\_\_\_\_ Other (Specify) \_\_\_\_\_

7. Describe by composition (i.e. material and percentage) those infectious wastes that would provide the most challenge to the proposed technology. Why?

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**E. MICROBIOLOGICAL TEST PROCEDURES:**

Any proposed alternative treatment method seeking statewide approval shall be capable of inactivating a minimum 4 log<sub>10</sub> reduction of bacterial spores and a minimum 5 log<sub>10</sub> reduction of mycobacteria as specified in table 1 of paragraph (E)(1) of Rule 3745-27-38 of the Ohio Administrative Code (OAC). Site-specific approval shall achieve a minimum 4 log<sub>10</sub> reduction of bacterial spores specified in table 2 of paragraph (E)(1) OAC Rule 3745-27-38.

Please contact the Division of Solid and Infectious Waste Management (DSIWM), Ohio EPA to obtain a copy of the guidance document for protocol development. Please be aware that any data obtained through a protocol deemed unacceptable by the DSIWM will not be accepted.

1. Each applicant shall use the appropriate microorganisms to test the effectiveness of a particular treatment technology in accordance with the following:

**State-wide Approval:** Select and use a mycobacteria species which is the most resistant to any aspect of the treatment technology listed in Table 1. In addition select and use a bacterial spore species which is the most resistant to any aspect of the treatment technology listed in Table 1.

**Site Specific Approval:** Select one bacterial spore species which is the most resistant to all aspects of the treatment technology listed in Table 2.

**Table 1**

**Mycobacterium**

\_\_\_\_\_ Mycobacterium terrae

\_\_\_\_\_ Mycobacterium phlei

\_\_\_\_\_ Mycobacterium bovis

\_\_\_\_\_ B. stearothermophilus

\_\_\_\_\_ B. subtilis

**Table 2**

**Bacterial Spores**

\_\_\_\_\_ B. stearothermophilus

\_\_\_\_\_ B. subtilis

2. Please provide the name, address, telephone number of the certifying laboratory, AND the name of the test manger. Please attach operator's manual, technical manual, maintenance manual, testing protocol, results, and all calculations.

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**F. BY-PRODUCTS OF THE TREATMENT PROCESS:**

1. Please indicate all by-products or end-products which may be generated as a result of this alternative treatment technology.

- |  |                                 |                                   |   |
|--|---------------------------------|-----------------------------------|---|
| <input type="checkbox"/> Air Emissions   | <input type="checkbox"/> Heat   | <input type="checkbox"/> Slag     | <input type="checkbox"/> Dust                                       |
| <input type="checkbox"/> Ash             | <input type="checkbox"/> Liquid | <input type="checkbox"/> Smoke    | <input type="checkbox"/> Chemical Residual                          |
| <input type="checkbox"/> Odor            | <input type="checkbox"/> Steam  | <input type="checkbox"/> Aerosols | <input type="checkbox"/> Vapors or Fumes<br>(other than from stack) |
| <input type="checkbox"/> Other (Specify) | _____                           |                                   |   |

2. If any of the above by-products or end-products are indicated, how will they be managed? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. If there are no by-products or end-products indicated, how was this determined? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Are any of the by-products or end-products toxic, biohazardous, listed in 40 CFR 261, etc.?  
 No  Yes    If yes, explain necessary handling practices, personal protective equipment, storage, disposal, etc.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Please describe the characteristics of the treated infectious waste. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**G. ENVIRONMENTAL EFFECTS OF THE TREATMENT PROCESS:**

1. What effects on the environment can be anticipated from the use and/or disposal of the treated waste from the treatment process?

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2. What environmental, occupational, and/or public hazards are associated with a malfunction or the treatment process? Specify.

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3. If the treatment process includes the use of water, steam, or other liquids, how will this waste discharge be handled?

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4. How will the treated waste from this process be disposed? \_\_\_\_\_

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**H. CRITICAL FACTORS OF TREATMENT PROCESS:**

1. What are the critical factors that influence this specific treatment technology?

\_\_\_\_\_ Exposure time      \_\_\_\_\_ Pressure      \_\_\_\_\_ Temperature      \_\_\_\_\_ Chemical concentration

\_\_\_\_\_ pH      \_\_\_\_\_ Organic load      \_\_\_\_\_ Density of waste      \_\_\_\_\_ Relative humidity

Other(s) \_\_\_\_\_

2. What are the consequences if these factors are not met?

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3. What type of ongoing maintenance is required in the operation of the treatment system?

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4. What emergency measures are required in the event of a malfunction?

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5. How are these measures addressed in an emergency plan or in the operations protocol?

\_\_\_\_\_ No      \_\_\_\_\_ Yes, please submit copy of emergency plans

6. What is the maximum amount of waste that can be treated by this process per cycle, batch, or hourly?

Specify. \_\_\_\_\_

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7. How long is a treatment cycle? \_\_\_\_\_

**The treatment cycle is defined as the instant infectious waste enter the treatment unit until the infectious waste exits the unit.**

**I. CHEMICAL INACTIVATION TREATMENT PROCESSES:**

1. If the treatment involves the use of chemical inactivation:

a. What is the name of the active ingredient? \_\_\_\_\_

b. What concentration must be used and maintained? \_\_\_\_\_ and \_\_\_\_\_

c. At what pH is the chemical agent active? \_\_\_\_\_

d. What is the necessary minimum contact time required to achieve Ohio's treatment standard?

Site-specific approval \_\_\_\_\_

Statewide approval \_\_\_\_\_

e. If there is any incompatibility with specific materials and surfaces, please specify \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. What is the active life of the chemical agent after it has been exposed to air or contaminated infectious waste?

\_\_\_\_\_  
\_\_\_\_\_

3. Have studies been conducted relative to the long-term effective residual of the chemical agent while in use?

\_\_\_\_\_ No      \_\_\_\_\_ Yes - If yes, please attach a copy of the study and test results.

4. What health and safety hazards may be associated with the chemical (short and long term)?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

MSDS attached?      \_\_\_\_\_ No      \_\_\_\_\_ Yes

5. Is the chemical agent registered with the US EPA Pesticide Registration Division (FIFRA)? \_\_\_\_\_ No      \_\_\_\_\_ Yes

If yes, provide a copy of the complete label and the US EPA pesticide registration number \_\_\_\_\_

**I. CHEMICAL INACTIVATION TREATMENT PROCESSES (CON'T):**

6. Is the spent chemical agent classified as a hazardous waste by US EPA (40 CFR Part 261) or by other state criteria?

\_\_\_\_\_ No      \_\_\_\_\_ Yes, Please specify whether by US EPA or state. \_\_\_\_\_

7. Is an environmental impact study for the chemical agent available?

\_\_\_\_\_ No      \_\_\_\_\_ Yes, Please attach a copy of the impact study.

**J. QUALITY ASSURANCE AND VERIFICATION OF ADEQUATE TREATMENT:**

1. How is the quality assurance of the treatment process addressed?

\_\_\_\_\_  
\_\_\_\_\_

2. What is the frequency that a microbiological indicator should be used to confirm effectiveness of the system?

\_\_\_\_\_  
\_\_\_\_\_

3. Other than the biological indicators listed in Section F, what other indicators, integrators, or monitoring devices are used to show that the treatment unit or process is functioning properly?

\_\_\_\_\_  
\_\_\_\_\_

4. How is it determined that the processed waste received proper treatment?

Temperature indicator:      \_\_\_\_\_ Visual only      \_\_\_\_\_ Continuous      \_\_\_\_\_ Both

Pressure indicator:      \_\_\_\_\_ Visual only      \_\_\_\_\_ Continuous      \_\_\_\_\_ Both

Time indicator:      \_\_\_\_\_ Visual only      \_\_\_\_\_ Continuous      \_\_\_\_\_ Both

pH indicator:      \_\_\_\_\_ Visual only      \_\_\_\_\_ Continuous      \_\_\_\_\_ Both

Other: \_\_\_\_\_

**J. QUALITY ASSURANCE AND VERIFICATION OF ADEQUATE TREATMENT (CON'T):**

5. Have the treatment process monitors been correlated with biological indicators to ensure effective and accurate monitoring of the treatment process?

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6. How are the process monitors interfaced to the system's operations to effect proper treatment conditions?

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7. Is there a calibration schedule established for the process monitor(s), and at what frequency is calibration performed?

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8. How are the process monitor controls secured to prevent operator over-ride of the treatment process?

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9. Is the treatment unit equipped with a lock-out device so that wastes may not be processed through the unit faster than they can be treated?

\_\_\_\_\_ No                      \_\_\_\_\_ Yes. Please describe the lock-out system.

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**K. POTENTIAL ENVIRONMENTAL BENEFITS:**

1. Has an energy analysis been conducted on this technology?

\_\_\_\_\_ No          \_\_\_\_\_ Yes, specify and provide results of the analysis.

2. Has an economic analysis been performed on the proposed technology?

\_\_\_\_\_ No          \_\_\_\_\_ Yes, specify and provide results of that analysis.

3. Under normal operational conditions, indicate the quality used for each of the following.

\_\_\_\_\_ Natural gas (ft<sup>3</sup>/hr)          \_\_\_\_\_ Electricity (Kw/hr)          \_\_\_\_\_ Water (gal/hr)

4. How does this treatment technology improve on existing infectious waste treatment and disposal methods?

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5. What is the potential of this proposed treatment technology for:

waste volume reduction? \_\_\_\_\_

recycling? \_\_\_\_\_

6. Has a strategy been developed for the recycling of any part of the treated waste, please describe.

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**L. OTHER RELEVANT INFORMATION AND COMMENTS:**

(Please provide such as approvals received from other states, operator safety, competency or training requirements for the owner/operator, etc.)

I certify that I have personally examined and am familiar with the information submitted in this request form and all attachments and that based on my inquiry of those persons immediately responsible for obtaining the information contained within, I believe that the information is true, accurate, and complete.

\_\_\_\_\_  
Name - Please print

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date