

3745-27-46 Standards for compost products.

(A) Applicability.

- (1) This rule applies to the owner or operator of a composting facility subject to rules 3745-27-40 to 3745-27-47 of the Administrative Code, or to section 1511.022 of the Revised Code that produces a cured compost or compost product for sale, at retail or wholesale, for use, distribution for use, or to give away.
- (2) This rule does not apply to the use, distribution for use, or giving away of the cured compost or compost product produced by a composting facility that composts dead animals pursuant to section 1511.022 of the Revised Code and any rules promulgated thereunder when either of the following applies:
 - (a) The composting is conducted by the person who raises the animals and the cured compost or compost product is used in agricultural operations owned or operated by that person, regardless of whether the person owns the animals.
 - (b) The composting is conducted by the person who owns the animals, but does not raise them and the cured compost or compost product is used in agricultural operations by either of the following:
 - (i) A person who raises the animals.
 - (ii) A person who raises grain that is used to feed the animals provided the grain is supplied by the owner of the animals.
- (3) This rule does not apply to any person who disposes of cured compost or compost product in a licensed solid waste landfill or another composting facility authorized to accept the cured compost or compost product as a feedstock type.
- (4) This rule does not apply to the owner or operator of a composting facility provided that all of the following conditions are met:
 - (a) The owner or operator uses only type A, type B, or type C feedstocks and authorized bulking agents resulting from the normal operations of the business or service.
 - (b) Such materials have been transported to the facility by the owner or operator.

- (c) The limits of materials placement on the facility site are less than one hundred and thirty-five thousand square feet of total area.
 - (d) The cured compost is utilized exclusively by the owner or operator of the facility as part of the normal operation of the business or service.
- (5) This rule does not apply to the owner of an animal or crop production operation provided that all of the following conditions are met:
- (a) The owner of the composting facility is the same as the owner of the animal or crop production operation.
 - (b) The owner uses only type A, type B, type C, or type D feedstocks and authorized bulking agents resulting from the animal or crop production operation.
 - (c) The composting facility is located on the premises of the animal or crop production operation.
 - (d) The cured compost produced by the facility is utilized exclusively at the animal or crop production operation.
 - (e) The compost facility is separate from those operations conducted for the purpose of animal mortality composting conducted in accordance with either section 1511.022 or section 3734.02 of the Revised Code and rules adopted thereunder.
- (6) This rule does not apply to the owner or operator of a registered class IV composting facility or to cured compost produced from a registered class IV composting facility provided the facility exclusively composts type A feedstocks, bulking agents, or additives as authorized by paragraph (F) of rule 3745-27-40 of the Administrative Code. Such cured compost may be sold, offered for sale at retail or wholesale, used, distributed for use or given away.
- (7) This rule does not apply to: business operations engaged in providing lawn mowing or landscaping services, and that are required to remove the type A feedstock generated while providing their services, or business operations that generate type A feedstock while providing their own lawn mowing or landscaping services, provided that all of the following conditions are met:
- (a) The owner or operator uses only type A feedstock, bulking agents, and additives generated from the business operation or service.

- (b) The owner of the composting facility is the same as the owner of the business operation.
 - (c) The composting facility is located on the premises of the business operation.
 - (d) The limits of materials placement on the facility site are less than twelve hundred square feet of total area.
 - (e) Cured compost is utilized exclusively at the business operation.
- (B) No owner or operator of a composting facility shall sell or offer for sale at retail or wholesale, use, distribute for use, or give away any compost product for the use for which the product is being sold, offered for sale, distributed, or given away or for which the product is being used by the owner or operator unless one of the following occurs:
- (1) The owner or operator has demonstrated in accordance with paragraph (C) of this rule that the compost product complies with the applicable compost quality standards.
 - (2) The owner or operator has obtained and is in compliance with a director's approval for an alternative use in accordance with paragraph (M) of this rule.
- (C) Owner or operator requirements for demonstrating compliance with the quality standards for compost products. Prior to the distribution of the cured compost as a compost product, the owner or operator of a composting facility shall demonstrate that the cured compost constitutes a compost product that meets the applicable quality standards by complying with all of the following:
- (1) Sample the cured compost in accordance with sampling methods specified in paragraph (I) of this rule or an alternative method approved in accordance with paragraph (J) of this rule.
 - (2) Sample the cured compost at the frequencies specified in paragraph (I) of this rule, or an alternative frequency approved in accordance with paragraph (J) of this rule.
 - (3) Test the cured compost for the applicable parameters specified in paragraph (E) of this rule, and any supplementary quality standards required pursuant to paragraph (F) of this rule.
 - (4) Test the cured compost using the applicable analytical methods specified in paragraph (E) of this rule, or any analytical method required pursuant to

paragraph (F) of this rule, and alternative preparation or analytical methods approved in accordance with paragraph (J) of this rule.

- (5) Maintain copies of all testing documentation, including analytical test results and analytical methods.
 - (6) Label the compost product in accordance with requirements specified in paragraph (K) of this rule.
- (D) The owner or operator that fails to meet the applicable quality standards for compost products shall dispose of the cured compost in a licensed solid waste landfill or another composting facility authorized to accept the cured compost or compost product as a feedstock type. Cured compost produced from feedstocks that currently do not have applicable quality standards shall be disposed of in a licensed solid waste landfill.
- (E) Compost product quality standards. The following quality standards are applicable to cured compost produced from type A, B, C, D, D1, E, F, G, H, I, and J feedstocks:
- (1) Type A feedstocks. The compost product quality standards applicable to cured compost produced from type A feedstocks are as follows:
 - (a) Contained in table 1 of this rule. No results shall exceed the concentration limits for the parameters listed in table 1.
 - (b) Contained in table 4 of this rule. No results shall exceed the concentration limits for the parameter listed in table 4. If the owner or operator does not meet the standard specified in table 4 and chooses to further process the cured compost, then the owner or operator must re-test the cured compost to demonstrate that the standard listed in table 4 has not been exceeded.
 - (c) Contained in table 5 of this rule. Analytical results shall be available for the parameters specified in table 5.
 - (2) Type B feedstocks. The compost product quality standards applicable to cured compost produced from type B feedstocks are as follows:
 - (a) Contained in table 1 of this rule. No results shall exceed the concentration limits for the parameters listed in table 1.
 - (b) Contained in table 3 of this rule. No results shall exceed the microbial count for the parameters listed in table 3.

- (c) Contained in table 4 of this rule. No results shall exceed the concentration limits for the parameter listed in table 4. If the owner or operator does not meet the standard specified in table 4 and chooses to take action to further reduce the foreign matter content of the cured compost, then the owner or operator must re-test the cured compost to demonstrate that the standard listed in table 4 has not been exceeded.
 - (d) Contained in table 5 of this rule. Analytical results shall be available for the parameters specified in table 5.
- (3) Type C feedstocks. The compost product quality standards applicable to cured compost produced from type C feedstocks are as follows:
- (a) Contained in table 1 of this rule. No results shall exceed the concentration limits for the parameters listed in table 1.
 - (b) Contained in table 3 of this rule. No results shall exceed the microbial count for the parameters listed in table 3.
 - (c) Contained in table 4 of this rule. No results shall exceed the concentration limits for the parameter listed in table 4. If the owner or operator does not meet the standard specified in table 4 and chooses to take action to further reduce the foreign matter content of the cured compost, then the owner or operator must re-test the cured compost to demonstrate that the standard listed in table 4 has not been exceeded.
 - (d) Contained in table 5 of this rule. Analytical results shall be available for the parameters specified in table 5.
- (4) Type D, D1, E, F, G, and H feedstocks. The compost product quality standards applicable to cured compost produced from type D, D1, E, F, G, and H feedstocks are as follows:
- (a) Contained in table 1 of this rule. No results shall exceed the concentration limits for the parameters listed in table 1.
 - (b) Contained in table 3 of this rule. No results shall exceed the microbial count for the parameters listed in table 3.
 - (c) Contained in table 4 of this rule. No results shall exceed the concentration limits for the parameters listed in table 4. If the owner or operator does not meet the standard specified in table 4 and chooses to take action to further reduce the foreign matter content of the cured compost, then the owner or operator must re-

test the cured compost to demonstrate that the standard listed in table 4 has not been exceeded.

- (d) Contained in table 5 of this rule. Analytical results shall be available for the parameters specified in table 5.
- (5) Type I feedstocks. The compost product quality standards applicable to cured compost produced from type I feedstocks are as follows:
- (a) Contained in table 1 of this rule. No results shall exceed the concentration limits for the parameters listed in table 1.
 - (b) Contained in table 2 of this rule. No results shall exceed the concentration limits for the parameters listed in table 2.
 - (c) Contained in table 3 of this rule. No results shall exceed the microbial count for the parameters listed in table 3.
 - (d) Contained in table 4 of this rule. No results shall exceed the concentration limits for the parameters listed in table 4. If the owner or operator does not meet the standard specified in table 4 and chooses to take action to further reduce the foreign matter content of the cured compost, then the owner or operator must re-test the cured compost to demonstrate that the standard listed in table 4 has not been exceeded.
 - (e) Contained in table 5 of this rule. Analytical results shall be available for the parameters specified in table 5.
- (6) Type J feedstocks. Cured compost produced from type J feedstocks has no applicable compost quality standards.

[Comment: Cured compost produced from type J feedstocks may be used at a licensed sanitary landfill facility regulated pursuant to Chapter 3745-27 of the Administrative Code to either protect the re-compacted soil liner [freeze/thaw protection material] from damage, or as alternative daily or intermediate cover materials. The owner or operator of the sanitary landfill facility shall have obtained necessary authorizations for use of such cured compost in accordance with Chapter 3745-27 of the Administrative Code prior to use as an alternative protection material or cover.]

- (F) Supplementary compost quality standards based upon individual feedstocks. The standards in this rule are based upon general information on primarily homogeneous feedstocks. The following additional information, or testing of feedstocks, cured compost, or compost product may be required on a case specific situation to ensure the standards are appropriately protective:

- (1) Upon written notification by the director, the owner or operator shall provide information regarding a characterization of the feedstocks including but not limited to the following:
 - (a) The agricultural, industrial, or commercial process used that produces the feedstock.
 - (b) A description of the chemical and biological component(s).
 - (c) A description of any known or potential heavy metals and organic compounds that may threaten to cause an adverse effect to the public health or safety, or to the environment.
 - (2) Upon written notification by the director, the owner or operator shall sample and test for additional parameters as the director deems necessary to ensure the standards are appropriately protective.
 - (3) Upon review of such additional information, the director may require additional conditions or quality standards for the cured compost. If so, the director shall notify the facility of such standards in writing.
- (G) Quality standards for commingled feedstocks and recirculated leachate. For the purpose of this rule, the quality standards for type A feedstock shall be considered the least stringent and for type J feedstock the most stringent. When commingling feedstocks, the applicable quality standards shall be determined by the feedstock with the more stringent quality standard. When recirculating leachate into the composting mixture, the applicable quality standards shall be determined by the feedstock with the more stringent quality standard contributing to the leachate.
- (H) Re-sampling and re-testing altered cured compost. If cured compost that has been previously sampled and tested in accordance with this rule is mixed with any amount of additional feedstocks, bulking agents, additives, or other untested cured compost, then the tested cured compost is considered to be altered and shall be re-sampled and re-tested in accordance with paragraphs (B), (E), (F), (I), and (J) of this rule.
- (I) Frequency of sampling and testing, sampling methods/sample collection and preservation. Sample collection and preservation shall ensure valid and representative results. The owner or operator shall sample the cured compost in accordance with the following:
- (1) Sampling from a windrow shall use all of the following:
 - (a) Use table A of this paragraph to determine the number of grab

samples required as a multiple of the cured compost volume in the windrow.

Table A

Cured compost volume				
Cubic yards	< 10,000	10,001-20,000	20,001-30,000	30,001-40,000*
Number of sample locations (cross-sections)	3	6	9	12
Number of grab samples per location	3	3	3	3
Total number of samples in composite	9	18	27	36
Total number of samples from composite to be tested	1	2	3	4

- * Greater volumes shall be sampled at three (3) additional locations for each increment of ten thousand cubic yards.
- (b) Choose three locations along the horizontal length of the windrow for each ten thousand cubic yards of cured compost that will divide the windrow in equal quarter sections. These three locations are the sampling cross-sections.
 - (c) Use a clean container to extract a minimum of three grab samples of five hundred cubic centimeters each, at each cross-section.
 - (d) Determine sampling locations along the vertical height, from the ground or composting pad to the top of the windrow, randomly at each cross-section.
 - (e) Extract the grab samples from each cross-section at depths measured from the windrow's outer surface equal to the following:
 - (i) One-half the horizontal width of the windrow.
 - (ii) One-fourth the horizontal width of windrow.
 - (iii) One-fourth the horizontal width of windrow on the opposite side of the cross-section where the first two grab samples

were collected.

- (f) Combine a total of nine grab samples per ten thousand cubic yards of cured compost, in a clean container, to form one composite sample.
- (g) Mix the composite sample thoroughly to ensure a valid and representative sample.

[Comment: A "clean container" includes, but is not limited to, a suitable size plastic or paper bag or bucket that contains no other material.]

- (h) Extract a sub-sample of a minimum of two thousand cubic centimeters in volume from the composite sample and place in an adequately sized, appropriate, clean container, and seal and label to reflect the collection date and time.
 - (i) Implement any additional requirements for sampling consistent with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA SW-846), 3rd edition, April 1992.
- (2) For sampling from a pile:
- (a) Use table A of this paragraph to determine the number of grab samples required as a multiple of the cured compost volume in the pile.
 - (b) Choose three equally distanced locations along the perimeter of the pile for each ten thousand cubic yards of cured compost that will divide the pile in three equal one-third sections. These three locations are the sampling cross-sections.
 - (c) Use a clean container to extract a minimum of three grab samples of five hundred cubic centimeters each, at each cross-section.
 - (d) Determine sampling locations along the vertical height, from the ground or composting pad to the top of the pile, randomly at each cross-section.
 - (e) Extract the grab samples from each cross-section at depths measured from the pile's outer surface equal to the following:
 - (i) One-half the horizontal width of the pile.

- (ii) One-fourth the horizontal width of pile.
 - (iii) One-fourth the horizontal width of pile on the opposite side of the cross-section where the first two grab samples were collected.
 - (f) Combine a total of nine grab samples per ten thousand cubic yards of cured compost, in a clean container, to form one composite sample.
 - (g) Mix the composite sample thoroughly to ensure a valid and representative sample.

[Comment: A "clean container" includes, but is not limited to, a suitable size plastic or paper bag or bucket that contains no other material.]
 - (h) Extract a sub-sample of a minimum of two thousand cubic centimeters in volume from the composite sample and place in an adequately sized, appropriate, clean container, and seal and label to reflect the collection date and time.
 - (i) Implement any additional requirements for sampling consistent with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA SW-846), 3rd edition, April 1992.
- (3) All samples collected for testing in accordance with table 3 of this rule shall be prepared and analysis started within eight hours of the collection of the sample.
- (4) All samples collected for testing of benzene in accordance with analytical method U.S. EPA 8260 in table 2 of this rule shall be prepared using a sufficient volume of cured compost to detect benzene at a minimum concentration of 0.002 milligrams per kilogram (mg/kg).
- (J) Alternative frequency, sampling, and testing methodologies. After one year of operation, the owner or operator may submit a written request to the director for an alternative frequency of sampling; an alternative sampling method; or an alternative preparation or analytical method in accordance with the following:
- (1) Frequency of sampling. The director may approve and condition a request for an alternative frequency of sampling if the owner or operator demonstrates to the satisfaction of the director that, at a minimum, the following requirements are met:
 - (a) The solid waste feedstocks, bulking agents, and additives accepted at the facility are consistent in quality and type.

- (b) The operation of the facility results in consistent quality of cured compost.
 - (c) The quality of the cured compost is consistent. The consistency shall be demonstrated through the submittal of copies of the results for five consecutive sampling and testing cycles in accordance with paragraphs (B), (C), (E), (F), (H) and (I) of this rule, where cured compost has met the applicable standards for compost product.
 - (d) Equivalent protection of human health and safety, and the environment is maintained.
- (2) Alternative sampling method. The director may approve and condition a request for an alternative sampling method if the owner or operator can demonstrate to the satisfaction of the director that, at a minimum, the following requirements are met:
- (a) The solid waste feedstocks, bulking agents, and additives accepted at the facility are consistent in quality and type.
 - (b) The operation of the facility results in consistent quality of cured compost.
 - (c) The quality of the cured compost is consistent, through the submittal of results of any previous sampling and testing cycles.
 - (d) Equivalent protection of human health and safety, and the environment is maintained.
- (3) Test preparation and analytical methodology. The director may approve and condition a request for an alternative test preparation and analytical methodology if the owner or operator can demonstrate to the satisfaction of the director that, at a minimum, the following requirements are met:
- (a) The test preparation and analytical method is scientifically recognized and will provide equivalent or improved test results.
 - (b) Equivalent protection of human health and the environment is maintained.
- (4) The owner or operator who has obtained an approval for an alternative frequency of sampling, an alternative sampling method, or an alternative preparation or analytical method shall immediately notify the director of

changes in the feedstocks, bulking agents, or additives composted and simultaneously shall commence complying with applicable requirements found in this rule.

- (K) Product information and availability of test results. The owner or operator shall provide product information for the compost product in accordance with the following requirements. The owner or operator shall also have available the results of testing that demonstrate that the distributed compost product meets the applicable requirements specified in paragraphs (E), (F), and (J) of this rule:

[Comment: Paragraph (J) of rule 3745-27-45 of the Administrative Code requires that the owner or operator retain all copies of test results for a period of no less than three years.]

- (1) All compost product that is distributed in a bag or packaged form shall be labeled with product information. The label shall be prominently visible and shall contain, at a minimum, the following information in a readable and conspicuous form:
 - (a) Name and address of the composting facility.
 - (b) General type of feedstocks used, including but not limited to: yard waste, source separated vegetative wastes, sewage sludge, paper pulp sludge, manure, dead animals, or any other feedstock authorized by the director.
 - (c) Any bulking agents or additives used, including those authorized by the director as alternative bulking agents or additives.
 - (d) Recommended uses for the compost product.
 - (e) Any owner or operator recommended restrictions on the use of the compost product.
- (2) All compost product that is distributed unpackaged or in bulk (not in a bag or container) is not required to be labeled but shall have the following product information in written form, available upon request by any recipient of the compost product:
 - (a) Name and address of the composting facility.
 - (b) General type of feedstocks used, including but not limited to: yard waste, source separated vegetative wastes, sewage sludge, paper pulp sludge, manure, dead animals, or any other feedstock authorized by the director.

- (c) Any bulking agents or additives used, including those authorized by the director as an alternative bulking agents or additives.
 - (d) Recommended uses for the compost product.
 - (e) Any owner or operator recommended restrictions on the use of the compost product.
- (3) The owner or operator of a composting facility who distributes compost product subsequently combined with any other materials shall include the following information on the label in a readable and conspicuous form for bagged or packaged compost product or in written form for unpackaged or bulk compost product, available upon request by any recipient of the compost product:
- "Other materials have been combined with this compost product after required testing was completed."
- (4) Upon the request of the recipient of the compost product, the owner or operator of a composting facility shall provide the recipient a summary of results from testing required in accordance with this rule.
- (5) The owner or operator of a compost facility who distributes compost product mixed with any other materials shall include the following in the summary results: "The results of this summary are only indicators of the compost product and do not include information on any other materials subsequently combined with this compost product after testing."
- (L) Distribution of compost product. Compost product that has been demonstrated to meet the applicable quality standards in accordance with paragraph (C) of this rule, and product information provided in accordance with paragraph (K) of this rule, may be distributed, without limitation, for any use. This authorization for unrestricted use does not ensure that the use of the compost product would be beneficial to all potential compost product applications.
- (M) Authorization for alternative use of cured compost that does not meet applicable standards for compost product. The director may approve and condition a request for an alternative use for cured compost that does not meet applicable quality standards in accordance with paragraph (E) of this rule if in the determination of the director, the alternative use does not cause or threaten to cause an adverse effect to the public health or safety, or the environment. The determination of the director shall be based on the information provided in paragraph (N) of this rule and any other information required by the director. Alternative uses involving agricultural applications shall also be in accordance

with accepted agricultural, silvicultural, or horticultural practices.

Requests for an alternative use of cured compost where the cured compost does not meet the applicable standards contained in tables 2, 4, or 6 of this rule shall not be considered for use in an agricultural application.

For the purposes of this rule, agricultural application includes, but is not limited to, application to grazing lands or crop fields, plant production, turf-grass production and landscaping.

(N) Criteria for approval of an alternative use for cured compost. The owner or operator of a composting facility whose cured compost has been sampled and tested in accordance with this rule and found to exceed any of the applicable concentration limits identified for the type of feedstock may submit a written request, in a form acceptable to the director, for approval for an alternative use for the cured compost in accordance with paragraph (M) of this rule, and include, at a minimum, the following:

- (1) A description of the proposed alternative use.
- (2) A detailed list of all feedstocks, bulking agents and additives utilized to produce the cured compost.
- (3) A copy of the test results of the cured compost required in accordance with paragraphs (E), (F), or (J) of this rule.
- (4) The location of proposed application or incorporation, total acreage to be utilized, total quantity of cured compost, and the application rate of cured compost that the owner or operator proposes for the alternative use, including justification of specific application rates, safe uses, and any applicable restrictions.
- (5) The results of test(s) of the soil from the proposed location of application or incorporation. The results of the soil test(s) shall include the specific parameter(s) that caused the cured compost to exceed the standards named in this rule.

[Comment: For example, if type I cured compost is to be applied or incorporated, and has met the standard for all parameters except zinc, the results of the soil tests shall include a value for zinc.]

- (6) A detailed narrative of why the requested alternate use will not adversely affect the public health or safety or the environment, with supporting justification including, at a minimum, scientific documentation, published

studies, and current scientific studies.

- (7) Any other information deemed necessary by the director.
- (O) The owner or operator of the composting facility that has submitted a copy of the information required in paragraph (N) of this rule and obtained authorization for alternative use in accordance with paragraph (M) of this rule must send a copy of the director's approval letter, by certified mail, to the owner of the land that has been approved as the application or incorporation location prior to application or incorporation of the cured compost.
- (P) The director or the health commissioner may order that cured compost or compost product be disposed in a licensed solid waste landfill if the director or the health commissioner deem that the cured compost or compost product causes or threatens to cause a nuisance or adversely affects the public health or safety or the environment.

Table 1

Parameter	Concentration limit mg/kg dry weight	Preparation methods	Analytical methods
Arsenic	41	AOAC 975.03(B)(b) or U.S. EPA 3050B or U.S. EPA 3051	U.S. EPA 6010B U.S. EPA 7060A or U.S. EPA 7061A
Cadmium	35	AOAC 975.03(B)(b) or U.S. EPA 3050B or U.S. EPA 3051	U.S. EPA 6010B U.S. EPA 7130 or U.S. EPA 7131A
Copper	1500	AOAC 975.03(B)(b) or U.S. EPA 3050B or U.S. EPA 3051	U.S. EPA 6010B U.S. EPA 7210
Lead	300	AOAC 975.03(B)(b) or U.S. EPA 3050B or U.S. EPA 3051	U.S. EPA 6010B U.S. EPA 7420 or U.S. EPA 7421
Mercury	7.8	AOAC 971.21 or U.S. EPA 3051	AOAC 971.21 U.S. EPA 7471A or U.S. EPA 6010B
Nickel	420	AOAC 975.03(B)(b) or U.S. EPA 3050B or U.S. EPA 3051	U.S. EPA 6010B U.S. EPA 7520
Selenium	100	AOAC 975.03(B)(b) or U.S. EPA 3050B or U.S. EPA 3051	U.S. EPA 6010B U.S. EPA 7740 or U.S. EPA 7741A
Zinc	2800	AOAC 975.03(B)(b) or U.S. EPA 3050B or U.S. EPA 3051	U.S. EPA 6010B U.S. EPA 7950 U.S. EPA 7951

Table 2

Parameter	Concentration limit mg/kg dry weight	Analytical methods
Organic constituents	Practical quantitation limit	U.S. EPA 8260B
Total petroleum hydrocarbons	105.0	U.S. EPA 8015B
PCB	1.0	U.S. EPA 8082A
Benzene	0.006	U.S. EPA 8260B* or U.S. EPA 8021B
Toluene	4.0	U.S. EPA 8260B or U.S. EPA 8021B
Ethyl benzene	6.0	U.S. EPA 8260B or U.S. EPA 8021B
Xylene	28.0	U.S. EPA 8260B or U.S. EPA 8021B

[* Note: The detection limit is 0.002 mg/kg. In accordance with paragraph (l)(5) of this rule, the sample used for the determination of the level for benzene present must be prepared as if the concentration limit were 0.002 mg/kg to decrease the percent error when using U.S. EPA 8260B for detection at such low concentration.]

Table 3

Parameter	Microbial count	Preparation method	Analytical method
Fecal coliforms	Preparation and analytical methods with a limit of less than 1000 Most Probable Number per gram of total solids (dry weight)(1000 MPN/GTS).	Standard methods part 9221E or part 9222D	Standard methods 9260D and either 9222D or 9221E
<i>Salmonella</i> spp.	Preparation and analytical methods with a limit of less than 3 Most Probable Number per 4 grams of total solids (3MPN/4GTS)	Standard method part 9260D	

Table 4

Parameter	Concentration limit/dry weight	Preparation method	Analytical method
Foreign matter	1.0% by weight on No. 5 sieve (4mm screen) and no more than a fourth of this foreign matter may be plastic.	U.S. EPA 160.3	Detailed below

Method for determining percent foreign matter

Foreign matter content shall be determined by passing a dried, weighed sample of not less than 100 grams of the cured compost through a U.S. standard No. 5 sieve (4 millimeter). The material remaining on the screen shall be inspected and the foreign matter shall be separated and weighed. The weight of the foreign matter divided by the total weight of the cured compost sample and multiplied by one hundred shall be the percent dry weight of the foreign matter content.

[Comment: Rule 3745-27-01 of the Administrative Code defines foreign matter as “inorganic and organic constituents that were not readily decomposed during composting including, but not limited to: plastics, glass, textiles, rubber, leather, metal, ceramics, styrofoam, sharp objects, and painted, laminated, or treated wood and bark”.]

Table 5

Parameter	Analytical method
Boron	AOAC 985.01C and U.S. EPA method 6010B
Maturity	Dewar-flask method test or Solvita test or phytotoxicity and seedling-growth response or O ₂ /CO ₂ respirometry
pH	North central regional (NCR) publication 221 or U.S. EPA 9045C soil pH or ASTM D 2976-71
Salinity	NCR publication 221
Total nitrogen	Dumas method (N-analyzers)
Total organic carbon	U.S. EPA 9060
Total phosphorous	U.S. EPA 6010B or U.S. EPA 3050B or U.S.EPA 3051 or U.S. EPA365.2 or AOAC method 985.01C and U.S.EPA 6010B or U.S. EPA method 7610
Total potassium	U.S. EPA 6010B or U.S. 3050B or U.S. EPA 3051 or AOAC method 985.01C and U.S. EPA 6010B or U.S. EPA method 7610

The parameters identified for testing in table 5 have no associated concentration limits. The analysis is necessary to ensure that compost quality is appropriate for the recipient's specific use of the compost product.

Acceptable levels of maturity will vary according to end-user application (note: check date of maturity test).

Acceptable pH level will vary according to end-user application and will generally be in the 5.5 - 8.5 range.

Acceptable levels of soluble salts will vary according to end-user applications. The optimal ranges for growing media (compost amended soil) is 0.5 to 4.5 millimho per centimeter (mmhos/cm).

Compost producers may provide pH and soluble salts information in product literature for the intended end-user application that reflect user industry standards.

U.S. environmental protection agency (U.S. EPA) method 160.3 is described in "Methods for Chemical Analysis of Water and Waste", 1979. All other EPA methods referenced in the foregoing tables are contained in EPA SW-846 "Test Methods for Evaluating Solid Waste, Physical / Chemical Methods", 3rd edition, 1998. North Central Region (NCR) publication 221 (revised October 1988), entitled "Recommended Chemical Soil Test Procedures for North Central Region" contains methodology for salinity and pH. Association of Official Analytical Chemists (AOAC) methods 975.03, 971.21, and 985.01C are contained in AOAC "Official Methods of Analysis", 1990, 15th edition. Standard methods 9221E, 9222D, and 9260D are contained in "Standard Methods for the Examination of Water and Wastewater", 18th edition, 1992. American Society for Testing and Methods (ASTM), 1997.

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