

3745-560-130

Compost quality standards for class I composting facilities.

[Comment: For dates of non regulatory government publications, publications of recognized organizations and associations, test methods, federal rules, and federal statutory provisions referenced in this rule, see rule 3745-500-03 of the Administrative Code titled "Incorporation by reference."]

- (A) The compost quality standards in this paragraph are applicable to all compost produced from yard waste, animal waste, agricultural ~~waste~~plant materials, food scraps, dead animals, raw rendering material, and alternative materials. The quality standards are not applicable to compost produced with mixed solid waste subject to paragraph (A)(1) of rule 3745-560-120 of the Administrative Code. The owner or operator shall have the samples collected pursuant to in accordance with rule 3745-560-125 of the Administrative Code analyzed using the methods specified in tables 1 to 4 of this rule or other methods authorized by the director pursuant to rule 3745-560-06 of the Administrative Code. Test results shall demonstrate that concentration limits are not exceeded for the parameters listed in the following tables: 1 to 3 of this rule. The owner or operator shall also have the samples analyzed for the parameters identified in table 4, which have no associated concentration limits, to ensure usage of compost product in accordance with accepted agricultural, silvicultural, or horticultural practices.

Table 1 - Heavy metals

Parameter	Concentration limit mg/kg dry weight	Preparation methods	Analytical methods	TMECC equivalent methods
Arsenic	41	SW-846 3050B or SW-846 3051A	SW-846 6010C <u>6010D</u> or SW-846 6020A <u>6020B</u> or SW-846 7010	TMECC 04.06-As
Boron	See Table 4			
Cadmium	35	SW-846 3050B or SW-846 3051A	SW-846 6010C <u>6010D</u> or SW-846 6020A <u>6020B</u> or SW-846 7000B or SW-846 7010	TMECC 04.06-Cd

Copper	1500	SW-846 3050B or SW-846 3051A	SW-846 6010C <u>6010D</u> or SW-846 6020A <u>6020B</u> or SW-846 7000B or SW-846 7010	TMECC 04.06-Cu
Lead	300	SW-846 3050B or SW-846 3051A	SW-846 6010C <u>6010D</u> or SW-846 6020C <u>6020B</u> or SW-846 7000B or SW-846 7010	TMECC 04.06-Pb
Mercury	7.8	SW-846 7471B	SW-846 7471B SW-846 6010C <u>6010D</u> or SW-846 6020A <u>6020B</u> or SW-846 7000B or SW-846 7010	TMECC 04.06-Hg
Nickel	420	SW-846 3050B or SW-846 3051A	SW-846 6010C <u>6010D</u> or SW-846 6020A <u>6020B</u> or SW-846 7010	TMECC 04.06-Ni
Selenium	100	SW-846 3050B or SW-846 3051A	SW-846 6010C <u>6010D</u> or SW-846 6020A <u>6020B</u>	TMECC 04.06-Se
Zinc	2800	SW-846 3050B or SW-846 3051A	SW-846 6020A <u>6020B</u> or SW-846 7000B or SW-846 7010	TMECC 04.06-Zn

Table 2 - Pathogens

Parameter	Microbial count	Preparation method	Analytical method	TMECC equivalent method
Fecal coliform	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 <u>9260B</u> and either 9222D or 9221E <u>or 9223</u>	TMECC 07.01-B
Salmonella spp.	Limit of less than 3 Most Probable Number per 4 grams of total solids (3MPN/4GTS)	Standard method part 9260D <u>9260B</u>	Standard methods 9260D <u>9260B</u> and either 9222D or 9221E, <u>or Neogen Reveal® 2.0</u>	TMECC 07.02

Table 3 - ~~Foreign/inert~~ Inert matter

Parameter	Concentration limit mg/kg dry weight	Preparation method	Analytical method	TMECC equivalent method
Foreign/inert <u>Inert</u> matter	1.0% by weight on No. 5 sieve (four mm screen) and no more than a fourth of this foreign/inert matter may be plastic	SW-846 160.3 <u>U.S. EPA 160.3 Methods for Chemical Analysis of Water and Wastes</u>	Detailed below	TMECC 03.08
<u>Method for determining percent inert matter. Inert matter content shall be determined by passing a dried, weighed sample of not less than one hundred grams of compost through a "U.S. standard No. 5 sieve" (four millimeter). The material remaining on the screen shall be inspected and the inert matter shall be separated and weighed. The weight of the inert</u>				

matter divided by the total weight of the compost sample and multiplied by one hundred shall be the per cent dry weight of the inert matter content.

Method for determining percent foreign matter:

~~Foreign matter content shall be determined by passing a dried, weighed sample of not less than one hundred grams of compost through a U.S. standard No. 5 sieve (four 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 compost sample and multiplied by one hundred shall be the per cent dry weight of the foreign matter content.~~

Table 4 - General parameters

Parameter	Analytical method
Boron	TMECC 04.05-B or Preparation: SW-846 3050B or SW-846 3051A and Analytical: SW-846 6010A <u>6010D</u> or SW-846 6020A <u>6020B</u>
Maturity	TMECC 05.08-A Specific Oxygen Uptake Rate or TMECC 05.08-B Carbon Dioxide Evolution Rate or TMECC 05.08-C In-situ Oxygen Refresh Rate or TMECC 05.08-D Dewar Self-Heating Test or TMECC 05.08-E Solvita® Maturity Index or TMECC 05.08-F Biologically Available Carbon
pH	TMECC 04.11-A or North central regional (NCR) publication 221 or SW-846 9045D soil pH or ASTM D2976
Salinity	TMECC 04.10 A or NCR publication 221
Total nitrogen	AOAC 968.06 or TMECC 04.02-D or TMECC 04.02-A
Total organic carbon	SW-846 9060 A or TMECC 04.01-A
Total phosphorus	TMECC 04.03-A or Preparation: SW-846 3050B or SW-846 3051A and Analytical: SW-846 6010A <u>6010D</u> or SW-846 6020A <u>6020B</u>

Total potassium	TMECC 04.04-A or Preparation: SW-846 3050B or SW-846 3051A and Analytical: SW-846 6010C <u>6010D</u> or SW-846 6020A <u>6020B</u> or SW-846 7000B
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[Comment: ~~The parameters identified for testing in table 4 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.

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

(B) Supplementary compost quality standards. Additional information or testing of feedstocks, bulking agents, additives, compost, or compost product may be required to ensure the standards are appropriately protective of public health ~~or~~, safety, or the environment.

(1) Upon written notification ~~by the director~~from Ohio EPA, the owner or operator shall provide information regarding the feedstocks, bulking agents, additives, compost, or compost product including but not limited to the following:

(a) ~~A description of the agricultural, industrial, or commercial process used to produce the feedstock~~The source of the feedstocks, bulking agents, and additives, compost, or compost product including a description of the process used to generate the feedstocks, bulking agents, and additives.

(b) A description of the chemical and biological constituents and results for any testing requested by Ohio EPA.

(c) ~~A description of any known or potential heavy metals and organic compounds that may threaten to cause an adverse effect to public health or safety or the environment~~Any other information deemed necessary by Ohio EPA.

- ~~(2) Upon written notification by the director, the owner or operator shall sample and test for additional parameters as deemed necessary to ensure the standards are appropriately protective of public health and safety and the environment.~~
- ~~(3)~~(2) Upon review of such additional information, the director may establish additional conditions or quality standards for the compost. The director shall provide written notification to the owner or operator of such conditions or standards.
- (C) Authorization for an alternative preparation or analytical testing method. Ohio EPA may approve and condition a request for alternative testing methods upon determination that the alternative methods ensure equivalent protection of public health, safety, and the environment. The owner or operator may submit a written request for approval of an alternative testing method that includes at a minimum the following information:
- (1) The feedstocks, bulking agents, and additives accepted at the facility.
 - (2) A description or published references to the scientifically recognized preparation or analytical method that will provide equivalent or improved test results.
 - (3) A narrative of how the requested alternative sampling or testing method will ensure compliance with applicable quality standards.
- (D) Ohio EPA may require the owner or operator to submit additional information upon review of a request generated in accordance with paragraph (C) of this rule.
- (E) An owner or operator who has obtained an approval for an alternative preparation or analytical testing method shall immediately notify the director of changes in the feedstocks, bulking agents, or additives composed or the mix ratio for composting and simultaneously shall commence complying with this rule.

~~[Comment: Compost containing mixed solid waste does not have testing parameters as it may only be distributed in accordance with paragraph (A)(1) of rule 3745-560-120 of the Administrative Code.]~~

Effective:

Five Year Review (FYR) Dates: 11/14/2017

Certification

Date

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