Environmental Protection Agency

§ 63.1316 PET and polystyrene affected sources—emissions control provisions.

(a) The owner or operator of an affected source producing PET using a continuous process shall comply with paragraph (b) of this section. The owner or operator of an affected source producing polystyrene using a continuous process shall comply with paragraph (c) of this section. As specified in paragraphs (b) and (c) of this section, owners or operators shall comply with §63.1315 for certain continuous process vents and with §63.1321 for all batch process vents. The owner or operator of an affected source producing PET using a batch process or producing polystyrene using a batch process shall comply with §63.1315 for continuous process vents and with §63.1321 for batch process vents, instead of the provisions of §§63.1316 through 63.1320.

(b) The owner or operator of an affected source producing PET using a continuous process shall comply with the requirements specified in paragraphs (b)(1) or (b)(2) of this section, as appropriate, and are not required to comply with the requirements specified in 40 CFR part 60, subpart DDD. Compliance can be based on either organic HAP or TOC.

(i) For purpose of this section, each continuous process vent shall be considered to be a Group 1 continuous process vent and the owner or operator of that continuous process vent shall comply with the requirements for a Group 1 continuous process vent.

(ii) For purposes of this section, the group determination procedure required by §63.1323 shall not apply.

(1) The owner or operator of an existing affected source with organic HAP emissions greater than 0.12 kg organic HAP per Mg of product from continuous process vents in the collection of material recovery sections (i.e., methanol recovery) within the affected source shall comply with either paragraph (b)(1)(i), (b)(1)(ii), or (b)(1)(iii) of this section. Emissions from continuous process vents in the

(ii) For purposes of this section, the group determination procedure required by §63.1323 shall not apply.

collection of material recovery sections within the affected source shall be determined by the procedures specified in §63.1318(b). The owner or operator of a new affected source shall comply with either paragraph (b)(1)(i)(A), (b)(1)(i)(B), or (b)(1)(i)(C) of this section.

(A) Organic HAP emissions from all continuous process vents in each individual material recovery section shall, as a whole, be no greater than 0.018 kg organic HAP per Mg of product from the associated TTPU(s); or alternatively, organic HAP emissions from all continuous process vents in the collection of material recovery sections within the affected source shall, as a whole, be no greater than 0.018 kg organic HAP per Mg of product from all associated TTPU. During periods of startup or shutdown, as an alternative to using the procedures specified in §63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (b)(1)(i)(A)(1), (2), or (3) of this section.

(1) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(2) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to §63.1318(b)(1). Keep records of this calculation.

(3) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(1)(i)(A) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

(B) As specified in §63.1318(d), the owner or operator shall maintain the daily average outlet gas stream temperature from each final condenser in a material recovery section at a temperature of +3 °C (+37 °F) or less (i.e., colder); or

(C) Comply with paragraph (b)(1)(v) of this section.

(ii) Limit organic HAP emissions from continuous process vents in the collection of polymerization reaction sections within the affected source by complying with either paragraph (b)(1)(ii)(A) or (b)(1)(ii)(B) of this section.

(A) Organic HAP emissions from all continuous process vents in each individual polymerization reaction section (including emissions from any equipment used to further recover ethylene glycol, but excluding emissions from process contact cooling towers) shall, as a whole, be no greater than 0.02 kg organic HAP per Mg of product from the associated TTPU(s); or alternatively, organic HAP emissions from all continuous process vents in the collection of polymerization reaction sections within the affected source shall, as a whole, be no greater than 0.02 kg organic HAP per Mg of product from all associated TTPU(s). During periods of startup or shutdown, as an alternative to using the procedures specified in §63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (b)(1)(ii)(A)(1), (2), or (3) of this section.

(1) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(2) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to §63.1318(b)(1). Keep records of this calculation.

(3) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(1)(ii)(A) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

(B) As specified in §63.1318(d), the owner or operator shall maintain the daily average outlet gas stream temperature from each final condenser in a material recovery section at a temperature of +3 °C (+37 °F) or less (i.e., colder); or

(C) Comply with paragraph (b)(1)(v) of this section.

(iii) Continuous process vents not included in a material recovery section, as specified in paragraph (b)(1)(i) of this section, and not included in a polymerization reaction section, as specified in paragraph (b)(1)(ii) of this section, shall comply with §63.1315.
(iv) Batch process vents shall comply with §63.1321.

(v) Comply with one of the following:

(A) Reduce the emissions in a combustion device to achieve 98 weight percent reduction or to achieve a concentration of 20 parts per million by volume (ppmv) on a dry basis, whichever is less stringent. If an owner or operator elects to comply with the 20 ppmv standard, the concentration shall include a correction to 3 percent oxygen only when supplemental combustion air is used to combust the emissions.

(B) Combust the emissions in a boiler or process heater with a design heat input capacity of 150 million Btu/hr or greater by introducing the emissions into the flame zone of the boiler or process heater; or

(C) Combust the emissions in a flare that complies with the requirements of §63.1333(e).

(2) The owner or operator of an affected source producing PET using a continuous terephthalic acid process shall comply with paragraphs (b)(2)(i) through (b)(2)(iv) of this section.

(i) Limit organic HAP emissions from continuous process vents in the collection of raw material preparation sections within the affected source by complying with either paragraph (b)(2)(i)(A) or (b)(2)(i)(B) of this section.

(A) Organic HAP emissions from all continuous process vents associated with the esterification vessels in each individual raw materials preparation section shall, as a whole, be no greater than 0.04 kg organic HAP per Mg of product from the associated TPPU(s); or alternatively, organic HAP emissions from all continuous process vents associated with the esterification vessels in the collection of raw material preparation sections within the affected source shall, as a whole, be no greater than 0.04 kg organic HAP per Mg of product from all associated TPPU(s). During periods of startup or shutdown, as an alternative to using the procedures specified in §63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (b)(2)(i)(A)(f), (2), or (3) of this section.

(1) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(2) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to §63.1318(b)(1). Keep records of this calculation.

(3) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(2)(i)(A) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

(B) Comply with paragraph (b)(2)(v) of this section.

(ii) Limit organic HAP emissions from continuous process vents in the collection of polymerization reaction sections within the affected source by complying with either paragraph (b)(2)(ii)(A) or (b)(2)(ii)(B) of this section.

(A) Organic HAP emissions from all continuous process vents in each individual polymerization reaction section (including emissions from any equipment used to further recover ethylene glycol, but excluding emissions from process contact cooling towers) shall, as a whole, be no greater than 0.02 kg organic HAP per Mg of product from the associated TPPU(s); or alternatively, organic HAP emissions from all continuous process vents in the collection of polymerization reaction sections within the affected source shall, as a whole, be no greater than 0.02 kg organic HAP per Mg of product from all associated TPPU(s). During periods of startup or shutdown, as an alternative to using the procedures specified in §63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (b)(2)(ii)(A)(f), (2), or (3) of this section.
(1) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(2) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to §63.1318(b)(1). Keep records of this calculation.

(3) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (b)(2)(i)(A) of this section were maintained at the level established to meet the emission limit at maximum representative operating conditions.

(B) Comply with paragraph (b)(2)(v) of this section.

(iii) Continuous process vents not included in a raw materials preparation section, as specified in paragraphs (b)(2)(i) of this section, and not included in a polymerization reaction section, as specified in paragraph (b)(2)(ii) of this section, shall comply with §63.1315.

(iv) Batch process vents shall comply with §63.1321.

(v) Comply with one of the following:

(A) Reduce the emissions in a combustion device to achieve 98 weight percent reduction or to achieve a concentration of 20 parts per million by volume (ppmv) on a dry basis, whichever is less stringent. If an owner or operator elects to comply with the 20 ppmv standard, the concentration shall include a correction to 3 percent oxygen only when supplemental combustion air is used to combust the emissions;

(B) Combust the emissions in a boiler or process heater with a design heat input capacity of 150 million Btu/hr or greater by introducing the emissions into the flame zone of the boiler or process heater; or

(C) Combust the emissions in a flare that complies with the requirements of §63.1333(e).

(c) The owner or operator of an affected source producing polystyrene resin using a continuous process shall comply with the requirements specified in paragraphs (c)(1) through (c)(3) of this section, as appropriate, instead of the requirements specified in 40 CFR part 60, subpart DDD. Compliance can be based on either organic HAP or TOC.

(1) Limit organic HAP emissions from continuous process vents in the collection of material recovery sections within the affected source by complying with either paragraph (c)(3)(i), (c)(1)(ii), or (c)(1)(iii) of this section.

(i) Organic HAP emissions from all continuous process vents in each individual material recovery section shall, as a whole, be no greater than 0.0036 kg organic HAP per Mg of product from the associated TPPU(s); or alternatively, organic HAP emissions from all continuous process vents in the collection of material recovery sections within the affected source shall, as a whole, be no greater than 0.0036 kg organic HAP per Mg of product from all associated TPPU(s). During periods of startup or shutdown, as an alternative to using the procedures specified in §63.1318(b)(1), an owner or operator of an affected source or emission unit subject to an emission limit expressed as mass emissions per mass product may demonstrate compliance with the limit in accordance with paragraphs (c)(1)(i)(A), (B), or (C) of this section.

(A) Keep records establishing that the raw material introduced and product discharged rates were both zero.

(B) Divide the organic HAP emission rate during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero according to §63.1318(b)(1). Keep records of this calculation.

(C) Keep records establishing that the operating parameters of the control device used to comply with the emission limit in paragraph (c)(1)(i) of this section were maintained at the level established to meet

(ii) As specified in §63.1318(d), the owner or operator shall maintain the daily average outlet gas stream temperature from each final condenser in a material recovery section at a temperature of −25 °C (−13 °F) or less (i.e., colder); or

(iii) Comply with one of the following:
(A) Reduce the emissions in a combustion device to achieve 98 weight percent reduction or to achieve a concentration of 20 parts per million by volume (ppmv) on a dry basis, whichever is less stringent. If an owner or operator elects to comply with the 20 ppmv standard, the concentration shall include a correction to 3 percent oxygen only when supplemental combustion air is used to combust the emissions;

(B) Combust the emissions in a boiler or process heater with a design heat input capacity of 150 million Btu/hr or greater by introducing the emissions into the flame zone of the boiler or process heater; or

(C) Combust the emissions in a flare that complies with the requirements of §63.1333(e).

(2) Limit organic HAP emissions from continuous process vents not included in a material recovery section, as specified in paragraph (c)(1)(i) of this section, by complying with §63.1315.

(3) Batch process vents shall comply with §63.1321.


§ 63.1317 PET and polystyrene affected sources—monitoring provisions.

Continuous process vents using a control or recovery device to comply with §63.1316 shall comply with the applicable monitoring provisions specified for continuous process vents in §63.1315(a), except that references to group determinations (i.e., total resource effectiveness) do not apply and owners or operators are not required to comply with §63.113.

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§ 63.1318 PET and polystyrene affected sources—testing and compliance demonstration provisions.

(a) Except as specified in paragraphs (b) through (d) of this section, continuous process vents using a control or recovery device to comply with §63.1316 shall comply with the applicable testing and compliance provisions for continuous process vents specified in §63.1315(a) except that, for purposes of this paragraph (a), references to group determinations (i.e., total resource effectiveness) do not apply and owners or operators are not required to comply with §63.113.

(b) PET affected sources using a dimethyl terephthalate process—Applicability determination procedure. Owners or operators shall calculate organic HAP emissions from the collection of material recovery sections at an existing affected source producing PET using a continuous dimethyl terephthalate process to determine whether §63.1316(b)(1)(i) is applicable using the procedures specified in either paragraph (b)(1) or (b)(2) of this section.

(1) Use Equation 1 of this subpart to determine mass emissions per mass product as specified in paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

During periods of startup or shutdown, as an alternative to using Equation 1 of this subpart, the owner or operator may divide the emission rate of total organic HAP or TOC during startup or shutdown by the rate of polymer produced from the most recent performance test associated with a production rate greater than zero to determine compliance with the emission limit.

\[
ER = \sum_{i=1}^{n} \frac{E_i}{(0.001 P_p)}
\]

where:

- ER = Emission rate of total organic HAP or TOC, kg/Mg product.
- \(E_i\) = Emission rate of total organic HAP or TOC in continuous process vent i, kg/hr.
- \(P_p\) = The rate of polymer produced, kg/hr.
- \(n\) = Number of continuous process vents in the collection of material recovery sections at the affected source.
- 0.001 = Conversion factor, kg to Mg.

(i) The mass emission rate for each continuous process vent, \(E_i\), shall be determined according to the procedures specified in §63.116(c)(4). The sampling site for determining whether §63.1316(b)(1)(i) is applicable shall be at the outlet of the last recovery or control device. When the provisions of §63.116(c)(4) specify that Method 18, 40 CFR part 60, appendix A shall be used, Method 18 or Method 25A, 40 CFR part 60, appendix A may be used for the purposes of this subpart. The use of Method 25A, 40 CFR part 60, appendix A