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crumb rubber taken as soon as safe and feasible after the stripping operation, but no later than the entry point for the first unit operation following the stripper (e.g., the dewatering screen).

(e) [Reserved]

(f) The monthly weighted average residual organic HAP content shall be calculated using Equation 26.

$$HAPCONT_{avg,wk} = \frac{\sum_{i=1}^{n}(C_i)(P_i)}{P_{wk}} \quad \text{[Eq. 26]}$$

where:

$HAPCONT_{avg,wk}$ = Monthly weighted average organic HAP content for all rubber processed at the affected source, kg organic HAP per Mg latex or dry crumb rubber.

n = Number of samples in the month.

C_i = Residual organic HAP content of sample i, determined in accordance with (b)(3) or (c)(3) of this section, kg organic HAP per Mg latex or dry crumb rubber.

P_i = Weight of latex or dry crumb rubber represented by sample i.

P_{wk} = Weight of latex or dry crumb rubber (Mg) processed in the month.

§ 63.496 Back-end process provisions—procedures to determine compliance using control or recovery devices.

(a) If an owner or operator complies with the residual organic HAP limitations in § 63.494(a) using control or recovery devices, compliance shall be demonstrated using the procedures in paragraphs (b) and (c) of this section. Previous test results conducted in accordance with paragraphs (b)(1) through (b)(6) of this section may be used to determine compliance in accordance with paragraph (c) of this section.

(b) Compliance shall be demonstrated using the provisions in paragraphs (b)(1) through (b)(10) of this section, as applicable.

(1) A test shall be conducted, the duration of which shall be in accordance with either paragraph (b)(1)(i) or (b)(1)(ii) of this section, as appropriate.

(i) If the back-end process operations are continuous, the test shall consist of three separate one hour runs.

(ii) If the back-end process operations are batch, the test shall consist of three separate one-hour runs, unless the duration of the batch cycle is less than one-hour, in which case the run length shall equal the complete duration of the back-end process batch cycle.

(2) The test shall be conducted when the grade of elastomer product with the highest residual organic HAP content leaving the stripper is processed in the back-end operations.

(3) The uncontrolled residual organic HAP content in the latex or dry crumb rubber shall be determined in accordance with § 63.495(b)(1) and (b)(3). A separate sample shall be taken and analyzed for each test run. The sample shall be representative of the material being processed in the back-end operation during the test, and does not need to be taken during the test.

(4) The quantity of material (weight of latex or dry crumb rubber) processed during the test run shall be recorded. Acceptable methods of determining this quantity are production records, measurement of stream characteristics, and engineering calculations.

(5) The inlet and outlet emissions from the control or recovery device shall be determined using the procedures in paragraphs (b)(5)(i) through (b)(5)(v) of this section, with the exceptions noted in paragraphs (b)(6) and (b)(7) of this section. The inlet and outlet emissions shall be determined when the material for which the uncontrolled residual organic HAP content is determined in accordance with paragraph (b)(3) of this section, is being processed in the equipment controlled by the control or recovery device.

(i) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites. Sampling sites shall be located at the inlet of the control or recovery device as specified in paragraphs (b)(5)(i)(A) or (b)(5)(i)(B) of this section, and at the outlet of the control or recovery device.

(A) The inlet sampling site shall be located at the exit of the back-end process unit operation before any opportunity for emission to the atmosphere, and before any control or recovery device.

(B) If back-end process vent streams are combined prior to being routed to control or recovery devices, the inlet sampling site may be for the combined stream, as long as there is no opportunity for emission to the atmosphere from any of the streams prior to being combined.

(ii) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(iii) To determine the inlet and outlet total organic HAP concentrations, the owner or operator shall use Method 18 or Method 25A of 40 CFR part 60, appendix A. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A may be used. The minimum sampling time for each run shall be in accordance with paragraph (b)(1) of this section, during which either an integrated sample or grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals during the run, with the time between samples no greater than 15 minutes.

(iv) The mass rate of total organic HAP shall be computed using Equations 27 and 28.

$$E_i = K_2\left(\sum_{j=1}^{n} C_{ij}M_{ij}\right)Q_i \qquad \text{[Eq. 27]}$$

$$E_o = K_2\left(\sum_{j=1}^{n} C_{oj}M_{oj}\right)Q_o \qquad \text{[Eq. 28]}$$

where:

C_{ij}, C_{oj}=Concentration of sample component j of the gas stream at the inlet and outlet of the control or recovery device, respectively, dry basis, ppmv.

E_i, E_o=Mass rate of total organic HAP at the inlet and outlet of the control or recovery device, respectively, dry basis, kg per hour (kg/hr).

M_{ij}, M_{oj}=Molecular weight of sample component j of the gas stream at the inlet and outlet of the control or recovery device, respectively, gm/gm-mole.

Q_i, Q_o=Flow rate of gas stream at the inlet and outlet of the control or recovery device, respectively, dry standard m^3/min.

K_2=Constant, 2.494×10^{-6} $(ppmv)^{-1}$ (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20°C.

(v) Inlet and outlet organic HAP emissions for the run shall be calculated by multiplying the mass rate total inlet and outlet emissions determined in accordance with paragraph (b)(5)(iv) of this section by the duration of the run (in hours).

(6) If a back-end process vent stream is introduced with the combustion air, or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, the inlet and outlet emissions shall be determined in accordance with paragraphs (b)(6)(i) through (b)(6)(iv) of this section.

(i) The inlet organic HAP emissions for the back-end process unit operation shall be determined in accordance with paragraph (b)(5) of this section.

(ii) The owner or operator shall also measure total organic HAP (or TOC, minus methane and ethane) emissions in all process vent streams and primary and secondary fuels introduced into the boiler or process heater, using the procedures in paragraph (b)(5) of this section, with the exceptions noted in paragraphs (b)(6)(ii)(A) through (b)(6)(ii)(C) of this section.

(A) Selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP concentrations in all process vent streams and primary and secondary fuels introduced into the boiler or process heater.

(B) Paragraph (b)(5)(iii) of this section is applicable, except that TOC (minus methane and ethane) may be measured instead of total organic HAP.

(C) The mass rates shall be calculated in accordance with paragraph (b)(5)(iv) of this section, except that C_j at the inlet and outlet of the control device shall be the sum of all total organic HAP (or TOC, minus methane and ethane) concentrations for all process vent streams and primary and secondary fuels introduced into the boiler or process heater.

(iii) The control efficiency of the boiler or process heater shall be calculated using Equation 29.

$$R = \frac{\sum_{i=1}^{n} E_{inlet_i} - \sum_{i=1}^{n} E_{outlet_i}}{\sum_{i=1}^{n} E_{inlet_i}} (100) \qquad (Eq. 29)$$

where:

R=Control efficiency of boiler or process heater, percent.

E_{inlet}=Mass rate of total organic HAP or TOC (minus methane and ethane) for all process vent streams and primary and secondary fuels at the inlet to the boiler or process heater, kg organic HAP/hr or kg TOC/hr.

E_{outlet}=Mass rate of total organic HAP or TOC (minus methane and ethane) for all process vent streams and primary and secondary fuels at the outlet to the boiler or process heater, kg organic HAP/hr or kg TOC/hr.

(iv) The outlet total organic HAP emissions associated with the back-end process unit operation shall be calculated using the equation in paragraph (b)(8) of this section.

(7) An owner or operator is not required to conduct a source test to determine the outlet organic HAP emissions if any control device specified in paragraphs (b)(7)(i) through (b)(7)(v) of this section is used. For these devices, the inlet emissions associated with the back-end process unit operation shall be determined in accordance with paragraph (b)(5) of this section, and the outlet emissions shall be calculated using the equation in paragraph (b)(8) of this section.

(i) A flare, provided the owner or operator complies with the flare provisions in §63.11(b) of subpart A. The compliance determination required by §63.6(h) of subpart A shall be conducted using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions. Compliance determinations are not necessary for flares already deemed to be in compliance with the flare provisions in §63.11(b) of subpart A.

(ii) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(iii) A boiler or process heater into which the process vent stream is introduced with the primary fuel or is used as the primary fuel.

(iv) A control device for which a performance test was conducted for determining compliance with an NSPS and the test was conducted using the same procedures specified in this section and no process changes have been made since the test.

(v) A boiler or process heater burning hazardous waste for which the owner or operator:

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(8) If one of the control devices listed in paragraph (b)(6) or (b)(7) of this section is used, the outlet emissions shall be calculated using Equation 30.

$$E_o = E_i(1 - R) \qquad [Eq. 30]$$

where:

E_o=Mass rate of total organic HAP at the outlet of the control or recovery device, respectively, dry basis, kg/hr.

E_i=Mass rate of total organic HAP at the inlet of the control or recovery device, respectively, dry basis, kg/hr, determined using the procedures in paragraph (b)(5)(iv) of this section.

R=Control efficiency of control device, as specified in paragraph (b)(8) (i), (ii), or (iii) of this section.

(i) If a back-end process vent stream is introduced with the combustion air, or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, the control efficiency of the boiler or process heater shall be determined using the procedures in paragraph (b)(6)(iii) of this section.

(ii) If a back-end process vent is controlled using a control device specified in paragraph (b)(7) (i), (ii), (iii), or (v) of this section, the control device efficiency shall be assumed to be 98 percent.

(iii) If a back-end process vent is controlled using a control device specified in paragraph (b)(7)(iv) of this section, the control device efficiency shall be the efficiency determined in the previous performance test.

(c) Compliance shall be determined using the procedures in this paragraph.

(1) For each test run, the residual organic HAP content, adjusted for the control or recovery device emission reduction, shall be calculated using Equation 31.

Where:

$$\mathrm{HAPCONT}_{run} = \frac{(C)(P) - \left(E_{i,run}\right) + \left(E_{o,run}\right)}{(P)} \qquad [\text{Eq. } 31]$$

$\mathrm{HAPCONT}_{run}$=Factor, kg organic HAP per kg elastomer (latex or dry crumb rubber).

C=Total uncontrolled organic HAP content, determined in accordance with paragraph (b)(3) of this section, kg organic HAP per kg latex or dry crumb rubber.

P=Weight of latex or dry crumb rubber processed during test run.

$E_{i,run}$=Mass rate of total organic HAP at the inlet of the control or recovery device, respectively, dry basis, kg per test run.

$E_{o,run}$=Mass rate of total organic HAP at the outlet of the control or recovery device, respectively, dry basis, kg per test run.

(2) A facility is in compliance if the average of the organic HAP contents calculated for all three test runs is below the residual organic HAP limitations in § 63.494(a).

(d) An owner or operator complying with the residual organic HAP limitations in § 63.494(a) using a control or recovery device, shall redetermine the compliance status through the requirements described in paragraph (b) of this section whenever process changes are made. The owner or operator shall report the results of the redetermination in accordance with § 63.499(d). For the purposes of this section, a process change is any action that would reasonably be expected to impair the performance of the control or recovery device. For the purposes of this section, the production of an elastomer with a residual organic HAP content greater than the residual organic HAP content of the elastomer used in the compliance demonstration constitutes a process change, unless the overall effect of the change is to reduce organic HAP emissions from the source as a whole. Other examples of process changes may include changes in production capacity or production rate, or removal or addition of equipment. For the purposes of this paragraph, process changes do not include: Process upsets; unintentional, temporary process changes; or changes that reduce the residual organic HAP content of the elastomer.

§ 63.497 Back-end process provisions—monitoring provisions for control and recovery devices.

(a) An owner or operator complying with the residual organic HAP limitations in § 63.494(a) using control or recovery devices, or a combination of stripper technology and control or recovery devices, shall install the monitoring equipment specified in paragraphs (a)(1) through (a)(6) of this section, as appropriate.