

all new

PV = NRT

$$\frac{PV}{RT} = \frac{N}{V}$$

1198

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REACTOR VAPOR TEMPERATURE (°C)

REACTOR VAPOR PRESSURE (mm Hg)

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Reactor vapor temperature (°C)	H ₂ O vapor pressure (mm Hg)	Reactor vapor temperature (°C)	H ₂ O vapor pressure (mm Hg)	Reactor vapor temperature (°C)	H ₂ O vapor pressure (mm Hg)
40	58.3	61	156.4	82	284.6
41	59.3	62	163.6	83	300.6
42	61.5	63	171.4	84	318.8
43	64.8	64	179.3	85	338.8
44	68.2	65	187.5	86	360.9
45	71.8	66	196.1	87	384.7
46	75.6	67	205.0	88	410.7
47	79.5	68	214.2	89	438.3
48	83.7	69	223.7	90	467.8
49	88.0	70	233.7	91	499.0
50	92.5	71	243.9	92	531.9
51	97.2	72	254.6	93	566.6
52	102.1	73	265.7	94	603.2
53	107.2	74	277.2	95	641.8
54	112.5	75	289.1	96	682.6
55	118.0	76	301.4	97	725.7
56	123.8	77	314.1	98	771.3
57	129.8	78	327.3	99	819.2
58	136.1	79	341.0	100	869.6
59	142.6	80	355.1		
60	149.4	81	369.7		

(B) The partial pressure (mm Hg) of vinyl chloride in reactor at end of strip from the following equation:

$$PPVC = 760 - RV - VPW$$

Where:

PPVC = partial pressure of vinyl chloride, in mm Hg

760 = atmospheric pressure at 0°C, in mm Hg

RV = absolute value of reactor vacuum, in mm Hg

VPW = vapor pressure of water, in mm Hg

(C) The reactor vapor space volume (m³) at end of strip from the following equation:

$$RVSV = RC - WV - \frac{PVCW}{833}$$

where:

RVSV = reactor vapor space volume, in m³

RC = reactor capacity, in m³

WV = volume of water in reactor from recipe, in m³

PVCW = dry weight of polyvinyl chloride in reactor from recipe, in kg

833 = typical density of polyvinyl chloride, in kg/m³

(iii) For each batch stripped in the reactor, the combined reactor opening loss and emissions from all sources following the reactor used as a stripper is to be determined using the following equation:

$$C = (PPVC)(10^{-3}) +$$

$$\frac{PPVC(RVSV)(1.002)}{(PVCW)(273 + RT)}$$

$$(PVCW)(273 + RT)$$

where:

C = g vinyl chloride/kg polyvinyl chloride product

PPVC = concentration of vinyl chloride in resin after stripping, in ppm

10⁻³ = conversion factor for ppm

PPVC = partial pressure of vinyl chloride determined according to paragraph (g)(6)(ii)(B) of this section, in mm Hg

RVSV = reactor vapor space volume

determined according to paragraph (g)(6)(ii)(C) of this section, in m³

1.002 = ideal gas constant in g·K/mm Hg·m³ for vinyl chloride

PVCW = dry weight of polyvinyl chloride in reactor from recipe, in kg

273 = conversion factor for °C to °K

RT = reactor temperature, in °C

16. By adding paragraph (h) to § 61.67 as follows:

(h)(1) Each piece of equipment within a process unit that can reasonably contain equipment in vinyl chloride service is presumed to be in vinyl chloride service unless an owner or operator demonstrates that the piece of equipment is not in vinyl chloride service. For a piece of equipment to be considered not in vinyl chloride service, it must be determined that the percent vinyl chloride content can be reasonably expected not to exceed 10 percent by weight for liquid streams and 10 percent by volume for gas streams. For purposes of determining the percent vinyl chloride content of the process fluid that is contained in or contacts equipment, procedures that conform to the methods described in ASTM Method D-2267 (incorporated by reference as specified in § 61.18) shall be used.

(2)(i) An owner or operator may use engineering judgment rather than the procedures in paragraph (h)(1) of this section to demonstrate that the percent vinyl chloride content does not exceed 10 percent by weight for liquid streams and 10 percent by volume for gas streams, provided that the engineering judgment demonstrates that the vinyl chloride content clearly does not exceed 10 percent. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in vinyl chloride service, however, the procedures in paragraph (h)(1) of this section shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in vinyl chloride service, the determination can

be revised only after following the procedures in paragraph (h)(1) of this section.

(3) Samples used in determining the percent vinyl chloride content shall be representative of the process fluid that is contained in or contacts the equipment.

17. By adding paragraphs (d), (e) and (f) to § 61.68 as follows:

§ 61.68 Emission monitoring.

(d) When exhaust gas(es), having emission limits that are subject to the requirement of paragraph (a) of this section, are emitted to the atmosphere around the control system and required vinyl chloride monitoring system, the vinyl chloride content of the emission shall be calculated (in units of each applicable emission limit) by best practical engineering judgment based on the discharge duration and known VC concentrations in the affected equipment as determined in accordance with § 61.67(b) or other acceptable method.

(e) For each 3-hour period, the vinyl chloride content of emissions subject to the requirements of paragraphs (a) and (d) of this section shall be averaged (weighted according to the proportion of time that emissions were continuously monitored and that emissions bypassed the continuous monitor) for purposes of reporting excess emissions under § 61.70(c)(1).

(f) For each vinyl chloride emission to the atmosphere determined in accordance with paragraph (e) of this section to be in excess of the applicable emission limits, the owner or operator shall record the identity of the source(s), the date, time, and duration of the excess emission, the cause of the emission, the approximate total vinyl chloride loss during the excess emission, and the method used for determining the vinyl chloride loss. This information shall be retained and made available for inspection by the Administrator as required by § 61.71(a).

18. By changing the title from "Semiannual report" to "Reporting" and by revising paragraph (a) of § 61.70 as follows: