

K = Constant, 1.740×10^{-7} (l/ppm)
(mole/scm)(MJ/kcal) where standard
temperature for mole/scm is 20°C.

C_i = Concentration of sample component *i*,
reported on a wet basis, in ppm, as
measured by Reference Method 18 or
ASTM 01946-67 (reapproved 1977),
incorporated by reference in Section
215.105.

M_i = Net heat of combustion of sample
component *i*, kcal/mole based on
combustion at 25°C and 760 mm Hg. If
published values are not available or
cannot be calculated, the heats of
combustion of vent stream components
are required to be determined using
ASTM 02182-76, incorporated by
reference in Section 215.105.

e) The emission rate of total organic compounds
in the process vent stream shall be
calculated using the following equation:

$$E = K'F \sum_{i=1}^n C_i M_i$$

Where:

E = Emission rate of total organic
compounds (minus methane and ethane)
in the sample in kg/hr.

K' = Constant 2.494×10^{-6} (l/ppm)
(mole/scm) (kg/g) (min/hr), where
standard temperature for (mole/scm)
is 20°C.

M_i = Molecular weight of sample component
i (g/mole).

F = Vent stream flowrate (scm/min), at a
standard temperature of 20°C.

f) The total vent stream concentration (by
volume) of compounds containing halogens
(ppmv; by compound) shall be summed from the
individual concentrations of compounds
containing halogens which were measured by
Reference Method 18.

(Source: Added at 11 Ill. Reg. 20829, effective
December 14, 1987)

APPENDIX F COEFFICIENTS FOR THE TOTAL RESOURCE EFFECTIVENESS INDEX (TRE) EQUATION

This Appendix contains values for the total
resource effectiveness index (TRE) equation in
Subpart V.

If a flow rate falls exactly on the boundary
between the indicated ranges, the operator shall
use the row in which the flow rate is maximum.

COEFFICIENTS FOR TRE EQUATION FOR CHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE LESS THAN OR EQUAL TO 3.5 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.0	13.5	48.73	0.	0.404	-0.1632	0.	0.
13.5	700.	42.35	0.624	0.404	-0.1632	0.	0.024
700.	1400.	34.38	0.678	0.404	-0.1632	0.	0.034
1400.	2100.	126.41	0.712	0.404	-0.1632	0.	0.042
2100.	2800.	168.44	0.747	0.404	-0.1632	0.	0.049
2800.	3500.	210.47	0.758	0.404	-0.1632	0.	0.054

COEFFICIENTS FOR TRE EQUATION FOR CHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE GREATER THAN 3.5 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.	13.5	47.76	0.	-0.292	0.	0.	0.
13.5	700.	41.58	0.605	-0.292	0.	0.	0.0245
700.	1400.	82.84	0.658	-0.292	0.	0.	0.0346
1400.	2100.	123.10	0.691	-0.292	0.	0.	0.0424
2100.	2800.	165.36	0.715	-0.292	0.	0.	0.0490
2800.	3500.	206.62	0.734	-0.292	0.	0.	0.0548

COEFFICIENTS FOR TRE EQUATION FOR NONCHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE LESS THAN OR EQUAL TO 0.48 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.	13.5	19.05	0.	0.113	-0.214	0.	0.
13.5	1350.	16.61	0.239	0.113	-0.214	0.	0.0245
1350.	2700.	32.91	0.260	0.113	-0.214	0.	0.0346
2700.	4050.	49.21	0.273	0.113	-0.214	0.	0.0424

COEFFICIENTS FOR TRE EQUATION FOR NONCHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE GREATER THAN 0.48 AND LESS THAN OR EQUAL TO 1.9 MJ/scm

FLOW RATE (scm/min)							
Min.	Max.	a	b	c	d	e	f
0.	13.5	19.74	0.	0.400	-0.202	0.	0.
13.5	1350.	18.30	0.138	0.400	-0.202	0.	0.0245
1350.	2700.	36.28	0.150	0.400	-0.202	0.	0.0346
2700.	4050.	54.26	0.158	0.400	-0.202	0.	0.0424