

B01 - BAKING OPERATIONS, NONCOMBUSTION EMISSIONS FROM FERMENTATION, UNCONTROLLED

CALCULATION METHODS

$$E_a = U_a \times [1.9 + (0.95 \times Y_1) + (0.19 \times T_1) - (0.51 \times Y_2) - (0.86 \times T_2)] \times C_i \times (1 - e)$$

$$E_h = U_h \times [1.9 + (0.95 \times Y_1) + (0.19 \times T_1) - (0.51 \times Y_2) - (0.86 \times T_2)] \times C_i \times (1 - e)$$

NOTES:

- Control equipment VOC capture and removal efficiencies must be identified in the stack information since emissions are calculated as uncontrolled.
- TSP and PM10 particulate emissions are assumed to be 0.
- Emission factors for NOx, CO, SOx, ROG, TOG, TSP, and PM10 from fuel combustion must be quantified separately. The following 'Baking emissions' refer to the fermentation process only.
- Trace organic speciation factors are based on source testing results from the Fornaca bakery. Ethanol comprised the majority (97.63%) of the ROG emissions quantified.
- Bakery operation emissions are dependent upon Yeast contents (Y1 & Y2) and fermentation times (T1 & T2) as specified in District Rule 67.24 and EPA document 453/R-92-017.

POLLUTANT	District Emission Factor	EPA REFERENCE	EPA	(UNITS)	COMMENTS
	(lbs/lb TOG released)	DOCUMENT	FACTOR		
NOX					
CO					
SOX					
TOG	1.0000	Emission estimation procedures are from EPA Alternative Control Technology Document for Bakery Oven Emissions 453/R-92-017 and District Rule 67.24.			EPA emission estimation technique quantifies TOG released from baking.
ROG	0.9957	ROG emissions are 95%+ ethanol which is not an AB2588 listed substance.			Assume TOG composed of 100% ROG based on Fornaca test results.
TSP					
PM10					
ACETALDEHYDE	0.0140				Based on Fornaca test results (TOG was 100% ROG).
ACETONE	0.0043				Based on Fornaca test results (balance of TOG was ethanol - 97.63%).
BENZENE					
BUTANOL	0.0054				Based on Fornaca test results (reported as isobutanol).
FORMALDEHYDE					
ISOPROPANOL					
METHANOL					
TOLUENE					
XYLENES					

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