

## **REGULATION 6.48 Standard of Performance for Existing Bakery Oven Operations**

### **Air Pollution Control District of Jefferson County Jefferson County, Kentucky**

**Relates To:** KRS Chapter 77 Air Pollution Control

**Pursuant To:** KRS Chapter 77 Air Pollution Control

**Necessity and Function:** KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the quantification of Volatile Organic Compound (VOC) emissions from existing bakery oven operations.

#### **SECTION 1 Applicability**

This regulation is applicable to existing bakeries that produce bread, rolls, buns, and similar products, but not those that produce crackers, pretzels, sweet goods or baked foodstuffs that are not yeast-leavened. This regulation applies to each existing bakery oven that commenced operation before the effective date of this regulation. Sources with a daily production rate of less than one ton of yeast-leavened bread shall be exempt from this regulation.

#### **SECTION 2 Definitions**

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Bakery oven" means any type of equipment or apparatus used to bake bread.
- 2.2 "Bread" means yeast-leavened pan bread, rolls, buns or similar yeast-leavened products.
- 2.3 "Leavened" means to raise a dough by causing gas to permeate it.
- 2.4 "Spike" means an additional amount of yeast added upon the dough side.
- 2.5 "Spike time" means the interval period over which spiking is accomplished.
- 2.6 "Yeast percentage" means the weight ratio of yeast to total recipe flour.

#### **SECTION 3 Method for Calculating VOC Emissions from Bakery Ovens**

The total non-methane VOC emissions from bakery ovens shall be calculated by using the following emission factor equations.

- 3.1 For bread made with yeast spike, the formula is:

$$E.F. = 0.95Y_i + 0.195T_i - 0.51S - 0.86T_s + 1.90$$

where:

- E.F. = pounds VOC per ton of baked bread.
- $Y_i$  = initial baker's percent of yeast to the nearest tenth of a percent, expressed in decimal form (i.e. 3.2% is equivalent to 0.032.)
- $T_i$  = total yeast action time in hours to the nearest tenth of an hour.
- S = final (spike) baker's percent of yeast to the nearest tenth of a percent, expressed in decimal form.
- $T_s$  = spiking time in hours to the nearest tenth of an hour.

3.2 For bread made with no final yeast spike, the formula is:

$$E.F. = 0.95Y_i + 0.195T_i + 1.90$$

3.3 For daily emissions from yeast-leavened bread the formula is:

$$\text{VOC Emissions pounds per day} = E.F. \times BP$$

where:

E.F. = pounds VOC per ton of baked bread.

BP = bread production in tons per day.

#### **SECTION 4 Exemptions**

4.1 This regulation shall not apply to bakery ovens used exclusively for the baking of bakery products leavened chemically in the absence of yeast.

4.2 This regulation shall not apply to bakery ovens used exclusively for the baking of bakery products other than bread. Such products include, but are not limited to, muffins, croutons, breadsticks and crackers.

#### **SECTION 5 Recordkeeping Requirements**

An owner or operator of one or more existing bakery ovens subject to this regulation shall maintain daily production records of bread. The owner or operator shall use the formula in Section 3 in order to calculate the total daily VOC emissions. This log shall be on file at the company and shall be maintained for a period of five years. This log shall be made available to the District upon request within a reasonable time.

Adopted v1/7-19-95; effective 7-19-95.