

**REGULATION 8
ORGANIC COMPOUNDS
RULE 42
LARGE COMMERCIAL BREAD BAKERIES**

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REGULATION 8
ORGANIC COMPOUNDS
RULE 42
LARGE COMMERCIAL BREAD BAKERIES

(Adopted September 20, 1989)

8-42-100 GENERAL

8-42-101 Description: The purpose of this rule is to limit the emission of precursor organic compounds from bread ovens at large commercial bread bakeries.

8-42-110 Exemption, Small Bakeries: Except for Section 8-42-502, this rule shall not apply to bakeries whose total production of bread, buns, and rolls per operating day is less than 45,450 kg (100,000 pounds), averaged over all operating days in any one month.

(Amended June 1, 1994)

8-42-111 Exemption, Low Emitting Ovens: Ovens demonstrated to the satisfaction of the APCO to emit less than 68.2 kg (150 pounds) of ethanol per operating day averaged over a period of one year shall be exempt from the requirements of Section 8-42-301.

8-42-112 Exemption, Existing Ovens: The requirements of Section 8-42-303 shall not apply to ovens, which commenced operation prior to January 1, 1988 and which are demonstrated to the satisfaction of the APCO to emit less than 113.7 kg (250 pounds) of ethanol per operating day, averaged over a period of one year.

8-42-113 Exemption, Miscellaneous Bakery Products: This rule does not apply to equipment used exclusively for the baking of bakery products other than bread, buns, and rolls. Such products include, but are not limited to, muffins, croutons, breadsticks, and crackers.

8-42-114 Exemption, Chemically Leavened Products: This rule does not apply to equipment used exclusively for the baking of bakery products leavened chemically in the absence of yeast.

8-42-200 DEFINITIONS

8-42-201 Approved Emission Control System: A system for reducing emissions of precursor organic compounds to the atmosphere consisting of a control device, which has been approved by the APCO and which satisfies the following conditions:

201.1 The control device shall achieve the control efficiency specified in the applicable standards section at all times during normal operation of the equipment being controlled.

201.2 The collection system shall vent all exhaust from the oven stack or stacks to the control device during normal operation.

8-42-202 Baseline Emissions: The average amount of precursor organic compounds emitted per operating day from an oven between January 1, 1988 and December 31, 1988. Emissions shall be calculated in accordance with Section 8-42-602.

8-42-203 Bread: A perishable foodstuff prepared from a dough whose primary ingredients are flour, sugar, salt, water, and yeast and which is baked into loaves, buns, or rolls.

8-42-204 Fermentation Time: Elapsed time between adding yeast to the dough or sponge and placing the loaves into the oven, expressed in hours.

8-42-205 Large Commercial Bread Bakery: Any bakery producing more than 45,454 kg (100,000 pounds) of breads, buns, and rolls per day.

8-42-206 Leaven: To raise a dough by causing gas to thoroughly permeate it.

8-42-207 Yeast Percentage: Pounds of yeast per hundred pounds of total recipe flour, expressed as a percentage.

8-42-208 Key System Operating Parameter: An emission control system operating parameter, such as temperature, flow rate or pressure, that ensures operation of the

abatement equipment within manufacturer specifications and compliance with the standards in Sections 8-42-302, and 303. (Adopted June 1, 1994)

8-42-300 STANDARDS

8-42-301 New and Modified Bakery Ovens: Effective January 1, 1989, a person subject to this rule shall not operate the following equipment unless the requirements of Section 8-42-302 are met:

- 301.1 Any newly constructed oven commencing operation after January 1, 1989.
- 301.2 Any newly constructed oven replacing an existing oven and commencing operation after January 1, 1989.
- 301.3 Any existing oven which has been modified, with modifications completed after January 1, 1989, at a cost exceeding 50% of replacement cost of the oven.
- 301.4 Any oven with a change in production after January 1, 1989, resulting in an emission increase, averaged over a 30 day period, of 68.2 kg (150 pounds) per operating day above the baseline emissions.

8-42-302 Emission Control Requirements, New and Modified Ovens: All new and modified ovens shall be required to vent all emissions to an approved emission control system capable of reducing emissions of precursor organic compounds by 90% on a mass basis.

8-42-303 Emission Control Requirements, Existing Ovens: Effective January 1, 1992, all existing ovens which commenced operation prior to January 1, 1989, shall be required to vent emissions to a control system meeting the following standards:

- 303.1 Emission collection system shall capture all emissions of precursor organic compounds from all oven stacks.
- 303.2 Collected emissions shall be vented to an approved emission control device which has a destruction efficiency of at least 90% on a mass basis.

8-42-304 Delayed Compliance, Existing Ovens: In lieu of complying with the requirements of Section 8-42-303, an applicant may elect to replace those ovens subject to Section 8-42-303 with new ovens meeting the requirements of Section 8-42-302 by January 1, 1994. Such election must be made by January 1, 1991, subject to approval of the APCO. In approving such an election, the APCO may require the posting of a bond and may impose permit conditions on the existing subject ovens in order to assure compliance with the January 1, 1994 installation of new ovens.

8-42-400 ADMINISTRATIVE REQUIREMENTS

8-42-401 Compliance Schedule: Any person subject to the requirements of Section 8-42-303 of this rule shall comply with the following increments of progress:

- 401.1 By January 1, 1990: Submit a status report to the APCO stating the options under consideration for retrofitting or replacing existing ovens.
- 401.2 By January 1, 1991: Submit a plan describing the methods proposed to be used to comply with 8-42-303.
- 401.3 By March 31, 1991: Submit a completed application for any Authority to Construct necessary to comply with these requirements.
- 401.4 By January 1, 1992: Be in full compliance with all applicable requirements.

8-42-402 Delayed Compliance Schedule: Any person seeking to comply with this rule under Section 8-42-304 shall comply with the following increments of progress:

- 402.1 By January 1, 1991: Submit a plan describing the methods proposed to be used to comply with 8-42-302.
- 402.2 By January 1, 1992: Submit to the APCO a status report on the purchase of the new ovens.
- 402.3 By January 1, 1993: Submit a completed application for any Authority to Construct necessary to comply with these requirements.
- 402.4 By January 1, 1994: Be in full compliance with all applicable requirements.

8-42-500 MONITORING AND RECORDS

8-42-501 Approved Emission Control System, Recordkeeping Requirements: Any person operating air pollution abatement equipment to comply with Section 8-42-302, or 303 shall record key system operating parameters on a daily basis

(Adopted June 1, 1994)

8-42-502 Burden of Proof: Any person claiming the small bakery exemption per Section 8-20-110 must have information available, such as production records, that would allow the APCO to verify this exemption.

(Adopted June 1, 1994)

8-42-600 MANUAL OF PROCEDURES

8-42-601 Determination of Emissions: Emissions of organics shall be measured as prescribed in the Manual of Procedures, Source Test Procedure ST-32.

8-42-602 Emission Calculation Procedures: If emission measurements conducted in accordance with Section 8-42-601 are not available for a specific bakery product, oven emissions shall be calculated using the emission factors in Table I.

TABLE I

Yt*	Pounds VOC/ton bakery product	Yt*	Pounds VOC/ton bakery product
1.0	.8488	16.0	7.5176
1.5	1.0711	16.5	7.7399
2.0	1.2934	17.0	7.9622
2.5	1.5157	17.5	8.1845
3.0	1.7380	18.0	8.4068
3.5	1.9603	18.5	8.6291
4.0	2.1826	19.0	8.8514
4.5	2.4049	19.5	9.0737
5.0	2.6272	20.0	9.2959
5.5	2.8495	20.5	9.5182
6.0	3.0718	21.0	9.7405
6.5	3.2941	21.5	9.9628
7.0	3.5163	22.0	10.1851
7.5	3.7386	22.5	10.4074
8.0	3.9609	23.0	10.6297
8.5	4.1832	23.5	10.8520
9.0	4.4055	24.0	11.0743
9.5	4.6278	24.5	11.2966
10.0	4.8501	25.0	11.5189
10.5	5.0724	25.5	11.7412
11.0	5.2947	26.0	11.9635
11.5	5.5170	26.5	12.1857
12.0	5.7393	27.0	12.4080
12.5	5.9616	27.5	12.6303
13.0	6.1839	28.0	12.8526
13.5	6.4061	28.5	13.0749
14.0	6.6284	29.0	13.2972
14.5	6.8507	29.5	13.5195
15.0	7.0730	30.0	13.7418
15.5	7.2953		

*Yt = (yeast percentage) x (fermentation time).

If yeast is added in 2 steps, Yt = [(initial yeast percentage) x (total fermentation time) + (remaining yeast percentage) x (remaining fermentation time)].