

§XXXX. Occupational exposure to food flavorings.

(a) Scope and Application. This section applies to a place of employment if any of the following occurs:

(1) One or more flavorings is manufactured, packaged, ~~or mixed~~ or blended with other flavorings.

(2) Any flavoring containing diacetyl at a concentration of [[_____ % or more and weighing _____ or more]] is: [[use of heat as a trigger?]]

(A) Heated to a temperature at or above _____° F, or,

~~(B) Sprayed, or~~

~~(C) Added to powdered food product or powdered ingredient of a food product.~~

Exception to subsection (2): This section does not apply if the process is completely enclosed and all emissions are discharged outside of the workplace.

~~(3) Employees are exposed to a food production process that uses any flavoring and employee exposure to the process has been demonstrated by at least one scientific study to be associated with the development of fixed obstructive lung disease.~~

~~(3) An employee has been diagnosed with fixed obstructive lung disease, and no cause other than occupational exposure to one or more flavorings is readily apparent.~~

NOTE: This section does not preclude the application of other sections of Title 8 including, but not limited to, sections 3203, 5141, 5143, 5144, 5155, and 5194.

(b) Definitions.

(1) “Flavoring” means any flavoring constituent, any combination of flavoring constituents, or any combination consisting of one or more flavoring constituents and other ingredients, which is intended primarily to impart flavor to food.

(2) “Flavoring constituent” means any of the following: diacetyl (2,3-Butanedione, CAS # 421-03-8) acetoin (CAS # 513860).

(3) “Food product” means any substance, other than a substance used primarily for the purpose of imparting flavor to food, intended to be consumed by humans or animals.

(b) Exposure assessment. The employer shall conduct representative assessments of employee exposure to flavoring constituents. The purpose of these assessments is to quantify the effectiveness of exposure control measures. The assessments shall be repeated annually or sooner if there is a significant change in engineering or work practice controls. In making such assessments, the employer shall follow the detailed guidance about sampling strategies, appropriate analytical methods, limits of detection, etc., that is found in

mandatory Appendix A.

(c) Engineering Controls and Work Practice Controls. The employer shall implement engineering and work practice controls to reduce employee exposure to the lowest levels feasible. The employer shall utilize measures to minimize vapor and dust exposure such as:

- (1) Local exhaust ventilation located and designed to capture vapors and dusts before they can enter the breathing zone as effectively as practicable;
 - (2) Enclosing operations involving any flavoring that generates vapors or dusts; and
 - (3) Minimizing the application of heat to processes where heat can contribute to exposure to vapors of flavoring constituents.
- (4) The employer shall document according to the criteria in mandatory Appendix B how the engineering and work practice controls that have been implemented have reduced employee exposures to the lowest feasible level.

(d) Respiratory Protection. In production or other areas of exposure where sampling detects airborne exposure to flavoring constituents after implementation of engineering and work practice controls, the employer shall provide [[[an appropriate respirator]] and implement a respiratory protection program in accordance with section 5144. A respirator shall be provided for any employee requesting one who handles flavorings, or who works in or next to an area where flavorings are handled.

(e) Medical Surveillance. The employer shall make medical surveillance available to all employees who work in or next to areas where flavorings are handled. The program shall include an initial medical evaluation, periodic follow up tests and a report from the physician.

(1) Initial medical evaluation. When this regulation becomes effective or before the time of initial assignment, the employer shall provide each employee covered with a medical evaluation that focuses on detecting and preventing respiratory disease. The evaluation shall include:

(A) A detailed occupational history that includes past and current work exposure to flavorings and other known substances known or suspected to be respiratory hazards.

(B) The respiratory health questionnaire that is in mandatory Appendix C. Prior to filling out the questionnaire each employee must be made familiar with the signs and symptoms associated with exposure to flavorings that are described in Appendix C.

(C) A pulmonary function test conducted and evaluated in accordance with guidelines of the American Thoracic Society (ATS) or equivalent and administered by technicians with current NIOSH spirometry certification and demonstrated knowledge of proper techniques for coaching test subjects.

(D) Appropriate additional tests as necessary, in the opinion of the evaluating physician.

(2) Follow up tests.

(A) The employer shall provide each employee with an ATS or equivalent pulmonary function test at least every six months. Additional evaluations, questionnaires, and tests shall be provided as necessary in the opinion of the evaluating physician.

(B) Whenever an employee develops signs and symptoms associated with exposure to a flavoring constituent, the employer shall provide the employee with an additional medical evaluation which shall include those elements considered appropriate by the evaluating physician.

(C) Exit evaluation. Whenever an employee who works or has worked in or next to areas where flavorings are handled terminates employment with the employer, an exit pulmonary function test and medical questionnaire shall be administered unless they have been provided within the previous thirty days. The employer shall arrange for and promptly provide any additional evaluations, tests or referrals necessary in the opinion of the evaluating physician.

(3) Information Provided to the Physician. The employer shall provide the following information to the evaluating physician:

(A) A copy of this standard and its appendices.

(B) A description of the affected employee's duties as they relate to the employee's exposure to diacetyl and other flavoring constituents.

(C) The employee's actual or representative breathing zone exposure levels, if known.

(D) A description of any personal protective equipment used or to be used.

(E) Information from previous employment-related medical evaluations of the employee, if known.

(f) Medical Removal and Physician's Written Opinion

(1) For each examination required under this standard, the employer shall obtain a written opinion from the examining physician within 15 days of the evaluation. This written opinion shall contain the results of the medical examination except that it shall not reveal specific findings or diagnoses unrelated to occupational exposure to diacetyl or other flavoring constituents. The written opinion shall include:

(A) The physician's opinion as to whether the employee has any medical condition that would place the employee at increased risk of material impairment of health from exposure to diacetyl or other potentially hazardous flavoring constituents;

(B) Any recommended limitations on the employee's exposures to diacetyl or other flavoring substances or ingredients, or on the employee's use of personal protective equipment, including respirators; and

(C) A statement that the employee has been informed by the physician of any medical conditions which would be aggravated by exposure to diacetyl or other flavoring constituents, and

(D) Whether medical conditions may have resulted from past exposure to diacetyl or other potentially hazardous flavoring constituents or from exposure in an emergency, and whether there is a need for further examination or treatment.

(E) The employer shall provide a copy of the physician's written opinion to the affected employee within 5 calendar days of its receipt.

(2) The employer shall provide for retention of the results of the medical examination and tests conducted by the physician in accordance with applicable legal requirements for medical confidentiality.

(3) When the physician recommends that an employee is to be restricted from their normal work as a result of an abnormal pulmonary function test result, the employer shall:

(A) Transfer the employee to comparable work for which the employee is qualified or can be trained in a short period (up to 6 months). The employer shall maintain the employee's current earnings, seniority, and other benefits. If there is no work available that would not involve the employee's being exposed to diacetyl or other potentially hazardous flavoring constituents, the employer shall maintain the employee's current earnings, seniority and other benefits

1. Until such work becomes available, or,

2. Until the employee is determined medically to be able to return to their original job status, or,

3. Until the employee is determined to be unable to return to work involving exposure to diacetyl or other potentially hazardous flavoring constituents, or,

4. For six months, whichever comes first.

(B) Provide competent medical counseling on the increased risk of significant health impairment for employees with medical conditions that may be directly or indirectly aggravated by exposure to diacetyl or other potentially hazardous flavoring constituents.

(g) Training and labeling of flavorings.

(1) Training. In addition to the information and training required by sections 3203, 5144, and 5194, the employer shall provide annual training that includes each of the following:

(A) The specific nature of the operations that result in or are reasonably likely to result in exposure to flavorings;

(B) The exposure assessment information that represent the level of exposure to which employees may be exposed, and the right of employees to obtain copies of this information under section 3204;

(C) The adverse health effects and signs and symptoms associated with exposure to flavorings and the need for employees to report these symptoms promptly to the employer if they experience any of them. This information shall include information contained in mandatory Appendix C. Employees shall be encouraged to report any of these symptoms to their employer, who shall keep a record of such reports and promptly provide follow up medical evaluations as needed.

(D) The engineering controls, work practices, labeling, and personal protective equipment associated with the employee's job assignment and how they should be used to reduce exposure to flavorings.

(2) Labeling. Any container of diacetyl shall be labeled with the following or equivalent warning:

WARNING: This product contains [[each flavoring constituent in the product]. [The substance or substances present] can be a severe respiratory hazard if improperly handled. Breathing dust or vapor from this product could result in lung damage or other adverse health effects.

(3) Control measures. A plain-language summary of the potential hazards of all flavorings present in the workplace and appropriate engineering control measures, work practices, and protective equipment shall be included in the material safety data sheet (MSDS) or in a supplemental document if the MSDS does not provide that information. This information shall be written in form that is understandable by the employee and available in the same manner as required by section 5194.

(h) Recordkeeping.

The employer shall maintain and provide access to all exposure assessment and medical records in accordance with section 3204. Training, reporting of signs and symptoms, control recommendation documents and other records not already covered by section 3204 shall be maintained and accessible for at least three years.

(i) MSDS Preparation

At places of employment at which one or more flavorings is manufactured,

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packaged, or mixed or blended with other flavorings for which the concentration of diacetyl is known, and the final product contains 0.1% or more diacetyl, the employer shall record that percentage on the MSDS for that product. All appropriate hazard warnings and information about health effects and toxicology of diacetyl shall be included on the MSDS, as required by 8CCR 5194.