

# 13 CARCINOGENS 4-NITROBIPHENYL, ETC.

# Z

## OAD 437, DIVISION 2

### GENERAL OCCUPATIONAL SAFETY AND HEALTH RULES

### SUBDIVISION Z – TOXIC AND HAZARDOUS SUBSTANCES

**437-002-0360 Adoption by Reference.** *In addition to, and not in lieu of, any other safety and health codes contained in OAR Chapter 437, the Department adopts by reference the following federal rules as printed in the Code of Federal Regulations, 29 CFR 1910, revised as of 7/1/98, and any subsequent amendments published in the Federal Register as listed below:*

(3) 29 CFR 1910.1002 **Coal tar pitch volatiles**, interpretation of term, published 1/21/83, Federal Register, vol. 43, p. 2768.

(4) 29 CFR 1910.1003 **13 Carcinogens**, published 3/7/96, Federal Register, vol. 61, no. 46, p. 9242; 1/8/98, FR vol. 63, no. 5, p. 1286; 4/23/98, FR vol. 63, no. 78, p. 20099; 1/5/05, FR vol. 69, p. 1111; 4/3/06, FR vol. 71, no. 63, p. 16669; 12/12/08, FR vol. 73, no. 240, pp. 75568-75589.

(5) 29 CFR 1910.1004 See §1910.1003, **13 Carcinogens**.

(6) Reserved for 29 CFR 1910.1005.

(7) 29 CFR 1910.1006 See §1910.1003, **13 Carcinogens**.

(8) 29 CFR 1910.1007 See §1910.1003, **13 Carcinogens**.

(9) 29 CFR 1910.1008 See §1910.1003, **13 Carcinogens**.

(10) 29 CFR 1910.1009 See §1910.1003, **13 Carcinogens**.

(11) 29 CFR 1910.1010 See §1910.1003, **13 Carcinogens**.

(12) 29 CFR 1910.1011 See §1910.1003, **13 Carcinogens**.

(13) 29 CFR 1910.1012 See §1910.1003, **13 Carcinogens**.

(14) 29 CFR 1910.1013 See §1910.1003, **13 Carcinogens**.

(15) 29 CFR 1910.1014 See §1910.1003, **13 Carcinogens**.

(16) 29 CFR 1910.1015 See §1910.1003, **13 Carcinogens**.

(17) 29 CFR 1910.1016 See §1910.1003, 13 Carcinogens.

*These standards are available at the Oregon Occupational Safety and Health Division, Oregon Department of Consumer and Business Services, and the United States Government Printing Office.*

**Stat. Auth.:** ORS 654.025(2) and 656.726(4).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** APD Admin. Order 13-1988, f. 8/2/88, ef. 8/2/88 (Benzene).  
 APD Admin. Order 14-1988, f. 9/12/88, ef. 9/12/88 (Formaldehyde).  
 APD Admin. Order 18-1988, f. 11/17/88, ef. 11/17/88 (Ethylene Oxide).  
 APD Admin. Order 4-1989, f. 3/31/89, ef. 5/1/89 (Asbestos-Temp).  
 APD Admin. Order 6-1989, f. 4/20/89, ef. 5/1/89 (Non-Asbestiforms-Temp).  
 APD Admin. Order 9-1989, f. 7/7/89, ef. 7/7/89 (Asbestos & Non-Asbestiforms-Perm).  
 APD Admin. Order 11-1989, f. 7/14/89, ef. 8/14/89 (Lead).  
 APD Admin. Order 13-1989, f. 7/17/89, ef. 7/17/89 (Air Contaminants).  
 OR-OSHA Admin. Order 1-1990, f. 1/11/90, ef. 1/11/90 (Formaldehyde-Temp).  
 OR-OSHA Admin. Order 3-1990, f. 1/19/90, ef. 1/19/90 (Asbestos & Non-Asbestiforms-Temp).  
 OR-OSHA Admin. Order 6-1990, f. 3/2/90, ef. 3/2/90 (Formaldehyde-Perm).  
 OR-OSHA Admin. Order 7-1990, f. 3/2/90, ef. 3/2/90 (Asbestos & Non-Asbestiforms-Perm).  
 OR-OSHA Admin. Order 9-1990, f. 5/8/90, ef. 8/8/90 (Labs).  
 OR-OSHA Admin. Order 11-1990, f. 6/7/90, ef. 7/1/90 (Air Contaminants).  
 OR-OSHA Admin. Order 13-1990, f. 6/28/90, ef. 8/1/90 (Asbestos-Temp).  
 OR-OSHA Admin. Order 14-1990, f. 6/28/90, ef. 8/1/90 (Lead).  
 OR-OSHA Admin. Order 19-1990, f. 8/31/90, ef. 8/31/90 (Asbestos-Perm).  
 OR-OSHA Admin. Order 20-1990, f. 9/18/90, ef. 9/18/90 (Lead).  
 OR-OSHA Admin. Order 21-1990, f. 9/18/90, ef. 9/18/90 (Air Contaminants).  
 OR-OSHA Admin. Order 7-1991, f. 4/25/91, ef. 4/25/91 (Air Contaminants, Asbestos, Formaldehyde).  
 OR-OSHA Admin. Order 13-1991, f. 10/10/91, ef. 10/10/91 (Lead, Formaldehyde).  
 OR-OSHA Admin. Order 15-1991, f. 12/13/91, ef. 12/13/91 (Asbestos).  
 OR-OSHA Admin. Order 1-1992, f. 1/22/92, ef. 1/22/92 (Formaldehyde).  
 OR-OSHA Admin. Order 4-1992, f. 4/16/92, ef. 4/16/92 (Formaldehyde).  
 OR-OSHA Admin. Order 5-1992, f. 4/24/92, ef. 7/1/92 (Bloodborne Pathogens).  
 OR-OSHA Admin. Order 6-1992, f. 5/18/92, ef. 5/18/92 (Asbestos).  
 OR-OSHA Admin. Order 10-1992, f. 9/24/92, ef. 9/24/92 (Lead-temp).  
 OR-OSHA Admin. Order 11-1992, f. 10/9/92, ef. 10/9/92 (Asbestos).  
 OR-OSHA Admin. Order 12-1992, f. 10/13/92, ef. 10/13/92 (Formaldehyde).  
 OR-OSHA Admin. Order 15-1992, f. 12/30/92, ef. 12/30/92 (Air Contaminants, BBP, Labs).  
 OR-OSHA Admin. Order 1-1993, f. 1/22/93, ef. 1/22/93 (Cadmium, MDA).  
 OR-OSHA Admin. Order 6-1993, f. 5/17/93, ef. 5/17/93 (Air Contaminants-Temp).  
 OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93 (remainder of 2/Z).  
 OR-OSHA Admin. Order 17-1993, f. 11/15/93, ef. 11/15/93 (Air Contaminants-Perm).  
 OR-OSHA Admin. Order 4-1995, f. 3/29/95, ef. 3/29/95 (Asbestos).  
 OR-OSHA Admin. Order 8-1995, f. 8/25/95, ef. 8/25/95 (Asbestos).  
 OR-OSHA Admin. Order 4-1996, f. 9/13/96, ef. 9/13/96 (Lead).  
 OR-OSHA Admin. Order 6-1996, f. 11/29/96, ef. 11/29/96 (Asbestos).  
 OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.  
 OR-OSHA Admin. Order 6-1997, f. 5/2/97, ef. 5/2/97.  
 OR-OSHA Admin. Order 8-1997, f. 11/14/97, ef. 11/14/97 (Methylene Chloride).  
 OR-OSHA Admin. Order 1-1998, f. 2/13/98, ef. 2/13/98 (Methylene Chloride).  
 OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.  
 OR-OSHA Admin. Order 1-1999, f. 3/22/99, ef. 3/22/99.  
 OR-OSHA Admin. Order 4-1999, f. 4/30/99, ef. 4/30/99.  
 OR-OSHA Admin. Order 1-2005, f. 4/12/05, ef. 4/12/05.  
 OR-OSHA Admin. Order 4-2006, f. 7/24/06, ef. 7/24/06.  
 OR-OSHA Admin. Order 5-2009, f. 5/29/09, ef. 5/29/09.

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## SUBDIVISION Z

### TOXIC AND HAZARDOUS SUBSTANCES

#### **§1910.1002 Coal Tar Pitch Volatiles; Interpretation of Term.**

As used in §1910.1000 (Table Z-1), coal tar pitch volatiles include the fused polycyclic hydrocarbons which volatilize from the distillation residues of coal, petroleum (excluding asphalt), wood, and other organic matter. Asphalt (CAS 8052-42-4, and CAS 64742-93-4) is not covered under the “coal tar pitch volatiles” standard.

[48 FR 2768, Jan. 21, 1983]

**Stat. Auth:** ORS 654.025(2) and 656.726(3)

**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.



# 13 CARCINOGENS 4-NITROBIPHENYL, ETC.

## §1910.1003 13 Carcinogens (4-Nitrobiphenyl, etc.)

### (a) Scope and application.

(1) This section applies to any area in which the 13 carcinogens addressed by this section are manufactured, processed, repackaged, released, handled, or stored, but shall not apply to transshipment in sealed containers, except for the labeling requirements under paragraphs (e)(2), (3) and (4) of this section. The 13 carcinogens are the following:

4-Nitrobiphenyl, Chemical Abstracts Service Register Number (CAS No.) 92933;  
alpha-Naphthylamine, CAS No. 134327;  
methyl chloromethyl ether, CAS No. 107302;  
3,3'-Dichlorobenzidine (and its salts) CAS No. 91941;  
bis-Chloromethyl ether, CAS No. 542881;  
beta-Naphthylamine, CAS No. 91598;  
Benzidine, CAS No. 92875;  
4-Aminodiphenyl, CAS No. 92671;  
Ethyleneimine, CAS No. 151564;  
beta-Propiolactone, CAS No. 57578;  
2-Acetylaminofluorene, CAS No. 53963;  
4-Dimethylaminoazo-benzene, CAS No. 60117; and  
N-Nitrosodimethylamine, CAS No. 62759.

(2) This section shall not apply to the following:

(i) Solid or liquid mixtures containing less than 0.1 percent by weight or volume of 4-Nitrobiphenyl; methyl chloromethyl ether; bis-chloromethyl ether; beta-Naphthylamine; benzidine or 4-Aminodiphenyl; and

(ii) Solid or liquid mixtures containing less than 1.0 percent by weight or volume of alpha-Naphthylamine; 3,3'-Dichlorobenzidine (and its salts); Ethyleneimine; beta-Propiolactone; 2-Acetylaminofluorene; 4-Dimethylaminoazobenzene, or N-Nitrosodimethylamine.

(b) **Definitions.** For the purposes of this section:

**Absolute filter** is one capable of retaining 99.97 percent of a mono disperse aerosol of 0.3 um particles.

**Authorized employee** means an employee whose duties require him to be in the regulated area and who has been specifically assigned by the employer.

**Clean change room** means a room where employees put on clean clothing and/or protective equipment in an environment free of the 13 carcinogens addressed by this section. The clean change room shall be contiguous to and have an entry from a shower room, when the shower room facilities are otherwise required in this section.

**Closed system** means an operation involving a carcinogen addressed by this section where containment prevents the release of the material into regulated areas, non-regulated areas, or the external environment.

**Decontamination** means the inactivation of a carcinogen addressed by this section or its safe disposal.

**Director** means the Director, National Institute for Occupational Safety and Health, or any person directed by him or the Secretary of Health and Human Services to act for the Director.

**Disposal** means the safe removal of the carcinogens addressed by this section from the work environment.

**Emergency** means an unforeseen circumstance or set of circumstances resulting in the release of a carcinogen addressed by this section that may result in exposure to or contact with the material.

**External environment** means any environment external to regulated and nonregulated areas.

**Isolated system** means a fully enclosed structure other than the vessel of containment of a carcinogen addressed by this section that is impervious to the passage of the material and would prevent the entry of the carcinogen addressed by this section into regulated areas, nonregulated areas, or the external environment, should leakage or spillage from the vessel of containment occur.

**Laboratory-type hood** is a device enclosed on the three sides and the top and bottom, designed and maintained so as to draw air inward at an average linear face velocity of 150 feet per minute with a minimum of 125 feet per minute; designed, constructed, and maintained in such a way that an operation involving a carcinogen addressed by this section within the hood does not require the insertion of any portion of any employee's body other than his hands and arms.

**Nonregulated area** means any area under the control of the employer where entry and exit is neither restricted nor controlled.

**Open-vessel system** means an operation involving a carcinogen addressed by this section in an open vessel that is not in an isolated system, a laboratory-type hood, nor in any other system affording equivalent protection against the entry of the material into regulated areas, non-regulated areas, or the external environment.

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**Protective clothing** means clothing designed to protect an employee against contact with or exposure to a carcinogen addressed by this section.

**Regulated area** means an area where entry and exit is restricted and controlled.

**(c) Requirements for areas containing a carcinogen addressed by this section.** A regulated area shall be established by an employer where a carcinogen addressed by this section is manufactured, processed, used, repackaged, released, handled or stored. All such areas shall be controlled in accordance with the requirements for the following category or categories describing the operation involved:

**(1) Isolated systems.** Employees working with a carcinogen addressed by this section within an isolated system such as a “glove box” shall wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

**(2) Closed system operation.**

**(i)** Within regulated areas where the carcinogens addressed by this section are stored in sealed containers, or contained in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens addressed by this section are contained within, access shall be restricted to authorized employees only.

**(ii)** Employees exposed to 4-Nitrobiphenyl; alpha-Naphthylamine; 3,3'-Dichlorobenzidine (and its salts); beta-Naphthylamine; benzidine; 4-Aminodiphenyl; 2-Acetylaminofluorene; 4-Dimethylaminoazo-benzene; and N-Nitrosodimethylamine shall be required to wash hands, forearms, face, and neck upon each exit from the regulated areas, close to the point of exit, and before engaging in other activities.

**(3) Open-vessel system operations.** Open-vessel system operations as defined in paragraph (b)(13) of this section are prohibited.

**(4) Transfer from a closed system, charging or discharging point operations, or otherwise opening a closed system.** In operations involving “laboratory-type hoods,” or in locations where the carcinogens addressed by this section are contained in an otherwise “closed system,” but is transferred, charged, or discharged into other normally closed containers, the provisions of this paragraph shall apply.

**(i)** Access shall be restricted to authorized employees only.

**(ii)** Each operation shall be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. Exhaust air shall not be discharged to regulated areas, nonregulated areas or the external environment unless decontaminated. Clean makeup air shall be introduced in sufficient volume to maintain the correct operation of the local exhaust system.

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(iii) Employees shall be provided with, and required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area.

(iv) Each employee engaged in handling operations involving the carcinogens addressed by this section must be provided with, and required to wear and use, a half-face filter type respirator for dusts, mists, and fumes. A respirator affording higher levels of protection than this respirator may be substituted.

(v) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified, as required under paragraphs (e)(2), (3), and (4) of this section.

(vi) Drinking fountains are prohibited in the regulated area.

(vii) Employees shall be required to wash hands, forearms, face, and neck on each exit from the regulated area, close to the point of exit, and before engaging in other activities and employees exposed to 4-Nitrobiphenyl; alpha-Naphthylamine; 3,3'-Dichlorobenzidine (and its salts); beta-Naphthylamine; Benzidine; 4-Aminodiphenyl; 2-Acetylaminofluorene; 4-Dimethylaminoazo-benzene; and N-Nitrosodimethylamine shall be required to shower after the last exit of the day.

**(5) Maintenance and decontamination activities.** In cleanup of leaks of spills, maintenance, or repair operations on contaminated systems or equipment, or any operations involving work in an area where direct contact with a carcinogen addressed by this section could result, each authorized employee entering that area shall:

(i) Be provided with and required to wear clean, impervious garments, including gloves, boots, and continuous-air supplied hood in accordance with §1910.134;

(ii) Be decontaminated before removing the protective garments and hood;

(iii) Be required to shower upon removing the protective garments and hood.

**(d) General regulated area requirements.**

**(1) Respiratory program.** The employer must implement a respiratory protection program in accordance with 29 CFR 1910.134(b), (c), (d) (except (d)(1)(iii) and (iv), and (d)(3)), and (e) through (m), which covers each employee required by this section to use a respirator.

**(2) Emergencies.** In an emergency, immediate measures including, but not limited to, the requirements of paragraphs (d)(2)(i) through (v) of this section shall be implemented.

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(i) The potentially affected area shall be evacuated as soon as the emergency has been determined.

(ii) Hazardous conditions created by the emergency shall be eliminated and the potentially affected area shall be decontaminated prior to the resumption of normal operations.

(iii) Special medical surveillance by a physician shall be instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section.

(iv) Where an employee has a known contact with a carcinogen addressed by this section, such employee shall be required to shower as soon as possible, unless contraindicated by physical injuries.

(v) An incident report on the emergency shall be reported as provided in paragraph (f)(2) of this section.

(vi) Emergency deluge showers and eyewash fountains supplied with running potable water shall be located near, within sight of, and on the same level with locations where a direct exposure to Ethyleneimine or beta-Propiolactone only would be most likely as a result of equipment failure or improper work practice.

### **(3) Hygiene facilities and practices.**

(i) Storage or consumption of food, storage or use of containers of beverages, storage or application of cosmetics, smoking, storage of smoking materials, tobacco products or other products for chewing, or the chewing of such products are prohibited in regulated areas.

(ii) Where employees are required by this section to wash, washing facilities shall be provided in accordance with §1910.141(d)(1) and (2)(ii) through (vii).

(iii) Where employees are required by this section to shower, shower facilities shall be provided in accordance with §1910.141(d)(3).

(iv) Where employees wear protective clothing and equipment, clean change rooms shall be provided for the number of such employees required to change clothes, in accordance with §1910.141(e).

(v) Where toilets are in regulated areas, such toilets shall be in a separate room.

**(4) Contamination control.**

(i) Except for outdoor systems, regulated areas shall be maintained under pressure negative with respect to nonregulated areas. Local exhaust ventilation may be used to satisfy this requirement. Clean makeup air in equal volume shall replace air removed.

(ii) Any equipment, material, or other item taken into or removed from a regulated area shall be done so in a manner that does not cause contamination in nonregulated areas or the external environment.

(iii) Decontamination procedures shall be established and implemented to remove carcinogens addressed by this section from the surfaces of materials, equipment, and the decontamination facility.

(iv) Dry sweeping and dry mopping are prohibited for 4-Nitrobiphenyl; alpha-Naphthylamine; 3,3'-Dichlorobenzidine (and its salts); beta-Naphthylamine; Benzidine; 4-Aminodiphenyl; 2-Acetylaminofluorene; 4-Dimethylaminoazo-benzene and N-Nitrosodimethylamine.

**(e) Signs, information and training.****(1) Signs.**

(i) Entrances to regulated areas shall be posted with signs bearing the legend:

CANCER-SUSPECT AGENT

AUTHORIZED PERSONNEL ONLY

(ii) Entrances to regulated areas containing operations covered in paragraph (c)(5) of this section shall be posted with signs bearing the legend:

CANCER-SUSPECT AGENT EXPOSED IN THIS AREA

IMPERVIOUS SUIT INCLUDING GLOVES, BOOTS,  
AND AIR-SUPPLIED HOOD REQUIRED AT ALL TIMES

AUTHORIZED PERSONNEL ONLY

(iii) Appropriate signs and instructions shall be posted at the entrance to, and exit from, regulated areas, informing employees of the procedures that must be followed in entering and leaving a regulated area.

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## (2) Container contents identification.

(i) Containers of a carcinogen addressed by this section and containers required under paragraphs (c)(4)(v) and (c)(6)(vii)(B) and (viii)(B) of this section that are accessible only to and handled only by authorized employees, or by other employees trained in accordance with paragraph (e)(5) of this section, may have contents identification limited to a generic or proprietary name or other proprietary identification of the carcinogen and percent.

(ii) Containers of a carcinogen addressed by this section and containers required under paragraphs (c)(4)(v) and (c)(6)(vii)(B) and (viii)(B) of this section that are accessible to or handled by employees other than authorized employees or employees trained in accordance with paragraph (e)(5) of this section shall have contents identification that includes the full chemical name and Chemical Abstracts Service Registry number as listed in paragraph (a)(1) of this section.

(iii) Containers shall have the warning words "CANCER-SUSPECT AGENT" displayed immediately under or adjacent to the contents identification.

(iv) Containers whose contents are carcinogens addressed by this section with corrosive or irritating properties shall have label statements warning of such hazards noting, if appropriate, particularly sensitive or affected portions of the body.

**(3) Lettering.** Lettering on signs and instructions required by paragraph (e)(1) shall be a minimum letter height of 2 inches (5 cm). Labels on containers required under this section shall not be less than one-half the size of the largest lettering on the package, and not less than 8-point type in any instance. Provided, That no such required lettering need be more than 1 inch (2.5 cm) in height.

**(4) Prohibited statements.** No statement shall appear on or near any required sign, label, or instruction that contradicts or detracts from the effect of any required warning, information, or instruction.

## (5) Training and indoctrination.

(i) Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:

(A) The nature of the carcinogenic hazards of a carcinogen addressed by this section, including local and systemic toxicity;

(B) The specific nature of the operation involving a carcinogen addressed by this section that could result in exposure;

(C) The purpose for and application of the medical surveillance program, including, as appropriate, methods of self-examination;

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- (D) The purpose for and application of decontamination practices and purposes;
- (E) The purpose for and significance of emergency practices and procedures;
- (F) The employee's specific role in emergency procedures;
- (G) Specific information to aid the employee in recognition and evaluation of conditions and situations which may result in the release of a carcinogen addressed by this section;
- (H) The purpose for and application of specific first aid procedures and practices;
- (I) A review of this section at the employee's first training and indoctrination program and annually thereafter.
- (ii) Specific emergency procedures shall be prescribed, and posted, and employees shall be familiarized with their terms, and rehearsed in their application.
- (iii) All materials relating to the program shall be provided upon request to authorized representatives of the Assistant Secretary and the Director.
- (f) Reserved.**
- (g) Medical surveillance.** At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees.
- (1) Examinations.**
- (i) Before an employee is assigned to enter a regulated area, a preassignment physical examination by a physician shall be provided. The examination shall include the personal history of the employee, family and occupational background, including genetic and environmental factors.
- (ii) Authorized employees shall be provided periodic physical examinations, not less often than annually, following the preassignment examination.
- (iii) In all physical examinations, the examining physician shall consider whether there exist conditions of increased risk, including reduced immunological competence, those undergoing treatment with steroids or cytotoxic agents, pregnancy, and cigarette smoking.
- (2) Records.**
- (i) Employers of employees examined pursuant to this paragraph shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be maintained for the duration of the employee's employment. Upon termination of the employee's employment, including retirement or death, or in the event that the employer ceases business without a successor, records, or notarized true copies thereof, shall be forwarded by registered mail to the Director.

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(ii) Records required by this paragraph shall be provided upon request to employees, designated representatives, and the Assistant Secretary in accordance with 29 CFR 1910.1020(a) through (e) and (g) through (i). These records shall also be provided upon request to the Director.

(iii) Any physician who conducts a medical examination required by this paragraph shall furnish to the employer a statement of the employee's suitability for employment in the specific exposure.

[39 FR 23502, June 27, 1974. Redesignated at 40 FR 23072, May 28, 1975, and amended at 41 FR 35184, Aug. 20, 1976; 43 FR 49751, Oct. 24, 1978; 45 FR 35281, May 23, 1980; 49 FR 18295, Apr. 30, 1984; 58 FR 35310, June 30, 1993; 61 FR 5507, Feb. 13, 1996; 61 FR 9227, March 7, 1996; 61 FR 31427, June 20, 1996; 63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

**Stat. Authority:** ORS 654.025(2) and 656.726(4).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

OR-OSHA Admin. Order 3-1998, f. 7/7/98, ef. 7/7/98.

OR-OSHA Admin. Order 1-2005, f. 4/12/05, ef. 4/12/05.

OR-OSHA Admin. Order 4-2006, f. 7/24/06, ef. 7/24/06.

OR-OSHA Admin. Order 5-2009, f. 5/29/09, ef. 5/29/09.



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## §1910.1004 Alpha-naphthylamine.

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).  
**Stats. Implemented:** ORS 654.001 through 654.295.  
**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

## §1910.1005 (RESERVED)

## §1910.1006 Methyl Chloromethyl Ether.

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).  
**Stats. Implemented:** ORS 654.001 through 654.295.  
**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

## §1910.1007 3,3'-Dichlorobenzidine (and Its Salts).

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).  
**Stats. Implemented:** ORS 654.001 through 654.295.  
**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

## §1910.1008 Bis-chloromethyl Ether.

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).  
**Stats. Implemented:** ORS 654.001 through 654.295.  
**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

**§1910.1009 Beta-naphthylamine.**

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

**§1910.1010 Benzidine.**

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

**§1910.1011 4-Aminodiphenyl.**

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

**§1910.1012 Ethyleneimine.**

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).

**Stats. Implemented:** ORS 654.001 through 654.295.

**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

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**§1910.1013 Beta-propiolactone.**

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).  
**Stats. Implemented:** ORS 654.001 through 654.295.  
**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

**§1910.1014 2-Acetylaminofluorene.**

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).  
**Stats. Implemented:** ORS 654.001 through 654.295.  
**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

**§1910.1015 4-Dimethylaminoazobenzene.**

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).  
**Stats. Implemented:** ORS 654.001 through 654.295.  
**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.

**§1910.1016 N-Nitrosodimethylamine.**

See §1910.1003, 13 Carcinogens.

**Stat. Authority:** ORS 654.025(2) and 656.726(3).  
**Stats. Implemented:** ORS 654.001 through 654.295.  
**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.  
OR-OSHA Admin. Order 4-1997, f. 4/2/97, ef. 4/2/97.



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**NOTE:** The following Oregon-initiated rule, OAR 437-002-0364, contains wording formerly contained in Division 116, Carcinogens, but the wording is now applicable **only to MOCA**, which is **not** covered by federal standards for carcinogens.

## ***437-002-0364 Oregon Rules for MOCA (4,4'-Methylene bis (2-chloroaniline))***

**(1) Application.** *This rule applies to any areas in which MOCA (4,4'-Methylene bis (2-chloroaniline)) (CAS# 101-14-4) is manufactured, processed, repackaged, released, handled, or stored, but shall not apply to transshipment in sealed containers, except for the labeling requirements under OAR 437-002-0364(5)(b), (c), and (d).*

### **(2) Definitions:**

**“Absolute filter”** *is one capable of retaining 99.97 percent of a monodisperse aerosol of 0.3 μm particles.*

**“Administrator”** *means the Administrator of the Oregon Occupational Safety and Health Division, or any person directed to act for the Administrator.*

**“Authorized employee”** *means an employee whose duties require them to be in the regulated area and who has been specifically assigned by the employer.*

**“Clean change room”** *means a room where employees put on clean clothing and/or protective equipment in an environment free of MOCA. The clean change room shall be contiguous to and have an entry from a shower room, when the shower room facilities are otherwise required in this rule.*

**“Closed system”** *means an operation involving MOCA where containment prevents the release of MOCA into regulated areas, non-regulated areas, or the external environment.*

**“Decontamination”** *means the inactivation of MOCA or its safe disposal.*

**“Disposal”** *means the safe removal of MOCA from the work environment.*

**“Emergency”** *means an unforeseen circumstance or set of circumstances resulting in the release of MOCA which may result in exposure to or contact with MOCA.*

**“External environment”** *means any environment external to regulated and non-regulated areas.*

**“Isolated system”** *means a fully enclosed structure other than the vessel of containment of MOCA which is impervious to the passage of MOCA and which would prevent the entry of MOCA into regulated areas, non-regulated areas, or the external environment, should leakage or spillage from the vessel of containment occur.*

**“Laboratory type hood”** is a device enclosed on three sides and the top and bottom, designed and maintained so as to draw air inward at an average linear face velocity of 150 feet per minute with a minimum of 125 feet per minute; designed, constructed, and maintained in such a way that an operation involving MOCA within the hood does not require the insertion of any portion of any employee's body other than their hands and arms.

**“Non-regulated area”** means any area under the control of the employer where entry and exit is neither restricted nor controlled.

**“Open-vessel system”** means an operation involving MOCA in an open vessel, which is not in an isolated system, a laboratory type hood, nor in any other system affording equivalent protection against the entry of MOCA into regulated areas, non-regulated areas, or the external environment.

**“Protective clothing”** means clothing designed to protect an employee against contact with or exposure to MOCA.

**“Regulated area”** means an area where entry and exit is restricted and controlled.

### **(3) Requirements for areas containing MOCA.**

**(a)** A regulated area shall be established by an employer where MOCA is manufactured, processed, used, repackaged, released, handled or stored. All such areas shall be controlled in accordance with the requirements for the following category or categories describing the operation involved:

**(A) Isolated systems.** Employees working with MOCA within an isolated system, such as a “glove box” shall wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

**(B) Closed system operation.** Within regulated areas where MOCA is stored in sealed containers, or contained in a closed system, including piping systems, with any sample ports or openings closed while MOCA is contained within:

**(i)** Access shall be restricted to authorized employees only; and

**(ii)** Employees shall be required to wash hands, forearms, face and neck upon each exit from the regulated areas, close to the point of exit and before engaging in other activities.

**(C) Open vessel system operations.** Open vessel system operations as defined in OAR 437-002-0364(2) are prohibited.

**(D) Transfer from a closed system, charging or discharging point operations, or otherwise opening a closed system.** In operations involving “laboratory type hoods,” or in locations where MOCA is contained in an otherwise “closed system,” but is transferred, charged, or discharged into other normally closed containers, the provisions of this rule shall apply.

**(i)** Access shall be restricted to authorized employees only.

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*(ii) Each operation shall be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. Exhaust air shall not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air shall be introduced in sufficient volume to maintain the correct operation of the local exhaust system.*

*(iii) Employees shall be provided with, and required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area.*

*(iv) Employees engaged in MOCA handling operations shall be provided with and required to wear and use a half-face, filter-type respirator for dusts, mists, and fumes, in accordance with OAR 437, Division 2/I, Personal Protective Equipment, 1910.134, Respiratory Protection. A respirator affording higher levels of protection may be substituted.*

*(v) Prior to each exit from a regulated area, employees shall be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers shall be identified, as required under OAR 437-002-0364(5)(b), (c) and (d).*

*(vi) Employees shall be required to wash hands, forearms, face and neck on each exit from the regulated area, close to the point of exit, and before engaging in other activities.*

*(vii) Employees shall be required to shower after the last exit of the day.*

*(viii) Drinking fountains are prohibited in the regulated area.*

**(E) Maintenance and decontamination activities.** *In cleanup of leaks or spills, maintenance or repair operations on contaminated systems or equipment, or any operations involving work in an area where direct contact with MOCA could result, each authorized employee entering that area shall:*

*(i) Be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood in accordance with OAR 437, Division 2/I, Personal Protective Equipment;*

*(ii) Be decontaminated before removing the protective garments and hood; and*

*(iii) Be required to shower upon removing the protective garments and hood.*

**(F) Premixed solutions.** *Where MOCA is present only in a single solution at a temperature not exceeding 220° F, the establishment of a regulated area is not required; however:*

*(i) Only authorized employees shall be permitted to handle such materials;*

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(ii) Each day employees shall be provided with and required to wear a clean change of protective clothing (smocks, coveralls, or long-sleeved shirts and pants), gloves, and other protective garments and equipment necessary to prevent contact with the solution in the process used;

(iii) Employees shall be required to remove and leave protective clothing and equipment when leaving the work area at the end of the work day, or at any time solution is spilled on such clothing or equipment. Used clothing and equipment shall be placed in impervious containers for purposes of decontamination or disposal. The contents of such impervious containers shall be identified, as required under OAR 437-002-0364(5)(b), (c) and (d).

(iv) Employees shall be required to wash hands and face after removing such clothing and equipment and before engaging in other activities;

(v) Employees assigned to work covered by OAR 437-002-0364(3)(a)(F) shall be deemed to be working in regulated areas for the purposes of OAR 437-002-0364(4)(a); (b)(A), (B); (c)(C), (D), and 437-002-0364(5) through (7).

(vi) Work areas where solution may be spilled shall be:

(I) Covered daily or after any spill with a clean covering; or

(II) Cleaned thoroughly daily and after any spill.

#### **(4) General Regulated Area Requirements:**

(a) **Emergencies.** In an emergency, immediate measures including, but not limited to, the requirements of sections (A), (B), (C), (D), and (E) below shall be implemented:

(A) The potentially affected area shall be evacuated as soon as the emergency has been determined.

(B) Hazardous conditions created by the emergency shall be eliminated and the potentially affected area shall be decontaminated prior to the resumption of normal operations.

(C) Special medical surveillance by a physician shall be instituted within 24 hours, for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with OAR 437-002-0364(6)(b).

(D) Where an employee has a known contact with MOCA, such employee shall be required to shower as soon as possible, unless contra-indicated by physical injuries.

(E) An incident report on the emergency shall be reported as provided in OAR 437-002-0364(6)(b).

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*(F) Emergency deluge showers and eyewash fountains supplied with running potable water shall be located near, within sight of, and on the same level with locations where a direct exposure to MOCA would be most likely as a result of equipment failure, or improper work practice.*

**(b) Hygiene Facilities and Practices.**

*(A) Storage or consumption of food, storage or use of containers of beverages, storage or application of cosmetics, smoking, storage of smoking materials, tobacco products or other products for chewing, or the chewing of such products, are prohibited in regulated areas.*

*(B) Where employees are required by OAR 437-002-0364 to wash, washing facilities shall be provided in accordance with OAR 437, Division 2/J, 1910.141, Sanitation.*

*(C) Where employees are required by OAR 437-002-0364 to shower, shower facilities shall be provided in accordance with OAR 437, Division 2/J, 1910.141 Sanitation.*

*(D) Where employees wear protective clothing and equipment clean change rooms shall be provided in accordance with OAR 437, Division 2/J, 1910.141, Sanitation, for the number of such employees required to change clothes.*

*(E) Where toilets are in regulated areas, such toilets shall be in a separate room.*

**(c) Contamination Control.**

*(A) Regulated areas, except for outdoor systems, shall be maintained under pressure negative with respect to non-regulated areas. Local exhaust ventilation may be used to satisfy this requirement. Clean make-up air in equal volume shall replace air removed.*

*(B) Any equipment, materials, or other item taken into or removed from a regulated area shall be done so in a manner that does not cause contamination in non-regulated areas or the external environment.*

*(C) Decontamination procedures shall be established and implemented to remove MOCA from the surfaces of materials, equipment, and the decontamination facility.*

*(D) Dry sweeping and dry mopping is prohibited.*

**(5) Signs, Information and Training.**

**(a) Signs.**

*(A) Entrances to regulated areas shall be posted with signs bearing the legend:*

**CANCER-SUSPECT AGENT**

**AUTHORIZED PERSONNEL ONLY**

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**(B)** Entrances to regulated areas containing operations covered in OAR 437-002-0364 (3)(a)(E), shall be posted with signs bearing the legend:

**CANCER-SUSPECT AGENT  
EXPOSED IN THIS AREA**

**IMPERVIOUS SUIT INCLUDING  
GLOVES, BOOTS, AND AIR-SUPPLIED  
HOOD REQUIRED AT ALL TIMES**

**AUTHORIZED PERSONNEL ONLY**

**(C)** Appropriate signs and instructions shall be posted at the entrance to, and exit from, regulated areas, informing employees of the procedures that must be followed in entering and leaving a regulated area.

**(b) Container Contents Identification.**

**(A)** Containers of a carcinogen and containers required under OAR 437-002-0364(3)(a)(D)(v), and 437-002-0391(5)(b), (c) and (d), which are accessible only to, and handled only by, authorized employees, or by other employees trained in accordance with OAR 437-002-0364(5)(e) may have contents identification limited to a generic or proprietary name, or other proprietary identification, of MOCA and percent.

**(B)** Containers of MOCA and containers required under OAR 437-002-0364(3)(a)(D)(v), and 437-002-0391(5)(b), (c) and (d), which are accessible to, or handled by employees other than authorized employees or employees trained in accordance with OAR 437-002-0364(5)(e) shall have contents identification which includes the full chemical name and Chemical Abstracts Service Registry Number as listed in OAR 437-002-0364(1).

**(C)** Containers shall have the warning words "CANCER-SUSPECT AGENT" displayed immediately under or adjacent to the contents identification.

**(D)** Containers which have MOCA contents with corrosive or irritating properties shall have label statements warning of such hazards, noting, if appropriate, particularly sensitive or affected portions of the body.

**(c) Lettering.** Lettering on signs and instructions required by OAR 437-002-0364(5)(a) and (b) shall be a minimum letter height of 2 inches. Labels on containers required under this division shall not be less than 1/2 the size of the largest lettering on the package, and not less than 8 point type in any instance; provided that no such required lettering need be more than 1 inch in height.

**(d) Prohibited Statements.** No statement shall appear on or near any required sign, label, or instruction which contradicts or detracts from the effect of any required warning, information or instruction.

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**(e) Training and Indoctrination.**

**(A)** Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:

- (i)** The nature of the carcinogenic hazards of MOCA including local and systemic toxicity;
- (ii)** The specific nature of the operation involving MOCA which could result in exposure;
- (iii)** The purpose for and application of the medical surveillance program, including, as appropriate, methods of self-examination;
- (iv)** The purpose for and application of decontamination practices and purposes;
- (v)** The purpose for and significance of emergency practices and procedures;
- (vi)** The employee's specific role in emergency procedures;
- (vii)** Specific information to aid the employee in recognition and evaluation of conditions and situations which may result in the release of MOCA;
- (viii)** The purpose for and application of specific first aid procedures and practices; and
- (ix)** A review of OAR 437-002-0364 at the employee's first training and indoctrination program and annually thereafter.

**(B)** Specific emergency procedures shall be prescribed, and posted, and employees shall be familiarized with their terms, and rehearsed in their application.

**(C)** All materials relating to the program shall be provided upon request to authorized representatives of the Administrator.

**(6) Reports.**

**(a) Operations.** Not later than December 1, 1974, the information required in sections (A), (B), (C), and (D) below shall be reported in writing to the Administrator. Any changes in such information shall be similarly reported in writing within 15 calendar days of such change.

**(A)** A brief description and in-plant location of the area(s) regulated and the address of each regulated area;

**(B)** The name(s) and other identifying information as to the presence of a carcinogen in each regulated area;

**(C)** The number of employees in each regulated area, during normal operations including maintenance activities; and

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*(D) The manner in which a carcinogen is present in each regulated area: e.g. whether it is manufactured, processed, used, repackaged, released, stored, or otherwise handled.*

*(b) Incidents. Incidents which result in the release of MOCA into any area where employees may be potentially exposed shall be reported in accordance with this rule.*

*(A) A report of the occurrence of the incident and the facts obtainable at that time, including a report of any medical treatment of affected employees, shall be made within 24 hours to the Administrator.*

*(B) A written report shall be filed with the Administrator within 15 calendar days thereafter, and shall include:*

*(i) A description of the area involved, and the extent of known and possible employee exposure and area contamination; and*

*(ii) A report of any medical treatment of affected employees, and any medical surveillance program implemented; and*

*(iii) An analysis of the circumstances of the incident, and measures taken or to be taken, with specific completion dates, to avoid further similar releases.*

*(7) Medical Surveillance. At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees.*

**(a) Examinations:**

*(A) Before an employee is assigned to enter a regulated area, a pre-assignment physical examination by a physician shall be provided. The examination shall include the personal history of the employee, family and occupational background, including genetic and environmental factors.*

*(B) Authorized employees shall be provided periodic physical examinations, not less often than annually, following the pre-assignment examination.*

*(C) In all physical examinations, the examining physician shall consider whether there exist conditions of increased risk, including reduced immunological competence, those undergoing treatment with steroids or cytotoxic agents, pregnancy and cigarette smoking.*

**(b) Records:**

*(A) Employers of employees examined pursuant to this rule shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be maintained for the duration of the employee's employment. Upon termination of the employee's employment, including retirement or death, or in the event that the employer ceases business without a successor, records, or notarized true copies thereof, shall be forwarded by registered mail to the Administrator.*

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*(i) A specification of the amount of material released, the amount of time involved and an explanation of the procedure used in determining this figure;*

*(B) Records required by this rule shall be provided upon request to employees, designated representatives, and the Administrator in accordance with OAR 437, Division 2/Z, 1910.1020, Access to Employee Exposure and Medical Records.*

*(C) Any physician who conducts a medical examination required by this rule shall furnish to the employer a statement of the employee's suitability for employment in the specific exposure.*

**Stat. Auth.:** ORS 654.025(2) and 656.726(3).

**Hist:** OR-OSHA Admin. Order 12-1993, f. 8/20/93, ef. 11/1/93.

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