



Regulations (Standards - 29 CFR) - Table of Contents

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1051
- **Title:** 1,3-Butadiene.
- **Appendix:** A, B, C, D, E, F

1910.1051(a)

Scope and application.

1910.1051(a)(1)

This section applies to all occupational exposures to 1,3-Butadiene (BD), Chemical Abstracts Service Registry No. 106-99-0, except as provided in paragraph (a)(2) of this section.

1910.1051(a)(2)

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1910.1051(a)(2)(i)

Except for the recordkeeping provisions in paragraph (m)(1) of this section, this section does not apply to the processing, use, or handling of products containing BD or to other work operations and streams in which BD is present where objective data are reasonably relied upon that demonstrate the work operation or the product or the group of products or operations to which it belongs may not reasonably be foreseen to release BD in airborne concentrations at or above the action level or in excess of the STEL under the expected conditions of processing, use, or handling that will cause the greatest possible release or in any plausible accident.

1910.1051(a)(2)(ii)

This section also does not apply to work operations, products or streams where the only exposure to BD is from liquid mixtures containing 0.1% or less of BD by volume or the vapors released from such liquids, unless objective data become available that show that airborne concentrations generated by such mixtures can exceed the action level or STEL under reasonably predictable conditions of processing, use or handling that will cause the greatest possible release.

1910.1051(a)(2)(iii)

Except for labeling requirements and requirements for emergency response, this section does not apply to the storage, transportation, distribution or sale of BD or liquid mixtures in intact containers or in transportation pipelines sealed in such a manner as to fully contain BD vapors or liquid.

1910.1051(a)(3)

Where products or processes containing BD are exempted under paragraph (a)(2) of this section, the employer shall maintain records of the objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in paragraph (m)(1) of this section.

1910.1051(b)

Definitions: For the purpose of this section, the following definitions shall apply:

Action level means a concentration of airborne BD of 0.5 ppm calculated as an eight (8)-hour time-weighted average.

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Authorized person means any person specifically designated by the employer, whose duties require entrance into a regulated area, or a person entering such an area as a designated representative of employees to exercise the right to observe monitoring and measuring procedures under paragraph (d)(8) of this section, or a person designated under the Act or regulations issued under the Act to enter a regulated area.

1,3-Butadiene means an organic compound with chemical formula $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$ that has a molecular weight of approximately 54.15 gm/mole.

Business day means any Monday through Friday, except those days designated as federal, state, local or company specific holidays.

Complete Blood Count (CBC) means laboratory tests performed on whole blood specimens and includes the following: White blood cell count (WBC), hematocrit (Hct), red blood cell count (RBC), hemoglobin (Hgb), differential count of white blood cells, red blood cell morphology, red blood cell indices, and platelet count.

Day means any part of a calendar day.

Director means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.

Emergency situation means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of BD.

Employee exposure means exposure of a worker to airborne concentrations of BD which would occur if the employee were not using respiratory protective equipment.

Objective data means monitoring data, or mathematical modelling or calculations based on composition, chemical and physical properties of a material, stream or product.

Permissible Exposure Limits, PELs means either the 8 hour Time Weighted Average (8-hr TWA) exposure or the Short-Term Exposure Limit (STEL).

Physician or other licensed health care professional is an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide one or more of the specific health care services required by paragraph (k) of this section.

Regulated area means any area where airborne concentrations of BD exceed or can reasonably be expected to exceed the 8-hour time weighted average (8-hr TWA) exposure of 1 ppm or the short-term exposure limit (STEL) of 5 ppm for 15 minutes.

This section means this 1,3-butadiene standard.

1910.1051(c)

Permissible exposure limits (PELs).

1910.1051(c)(1)

Time-weighted average (TWA) limit. The employer shall ensure that no employee is exposed to an airborne concentration of BD in excess of one (1) part BD per million parts of air (ppm) measured as an eight (8)-hour time-weighted average.

1910.1051(c)(2)

Short-term exposure limit (STEL). The employer shall ensure that no employee is exposed to an airborne concentration of BD in excess of five parts of BD per million parts of air (5 ppm) as determined over a sampling period of fifteen (15) minutes.

1910.1051(d)

Exposure monitoring.

1910.1051(d)(1)

General.

1910.1051(d)(1)(i)

Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 15-minute short-term exposures of each employee.

1910.1051(d)(1)(ii)

Representative 8-hour TWA employee exposure shall be determined on the basis of one or more samples representing full-shift exposure for each shift and for each job classification in each work area.

1910.1051(d)(1)(iii)

Representative 15-minute short-term employee exposures shall be determined on the basis of one or more samples representing 15-minute exposures associated with operations that are most likely to produce exposures above the STEL for each shift and for each job classification in each work area.

1910.1051(d)(1)(iv)

Except for the initial monitoring required under paragraph (d)(2) of this section, where the employer can document that exposure levels are equivalent for similar operations on different work shifts, the employer need only determine representative employee exposure for that operation from the shift during which the highest exposure is expected.

1910.1051(d)(2)

Initial monitoring.

1910.1051(d)(2)(i)

Each employer who has a workplace or work operation covered by this section, shall perform initial monitoring to determine accurately the airborne concentrations of BD to which employees may be exposed, or shall rely on objective data pursuant to paragraph (a)(2)(i) of this section to fulfill this requirement. The initial monitoring required under this paragraph shall be completed within 60 days of the introduction of BD into the workplace.

1910.1051(d)(2)(ii)

Where the employer has monitored within two years prior to the effective date of this section and the monitoring satisfies all other requirements of this section, the employer may rely on such earlier monitoring results to satisfy the requirements of paragraph (d)(2)(i) of this section, provided that the conditions under which the initial monitoring was conducted have not changed in a manner that may result in new or additional exposures.

1910.1051(d)(3)

Periodic monitoring and its frequency.

1910.1051(d)(3)(i)

If the initial monitoring required by paragraph (d)(2) of this section reveals employee exposure to be at or above the action level but at or below both the 8-hour TWA limit and the STEL, the employer shall repeat the representative monitoring required by paragraph (d)(1) of this section every twelve months.

1910.1051(d)(3)(ii)

If the initial monitoring required by paragraph (d)(2) of this section reveals employee exposure to be above the 8-hour TWA limit, the employer shall repeat the representative monitoring required by paragraph (d)(1)(ii) of this section at least every three months until the employer has collected two samples per quarter (each at least 7 days apart) within a two-year period, after which such monitoring must occur at least every six months.

1910.1051(d)(3)(iii)

If the initial monitoring required by paragraph (d)(2) of this section reveals employee exposure to be above the STEL, the employer shall repeat the representative monitoring required by paragraph (d)(1)(iii) of this section at least every three months until the employer has collected two samples per quarter (each at least 7 days apart) within a two-year period, after which such monitoring must occur at least every six months.

1910.1051(d)(3)(iv)

The employer may alter the monitoring schedule from every six months to annually for any required representative monitoring for which two consecutive measurements taken at least 7 days apart indicate that employee exposure has decreased to or below the 8-hour TWA, but is at or above the action level.

1910.1051(d)(4)

Termination of monitoring.

1910.1051(d)(4)(i)

If the initial monitoring required by paragraph (d)(2) of this section reveals employee exposure to be below the action level and at or below the STEL, the employer may discontinue the monitoring for employees whose exposures are represented by the initial monitoring.

1910.1051(d)(4)(ii)

If the periodic monitoring required by paragraph (d)(3) of this section reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level and at or below the STEL, the employer may discontinue the monitoring for those employees who are represented by such monitoring.

1910.1051(d)(5)

Additional monitoring.

1910.1051(d)(5)(i)

The employer shall institute the exposure monitoring required under paragraph (d) of this section whenever there has been a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposures to BD or when the employer has any reason to suspect that a change may result in new or additional exposures.

1910.1051(d)(5)(ii)

Whenever spills, leaks, ruptures or other breakdowns occur that may lead to employee exposure above the 8-hr TWA limit or above the STEL, the employer shall monitor [using leak source, such as direct reading instruments, area or personal monitoring], after the cleanup of the spill or repair of the leak, rupture or other breakdown, to ensure that exposures have returned to the level that existed prior to the incident.

1910.1051(d)(6)

Accuracy of monitoring. Monitoring shall be accurate, at a confidence level of 95 percent, to within plus or minus 25 percent for airborne concentrations of BD at or above the 1 ppm TWA limit and to within plus or minus 35 percent for airborne concentrations of BD at or above the action level of 0.5 ppm and below the 1 ppm TWA limit.

1910.1051(d)(7)

Employee notification of monitoring results.

1910.1051(d)(7)(i)

The employer must, within 15 working days after the receipt of the results of any monitoring performed under this section, notify each affected employee of these results either individually in writing or by posting the results in an appropriate location that is accessible to employees.

1910.1051(d)(7)(ii)

The employer shall, within 15 business days after receipt of any monitoring performed under this section indicating the 8-hour TWA or STEL has been exceeded, provide the affected employees, in writing, with information on the corrective action being taken by the employer to reduce employee exposure to or below the 8-hour TWA or STEL and the schedule for completion of this action.

1910.1051(d)(8)

Observation of monitoring.

1910.1051(d)(8)(i)

Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to BD conducted in accordance with paragraph (d) of this section.

1910.1051(d)(8)(ii)

Observation procedures. When observation of the monitoring of employee exposure to BD requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the observer at no cost with protective clothing and equipment, and shall ensure that the observer uses this equipment and complies with all other applicable safety and health procedures.

1910.1051(e)

Regulated areas.

1910.1051(e)(1)

The employer shall establish a regulated area wherever occupational exposures to airborne concentrations of BD exceed or can reasonably be expected to exceed the permissible exposure limits, either the 8-hr TWA or the STEL.

1910.1051(e)(2)

Access to regulated areas shall be limited to authorized persons.

1910.1051(e)(3)

Regulated areas shall be demarcated from the rest of the workplace in any manner that minimizes the number of employees exposed to BD within the regulated area.

1910.1051(e)(4)

An employer at a multi-employer worksite who establishes a regulated area shall communicate the access restrictions and locations of these areas to other employers with work operations at that worksite whose employees may have access to these areas.

1910.1051(f)

Methods of compliance.

1910.1051(f)(1)

Engineering controls and work practices.

1910.1051(f)(1)(i)

The employer shall institute engineering controls and work practices to reduce and maintain employee exposure to or below the PELs, except to the extent that the employer can establish that these controls are not feasible or where paragraph (h)(1)(i) of this section applies.

1910.1051(f)(1)(ii)

Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the 8-hour TWA or STEL, the employer shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection that complies with the requirements of paragraph (h) of this section.

1910.1051(f)(2)

Compliance plan.

1910.1051(f)(2)(i)

Where any exposures are over the PELs, the employer shall establish and implement a written plan to reduce employee exposure to or below the PELs primarily by means of engineering and work practice controls, as required by paragraph (f)(1) of this section, and by the use of respiratory protection where required or permitted under this section. No compliance plan is required if all exposures are under the PELs.

1910.1051(f)(2)(ii)

The written compliance plan shall include a schedule for the development and implementation of the engineering controls and work practice controls including periodic leak detection surveys.

1910.1051(f)(2)(iii)

Copies of the compliance plan required in paragraph (f)(2) of this section shall be furnished upon request for examination and copying to the Assistant Secretary, the Director, affected employees and designated employee representatives. Such plans shall be reviewed at least every 12 months, and shall be updated as necessary to reflect significant changes in the status of the employer's compliance program.

1910.1051(f)(2)(iv)

The employer shall not implement a schedule of employee rotation as a means of compliance with the PELs.

1910.1051(g)

Exposure Goal Program.

1910.1051(g)(1)

For those operations and job classifications where employee exposures are greater than the action level, in addition to compliance with the PELs, the employer shall have an exposure goal program that is intended to limit employee exposures to below the action level during normal operations.

1910.1051(g)(2)

Written plans for the exposure goal program shall be furnished upon request for examination and copying to the Assistant Secretary, the Director, affected employees and designated employee representatives.

1910.1051(g)(3)

Such plans shall be updated as necessary to reflect significant changes in the status of the exposure goal program.

1910.1051(g)(4)

Respirator use is not required in the exposure goal program.

1910.1051(g)(5)

The exposure goal program shall include the following items unless the employer can demonstrate that the item is not feasible, will have no significant effect in reducing employee exposures, or is not necessary to achieve exposures below the action level:

1910.1051(g)(5)(i)

A leak prevention, detection, and repair program.

1910.1051(g)(5)(ii)

A program for maintaining the effectiveness of local exhaust ventilation systems.

1910.1051(g)(5)(iii)

The use of pump exposure control technology such as, but not limited to, mechanical double-sealed or seal-less pumps.

1910.1051(g)(5)(iv)

Gauging devices designed to limit employee exposure, such as magnetic gauges on rail cars.

1910.1051(g)(5)(v)

Unloading devices designed to limit employee exposure, such as a vapor return system.

1910.1051(g)(5)(vi)

A program to maintain BD concentration below the action level in control rooms by use of engineering controls.

1910.1051(h)

Respiratory protection.

1910.1051(h)(1)

General. For employees who use respirators required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this paragraph. Respirators must be used during:

1910.1051(h)(1)(i)

Periods necessary to install or implement feasible engineering and work-practice controls.

1910.1051(h)(1)(ii)

Non-routine work operations that are performed infrequently and for which employee exposures are limited in duration.

1910.1051(h)(1)(iii)

Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposures to or below the PELs.

1910.1051(h)(1)(iv)

Emergencies.

1910.1051(h)(2)

Respirator program.

1910.1051(h)(2)(i)

The employer must implement a respiratory protection program in accordance with § 1910.134(b) through (d) (except (d)(1)(iii), (d)(3)(iii)(B)(1), and (2)), and (f) through (m), which covers each employee required by this section to use a respirator.

1910.1051(h)(2)(ii)

If air-purifying respirators are used, the employer must replace the air-purifying filter elements according to the replacement schedule set for the class of respirators listed in Table 1 of this section, and at the beginning of each work shift.

1910.1051(h)(2)(iii)

Instead of using the replacement schedule listed in Table 1 of this section, the employer may replace cartridges or canisters at 90% of their expiration service life, provided the employer:

1910.1051(h)(2)(iii)(A)

Demonstrates that employees will be adequately protected by this procedure.

1910.1051(h)(2)(iii)(B)

Uses BD breakthrough data for this purpose that have been derived from tests conducted under worst-case conditions of humidity, temperature, and air-flow rate through the filter element, and the employer also describes the data supporting the cartridge-or canister-change schedule, as well as the basis for using the data in the employer's respirator program.

1910.1051(h)(2)(iv)

A label must be attached to each filter element to indicate the date and time it is first installed on the respirator.

1910.1051(h)(2)(v)

If NIOSH approves an end-of-service-life indicator (ESLI) for an air-purifying filter element, the element may be used until the ESLI shows no further useful service life or until the element is replaced at the beginning of the next work shift, whichever occurs first.

1910.1051(h)(2)(vi)

Regardless of the air-purifying element used, if an employee detects the odor of BD, the employer must replace the air-purifying element immediately.

1910.1051(h)(3)

Respirator selection.

1910.1051(h)(3)(i)

The employer must select appropriate respirators from Table 1 of this section.

TABLE 1.—MINIMUM REQUIREMENTS FOR RESPIRATORY PROTECTION FOR AIRBORNE BD

Concentration of airborne BD (ppm) or condition of use	Minimum required respirator
Less than or equal to 5 ppm (5 times PEL)	(a) Air-purifying half mask or full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 4 hours.
Less than or equal to 10 ppm (10 times PEL) ...	(a) Air-purifying half mask or full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 3 hours.
Less than or equal to 25 ppm (25 times PEL) ...	(a) Air-purifying full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every 2 hours. (b) Any powered air-purifying respirator equipped with approved BD or organic vapor cartridges. PAPR cartridges shall be replaced every 2 hours. (c) Continuous flow supplied air respirator equipped with a hood or helmet.
Less than or equal to 50 ppm (50 times PEL) ...	(a) Air-purifying full facepiece respirator equipped with approved BD or organic vapor cartridges or canisters. Cartridges or canisters shall be replaced every (1) hour. (b) Powered air-purifying respirator equipped with a tight-fitting facepiece and an approved BD or organic vapor cartridges. PAPR cartridges shall be replaced every (1) hour.
Less than or equal to 1,000 ppm (1,000 times PEL).	(a) Supplied air respirator equipped with a half mask or full facepiece and operated in a pressure demand or other positive pressure mode.
Greater than 1000 ppm unknown concentration, or firefighting.	(a) Self-contained breathing apparatus equipped with a full facepiece and operated in a pressure demand or other positive pressure mode. (b) Any supplied air respirator equipped with a full facepiece and operated in a pressure demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in a pressure demand or other positive pressure mode.
Escape from IDLH conditions	(a) Any positive pressure self-contained breathing apparatus with an appropriate service life.

Concentration of airborne BD (ppm) or condition of use	Minimum required respirator
	(b) A air-purifying full facepiece respirator equipped with a front or back mounted BD or organic vapor cartridge.

NOTES: Respirators approved for use in higher concentrations are permitted to be used in lower concentrations. Full facepiece is required when eye irritation is anticipated.

1910.1051(h)(3)(ii)

Air-purifying respirators must have filter elements approved by NIOSH for organic vapors or BD.

1910.1051(h)(3)(iii)

When an employee whose job requires the use of a respirator cannot use a negative-pressure respirator, the employer must provide the employee with a respirator that has less breathing resistance than the negative-pressure respirator, such as a powered air-purifying respirator or supplied-air respirator, when the employee is able to use it and if it provides the employee adequate protection.

1910.1051(i)

Protective clothing and equipment. Where appropriate to prevent eye contact and limit dermal exposure to BD, the employer shall provide protective clothing and equipment at no cost to the employee and shall ensure its use. Eye and face protection shall meet the requirements of 29 CFR 1910.133.

1910.1051(j)

Emergency situations. Written plan. A written plan for emergency situations shall be developed, or an existing plan shall be modified, to contain the applicable elements specified in 29 CFR 1910.38 and 29 CFR 1910.39, "Emergency action plans" and "Fire prevention plans," respectively, and in 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," for each workplace where there is the possibility of an emergency.

1910.1051(k)

Medical screening and surveillance.

1910.1051(k)(1)

Employees covered. The employer shall institute a medical screening and surveillance program as specified in this paragraph for:

1910.1051(k)(1)(i)

Each employee with exposure to BD at concentrations at or above the action level on 30 or more days or for employees who have or may have exposure to BD at or above the PELs on 10 or more days a year;

1910.1051(k)(1)(ii)

Employers (including successor owners) shall continue to provide medical screening and surveillance for employees, even after transfer to a non-BD exposed job and regardless of when the employee is transferred, whose work histories suggest exposure to BD:

1910.1051(k)(1)(ii)(A)

At or above the PELs on 30 or more days a year for 10 or more years;

1910.1051(k)(1)(ii)(B)

At or above the action level on 60 or more days a year for 10 or more years; or

1910.1051(k)(1)(ii)(C)

Above 10 ppm on 30 or more days in any past year; and

1910.1051(k)(1)(iii)

Each employee exposed to BD following an emergency situation.

1910.1051(k)(2)

Program administration.

1910.1051(k)(2)(i)

The employer shall ensure that the health questionnaire, physical examination and medical procedures are provided without cost to the employee, without loss of pay, and at a reasonable time and place.

1910.1051(k)(2)(ii)

Physical examinations, health questionnaires, and medical procedures shall be performed or administered by a physician or other licensed health care professional.

1910.1051(k)(2)(iii)

Laboratory tests shall be conducted by an accredited laboratory.

1910.1051(k)(3)

Frequency of medical screening activities. The employer shall make medical screening available on the following schedule:

1910.1051(k)(3)(i)

For each employee covered under paragraphs (k)(1)(i) and (ii) of this section, a health questionnaire and complete blood count with differential and platelet count (CBC) every year, and a physical examination as specified below:

1910.1051(k)(3)(i)(A)

An initial physical examination that meets the requirements of this rule, if twelve months or more have elapsed since the last physical examination conducted as part of a medical screening program for BD exposure;

1910.1051(k)(3)(i)(B)

Before assumption of duties by the employee in a job with BD exposure;

1910.1051(k)(3)(i)(C)

Every 3 years after the initial physical examination;

1910.1051(k)(3)(i)(D)

At the discretion of the physician or other licensed health care professional reviewing the annual health questionnaire and CBC;

1910.1051(k)(3)(i)(E)

At the time of employee reassignment to an area where exposure to BD is below the action level, if the employee's past exposure history does not meet the criteria of paragraph (j)(1)(ii) of this section for continued coverage in the screening and surveillance program, and if twelve months or more have elapsed since the last physical examination; and

1910.1051(k)(3)(i)(F)

At termination of employment if twelve months or more have elapsed since the last physical examination.

1910.1051(k)(3)(ii)

Following an emergency situation, medical screening shall be conducted as quickly as possible, but not later than 48 hours after the exposure.

1910.1051(k)(3)(iii)

For each employee who must wear a respirator, physical ability to perform the work and use the respirator must be determined as required by 29 CFR 1910.134.

1910.1051(k)(4)

Content of medical screening.

1910.1051(k)(4)(i)

Medical screening for employees covered by paragraphs (j)(1)(i) and (ii) of this section shall include:

1910.1051(k)(4)(i)(A)

A baseline health questionnaire that includes a comprehensive occupational and health history and is updated annually. Particular emphasis shall be placed on the hematopoietic and reticuloendothelial systems, including exposure to chemicals, in addition to BD, that may have an adverse effect on these systems, the presence of signs and symptoms that might be related to disorders of these systems, and any other information determined by the examining physician or other licensed health care professional to be necessary to evaluate whether the employee is at increased risk of material impairment of health from BD exposure. Health questionnaires shall consist of the sample forms in Appendix C to this section, or be equivalent to those samples;

1910.1051(k)(4)(i)(B)

A complete physical examination, with special emphasis on the liver, spleen, lymph nodes, and skin;

1910.1051(k)(4)(i)(C)

A CBC; and

1910.1051(k)(4)(i)(D)

Any other test which the examining physician or other licensed health care professional deems necessary to evaluate whether the employee may be at increased risk from exposure to BD.

1910.1051(k)(4)(ii)

Medical screening for employees exposed to BD in an emergency situation shall focus on the acute effects of BD exposure and at a minimum include: A CBC within 48 hours of the exposure and then monthly for three months; and a physical examination if the employee reports irritation of the eyes, nose throat, lungs, or skin, blurred vision, coughing, drowsiness, nausea, or headache. Continued employee participation in the medical screening and surveillance program, beyond these minimum requirements, shall be at the discretion of the physician or other licensed health care professional.

1910.1051(k)(5)

Additional medical evaluations and referrals.

1910.1051(k)(5)(i)

Where the results of medical screening indicate abnormalities of the hematopoietic or reticuloendothelial systems, for which a non-occupational cause is not readily apparent, the examining physician or other licensed health care professional shall refer the employee to an appropriate specialist for further evaluation and shall make available to the specialist the results of the medical screening.

1910.1051(k)(5)(ii)

The specialist to whom the employee is referred under this paragraph shall determine the appropriate content for the medical evaluation, e.g., examinations, diagnostic tests and procedures, etc.

1910.1051(k)(6)

Information provided to the physician or other licensed health care professional. The employer shall provide the following information to the examining physician or other licensed health care professional involved in the evaluation:

1910.1051(k)(6)(i)

A copy of this section including its appendices;

1910.1051(k)(6)(ii)

A description of the affected employee's duties as they relate to the employee's BD exposure;

1910.1051(k)(6)(iii)

The employee's actual or representative BD exposure level during employment tenure, including exposure incurred in an emergency situation;

1910.1051(k)(6)(iv)

A description of pertinent personal protective equipment used or to be used; and

1910.1051(k)(6)(v)

Information, when available, from previous employment-related medical evaluations of the affected employee which is not otherwise available to the physician or other licensed health care professional or the specialist.

1910.1051(k)(7)

The written medical opinion.

1910.1051(k)(7)(i)

For each medical evaluation required by this section, the employer shall ensure that the physician or other licensed health care professional produces a written opinion and provides a copy to the employer and the employee within 15 business days of the evaluation. The written opinion shall be limited to the following information:

1910.1051(k)(7)(i)(A)

The occupationally pertinent results of the medical evaluation;

1910.1051(k)(7)(i)(B)

A medical opinion concerning whether the employee has any detected medical conditions which would place the employee's health at increased risk of material impairment from exposure to BD;

1910.1051(k)(7)(i)(C)

Any recommended limitations upon the employee's exposure to BD; and

1910.1051(k)(7)(i)(D)

A statement that the employee has been informed of the results of the medical evaluation and any medical conditions resulting from BD exposure that require further explanation or treatment.

1910.1051(k)(7)(ii)

The written medical opinion provided to the employer shall not reveal specific records, findings, and diagnoses that have no bearing on the employee's ability to work with BD.

Note: However, this provision does not negate the ethical obligation of the physician or other licensed health care professional to transmit any other adverse findings directly to the employee.

1910.1051(k)(8)

Medical surveillance.

1910.1051(k)(8)(i)

The employer shall ensure that information obtained from the medical screening program activities is aggregated (with all personal identifiers removed) and periodically reviewed, to ascertain whether the health of the employee population of that employer is adversely affected by exposure to BD.

1910.1051(k)(8)(ii)

Information learned from medical surveillance activities must be disseminated to covered employees, as defined in paragraph (k)(1) of this section, in a manner that ensures the confidentiality of individual medical information.

1910.1051(l)

Communication of BD hazards to employees.

1910.1051(l)(1)

Hazard communication—general.

1910.1051(l)(1)(i)

Chemical manufacturers, importers, distributors and employers shall comply with all requirements of the Hazard Communication Standard (HCS) (§ 1910.1200) for BD.

1910.1051(l)(1)(ii)

In classifying the hazards of BD at least the following hazards are to be addressed: Cancer; eye and respiratory tract irritation; central nervous system effects; and flammability.

1910.1051(l)(1)(iii)

Employers shall include BD in the hazard communication program established to comply with the HCS (§ 1910.1200). Employers shall ensure that each employee has access to labels on containers of BD and to safety data sheets, and is trained in accordance with the requirements of HCS and paragraph (l)(2) of this section.

1910.1051(l)(2)

Employee information and training.

1910.1051(l)(2)(i)

The employer shall provide all employees exposed to BD with information and training in accordance with the requirements of the Hazard Communication Standard, 29 CFR 1910.1200, 29 CFR 1915.1200, and 29 CFR 1926.59.

1910.1051(l)(2)(ii)

The employer shall train each employee who is potentially exposed to BD at or above the action level or the STEL in accordance with the requirements of this section. The employer shall institute a training program, ensure employee participation in the program, and maintain a record of the contents of such program.

1910.1051(l)(2)(iii)

Training shall be provided prior to or at the time of initial assignment to a job potentially involving exposure to BD at or above the action level or STEL and at least annually thereafter.

1910.1051(l)(2)(iv)

The training program shall be conducted in a manner that the employee is able to understand. The employer shall ensure that each employee exposed to BD over the action level or STEL is informed of the following:

1910.1051(l)(2)(iv)(A)

The health hazards associated with BD exposure, and the purpose and a description of the medical screening and surveillance program required by this section;

1910.1051(l)(2)(iv)(B)

The quantity, location, manner of use, release, and storage of BD and the specific operations that could result in exposure to BD, especially exposures above the PEL or STEL;

1910.1051(l)(2)(iv)(C)

The engineering controls and work practices associated with the employee's job assignment, and emergency procedures and personal protective equipment;

1910.1051(l)(2)(iv)(D)

The measures employees can take to protect themselves from exposure to BD.

1910.1051(l)(2)(iv)(E)

The contents of this standard and its appendices, and

1910.1051(l)(2)(iv)(F)

The right of each employee exposed to BD at or above the action level or STEL to obtain:

1910.1051(l)(2)(iv)(F)(1)

medical examinations as required by paragraph (j) of this section at no cost to the employee;

1910.1051(l)(2)(iv)(F)(2)

the employee's medical records required to be maintained by paragraph (m)(4) of this section; and

1910.1051(l)(2)(iv)(F)(3)

all air monitoring results representing the employee's exposure to BD and required to be kept by paragraph (m)(2) of this section.

1910.1051(l)(3)

Access to information and training materials.

1910.1051(l)(3)(i)

The employer shall make a copy of this standard and its appendices readily available without cost to all affected employees and their designated representatives and shall provide a copy if requested.

1910.1051(l)(3)(ii)

The employer shall provide to the Assistant Secretary or the Director, or the designated employee representatives, upon request, all materials relating to the employee information and the training program.

1910.1051(m)

Recordkeeping.

1910.1051(m)(1)

Objective data for exemption from initial monitoring.

1910.1051(m)(1)(i)

Where the processing, use, or handling of products or streams made from or containing BD are exempted from other requirements of this section under paragraph (a)(2) of this section, or where objective data have been relied on in lieu of initial monitoring under paragraph (d)(2)(ii) of this section, the employer shall establish and maintain a record of the objective data reasonably relied upon in support of the exemption.

1910.1051(m)(1)(ii)

This record shall include at least the following information:

1910.1051(m)(1)(ii)(A)

The product or activity qualifying for exemption;

1910.1051(m)(1)(ii)(B)

The source of the objective data;

1910.1051(m)(1)(ii)(C)

The testing protocol, results of testing, and analysis of the material for the release of BD;

1910.1051(m)(1)(ii)(D)

A description of the operation exempted and how the data support the exemption; and

1910.1051(m)(1)(ii)(E)

Other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

1910.1051(m)(1)(iii)

The employer shall maintain this record for the duration of the employer's reliance upon such objective data.

1910.1051(m)(2)

Exposure measurements.

1910.1051(m)(2)(i)

The employer shall establish and maintain an accurate record of all measurements taken to monitor employee exposure to BD as prescribed in paragraph (d) of this section.

1910.1051(m)(2)(ii)

The record shall include at least the following information:

1910.1051(m)(2)(ii)(A)

The date of measurement;

1910.1051(m)(2)(ii)(B)

The operation involving exposure to BD which is being monitored;

1910.1051(m)(2)(ii)(C)

Sampling and analytical methods used and evidence of their accuracy;

1910.1051(m)(2)(ii)(D)

Number, duration, and results of samples taken;

1910.1051(m)(2)(ii)(E)

Type of protective devices worn, if any; and

1910.1051(m)(2)(ii)(F)

Name, social security number and exposure of the employees whose exposures are represented.

1910.1051(m)(2)(ii)(G)

The written corrective action and the schedule for completion of this action required by paragraph (d)(7)(ii) of this section.

1910.1051(m)(2)(iii)

The employer shall maintain this record for at least 30 years in accordance with 29 CFR 1910.1020.

1910.1051(m)(3)

[Reserved]

1910.1051(m)(4)

Medical screening and surveillance.

1910.1051(m)(4)(i)

The employer shall establish and maintain an accurate record for each employee subject to medical screening and surveillance under this section.

1910.1051(m)(4)(ii)

The record shall include at least the following information:

1910.1051(m)(4)(ii)(A)

The name and social security number of the employee;

1910.1051(m)(4)(ii)(B)

Physician's or other licensed health care professional's written opinions as described in paragraph (k)(7) of this section;

1910.1051(m)(4)(ii)(C)

A copy of the information provided to the physician or other licensed health care professional as required by paragraphs (k)(7)(ii)-(iv) of this section.

1910.1051(m)(4)(iii)

Medical screening and surveillance records shall be maintained for each employee for the duration of employment plus 30 years, in accordance with 29 CFR 1910.1020.

1910.1051(m)(5)

Availability.

1910.1051(m)(5)(i)

The employer, upon written request, shall make all records required to be maintained by this section available for examination and copying to the Assistant Secretary and the Director.

1910.1051(m)(5)(ii)

Access to records required to be maintained by paragraphs (l)(1)-(3) of this section shall be granted in accordance with 29 CFR 1910.1020(e).

1910.1051(m)(6)

Transfer of records. The employer shall transfer medical and exposure records as set forth in 29 CFR 1910.1020(h).

1910.1051(n)

[Reserved]

1910.1051(o)

Appendices.

1910.1051(o)(1)

Appendix E to this section is mandatory.

1910.1051(o)(2)

Appendices A, B, C, D, and F to this section are informational and are not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.

[61 FR 56746, Nov. 4, 1996; 63 FR 1152, Jan. 8, 1998; 67 FR 67965, Nov. 7, 2002; 70 FR 1143, Jan. 5, 2005; 71 FR 16672 and 16674, April 3, 2006; 73 FR 75586, Dec. 12, 2008; 76 FR 33609, June 8, 2011; 77 FR 17785, March 26, 2012; 78 FR 9313, Feb. 8, 2013]

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