Guidance for Developing a Written Respiratory Protection Program

AX #501, NOVEMBER 2013

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This guidance document provides regulatory background and a model respiratory program form that addresses the Occupational Health and Safety Administration's (OSHA's) Respiratory Protection Program Standard (29 CFR §1910.134) that applies to all respirator use in general industry and construction workplaces. The standard applies when (1) employees are required to wear respirators to protect themselves from exposure to air contaminants above a specific exposure limit, (2) if the employer requires respirators to be worn, or (3) if respirators are otherwise necessary to protect employee health.

Additionally, limited requirements apply when employees, for personal, comfort, or other reasons, voluntarily choose to wear certain kinds of air-purifying respirators (APR). The standard affirms OSHA's long-standing policy that personal protective equipment (PPE) – in this instance, respirators - are the last line of defense when engineering and work practice controls are inadequate to reduce employee exposure, or during the development and installation of other controls.

Among other requirements, the OSHA standard 29 CFR §1910.134 mandates that employers:

- Select respirator requirements based on the hazard(s) and the required protection;
- Develop a written program;
- Assign a Program Administrator;
- Prepare work site-specific procedures;
- Train employees on the usage, fit, maintenance, cleaning, and storage of respirators;
- Provide medical evaluation to determine employee ability to wear the selected respirator via (1) medical examination or (2) confidential questionnaire and, when required by the responses to the questionnaire, a follow-up medical examination;

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- Fit test employees who will use any respirator with negative or positive pressure tight-fitting face piece, prior to first use and annually thereafter;
- Provide the tools and replacement parts necessary for respirator cleaning, maintenance, and repair; and
- Perform periodic program evaluation to ensure effectiveness.

Checklist for Completing a Respiratory Protection Program

The below checklist may be used as guidance for developing your own company's respiratory protection program and may be edited to address company specific procedures, personnel, and operations. These steps provide an outline for developing and implementing a respiratory protection program in accordance with OSHA's Standard. These steps are detailed in the body of this guidance document.

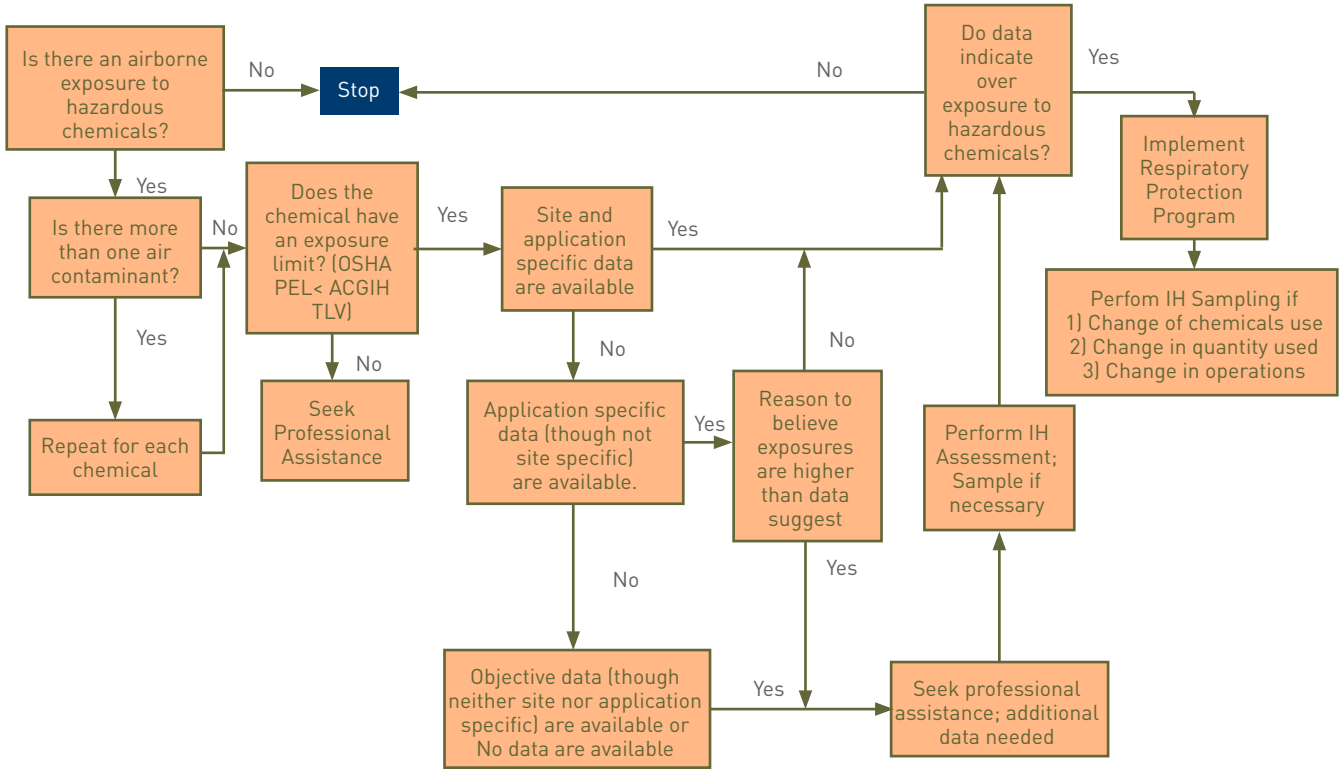
	In implementing the program, consider completing the following steps:
	Using the flow chart in Figure 1, page 4 of this guidance, determine which company operations require the use of respirators and determine what kind of respirator is required for each operation.
	If respiratory protection is needed, create a "Company-Specific Respiratory Protection Program (RPP)" using this document as an example. Complete Table 1 in your document following the example in Table 1 of this guidance.
	Designate a qualified Program Administrator in Section II A.
	Designate the physician or other licensed health care professional in Section II D.
	Establish forms and procedures for annual program evaluation (see Appendices in Attachment A).
	Arrange for medical examinations for employees assigned to wear respirators.
	Perform a respirator fit test and assess the impact of other Personal Protection Equipment (PPE) (i.e. safety glasses and goggles) on respirator performance and fit. Cross-reference PPE assessment in Table 1 of your "Company-Specific Respiratory Protection Program (RPP)."
	Designate the area or location where atmosphere-supplying respirators, air-purifying respirators, and a supply of replacement parts, will be stored, as defined in Section III.E.
	Conduct training for employees and supervisors assigned to jobs requiring respirators.
	Document and retain all training, fit test restults, etc.
	Conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented.

1. Respiratory Selection

"Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program." (29 CFR §1910.134(a)(2))

Using the flow chart in Figure 1, determine which company operations require the use of respirators and determine what kind of respirator is required for each operation.

Figure 1: Center for the Polyurethanes Industry
MDI Exposure Assessment Decision Matrix for Selecting Respiratory Protection



2. Creating a Company-Specific Respiratory Protection Program (RPP)

Engineering controls, such as ventilation and substitution of less toxic materials are the first line of defense; however, engineering controls may not always be feasible for some operations or may not completely identify the hazards. In these situations, respirators and other protective equipment may be used. If respiratory protection is needed, create a "Company-Specific RPP" using the example in Attachment A, of this document.

The work processes requiring respirator use are outlined in Table 1. Complete Table 1 and include in your company-specific RPP document as indicated in Section I.B. of Attachment A.

Table 1

Voluntary and Required Respirator Use

Voluntary and Required Respirator Use		
Respirator Type	Department/Task	Respiratory Hazard/PEL
<type of respirator>	*<operations>*	*<hazard description>*
<e.g., Dust Mask (Filtering facepiece)>		*<e.g., None -Voluntary use – particulates not otherwise regulated (e.g., nuisance dust>*
<e.g., Half-face Air Purifying Respirator with organic vapor cartridgepre-filter>	*<e.g., Application of MDI in outdoor operations>*	*<e.g., polymeric MDI1>*
<e.g., Half-face Air Purifying Respirator with organic vapor/acid gas cartridge>	*<e.g., Maintenance/ Paint Stripping>*	*<e.g., organic acids and vapors—(list)>*

Example for a spray foam operation. Voluntary and Required Respirator Use		
Respirator Type	Department/Task	Respiratory Hazard/PEL
<e.g., Dust Mask (Filtering facepiece)>		*<e.g., None - Voluntary use>*
<e.g., Half-face Air Purifying Respirator with organic vapor/acid gas cartridge; pre-filter>	*<e.g., Application of MDI in outdoor operations>*	*Polymeric MDI*
<e.g., Type C Supplied Air Respirator or self-contained breathing apparatus	*Application of polymeric MDI in interior applications (such as perimeter wall insulation)*	*Polymeric MDI*

3. Identifying Program Administrator

"The employer shall designate a program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness." (29 CFR § 1910.134(c)(3))

The designated qualified Program Administrator may be identified when completing Attachment A Section II of this document titled Model Respiratory Protection Program.

Program Administrator Responsibilities

_____ is responsible for administering the
(Program Administrator's name)
Respiratory Protection Program.

The Program Administrator's duties may include the following:

- Identifying work areas, processes, or tasks that require workers to wear respirators, and evaluating hazards.
- Selecting appropriate approved respiratory protection options.
- Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- Arranging for and or conducting training.
- Ensuring proper storage, cleaning, inspection, and maintenance of respiratory protection equipment.
- Assign a cartridge replacement schedule as appropriate.
- Conducting qualitative and/or quantitative fit testing.
- Administering the medical surveillance program.
- Maintaining required program records.
- Evaluating the respiratory protection program.
- Updating the written program, as necessary.

There may be additional duties not set forth above.

4. Identifying Medical Contractor/Provider

The designated physician or other licensed health care professional may be identified when completing Section II.D. Program Provider of your "Company-Specific RPP".

Medical Department _____, is responsible for the medical
(Insert Medical Contractor/Provider if there is no on-site facility)
evaluation of all employees in the program to determine that they are physically able to perform the work and wear the equipment.

5. Forms and Procedures

Example forms and procedures for annual program may be found under Section III of Attachment A of this document.

Forms found in the Appendices of Attachment A can be used as examples:

Appendix II: OSHA Respiratory Medical Evaluation Questionnaire
Appendix III: Respirator Fit Test Record (Qualitative)
Appendix IV: Respirator Protection Training — QUIZ

6. Medical Evaluation

Arrange for medical examinations for employees assigned to wear respirators. See Section III A. Medical Evaluation in Attachment A of this document.

"Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee." (29 CFR §1910.134(e))

Accordingly, this paragraph specifies the minimum requirements for medical evaluation that employers must implement as set forth in 29 CFR § 1910.134(e) to determine the employee's ability to use a respirator.

Any employee who is required to wear a respirator, or chooses to wear an air-purifying respirator (APR) voluntarily, must first pass a medical evaluation and have medical approval before wearing the equipment on the job. Voluntary use of filtering facepieces (i.e., dust masks) such as_____ and individuals equipped with
(Insert type(s) of dust mask used)
voluntarily wearing dust masks (filtering facepiece), are excluded from this requirement, as stated in 29 CFR§1910.134(c)(2)(ii).

Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Employees refusing the medical evaluation cannot work in areas requiring respirator use. The evaluation is conducted using the questionnaire provided in Appendix II, or an actual examination that obtains the same information. All examinations and questionnaires are to remain confidential between the employee and the physician or other licensed health care professional (PLHCP).

The medical evaluation will be conducted by: _____
(name of clinic, physician/, or PLHCP)

7. Respiratory Fit-test and PPE

Perform a respirator fit test and assess the impact of other Personal Protection Equipment (PPE) (i.e. safety glasses and goggles) on respirator performance and fit. Cross-reference PPE assessment in Table 1 of your "Company-Specific RPP". Keep documentation of all fit-tests. Appendix III "Respirator Fit Test Record" can be used for this purpose.

Respirator Fit Testing

This paragraph requires that, before an employee may be required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used. This paragraph specifies the kinds of fit tests allowed, the procedures for conducting them, and how the results of the fit tests must be used." (29 CFR § 1910.134(f))

Fit testing is required by OSHA for employees wearing respirators with a negative or positive pressure, tight-fitting facepiece. The fit test is conducted using the respirator the employee will be wearing on the job.

- Fit testing is conducted in accordance with 29 CFR § 1910.134(f):
- Prior to initial use of the respirator.
- If a different respirator facepiece (size, style, model or make) is used.
- When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).
- On an annual basis.

An example of Fit testing procedure, Bitrex Respirator Fit Test Procedure, can be found in Attachment A, Appendix I.

8. Cleaning, Maintenance, and Storage

Respiratory protection programs require written "procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators." (CFR § 1910.134(c)(1)(v))

Designate the area or location where atmosphere-supplying respirators, air-purifying respirators, and a supply of replacement parts will be stored, as described in Section III.E. Cleaning, Maintenance, and Storage. Complete and edit your "Company-Specific RPP" as necessary.

Respirators are to be regularly cleaned and disinfected according to the manufacturer's instructions. APRs are to be cleaned and disinfected as often as necessary. SARs and emergency use respirators are to be cleaned and disinfected after each use according to 29 CFR § 1910.134(h)(1)(iii).

Cleaning

These are general steps for cleaning and disinfecting respirators; refer to the manufacturer for specific directions:

- Disassemble respirator, removing all filters, canisters, or cartridges.
- Wash the facepiece and associated parts in a mild detergent with warm water. Do not use organic solvents or bleach.
- Rinse thoroughly in clean, warm water. Wipe the respirator with disinfectant wipes (70% isopropyl alcohol)

to kill germs. Air dry in a clean area. If a clean area is not available, use clean disposable paper towels to blot excess moisture.
- Reassemble the respirator and replace any defective parts (noting the condition of the head straps and valve flaps).
- Place in a clean, dry plastic bag or other airtight container.

The Program Administrator is responsible for ensuring there are adequate cleaning and disinfecting supplies. If supplies are low, employees can notify their Supervisor or the Program Administrator.

Maintenance

After leaving the respirator use area, employees can perform limited maintenance on their equipment only in an area that is free from respiratory hazards.

Respirators are to be properly maintained at all times so that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and/or defects. Worn or deteriorated parts must be replaced prior to equipment use. No components are replaced or repairs made beyond those recommended by the manufacturer. Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and shall use only the respirator manufacturer's NIOSH-approved parts designed for the respirator according to 29 CFR § 1910.134(h)(4).

The following checklist may be used when inspecting respirators:

	Facepiece: cracks, tears, holes, facemask distortion, cracked or loose lenses/ face shield
	Headstraps: breaks, tears, broken buckles/clasps, overstretched elastic bands
	Valves: residue/dirt, cracks or tears in valve material, absence of valve flap
	Filter/Cartridges: proper cartridge for hazard, approval designation, intact gaskets, cracks or dents in housing
	Air Supply Systems: breathing air quality/grade, condition of supply hoses, hose connections, settings on regulators and valves

Defective respirators or those with defective parts are taken out of service immediately (29 CFR § 1910.134(h)(4)). Employees should notify their supervisor about all respirator defects. It is the Supervisor's responsibility to give the defective equipment either to the Program Administrator or to the individual charged with replacement/repair. The Program Administrator then decides whether to:

- Temporarily take the respirator out of service until it can be repaired;
- Have it repaired; or
- Dispose of it if the problem is irreparable.[1]

1 When a respirator is taken out of service, it is tagged as such to prevent accidental use of a malfunctioning device. All defective respirators are stored separately from functional respirators.

Storage

APRs are stored in a clean, dry area and following the manufacturer's recommendations. Employees inspect and clean their own respirators according to the provisions of this program. The equipment is stored in plastic bags or airtight containers. Each bag/container is marked with an employee name, and only that particular employee can use it for their equipment storage. (29 CFR § 1910.134(h)(2)).

A supply of respirators and replacement components are stored in the original manufacturer's packaging in the _____

(area or location)

9. Training

"Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance" is required by 29 CFR §1910.134(c)(1)(viii).

Training for employees and supervisors assigned to jobs requiring respirators, may be documented in Section III.F Training, in your "Company-Specific RPP".

The Program Administrator provides training to respirator users and their supervisors on:

- Contents of _____respiratory protection program.
  (Company's)
- Responsibilities of employees and supervisors.
- Requirements of OSHA's respiratory protection standard.

All training occurs prior to any respirator use in the workplace. Supervisors receive their training prior to supervising employees required to use respirators.

The training program covers the following topics:

- Elements of _____ respiratory protection program
  (Company's)
- The information covered under OSHA Standard 29 CFR § 1910.134
- Respiratory hazards encountered at the worksite
- Proper selection and use of respirators
- Additional PPE
- Respirator limitations
- How to perform user seal (fit) checks
- Fit testing
- Emergency respirator use procedures
- Respirator maintenance and storage
- Medical signs and symptoms limiting effective respirator use

Employees are required, by OSHA, to demonstrate their understanding of the topics covered in the training through hands-on exercises and a written quiz. The Program Administrator documents respirator training. Refer to Attachment A, Appendix IV of this document, for a copy of a Respirator Protection Training Quiz. This

documentation includes the type, model, and size of respirator on which each employee has been trained and fit tested.

Employees are retrained annually, or as needed (i.e., relocation to another department using a different type of respirator).

10. Documentation and Recordkeeping

Document and retain all training, fit test results, etc. as shown in Section IV. Documentation and Recordkeeping of your "Company-Specific RPP."

Documentation and Recordkeeping

- The Program Administrator maintains the following records:
- A written copy of this program and the OSHA standard (this information is available to any interested employee).
- Training and fit testing records. These records are updated as new employees are trained; when existing employees receive refresher training; and/or when new fit testing is conducted.
- Written recommendations from the physician or other licensed health care professional (PLHCP) on an employee's ability to use respirators. Medical evaluations are maintained in accordance with the OSHA Medical Records Standard 29 CFR §1910.1020.

Conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented as to Section V of your "Company-Specific RPP."

11. Program Evaluation

Periodic evaluations of the workplace ensure that the provisions of this program are being implemented.

"This section requires the employer to conduct evaluations of the workplace to ensure that the written respiratory protection program is being properly implemented, and to consult employees to ensure that they are using the respirators properly." (29 CFR § 1910.134(l))

The Program Administrator and other responsible supervisors conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. These evaluations can include regular consultations with both the employees using respirators and their supervisors. There may be other topics that a company determines are appropriate. This can identify areas for improvement and to address problems. Records' reviews, site inspections and periodic air monitoring also assist in program review.

ATTACHMENT A
MODEL RESPIRATORY PROTECTION PROGRAM FORM

for

_____

(Company Name)

_____

(Street Address)

_____

(City, State, Zip code)

as required by 29 CFR §1910.134

I. Purpose and Scope

The purpose of this program is to protect all employees of _____
(company)
from respiratory hazards, and to ensure that the company is in compliance with OSHA's Respiratory Protection Program Standard 29 CFR§1910.134.

Engineering controls, such as ventilation and substitution of less toxic materials, may not be completely effective in controlling airborne hazards. Routine operations and reasonably foreseeable emergency situations associated with the operations are considered when assessing respirator protection and other types of personal protective equipment (PPE) used to safeguard employees' health.

A. Mandatory Use of Respirators

"In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employer, the employer shall establish and implement a written respiratory protection program with worksite specific procedures. The program shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use. The employer shall include in the program the following provisions of this section, as applicable:" (29 CFR § 1910.134(c)(1))

_____ has determined that some employees in
(company)
certain work tasks are exposed to respiratory hazards. All employees performing these tasks must wear the designated equipment, or equipment providing greater or equivalent protection.
Additionally, _____ requires these employees to
(company)
participate in the company's respiratory protection program as a condition of continued employment. An employee's failure to do so may result in disciplinary action, up to and including termination for serious or repeated infractions.

Employees of _____ are required to wear respirators
(company)

or personal protective equipment (PPE) when the following situations exist:

- There is exposure to air contaminants above a specific exposure limit;
- If respirators or PPE are necessary to protect employee health;
- During specific routine work practices, processes or tasks identified by _____ as requiring use of a respirator or PPE; and
(company)

In all cases, employees participating in this program do so at no cost to themselves. The expenses associated with training, medical evaluations and equipment are the sole responsibility of _____.
(company)

B. Voluntary Use of Respirators

If an employee desires to wear a respirator during certain operations in non-hazardous areas,

_____ will review each such request on a case-by-case basis.
(company)

An employee may use the respirator provided or may provide his/her own for voluntary use, if

- doing so does not jeopardize the employee's health or safety, or that of his/her co-workers,
- the equipment itself does not create a workplace hazard and
- _____ (Respiratory Protection Program Administrator) has approved the use.
(Program Administrator's name)

All employees voluntarily wearing respirators are required to receive a copy of "Information for Employees Using Respirators When Not Required Under the Standard." See Resources in Section VI of this document.

_____ must review this OSHA information with each employee prior to their
(company)
voluntary use of respiratory protective equipment.

In addition, employees voluntarily using tight-fitting respirators must follow the medical surveillance, cleaning, maintenance and storage procedures in this program.

_____ may assign other additional program requirements for those voluntarily
(company)
wearing respirators or other PPE.

Employees voluntarily wearing dust masks (filtering facepiece) are not subject to the program's medical evaluation. However, their equipment must be clean and free of contamination, and not interfere with the employee's ability to work safely.[2] These employees are also provided a copy of Appendix II and the information is reviewed with them before their use of dust masks.

*Note to Program Administrator: Table 1 is to be customized for*_____.
(company)

2 OSHA Directive CPL 2-0.120 D(3)(c)(2).

Table 1 is to be completed to communicate where respirators are required in the operations of _____.

(company)

Table 1 Voluntary and Required Respirator Use		
Respirator Type	Department/Task	Respiratory Hazard/PEL
<type of respirator>	*<operations>*	*<hazard description>*
<e.g., Dust Mask (Filtering facepiece)>		*<e.g., None - Voluntary use – particulates not otherwise regulated (e.g., nuisance dust>*
<e.g., Half-face Air Purifying Respirator with organic vapor cartridge pre-filter>	*<e.g., Application of MDI in outdoor operations>*	*<e.g., polymeric MDI1>*
<e.g., Half-face Air Purifying Respirator with organic vapor/acid gas cartridge>	*<e.g.,equirememnt?t forth above.ning;, as set forth in CFR?re appropriate. to Diisocyanates Maintenance/ Paint Stripping>*	*<e.g., organic acids and vapors—(list)>*

4,4'-Methylenediphenyl diisocyanate (MDI).

II. Program Administration

"The employer shall designate a program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness." (29 CFR § 1910.134(c)(3))

A. Program Administrator Responsibilities

_____ is responsible for administering the
(Program Administrator's name)
Respiratory Protection Program.

The Program Administrator's duties may include the following:

- Identifying work areas, processes, or tasks that require workers to wear respirators, and evaluating hazards.
- Selecting appropriate approved respiratory protection options.
- Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- Arranging for and or conducting training.
- Ensuring proper storage, cleaning, inspection, and maintenance of respiratory protection equipment.
- Assign a cartridge replacement schedule as appropriate.
- Conducting qualitative and/or quantitative fit testing.
- Administering the medical surveillance program.
- Maintaining required program records.
- Evaluating the respiratory protection program.
- Updating the written program, as necessary.

There may be additional duties not set forth above.

B. Supervisor Responsibilities

Supervisors are responsible for ensuring that the Respiratory Protection Program is implemented in their work areas in accordance with all OSHA standards. In addition to being knowledgeable about the program requirements for their own protection, supervisors also ensure that the program is understood and followed by the employees under their supervision.

Supervisory duties may include the following:

- Ensure supervised employees (including all new hires) receive appropriate training, fit testing, and annual medical evaluations.
- Ensure the availability of appropriate respirators and accessories.
- Be aware of tasks requiring the use of respiratory protection.
- Enforce the proper use of respiratory protection.
- Ensure that respirators are properly cleaned, maintained, inspected, and stored in accordance with the respiratory protection plan.
- Monitor work areas and operations with sufficient frequency to identify respiratory hazards and select proper equipment.

- Ensure respirators fit well and do not cause discomfort. Coordinate with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.
- Ensure adequate air quantity, quality, and flow of breathing air for atmosphere-supplying respirators. (See (c)(1) of the standard).

C. Employee Responsibilities

Each employee must wear his or her respirator when and where required, under the conditions specified by this program. They are also obligated to use the equipment according to the training procedures for each model. Employees may be responsible for the following:

- Being familiar with this program.
- Caring for and maintaining the respirators as instructed, and store them in a clean sanitary location.
- Performing positive and negative pressure respirator checks before each use.
- Informing the supervisor if the respirator no longer fits well, and request a new one that fits properly.
- Informing the supervisor or Program Administrator of any potential respiratory hazards or other concerns regarding the program.
- Informing the supervisor of need for a medical reevaluation.

D. Medical Provider Responsibilities

Medical Department _____,

(Insert Medical Contractor/Provider if there is no on-site facility)

is responsible for the medical evaluation of all employees in the program to assure that they are physically able to perform the work and wear the equipment (29 CFR § 1910.134(e)).

III. Program Elements

A. Medical Evaluation

"Medical evaluation. Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee." (29 CFR § 1910.134(e))

Accordingly, this paragraph specifies the minimum requirements for medical evaluation that employers must implement to determine the employee's ability to use a respirator as set forth in 29 CFR § 1910.134(e).

Any employee who is required to wear a respirator, or chooses to wear an air-purifying respirator (APR) voluntarily, must first pass a medical evaluation and have medical approval before wearing the equipment on the job. Voluntary use of filtering facepieces (i.e., dust masks) such as_____,
(Insert type(s) of dust mask used)
are excluded from this requirement, as stated in 29 CFR § 1910.134(c)(2)(ii).

Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Employees refusing the medical evaluation cannot work in areas requiring respirator use. The evaluation is conducted using the questionnaire provided in Attachment A, Appendix II, of this document, or an actual examination that obtains the same information. All examinations and questionnaires are to remain confidential between the employee and the physician or other licensed health care professional (PLHCP).

The medical evaluation will be conducted by: _____
(name of clinic, or name of physician/PLHCP)

1. Evaluation Procedures

- Every employee requiring medical evaluation is given a copy of the medical questionnaire in Appendix II[3] along with a stamped envelope, addressed to the physician or other PLHCP. The employee is to complete the confidential questionnaire during his/her work shift and mail it in the envelope provided.
- To the extent feasible_____
(company)
accommodates employees unable to read the questionnaire. At an employee's request someone other than _____ may be asked to assist in reading the document.
(Program Administrator)
If this is not possible, the employee will be sent to the PLHCP for a medical evaluation.[4]
- Follow-up medical exams are given to employees as required by the OSHA standard, or as deemed necessary by the PLHCP.
- All employees can speak with the PLHCP about their medical evaluation.
- Any employee required by medical reasons to wear a positive pressure air purifying respirator is provided a powered air purifying respirator.

3 OSHA 29 CFR § 1910.134 Appendix C, OSHA Respiratory Medical Evaluation Questionnaire
4 OSHA Directive CPL 2-0.120 Inspection Procedure for the Respiratory Protection Standard.

After an employee has received approval and started using a respirator, an additional medical evaluation is conducted for the following reasons according to 29 CFR § 1910.134(e)(7):

- The employee reports signs and/or symptoms related to his/her ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing;
- The PLHCP or supervisor informs the Program Administrator of a reevaluation need;
- Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation; or
- A change occurs in the workplace conditions that may result in an increased physiological burden on the employee.

2. Determination of Fitness

A physician or other licensed health care professional (PLHCP) at _____ evaluates the completed health care questionnaire.[5]
(name of clinic, or name of PLHCP)

Prior to making a formal determination, _____,
(company)
provides the PLHCP with the following information on respirator usage in accordance with CFR § 1910.134(e)(5)(i):

- The respirator equipment's type and weight;
- Use frequency and duration;
- Expected work effort;
- Additional personal protective clothing/equipment to be used; and
- Estimated temperature and humidity extremes expected in the work area where the respirator is to be used.[6]

The PLHCP provides a recommendation of each employee's physical ability to wear a respirator and perform the assigned work. Such evaluations will be provided in writing and shall provide only the following information in accordance with CFR § 1910.134(e)(6):

- Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;
- The need, if any, for follow-up medical evaluations; and
- A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

5 OSHA Sections 1 and 2, Part A of Appendix C. Prior to implementing the program, the company provides the PLHCP with a copy of the completed Health Care Questionnaire

6 If the PLHCP and the noted conditions remain the same, the information need not be provided for subsequent medical evaluations.

3. Follow-up Medical Examination

If an employee responds positively to any of questions 1 through 8 in Section 2 of OSHA's Medical Evaluation Questionnaire (See Attachment A, Appendix II), or if the PLHCP deems it necessary, a follow-up exam is provided. This exam includes any medical tests, consultations, or diagnostic procedures that the PLHCP needs, to make a final determination for safe respirator usage.

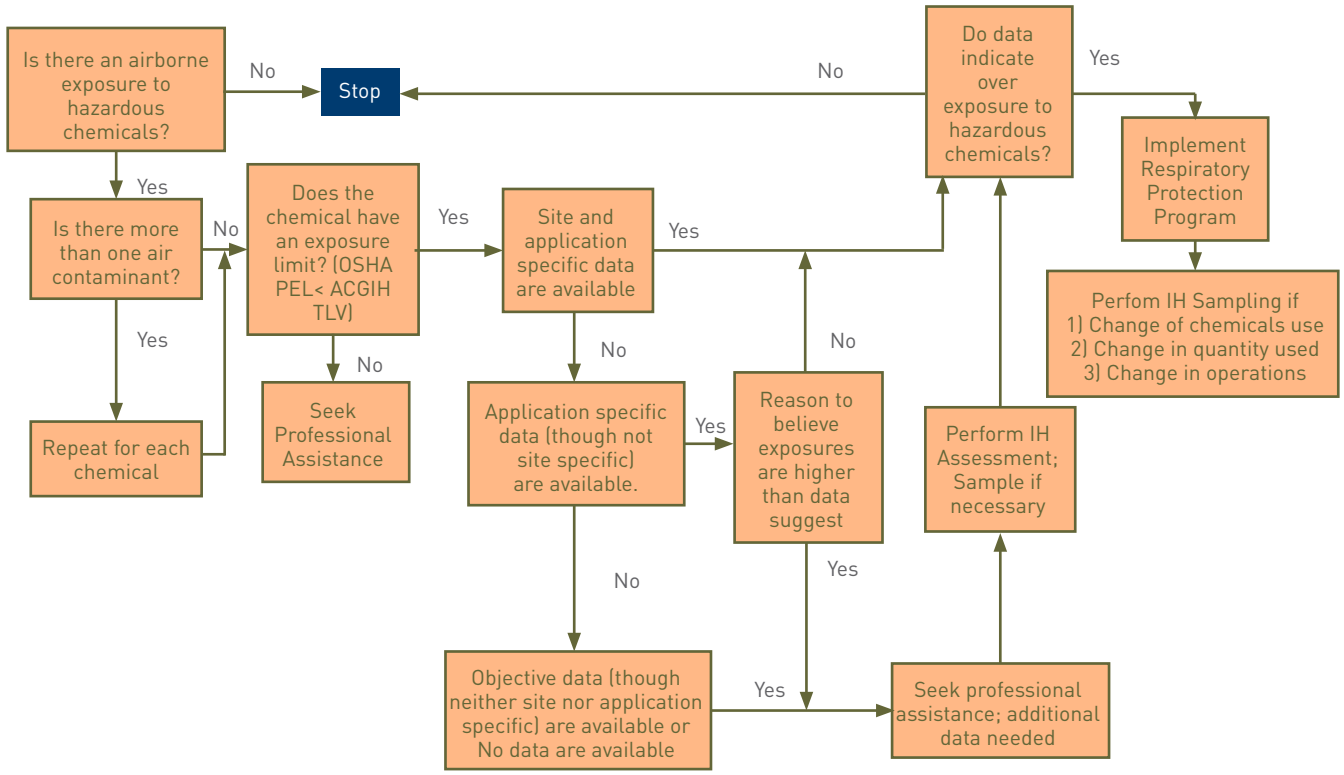
B. Respirator Selection

"Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program." (29 CFR § 1910.134(a)(2))

_____ has performed an exposure assessment
(Company)

identifying the respiratory hazard(s) found in its workplace.[7] The decision matrix used in this process is shown in Figure 1.

Figure 1: Center for the Polyurethanes Industry
MDI Exposure Assessment Decision Matrix for Selecting Respiratory Protection



7 _____ has evaluated its operations as required by the Personal Protective Equipment (PPE)
(company)
Standards in Subpart I, 29 CFR § 1910.132-138.

Based on this information, and in accordance with all OSHA Standards, the Program Administrator selects the respirator to be used.

C. Respirator Fit Testing

"Fit testing. This paragraph requires that, before an employee may be required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used. This paragraph specifies the kinds of fit tests allowed, the procedures for conducting them, and how the results of the fit tests must be used." (29 CFR § 1910.134(f))

Fit testing is required by OSHA for employees wearing respirators with a negative or positive pressure, tight-fitting facepiece. The fit test is conducted using the respirator the employee will be wearing on the job.

Fit testing is conducted in accordance with 29 CFR § 1910.134(f):

- Prior to initial use of the respirator.
- If a different respirator facepiece (size, style, model or make) is used.
- When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.)
- On an annual basis.

The company uses a qualitative fit test (QLFT) or a quantitative fit test (QNFT) method as designated in Table 2.[8] If an employee passes either test, but notifies the employer that the fit is unacceptable, the employee is allowed to select a different respirator, and is retested.

The Program Administrator will conduct fit tests following the OSHA approved Bitrex Solution Aerosol QLFT protocol. Note to Program Administrator: Appendix I of the OSHA 1910.134 is titled: Fit Testing Procedures (Mandatory). The requirements in this appendix apply to all OSHA-accepted fit test methods, both Qualitative Fit Testing (QLFT) and Quantitative Fit Testing (QNFT). The Program Administrator must be knowledgeable of the information in this Appendix if they company performs their own respiratory fit testing on employees. Appendix A (attached to this Model Respiratory Program) is an example of one QLFT fit test procedure (BitrexTM) accepted by OSHA. Appendix III (attached to this Model Respiratory Program) is an example form documenting and Employee Fit Test Record.

8 As established in Appendix A of the OSHA standard (Attachment 1).

Table 2 OSHA Acceptable Fit-Testing Methods*		
	QLFT	QNFT
Half-Face, Negative Pressure, APR (<100 fit factor)	Yes	Yes
Full-Face, Negative Pressure, APR (<100 fit factor) used in atmospheres up to 10 times the PEL	Yes	Yes
Full-Face, Negative Pressure, APR (>100 fit factor)	No	Yes
Powered Air-Purfying Respirator, tight-fitting PAPR	Yes	Yes
Supplied-Air Respirators (SAR), or SCBA used in Negative Pressure (Demand Mode) (>100 fit factor)	No	Yes
Supplied-Air Respirators (SAR), or SCBA used in Positive Pressure (Pressure Demand Mode)	Yes	Yes
SCBA-Structural Fire Fighting, Positive Pressure	Yes	Yes
SCBA/SAR-IDLH, Positive Pressure	Yes	Yes
Mouth-bit Respirators	Fit-testing is not required	
Loose-fitting Respirators (e.g. hoods, helmets)	Fit-testing is not required	

* Table adapted from OSHA's Small Entity Compliance Guide for the Respiratory Protection Standard. OSHA 29 CFR §1910.134(f)(6)

D. Respirator Use

General Use Instructions

Each time a respirator is worn, the wearer must conduct a user seal check (29 CFR § 1910.134(g)(1)(iii)). Employees may select either the positive or negative pressure check.[9] Additional PPE, combined with respirator use, may be necessary to adequately prevent exposure. The use of eye, face or skin protection may be required during certain processes. Consult the process supervisor for other required equipment.

In accordance with 29 CFR § 1910.134(g)(1), tight fitting facepiece respirators are not permitted for use if:

- An employee has facial hair that interferes with either the sealing surface of the respirator and the face, or interferes with the valve function.
- Corrective glasses/goggles or other personal protective equipment interferes with the seal of the facepiece.
- Any other condition interferes with the facepiece seal.

In accordance with 29 CFR § 1910.134(g)(2), the employee must vacate the respirator use area for the following reasons:

- To wash his/her face and respirator facepiece, as necessary to prevent respirator-induced eye or skin irritation;
- If vapor or gas breakthrough is detected;
- If there is a change in breathing resistance;

9 The seal check procedures are performed in accordance with Appendix B-1 of OSHA 29 CFR §1910.134 or the manufacturer's direction, whichever is most effective.

- If there is facepiece leakage; or
- To replace the respirator/filter or change the cartridge/canister.

E. Cleaning, Maintenance, and Storage

Requirement: "Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators" (29 CFR §1910.134(c)(1)(v)).

Respirators are to be regularly cleaned and disinfected according to the manufacturer's instructions. APRs are to be cleaned and disinfected as often as necessary to be maintained in a sanitary condition SARs and emergency use respirators are to be cleaned and disinfected after each use according to 29 CFR § 1910.134(h)(1)(iii).

Cleaning

Follow these general steps for cleaning and disinfecting respirators, refer to the manufacturer for specific directions:

- Disassemble respirator, removing all filters, canisters, or cartridges.
- Wash the facepiece and associated parts in a mild detergent with warm water. Do not use organic solvents or bleach.
- Rinse thoroughly in clean, warm water.
- Wipe the respirator with disinfectant wipes (70% isopropyl alcohol) to kill germs.
- Air dry in a clean area. If a clean area is not available, use clean disposable paper towels to blot excess moisture.
- Reassemble the respirator and replace any defective parts (noting the condition of the head straps and valve flaps).
- Place in a clean, dry plastic bag or other airtight container.

The Program Administrator is responsible for ensuring there are adequate cleaning and disinfecting supplies. If supplies are low, employees can notify their Supervisor or the Program Administrator.

Maintenance

After leaving the respirator use area, employees can do limited maintenance on their equipment only in an area that is free from respiratory hazards.

Respirators are to be properly maintained at all times so that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and/or defects. Worn or deteriorated parts must be replaced prior to equipment use.

No components are replaced or repairs made beyond those recommended by the manufacturer. Repairs or adjustments to respirators are to be made only by persons

appropriately trained to perform such operations and shall use only the respirator manufacturer's NIOSH-approved parts designed for the respirator according to 29 CFR § 1910.134(h).

The following checklist may be used when inspecting respirators:

	Facepiece: cracks, tears, holes, facemask distortion, cracked or loose lenses/face shield
	Headstraps: breaks, tears, broken buckles/clasps, overstretched elastic bands
	Valves: residue/dirt, cracks or tears in valve material, absence of valve flap
	Filter/Cartridges: proper cartridge for hazard, approval designation, intact gaskets, cracks or dents in housing
	Air Supply Systems: breathing air quality/grade, condition of supply hoses, hose connections, settings on regulators and valves

Defective respirators or those with defective parts are taken out of service immediately (29 CFR §1910.134(h)(4)). Employees should notify their supervisor about all respirator defects. It is the Supervisors responsibility to give the defective equipment either to the Program Administrator or to the individual charged with replacement/repair. The Program Administrator then decides whether to:

- Temporarily take the respirator out of service until it can be repaired;
- Have it repaired; or
- Dispose of it if the problem is irreparable.

Storage

APRs are stored in a clean, dry area and following the manufacturer's recommendations. Employees inspect and clean their own respirators according to the provisions of this program. The equipment is stored in plastic bags or airtight containers. Each bag/container is marked with an employee name, and only that particular employee can use it for their equipment storage. (29 CFR §1910.134(h)(2)).

A supply of respirators and replacement components are stored in the original manufacturer's packaging in the

_____

(area or location)

Cartridge and Canister Change-Out Schedules

In the application of product containing MDI, the use of an air-purifying respirator (APR) may be permitted if the airborne MDI concentration is no greater than 10 times the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV) or OSHA PEL. If an APR is selected, the cartridge must be equipped with an end of service life indicator (ESLI) certified by NIOSH, or a change-out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. When using an APR respirator, a pre-filter combined with an organic vapor cartridge is recommended. APR cannot be used if (1) the employee is working in the zone of the contaminant (e.g., visible overspray is evident on the workers body), or (2) in the construction industry where spray foam application is inside a structure or a confined space with inadequate ventilation. In these situations, PAPR or SAR are provided. Contact the respirator manufacturer or the product supplier for their recommendation on

specific cartridge use. The basis for the change out schedule must be described in the employer's written respirator program.

Employees wearing APR with particulate pre-filters for protection against wood dust and other particulates must change their cartridges when they experience difficulty breathing (i.e. resistance) while wearing their mask, according to the manufacturer.

Equipment Malfunction During Use

Air-Purifying Respirators (APR)

If an APR or any of its components malfunctions (breakthrough, facepiece leakage, or faulty valve), the wearer must leave the respirator use area immediately and notify the supervisor about the malfunction. The supervisor is then responsible for ensuring that the employee receives the necessary repair parts or a new functional respirator.

Supplied-Air Respirator (SAR)

Usually, employees using SAR work in pairs. If one experiences an SAR malfunction, then he/she notifies the partner of the problem by using hand signals. The partner then escorts the affected employee outside the respirator use area.

Supplied-air respirators use only Grade D breathing air as described in ANSI/ Compressed Gas Association Commodity Specification for Air, G-7.1-1989*. The Program Administrator will maintain a Certificate of Analysis from the supplier that (1) Grade D breathing air is contained in the cylinders used to supply breathing air; (2) cylinders are tested and maintained as required in the Shipping Container Specification Regulations of the Department of Transportation; and (3) the moisture content in the cylinder does not exceed a dew point of -50 degrees Fahrenheit at 1 atmosphere pressure for each shipment of cylinders received or for the purification system used to clean breathing air in a hose/compressor system.

*The oxygen content (v/v) is between 19.5% and 23.5%; hydrocarbon (condensed) content is 5 mg/m3 or less; carbon monoxide content is 10ppm or less; and carbon dioxide content is 1,000.

F. TRAINING

"Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance" is required by 29 CFR §1910.134(c)(1)(viii).

The Program Administrator provides training to respirator users and their supervisors on:

- Contents of _____respiratory protection program.
  (Company's)
- Responsibilities of employees and supervisors.
- Requirements of OSHA's respiratory protection standard.

All training occurs prior to any respirator use in the workplace. Supervisors receive their training prior to supervising employees required to use respirators.

The training program covers the following topics:

- Elements of _____ respiratory protection program
  (Company's)
- The information covered under OSHA Standard 29 CFR § 1910.134
- Respiratory hazards encountered at the worksite
- Proper selection and use of respirators
- Additional PPE
- Respirator limitations
- How to perform user seal (fit) checks
- Fit testing
- Emergency respirator use procedures
- Respirator maintenance and storage
- Medical signs and symptoms limiting effective respirator use

Employees are required by OSHA to demonstrate their understanding of the topics covered in the training through hands-on exercises and a written quiz. The Program Administrator documents respirator training. Refer to Appendix IV, of this document, for a copy of the Respirator Protection Training Quiz. This documentation includes the type, model, and size of respirator on which each employee has been trained and fit tested.

Employees are retrained annually, or as needed (i.e., relocation to another department using a different type of respirator.)

IV. Program Evaluation

"This section requires the employer to conduct evaluations of the workplace to ensure that the written respiratory protection program is being properly implemented, and to consult employees to ensure that they are using the respirators properly" (29 CFR § 1910.134(l)).

The Program Administrator and other responsible supervisors conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. These evaluations can include regular consultations with both the employees using respirators and their supervisors. There may be other topics that a company determines are appropriate. This can identify areas for improvement and to address problems.

Records' reviews, site inspections and periodic air monitoring also assist in program review.

V. Documentation and Recordkeeping

The Program Administrator maintains the following records:

- A written copy of this program and the OSHA standard (this information is available to any interested employee).
- Training and fit testing records. These records are updated as new employees are trained; when existing employees receive refresher training; and/or when new fit testing is conducted.
- Written recommendations from the PLHCP on an employee's ability to use respirators. Medical evaluations are maintained in accordance with the OSHA Medical Records Standard (29 CFR § 1910.1020).

The OSHA website hosts additional information about topics such as respiratory fit testing procedures, user seal check procedures, respiratory cleaning procedures, and the OSHA Respiratory Medical Evaluation Questionnaire. You should access OSHA's website at www.osha.gov for more information.

VI. References/Resources

1. 29 CFR § 1910.134 Respiratory Protection Standard and Appendices, OSHA.
   Click on the link above to open the full text of Attachment 1.
   For the most up-to-date information on these sections of OSHA regulations, click below to visit the OSHA website and
   http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&P_id=12716&p_text_version=FALSE

   A. Fit Testing Procedures.
   http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9780&p_text_version=FALSE

   B. 1. User Seal Check Procedures.
   http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9781&p_text_version=FALSE

   2. Respiratory Cleaning Procedures
   http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=978&p_text_version=FALSE

   C. OSHA Respirator Medical Evaluation Questionnaire.
   http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9783&p_text_version=FALSE

D. Information for Employees Using Respirators When Not Required Under the Standard. http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9784&p_text_version=FALSE

2. Excerpts from "Risk Assessment - Methylenediphenyl diisocyanate, CAS-No.:26447-40-5, EINECS-No.: 247-714-0," Draft of 5.02.99.

3. OSHA Standard for Respiratory Protection requirements for Allowable Use of Air-purifying Respirators (APR) Against Gases and Vapors - Excerpts from OSHA documents.

4. Evaluation of the Effectiveness of Air-purifying Respirator Cartridges in Removing MDI Aerosols From Air, M. W. Spence, T. D. Landry, D. W. Huff; Environment, Health, and Safety, The Dow Chemical Company, Midland, Michigan 48674; (517)636-2331.

5. National Institute for Occupational Safety and Health (NIOSH) Policy Statement, NIOSH Respirator Use Policy/OSHA's §1910.134, August 4, 1999.

   For the most up-to-date information on this topic, click below to visit the NIOSH website http://www.3m.com/market/safety/ohes2/html/nioshPolicyStatement.html

6. Questions and Answers on the Respiratory Protection Standard (English only). OSHA and Appendices.

   1. Appendix D (Spanish Translation)
   2. Respirator-Use Requirements Flowchart
   3. State Licensing Boards Information
   4. Respirator Medical Evaluation Questionnaire (English)

   For the most up-to-date information on this topic and for the translations, click below to visit the OSHA website: http://www.osha-slc.gov/qna.pdf

7. Letter from Richard Fairfax, OSHA, Directorate of Compliance Programs, to David G. Sarvadi, Keller and Heckman, LLP, July 18, 2000, and Larry Janssen, CIH, 3M Company, July 18, 2000.

Appendix I

OSHA BitrexTM Respirator Fit Test Protocol

The purpose of a fit test is to meet OSHA Standard 29 CFR §1910.134. The BitrexTM (Denatonium benzoate) solution aerosol QLFT protocol uses the published saccharin test protocol because that protocol is widely accepted. Bitrex is routinely used as a taste aversion agent in household liquids which children should not be drinking and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers. The entire screening and testing rocedure shall be explained to the test subject prior to the conduct of the screening test.

1.0 Bitrex Fit Test Instructions

1. Scope: The Bitrex fit test is conducted so the person being fit tested can detect the taste of the Bitrex sensitivity solution. Once detection is confirmed, the person is tested using the Bitrex fit test solution with the respirator to detect breakthrough.

2. Related Procedures and Other Documents:

   1.2.1 Bitrex Qualitative Fit Test Kit Instructions Part No. 2041 Allegro Industries

   1.2.2 MSDS Sheet Bitrex Fit Sensitivity Solution #1

   1.2.3 MSDS Sheet Bitrex Fit Test Solution #2

   1.2.4 Respirator Fit Test Record (Appendix III)

   1.2.5 Respirator Protection Training Quiz (Appendix IV)

2.0 Equipment

2.1 Fit test kit
2.2 Test hood
2.3 Nebulizer #1 (sensitivity)
2.4 Nebulizer #2 (fit test)
2.5 Sensitivity Solution
2.6 Fit Test Solution
2.7 Stopper
2.8 Canister cartridge

3.0 Bitrex Fit Test Solution Instructions

3.1 Remove Sensitivity Test solution and with tip pointed upward, pinch along the length of the applicator tube to crush the glass ampoule.

3.1.1 It is important to keep the applicator tip pointed upward when pinching the tube to prevent the solution from squirting out during the pinching process.

3.2 Remove the end cap from the nebulizer and insert the applicator tip into the u section opening of the nebulizer. Squeeze and transfer the solution from the applicator into the neck of the nebulizer until the applicator is empty

3.2.1 Do not remove the end tip of the applicator tube. It contains a porous filter, which is designed to filter out the crushed glass. The tip contains a hole for solution transfer.

3.2.2 Replace protective end cap on nebulizer until test is ready to be performed

3.3 Repeat operations 3.1 and 3.2 for the fit test solution ampoule using the appropriate nebulizer.

4.0 Bitrex Sensitivity Test Instructions

Note: The subject should not eat, drink or chew gum for at least 15 minutes before the test.

4.1 Place the hood over the subject without a respirator

4.2 Position the hood forward so there is about six inches between the subject's face and the window. This is important to ensure even dispersion of the aersol and clearance for the respirator during the fit test.

4.3 Instruct the subject to breath through their mouth with their tongue extended.

4.4 Using the sensitive test solution Nebulizer #1 inject the aerosol into the hood through the hole in the window.

4.4.1 Inject 10 times, fully squeezing and collapsing the bulb.

4.4.2 The nozzle is directed away from the nose and mouth of the person being tested.

4.5 Ask the subject if they can detect the bitter taste of the solution.

4.5.1 If tasted, note the number of squeezes on the Respirator Fit Test Record.

4.5.2 All testing results are in groups of 10 and should be noted on the paperwork in groups of 10 squeezes.

4.6 If the subject does not taste the sensitivity solution, inject an additional 10 full squeezes of the aerosol into the hood.

4.6.1 Repeat with 10 more squeezes

4.7 If the Bitrex is not tasted after 30 squeezes, the subject is unable to taste Bitrex and may not perform the fit test.

5.0 Bitrex Fit Test Work Instructions

5.1 Have the subject don and fit check the respirator per the manufacturers' instructions.

5.1.1 Use the particulate filter provided (N95-P100 rating)

5.2 Place the hood over the subject with the respirator on

5.3 Position the hood forward so there is about six inches between the subject's face and the window.

This is important to ensure even dispersion of the aerosol and clearance for the respirator during the fit test.

5.4 Instruct the subject to breathe through their mouth with their tongue extended.

5.5 Using the sensitive test solution Nebulizer #2 inject the aerosol into the hood through the hole in the window.

5.5.1 Inject 10 times, fully squeezing and collapsing the bulb.

5.5.2 To maintain an adequate concentration of aerosol during this test, inject onehalf of the number of squeezes used in step 5.5.1, every 30 seconds

5.6 Ask the subject if they can detect the bitter taste of the solution any time during the following exercises for 60 seconds each.

5.6.1 Normal breathing

5.6.2 Deep breathing...breaths should be deep and regular.

5.6.3 Turning head from side to side- movement should be complete with one turn every second.

5.6.4 Nodding head up and down- movement should be complete with one turn every second.

5.6.5 Talking, reciting the alphabet or reading aloud a prepared text. The "Rainbow Passage" is suggested.[1]

5.6.6 Bending over- The test subject shall bend at the waist as if they were to touch their toes.

5.6.6.1 Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.

5.6.7 Normal breathing

5.7 If the entire test is completed without the subject detecting the bitter taste of the Bitrex aerosol, the test is successful and the respirator fit is deemed adequate.

5.8 If the taste of Bitrex is detected the test has failed and a different respirator must be tried, and the entire procedure is repeated (sensitivity and fit tests).

5.9 Enter pass/fail on the Respirator Fit Test Record

5.10 Have subject and the trainer sign the document

[1]The Rainbow Passage: When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.

Appendix II
OSHA Respiratory Medical Evaluation Questionnaire[1]

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory)

The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____
2. Your name: _____
3. Your age (to nearest year) : _____
4. Sex (circle one): Male/Female
5. Your height: _____feet _____inches
6. Your weight: _____pounds
7. Your job title:_____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code) : _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one)? Select Yes or No
11. Check the type of respirator you will use (you can check more than one category):
    a. N, R, or P disposable respirator (filter-mask, non- cartridge type only).
    b. Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).
12. Have you worn a respirator (circle one)? Select Yes or No
    If "yes," what type(s): _____

[1] OSHA 1910.134 Appendix C, OSHA Respiratory Medical Evaluation Questionnaire

Part A. Section 2. (Mandatory)

Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you **currently** smoke tobacco, or have you smoked tobacco in the last month? Select Yes or No
2. Have you **ever had** any of the following conditions?
    a. Seizures (fits): Select Yes or No
    b. Diabetes (sugar disease): Select Yes or No
    c. Allergic reactions that interfere with your breathing: Select Yes or No
    d. Claustrophobia (fear of closed-in places): Select Yes or No
    e. Trouble smelling odors: Select Yes or No
3. Have you **ever had** any of the following pulmonary or lung problems?
    a. Asbestosis: Select Yes or No
    b. Asthma: Select Yes or No
    c. Chronic bronchitis: Select Yes or No
    d. Emphysema: Select Yes or No
    e. Pneumonia: Select Yes or No
    f. Tuberculosis: Select Yes or No
    g. Silicosis: Select Yes or No
    h. Pneumothorax (collapsed lung): Select Yes or No
    i. Lung cancer: Select Yes or No
    j. Broken ribs: Select Yes or No
    k. Any chest injuries or surgeries: Select Yes or No
    l. Any other lung problem that you've been told about: Select Yes or No
4. Do you **currently** have any of the following symptoms of pulmonary or lung illness?
    a. Shortness of breath: Yes/No
    b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Select Yes or No
    c. Shortness of breath when walking with other people at an ordinary pace on level ground: Select Yes or No
    d. Have to stop for breath when walking at your own pace on level ground: Select Yes or No
    e. Shortness of breath when washing or dressing yourself: Select Yes or No

f. Shortness of breath that interferes with your job: Select Yes or No
g. Coughing that produces phlegm (thick sputum): Select Yes or No
h. Coughing that wakes you early in the morning: Select Yes or No
i. Coughing that occurs mostly when you are lying down: Select Yes or No
j. Coughing up blood in the last month: Select Yes or No
k. Wheezing: Select Yes or No
l. Wheezing that interferes with your job: Select Yes or No
m. Chest pain when you breathe deeply: Select Yes or No
n. Any other symptoms that you think may be related to lung problems: Select Yes or No

5. Have you ever had any of the following cardiovascular or heart problems?
   a. Heart attack: Select Yes or No
   b. Stroke: Select Yes or No
   c. Angina: Select Yes or No
   d. Heart failure: Select Yes or No
   e. Swelling in your legs or feet (not caused by walking): Select Yes or No
   f. Heart arrhythmia (heart beating irregularly): Select Yes or No
   g. High blood pressure: Select Yes or No
   h. Any other heart problem that you've been told about: Select Yes or No

6. Have you ever had any of the following cardiovascular or heart symptoms?
   a. Frequent pain or tightness in your chest: Select Yes or No
   b. Pain or tightness in your chest during physical activity: Select Yes or No
   c. Pain or tightness in your chest that interferes with your job: Select Yes or No
   d. In the past two years, have you noticed your heart skipping or missing a beat: Select Yes or No
   e. Heartburn or indigestion that is not related to eating: Select Yes or No
   f. Any other symptoms that you think may be related to heart or circulation problems: Select Yes or No

7. Do you currently take medication for any of the following problems?
   a. Breathing or lung problems: Select Yes or No
   b. Heart trouble: Select Yes or No
   c. Blood pressure: Select Yes or No
   d. Seizures (fits): Select Yes or No

8. If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)
    a. Eye irritation: Select Yes or No
    b. Skin allergies or rashes: Select Yes or No
    c. Anxiety: Select Yes or No
    d. General weakness or fatigue: Select Yes or No
    e. Any other problem that interferes with your use of a respirator: Select Yes or No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire?
Select Yes or No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently)?
Select Yes or No
11. Do you currently have any of the following vision problems?
    a. Wear contact lenses: Select Yes or No
    b. Wear glasses: Select Yes or No
    c. Color blind: Select Yes or No
    d. Any other eye or vision problem: Select Yes or No
12. Have you ever had an injury to your ears, including a broken ear drum?
Select Yes or No
13. Do you currently have any of the following hearing problems?
    a. Difficulty hearing: Select Yes or No
    b. Wear a hearing aid: Select Yes or No
    c. Any other hearing or ear problem: Select Yes or No
14. Have you ever had a back injury? Select Yes or No

15. Do you currently have any of the following musculoskeletal problems?
    a. Weakness in any of your arms, hands, legs, or feet: Select Yes or No
    b. Back pain: Select Yes or No
    c. Difficulty fully moving your arms and legs: Select Yes or No
    d. Pain or stiffness when you lean forward or backward at the waist: Select Yes or No
    e. Difficulty fully moving your head up or down: Select Yes or No
    f. Difficulty fully moving your head side to side: Select Yes or No
    g. Difficulty bending at your knees: Select Yes or No
    h. Difficulty squatting to the ground: Select Yes or No
    i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Select Yes or No
    j. Any other muscle or skeletal problem that interferes with using a respirator: Select Yes or No

Appendix III
Respirator Fit Test Record (Qualitative)

Name: _____ Date: _____

Job: _____ Glasses worn: _____

Facial hair, other: _____

Test media: ☐ Bitrex ϖ ☐ Saccharin ϖ

Respirator Type: A _____ **B** _____

A. Compatible with eye glasses
B. Test Exercises

1. Head stationary, normal breathing	_____	_____
2. Head stationary, deep breathing	_____	_____
3. Head turning side to side	_____	_____
4. Head moving up and down	_____	_____
5. Talking (rainbow passage)	_____	_____

C. Comfort

1. Very comfortable	_____	_____
2. Comfortable	_____	_____
3. Barely comfortable	_____	_____
4. Uncomfortable	_____	_____
5. Intolerable	_____	_____
Pass/Fail	#	#

Assigned equipment: A		
Manufacturer:	Model:	Size:
Assigned equipment: B		
Manufacturer:	Model:	Size:

Tested by (print name) Signature

Signature of trainee

Appendix IV
Respirator Protection Training — QUIZ

Name: _____ Date: _____

1. A positive and negative pressure check should be conducted each time the respirator is worn True or False?
2. A dust mask is adequate protection against solvents True or False?
3. Respirators should be cleaned on a daily basis True or False?
4. The only adequate protection against MDI is from the dual-cartridge respirator True or False?
5. A respirator can be borrowed from a co-worker in the event that your respirator is not available True or False?
6. In order to assure a proper fit, clean shaven skin must be in contact with all respirator skin sealing surfaces at all times True or False?
7. Air-purifying respirators (APRs) can be worn for protection against MDI vapor/mist during spray-on TBL applications True or False?

Legal Notice

This Respiratory Protection Program Guidance Document has been prepared to provide helpful ideas and information for parties interested in undertaking operations using requiring respiratory protection. The respiratory protection program and guidelines provided are based on OSHA requirements under 29 CFR § 1910.134, and can help a facility develop its own respiratory protection program. Many parts of this guidance document provide examples and possible text that a facility can use for its program. However, the actual terms and examples used for a facility's program are subject to each individual facility's independent review and determination.

Each facility has an independent obligation to ascertain that their plans, actions and practices meet all relevant laws and represent sound business practices for their particular operations. Facilities may need to vary their approach with respect to particular operations, products or locations based on specific factual circumstances. Therefore, the Center for the Polyurethanes Industry (CPI) of the American Chemistry Council (ACC) and its members do not make any warranty or representation, either express or implied, with respect to the accuracy or completeness of the information contained in this document. Further, CPI disclaims and does not assume any liability of any kind whatsoever resulting from the use of or reliance upon any information, conclusions, or opinions contained herein.

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