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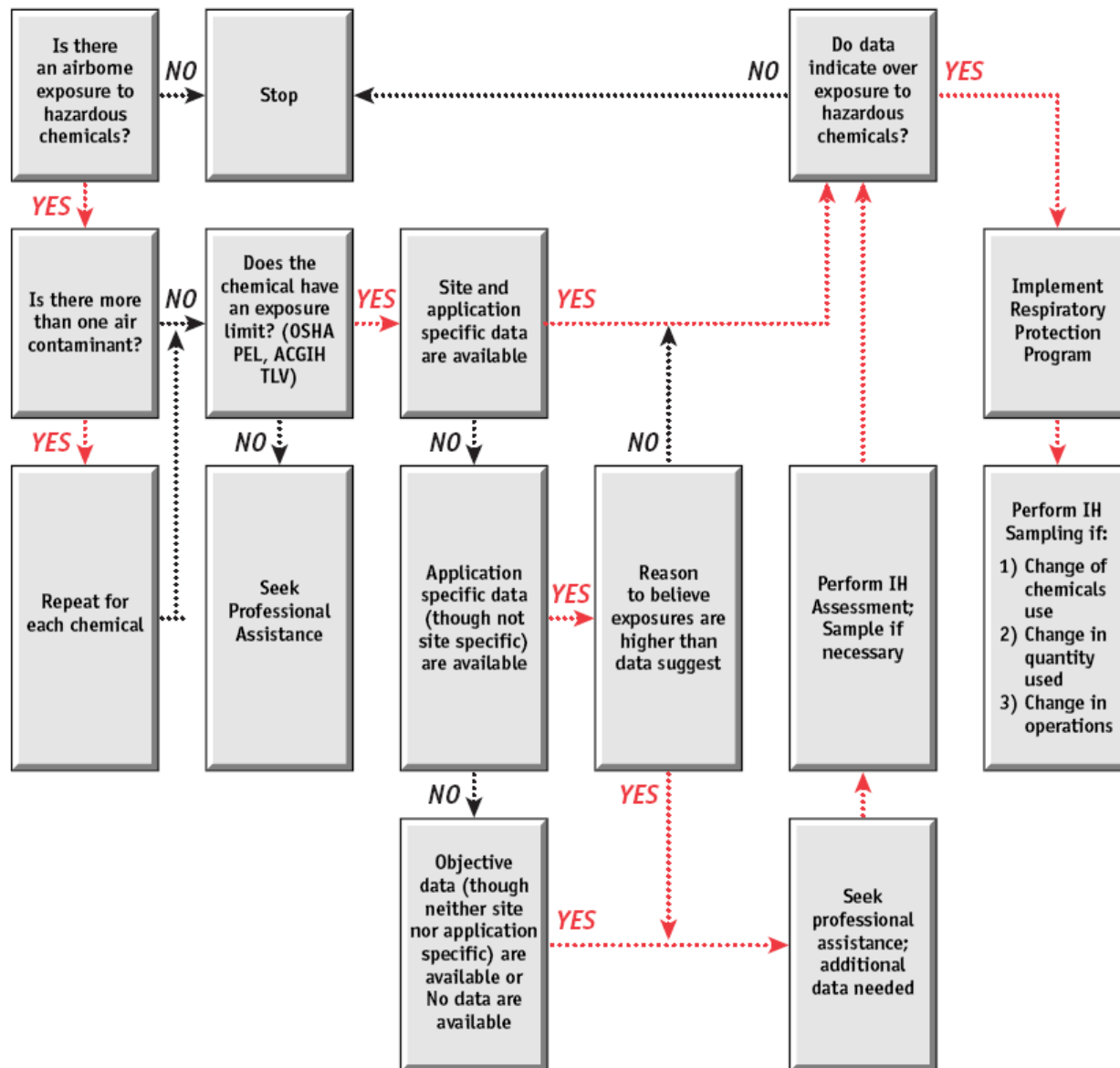
Mount Airy, NC

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***Model Respiratory Protection Program  
for Compliance with the Occupational  
Safety and Health Administration's  
(OSHA) Protection Program Standard 29  
C.F.R §1910.134***

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# MDI Exposure Assessment Decision Matrix for Selecting Respiratory Protection



## **IMPLEMENTATION GUIDE and REGULATORY BACKGROUND**

*29 C.F.R. §1910.134 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 - 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 standard mandates that employers:*

- Develop a written program;*
- Assign a Program Administrator;*
- Prepare work site-specific procedures;*
- Select respirators based on the hazard(s) and the required protection;*
- Train employees on the usage, fit, maintenance, cleaning, and storage of respirators;*
- 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 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;*
- Provide the tools and replacement parts necessary for respirator cleaning, maintenance, and repair; and*
- Perform periodic program evaluation to ensure effectiveness.*

*A major change in the standard is the provision governing when APR may be used. In the past, OSHA and the National Institute for Occupational Safety and Health (NIOSH) both prohibited the use of APR against gases and vapors that had inadequate warning properties — principally when the odor threshold was above the applicable exposure limit. The new standard permits the use of APR without limit, if the employer has objective data (1) that APR provide adequate protection, and (2) on the service life of the cartridges, upon which a cartridge change out schedule may be based. OSHA confirmed this interpretation in a letter to API's Counsel, Keller and Heckman LLP dated July 18, 2000, specifically with respect to diisocyanates (see Attachment 8).*

**The following document is a draft that must be edited to address company specific procedures, personnel, and operations.**

**In implementing the program, the following steps must be completed:**

<input type="checkbox"/>	1. Using the flow chart in Section III.B., determine which company operations require the use of respirators and determine what kind of respirator is required for each operation. Complete the Table in Attachment 9 following the example in Section I of the model program.
<input type="checkbox"/>	2. Designate the Program Administrator in Section II.
<input type="checkbox"/>	3. Designate the physician or other licensed health care professional in Section III.
<input type="checkbox"/>	4. Identify operations where respirators are required and designate the types of respirator to be used, following the methods in the flow chart in Section III.B.; prepare a Table showing the respirator assignments using the blank table in Attachment 9.
<input type="checkbox"/>	5. Arrange for medical examinations for employees assigned to wear respirators.
<input type="checkbox"/>	6. Perform a respirator fit test and assess the impact of other Personal Protection Equipment (particularly safety glasses and goggles) on respirator performance and fit. Cross-reference PPE assessment in the blank table in Attachment 9.
<input type="checkbox"/>	7. 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.
<input type="checkbox"/>	8. Conduct training for employees and supervisors assigned to jobs requiring respirators.
<input type="checkbox"/>	9. Establish forms and procedures for annual program evaluation under Section IV.
<input type="checkbox"/>	10. Insert appropriate information into fields designated by "_____" to create a written respiratory protection program for your company. Include all applicable attachments (i.e., this book).

# **RESPIRATORY PROTECTION PROGRAM**

for

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*(COMPANY NAME)*

---

*(street address)*

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*(city, state, zip code )*

**as required by 29 C.F.R. §1910.134**

# RESPIRATORY PROTECTION PROGRAM

*for*

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(COMPANY NAME)

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## TABLE OF CONTENTS

I.	Purpose and Scope.....	2
	Mandatory use of respirators	
	Voluntary use of respirators	
II.	Program Administration.....	6
	Program Administrator responsibilities	
	Supervisor responsibilities	
	Employee responsibilities	
III.	Program Elements.....	8
	A. Medical Evaluation.....	8
	B. Respirator Selection.....	11
	C. Respirator Fit Testing.....	13
	D. Respirator Use.....	14
	a. General Use Instructions	
	b. Cleaning, Maintenance and Storage	
	c. Cartridge and Canister change-out schedules	
	d. Equipment malfunction	
	E. Training.....	18
IV.	Program Evaluation.....	19
V.	Documentation and Record keeping.....	20
VI.	Attachments.....	21

## **I. Purpose and Scope**

The purpose of this program is to protect all employees of \_\_\_\_\_  
(company)  
from respiratory hazards, and to ensure that \_\_\_\_\_  
(company)  
is in compliance with OSHA’s Respiratory Protection Program Standard 29 C.F.R.  
§1910.134(c).<sup>1</sup>

Engineering controls, such as ventilation and substitution of less toxic materials, may not be completely effective in controlling airborne hazards. In these situations, respirators, and in emergency conditions, respirators and other types of personal protective equipment must be used to safeguard employees’ health.

*Note to Program Administrator: Table I is to be customized for \_\_\_\_\_.*  
(company)

*Table 1a is a generic overview; Table 1b is an example for a spray foam operation. Table 1c is a blank form to be completed to communicate where respirators are required in the operations of \_\_\_\_\_.*  
(company)

### **Mandatory use of respirators**

\_\_\_\_\_ 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)
- During some non-routine or emergency operations, (for example, clean-up of hazardous spills).

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 \_\_\_\_\_.

<sup>1</sup>Attachment 1

## Respiratory Protection Program – Purpose and Scope

(company)

### 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

(Program Administrator's name)

has approved the use.

All employees voluntarily wearing respirators are required to receive a copy of "**Information for Employees Using Respirators When Not Required Under the Standard.**" See Appendix D (page 89). \_\_\_\_\_ must review this OSHA information

(company)

with each employee prior to their 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

(company)

for those voluntarily wearing respirators or other PPE.

Employees voluntarily wearing dust masks (filtering facepiece) or escape-only respirators 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.<sup>2</sup> These employees are also provided a copy of Appendix D and given a review of the information before their use of dust masks.

<sup>2</sup> OSHA Directive CPL 2-0.120 D(3)(c)(2), page 15.



**Respiratory Protection Program – Purpose and Scope**

TABLE 1 ( a ) 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; P-100 pre-filter>	<e.g. Application of MDI in outdoor operations>	<e.g. polymeric MDI <sup>3</sup> >
<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)>
<type of respirator>	<operations>	<hazard description>

TABLE 1 ( b ) Voluntary and Required Respirator Use		
Respirator Type	Department/Task	Respiratory Hazard/PEL
<e.g. Dust Mask (Filtering facepiece)>		None - Voluntary use
<e.g. Half-face Air Purifying Respirator with organic vapor/acid gas cartridge; P-100 pre-filter>	Application of MDI in outdoor operations>	Polymeric MDI <sup>4</sup>
<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 <sup>5</sup>

<sup>3</sup> 4,4'-Methylenediphenyl diisocyanate (MDI).

<sup>4</sup> 4,4'-Methylenediphenyl diisocyanate (MDI).

<sup>5</sup> 4,4'-Methylenediphenyl diisocyanate (MDI).



## **II. Program Administration**

### **Program Administrator Responsibilities**

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

The Program Administrator's duties include the following:

- Identifying work areas, processes, or tasks<sup>6</sup> that require workers to wear respirators, and evaluating the associated 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 and maintenance of respiratory protection equipment;
- Conducting qualitative fit testing;
- Administering the medical surveillance program;
- Maintaining required program records;
- Evaluating the respiratory protection program; and,
- Updating the written program, as necessary.

### **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 must also ensure that the program is understood and followed by the employees under their supervision.

Supervisory duties 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, and stored in accordance with the program.
- Monitor work areas and operations with sufficient frequency to identify respiratory hazards and select proper equipment.
- Coordinate with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

<sup>6</sup> Routine operations and reasonably foreseeable emergency situations associated with the operations are considered when assessing where respiratory protection is necessary.

## **Respiratory Protection Program – Program Administration**

### **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 are also 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.
- 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.

### **III. Program Elements**

#### **A. Medical Evaluation**

Any employee who

- is required to wear a respirator, or
- chooses to wear an air-purifying respirator (APR) voluntarily, must first pass a medical examination and have medical approval before wearing the equipment on the job.<sup>7</sup>

Employees refusing the medical evaluation cannot work in areas requiring respirator use.

The evaluation is conducted using the questionnaire provided in Appendix C (p.81) or an actual examination that obtains the same information.<sup>8</sup>

The Company's consulting \_\_\_\_\_  
"Medical Group" or "Physician"  
is \_\_\_\_\_  
(name of clinic, or name of physician/PLHCP)

\_\_\_\_\_ (name of Physician/PLHCP)

determines how the medical exams are conducted.

#### **Evaluation Procedures**

- Every employee requiring medical evaluation is given a copy of the medical questionnaire in Appendix C (p. 73) 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.<sup>9</sup> At an employee's request someone other than \_\_\_\_\_ (Program Administrator) may be asked to assist in reading the document. If this is not possible, the employee will be sent to the PLHCP for a medical evaluation.<sup>10</sup>
- Follow-up medical exams are given to employees as required by the OSHA standard, or as deemed necessary by the PLHCP.

<sup>7</sup> Voluntary use of dust masks (filtering facepieces such as 3 M's 8710, Survivair's N95 Disposable or MSA's Affinity Plus) and individuals equipped with escape-only respirators are excluded from this requirement.

<sup>8</sup> All examinations and questionnaires are to remain confidential between the employee and the physician or other licensed health care professional (PLHCP).

<sup>9</sup> For those individuals who speak only Spanish, a translated questionnaire is available in Appendix C of the OSHA Standard (Attachment 1).

<sup>10</sup> OSHA Directive CPL 2-0.120 Inspection Procedure for the Respiratory Protection Standard, page 23.

## Respiratory Protection Program – Program Elements

- 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.
- After an employee has received approval and started using a respirator, an additional medical evaluation is conducted for the following reasons:
  1. 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;
  2. The PLHCP or supervisor informs the Program Administrator of a reevaluation need
  3. Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation; or,
  4. A change occurs in the workplace conditions that may result in an increased physiological burden on the employee.

### Determination of fitness

A physician or other licensed health care professional (PLHCP) at \_\_\_\_\_  
(name of clinic, or name of PLHCP)  
evaluates the completed health care questionnaire.<sup>11</sup>

Prior to making a formal determination, \_\_\_\_\_,  
(company),

provides the PLHCP with the following information on respirator usage:

- the 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.<sup>12</sup>

The PLHCP provides an assessment of each employee's physical ability to wear a respirator and perform the assigned work. Such evaluations will be provided in writing according to one of the following three formats:

- The employee is qualified to perform assigned work and wear the assigned respirator.
- The employee is not qualified to perform assigned work and wear the assigned respirator.
- The employee is qualified to perform assigned work and wear the assigned respirator with the following limitations: <insert limitations and other considerations>.

<sup>11</sup> Sections 1 and 2, Part A of Appendix C, pg. 83. Prior to implementing the program, the company provides the PLHCP with a copy of the respiratory protection program and a copy of Appendix C. If a new PLHCP is selected, the company provides these document or they are transferred from the former PLHCP.

<sup>12</sup> If the PLHCP and the noted conditions remain the same, the information need not be provided for subsequent medical evaluations.

**Follow-up medical examination**

If an employee responds positively to any of questions 1 through 8 in Section 2 of the questionnaire, 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

\_\_\_\_\_ has performed an exposure assessment  
 \_\_\_\_\_ (Company)  
 identifying the respiratory hazard(s) found in its workplace.<sup>13</sup> The decision matrix used in this process is shown in Figure 1.

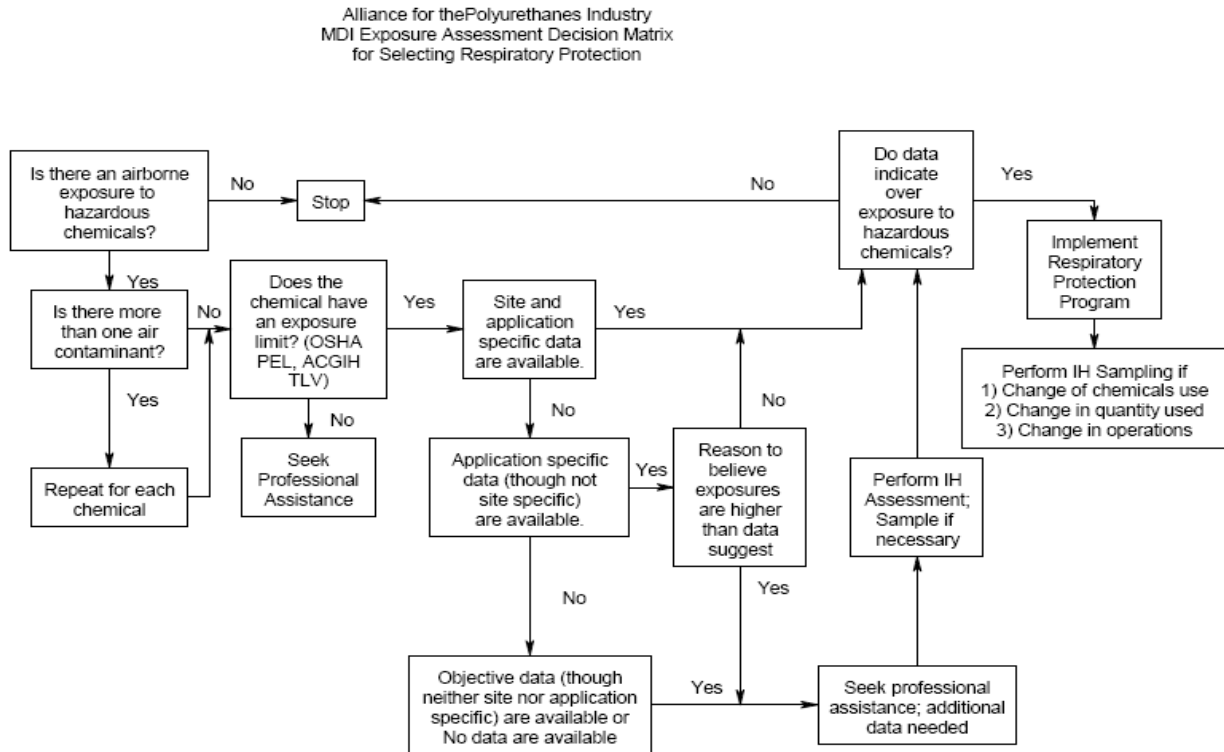


Figure 1.

Based on this information, and in accordance with all OSHA Standards, the Program Administrator selects the respirator to be used. See Attachment 9 (page 251) for a detailed description of \_\_\_\_\_ (company's) work operations requiring the use of a respirator, the type of respirator to be used, and the hazardous chemical(s) present.

<sup>13</sup> \_\_\_\_\_ has evaluated its operations as required by the Personal Protective Equipment (PPE) \_\_\_\_\_ (company) Standards in Subpart I, 29 C.F.R. 1910.132-138.



## **Respiratory Protection Program – Respirator Selection**

**Air-purifying respirators** may now be used in compliance with OSHA's Respirator Standard to protect against limited diisocyanate exposures. This was not true before the Standard was revised in 1998. The revised Standard requires that

- The respirator cartridge/filter combination is appropriate for diisocyanates and
- Objective data are used to establish cartridge change schedules to prevent cartridges from being used past their service life.

### C. Respirator Fit Testing

Fit testing is required 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:

- Prior to initial use of the respirator.
- If a different respirator facepiece (size, style, model or make) is used.
- On an annual basis.
- If the employee, \_\_\_\_\_, PLHCP, supervisor or Program Administrator  
(company)  
 makes a visual observation of changes in the employee’s physical condition that could affect respirator fit. This might include: facial scarring, dental changes, cosmetic surgery or a drastic change in weight.

The company uses a qualitative fit test (QLFT) or a quantitative fit test (QNFT) method as designated in Table 2.<sup>14</sup> 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.

<b>Table 2 Acceptable Fit-Testing Methods</b>		
	<b>QLFT</b>	<b>QNFT</b>
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
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	

<sup>14</sup>As established in Appendix A of the standard (Attachment 1).

## **D. Respirator Use**

### **General Use Instructions**

Each time a respirator is worn, the wearer must conduct a ‘user seal check’. Employees may select either the positive or negative pressure check.<sup>15</sup> 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. Employees must consult the process supervisor for the required equipment.

**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.

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

### **Cleaning, Maintenance, and Storage**

Respirators are to be regularly cleaned and disinfected according to the manufacture’s instructions.

APR’s are to be cleaned and disinfected as often as necessary, but at least once each day they are used.<sup>16</sup>

SARs and emergency use respirators are to be cleaned and disinfected after each use.

#### **Cleaning**

These seven steps are to be followed for cleaning and disinfecting respirators, unless the manufacturer directs otherwise:

- 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.

<sup>15</sup> The tests are performed in accordance with Appendix B-1 of the standard or the manufacturer’s direction — whichever is most effective.

<sup>16</sup> Or as outlined in 29C.F.R. 1910.134(h)(1) of the Standard.

## Respiratory Protection Program – Respirator Use

- 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 is an adequate supply of cleaning and disinfecting supplies. If supplies are low, employees must 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.

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. Regulator or alarm repairs of atmosphere-supplying respirators are to be conducted by the manufacturer.

### **Respirator Inspection Checklist:**

- ✓ Facepiece: cracks, tears, holes, facemask distortion, cracked or loose lenses/face shield
- ✓ Head straps: 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.

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 appropriate person 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.<sup>17</sup>

<sup>17</sup> 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.

Atmosphere supplying respirators are stored in \_\_\_\_\_  
(area or location)

A supply of respirators and replacement components are stored in the original manufacturer’s packaging in the in \_\_\_\_\_  
(area or location)

**Cartridge and Canister Change Out Schedules**

Organic vapor/acid gas cartridges/canisters with a P-100 prefilter that are used in the application<sup>18</sup> of product containing MDI must be changed after 8 hours of use or at the end of the shift, whichever is shorter. The basis for this change-out schedule is included in Attachment 2 (page 95).

Employees wearing APR with P-100 filters for protection against wood dust and other particulates must change their cartridges when they experience difficulty breathing (i.e. resistance).

**Equipment Malfunction**

**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.

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<sup>18</sup> 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 are provided.

## Respiratory Protection Program – Respirator Use

### 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.<sup>19</sup> 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.

<sup>19</sup> The oxygen content (v/v) is between 19.5% and 23.5%; hydrocarbon (condensed) content is 5 mg/m<sup>3</sup> or less; carbon monoxide content is 10 ppm or less; and carbon dioxide content is 1,000 ppm or less.

## **E. TRAINING**

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:

- All elements of \_\_\_\_\_ respiratory protection program;  
(Company's)
- The information covered under OSHA Standard 29 C.F.R. 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 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. 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**

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 include regular consultations with both the employees using respirators and their supervisors. This is done to 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.
- All 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.
- All 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 C.F.R. §1910.1020.)

## VI. Attachments

1. [29 C.F.R. § 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  
[http://www.osha-slc.gov/OshStd\\_toc/OSHA\\_Std\\_toc\\_1910\\_SUBPART\\_I.html](http://www.osha-slc.gov/OshStd_toc/OSHA_Std_toc_1910_SUBPART_I.html)  
and  
[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=12716&p\\_text\\_version=FALSE](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](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](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9781&p_text_version=FALSE)
  - B-2. Respiratory Cleaning Procedures  
[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9782&p\\_text\\_version=FALSE](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9782&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](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](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9784&p_text_version=FALSE)
2. [Using Air-Purifying Respirators for Protection Against Isocyanates Under OSHA's New Respiratory Protection Standard: Validation for Cartridge/canister Change-out Schedule Prepared by Keller and Heckman.](#)
3. [Excerpts from "Risk Assessment - Methylenediphenyl diisocyanate, CAS-No.: 26447-40-5, EINECS-No.: 247-714-0." Draft of 5.02.99.](#)
4. [OSHA Standard for Respiratory Protection requirements for Allowable Use of Air-purifying Respirators \(APR\) Against Gases and Vapors - Excerpts from OSHA documents.](#)
5. [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.

## Respiratory Protection Program – List of Attachments

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

Click on the link above to open the full text of Attachment 6.

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>

7. [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)

Click on the link above to open the full text of Attachment 7.

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>

8. [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.](#)

9. [Company prepared hazard and PPE respiratory assignment.](#)