**Hazard Assessment for Respirator Selection**

1. Identify the airborne contaminant(s):

An important source of information on airborne contaminants is the Material Safety Data Sheet (MSDS) for each product. The MSDS identifies the ingredients in each product that have been determined to be a health hazard and the physical and chemical characteristics of the product such as vapor pressure and flash point.

The physical form of the hazard will also help determine the type of respiratory protection needed.

* Dusts are tiny suspended particles resulting from a mechanical process such as grinding.
* Mists are tiny liquid droplets usually created by spraying operations.
* Fumes are small particles formed by a condensing gas or vapor such as in welding.
* Vapors are substances that evaporate from a liquid or solid.
* Gases are formless fluids that occupy the space in which they are enclosed. Examples include nitrogen and carbon monoxide.
* Smoke is a mixture of suspended particles and gases which are the result of combustion. Smoke can contain toxic contaminants.

2. Determine the concentration level of the contaminant:

Monitoring instruments will give you a precise reading of the airborne concentration level of the contaminant. If testing indicates exposure to an airborne concentration level at or above the Permissible Exposure Level (PEL) established for that substance, respiratory protection must be worn. This testing should be done by an industrial hygienist or other qualified staff.

3. Evaluate the conditions of exposure:

There are many variables that can affect your choice of respiratory protection. Always keep these factors in mind:

* The nature of the task. How long will exposure to each hazard be? Is the work strenuous (which makes breathing more difficult)?
* The characteristics of the work area. Is the work area a confined space and/or poorly ventilated? Will air temperatures be hot or cold? Could more than one contaminant be present?
* The type of work process. Does the way chemicals are combined, heated or applied create an additional or new health hazard? An example of this could be a paint spraying or welding operation.

4. Match the hazard, concentration level and the conditions of exposure to the proper type of respirator:

A wide range of supplied-air and air-purifying respirators are available from various manufacturers. Contact EH&S for help in selecting the proper respirator for your specific work area. The following worksheet and forms can be used for documenting the respirator hazard assessment and selection process.

**Respiratory Hazard Assessment worksheet**

Department:

Worksite:

General Description of Job Task:

Job Classification(s)

Level of physical exertion required to perform job:

Respiratory hazard(s) present:

OSHA PEL:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ACGIH TLV: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Is monitoring data available? \_\_\_\_\_\_\_Yes \_\_\_\_\_\_\_\_No

If yes, attach to this form.

Contaminant concentrations present in the workplace:

Contaminant(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Concentration:

Contaminant(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Concentration:

Contaminant(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Concentration:

Does data indicate levels that exceed applicable limits? \_\_\_\_\_\_Yes \_\_\_\_\_\_No

Does data indicate IDLH concentrations? \_\_\_\_\_\_Yes \_\_\_\_\_\_ No

Note: Wherever hazardous exposure(s) cannot be identified or reasonably quantified, the atmosphere must be considered IDLH.

Does data indicate oxygen deficiency (less than 19.5%)? \_\_\_\_\_\_Yes \_\_\_\_\_\_No

Is the respirator for routine use or emergency use?

Additional factors (i.e. temperature and humidity levels, etc.):

Communication requirements:

Are engineering/ administrative controls feasible? \_\_\_\_\_\_\_\_Yes \_\_\_\_\_\_\_\_No

If no, describe reasons:

Type of respirator selected: \_\_\_\_\_\_ air purifying \_\_\_\_\_\_\_\_ atmosphere supplying

Style of respirator selected: \_\_\_\_\_\_ tight-fitting \_\_\_\_\_\_\_\_\_\_ lose-fitting

Make: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Model#\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Type of canister or cartridge to be used:

Cartridge/canister change schedule if applicable

Evaluator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Respiratory Hazard Assessment and Certification Form

Department:

Date:

List Engineering or Administrative Controls:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Job Description | MSDS Product/Trade Name | Contaminant | Concentration | ppm or mg/m3 | PEL/TLV | Recommended Respiratory Protection | Service Life |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

I have performed an evaluation of the work areas indicated above, assessed the hazards and selected the appropriate respiratory protection.

Evaluator:

Date:

**Hazard Assessment Log**

|  |
| --- |
| Department:Date: |
| **Department** | **Contaminants** | **Exposure Level****(8 hr TWA)** | **PEL** | **Controls** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |