

# CHEMICAL EXPOSURE ASSESSMENT

## *Program Element*

### R2-10-207(10)(j)

Each agency shall develop, implement, and monitor a Chemical Exposure Assessment program element, when applicable.

In order to prevent employee illness and injury during the storage, handling, and disposal of chemicals, all hazardous chemicals must be:

- Anticipated and/or recognized;
- Evaluated through assessment (Chemical Exposure Assessment); and
- Feasibly controlled to prevent workplace illness and injury.

The chemical's Safety Data Sheet (SDS) is an excellent resource for identifying health and safety hazards.

<b>Definition:</b>	<p>A Chemical Exposure Assessment identifies hazardous chemicals so that controls can be implemented to reduce workplace illness and injury.</p> <p>The information gathered is included as part of the written chemical hazard evaluation to determine appropriate engineering and/or administrative methods to control occupational exposure. It will aid in the evaluation and selection of:</p> <ul style="list-style-type: none"><li>● Chemical substitution if a less hazardous chemical or substance can be used to achieve the same results</li><li>● Feasible administrative and engineering controls</li><li>● Personal Protective Equipment (PPE)</li></ul> <p>Additional compliance programs may be necessary such as Hazard Communication, Respiratory Protection, Hazardous Waste, Chemical Hygiene, etc. (refer to the <a href="#">Loss Prevention Program Elements</a> web page.)</p>
<b>Why do I need this program?</b>	<p>Employee exposure to hazardous chemicals must be maintained at the lowest practical levels and are to stay below the OSHA Permissible Exposure Limits (PELs) listed in OSHA 29 CFR 1910.1000, Subpart Z at all times; A Chemical Exposure Assessment is conducted to ensure that employees do not exceed these levels.</p>

**How do I know if this program applies to my agency and my specific job hazards?**

Agencies that use hazardous chemicals must perform a Chemical Exposure Assessment to determine the need to protect their employees.

A hazardous chemical is any compound, or mixture of a chemical compound, which is a **physical** and/or **health** hazard.

A **physical** hazard is:

- a flammable or combustible liquid
- a compressed gas
- an organic peroxide
- an explosive
- an oxidizer
- a pyrophoric
- an unstable material (reactive)
- a water reactive material

A **health** hazard has acute or chronic health effects that may occur in exposed employees. Common target areas include the lungs, skin, ears, and eyes. Examples of health hazards include:

- Allergens
- Teratogens
- Mutagens
- Carcinogens
- Chronic toxins
- Acute toxins
- Anesthetic
- Asphyxiants
- Irritants
- Corrosives
- Sensitizers
- Hepatotoxins
- Nephrotoxins
- Neurotoxins
- Hemolytic toxins

<p><b>What are the minimum required elements and/or best practices for a Chemical Exposure Assessment Program?</b></p>	<p>The minimum required elements should include:</p> <ul style="list-style-type: none"> <li>● Current chemical inventory</li> <li>● The standard operating procedures for storage, handling, application, and disposal of chemicals</li> <li>● Control methods that should be used (lab hoods, gloves, worker rotation, etc.)</li> <li>● Health effects and Occupational Exposure Limit (OEL) for the chemical(s) in question (located in Section 3: Composition/Ingredients of the SDS)</li> <li>● Document the amount of chemical that is stored, used, and disposed of, and indicate any storage limitations</li> <li>● Other environmental conditions under which exposures occur (located in Section 2: Hazards(s) Identification of the SDS)</li> <li>● Chemical pathways and the route of entry (inhalation, skin absorption, ingestion, injection)</li> <li>● Exposure monitoring (ex: biological monitoring, airborne sampling, bulk sampling, and surface sampling)</li> <li>● A report of findings and recommendations for feasible controls, if applicable</li> <li>● Training program established for the affected employees</li> <li>● Re-assessment of the work place after all feasible controls are installed or established</li> </ul>
<p><b>Are there any mandatory training requirements or best practices that must be developed by the agency?</b></p>	<p><b>Yes.</b> Training requirements depend on the workplace chemical exposure and classification. Training is required by the <a href="#">OSHA HAZCOM 2012 Standard, 29 CFR 1910.1200</a> and any other applicable standards.</p> <p>Another OSHA training resource is <a href="#">Training Requirements in OSHA Standards</a></p> <p>All training must be conducted in a manner and language in which the worker is able to understand.</p>
<p><b>Are there specific requirements for documenting the program, training, etc...?</b></p>	<p>Agencies should retain chemical assessment documentation as part of the written Hazard Communication Program.</p> <p>Agencies must retain SDSs for the duration of employment plus 30 years for all employees exposed to the chemical.</p>

	<p>Notify employees within 15 days after receipt of any monitoring results. Employee exposure records similarly must be preserved and maintained for at least 30 years.</p> <p>It is advisable for agencies to retain employee hazard communication training records for the duration of employment.</p> <p>Training should be documented either in paper format, electronic means or via the <a href="#">State's Employee Learning Portal</a>.</p> <p>Review, evaluate and update the effectiveness of the Chemical Hygiene Plan at least annually.</p>
<p><b>Are there any resources available that can assist me in putting together a Chemical Exposure Assessment ?</b></p>	<p><b>Yes.</b> State Risk Management has Loss Prevention Consultants available that can assist managers and supervisors in identifying potential hazards, and guide agencies on the establishment of program elements.</p> <p>For assistance contact State Risk Management, Loss Prevention at <a href="mailto:rmdlossprevention@azdoa.gov">rmdlossprevention@azdoa.gov</a>.</p> <p>Additional Resources:</p> <ul style="list-style-type: none"><li>• <a href="#">Chemical Exposure Assessment Worksheet</a></li><li>• On the Safety and Health Topics page, OSHA identifies requirements related to <a href="#">Chemical Hazards and Toxic Substances</a></li><li>• NIOSH Sampling Methods, found in The National Institute of Occupational Safety and Health (<a href="#">NIOSH</a>) <a href="#">Pocket Guide</a></li><li>• OSHA - <a href="#">Alphabetic Chemical Sampling Index</a></li><li>• The American Conference of Governmental Hygienists (<a href="#">ACGIH</a>) <a href="#">TLV Booklet</a></li><li>• <a href="#">JJ Keller, Hazardous Chemicals 101: Understanding the Different Between Hazmat, Hazcom and Hazardous Waste</a></li></ul>