## Cadmium

1. **Purpose**

The purpose of this plan is to ensure our employee's cadmium exposure level is below the OSHA Action Level (AL) and/or Permissible Exposure Limit (PEL). This plan must be made available to all employees.

1. **Scope**

This plan establishes requirements on how we will get into compliance with OSHA's cadmium standard. It includes engineering, work practice, and administrative controls. It will be reviewed an updated at least annually, or more often if necessary, until two consecutive exposure monitoring results are below the PEL. This plan can then be modified to include only those sections required when employees are exposed to cadmium above the Action Level.

1. **Responsibility**

The Safety Department is responsible for implementation, enforcement and periodic review of this plan. All supervisors are responsible for understanding this plan and implementation of the plan in their area. All affected employees are also responsible for following the requirements outlined here as they apply to their job. The term "employee" as used in this plan refers only to those who are exposed to greater than the PEL.

1. **Cadmium Monitoring**

* We will complete an initial determination of employee exposure to cadmium in the workplace in all areas that may contain cadmium.
* Air sampling will be performed in all areas that may contain cadmium.
* We will conduct additional monitoring wherever there has been a change in raw materials, personnel, equipment, work practices or finished products that may result in an employee being exposed to cadmium above the AL of PEL.
* Each employee monitored will be notified of the results within 15 working days after receipt of the results. The air sample results are provided to the employee using the Employee Notification of Sampling Results form found in the Appendix. For employees exposed to cadmium above the PEL, we will provide a written notice that the PEL was exceeded and a description of the corrective action(s) to be taken to reduce employee exposures below the PEL.
* We request that all companies or sources used to conduct the air sampling use American Industrial Hygiene Association (AIHA) accredited laboratories. These laboratories have strict internal quality control procedures which will follow the accuracy of measurement requirements outlined in the Cadmium Standards.

1. **Regulated Areas**

We will establish regulated areas in all areas where employee exposures to cadmium exceed the OSHA PEL. Access to these areas is restricted to authorized personnel only. Smoking, eating, drinking, chewing tobacco or gum, or applying cosmetics are prohibited in the regulated areas. Each employee will be required to wear the appropriate personal protective equipment and respiratory protection required to enter the regulated area.

1. **Work Practice**

* Personal protective equipment will be provided, at no cost to the employee, to each employee exposed to cadmium above the OSHA PEL.
* Employees will be provided with clean, dry protective clothing at least weekly.
* Cleaning, laundering, and disposal of the protective clothing will be provided at no cost to the employee.
* Repair or replacement of protective clothing and equipment will be provided at no cost to the employee.
* Employees will remove their protective clothing at the end of the work shift only in the change room. Employees will not be allowed to remove contaminated clothing from the facility.
* The protective clothing will be placed in marked containers. These containers will be closed immediately.
* The contaminated protective clothing container is marked with the label stated in 1910.1027(m)(3)(ii).
* Employees will not remove cadmium from protective clothing or equipment by blowing, shaking, or any other means that disperses cadmium into the air.
* To reduce employee exposures to cadmium a housekeeping schedule has been implemented.
* It is employee’s responsibility to help maintain the work area to reduce exposures to airborne cadmium.
* All surfaces shall be maintained as free as practicable of accumulated cadmium.
* Floors and other surfaces where cadmium accumulates may not be cleaned by the use of compressed air. High efficient particulate air (HEPA) or other equally effective filtration system should be considered for use in cleaning contaminated surfaces.
* Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and found not to be effective.
* Where vacuuming methods are selected, the vacuums shall be used and emptied in a manner which minimizes the re-entry of cadmium into the workplace.
* When filters and ventilation equipment must be maintained or worked on (changing filters etc.), all employees must vacate the area. The employees working on the ventilation equipment must wear the appropriate PPE.
* Employees will not have or consume food or beverages, chew tobacco or gum products or apply cosmetics in operations listed in part IV. Employees are responsible for washing hands and face prior to breaks and lunch.
* Change rooms are provided to all employees. All employees will use these change rooms and separate storage facilities for protective work clothing and equipment and for street clothes to prevent cross-contamination.
* All employees will shower at the end of the shift. Employees will not leave the facility wearing clothing or equipment worn in the work areas with cadmium airborne concentrations that are above the PEL or cause eye or skin irritation.
* Employees must use the designated lunchroom to consume food. The tables for eating will be maintained free of cadmium so that no employee in the lunchroom facility is exposed at any time to cadmium at or above a concentration of 2.5 ug/m3.
* Employees are required to wash their hands and face prior to eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics. Employees will not enter the lunchroom facilities with protective work clothing unless surface lead dust has been removed by HEPA vacuuming or some other method that removes cadmium dust without dispersing it.

1. **Medical Surveillance**

We have implemented a medical surveillance program for all employees exposed or may be exposed to cadmium above the OSHA AL for more than 30 days per year. The medical surveillance program examinations will be performed under the supervision of a licensed physician. Medical surveillance is available for each affected employee and is provided at no cost to the employee and at a reasonable time and place. The medical surveillance program also includes biological monitoring. Medical examinations are made available at least annually and more often if required. The medical examinations and biological monitoring requirements for pre-employment, surveillance and medical removal as outlined in the medical surveillance section of the cadmium standard are the minimal examination criteria to be followed by the licensed physician performing the medical surveillance.

For those employees assigned to an area where a respirator is required an examination will be provided. The examination is performed by the licensed physician. The examining physician will determine if the employee can wear a respirator. [If the employee can not wear a respirator, the employee will be assigned to an area where cadmium exposures are below the OSHA PEL.]

Examinations are also provided to those employees acutely exposed to cadmium during an emergency procedure and at the time of termination.

The following information will be provided to the physician:

* A copy of this Standard and Appendices.
* Description of affected employees former, current and anticipated duties as relate to occupational exposure to cadmium.
* Employees former, current and anticipated future levels of occupational exposure to cadmium.
* Description of personal protective equipment and respiratory protection used and how long used or anticipated to be used by employee.
* Results of previous biological monitoring and medical examinations.

A physician will provide a written medical opinion for each medical examination performed on each employee. The medical opinion will contain the following information:

* Physician’s diagnosis for employee.
* Physician’s opinion of any detected medical condition(s) that would place employee at increased risks of impairment to health from further exposure to cadmium including any indications of potential cadmium toxicity.
* Results of biological, other testing or related evaluations that directly assess employee’s absorption of cadmium. The physician has been instructed to not reveal specific findings or diagnoses unrelated to cadmium exposure.
* Any recommended removal from, or limitation of activities or duties of employee or restriction on use of personal protective equipment.
* A statement that physician has clearly and carefully explained results of medical evaluation including biological monitoring and medical conditions related to cadmium exposure to the employee. Any limitations on the employee’s diet or use of medications will also be explained to the employee.

We will medically remove employees from their current job when required by medical evaluations including biological monitoring. The employees will not be returned to their former job until the examining physician has determined that continued medical removal is no longer necessary.

For employees medically removed from their current position, medical evaluation, including biological monitoring will continue at the required frequency until results indicate the frequency can be reduced or eliminated.

Medical removal benefits protection will be provided to each employee medically removed.

Each employee will be provided with the following information:

* A copy of the physician’s written medical opinion within two weeks of receipt.
* Copy of the biological monitoring results and an explanation sheet explaining the results within two weeks of receipt.
* The information the employer provided to the examining physician will be provided to the employee within 30 days of receipt of a request.

A record will be kept of any abnormal condition or disorder caused by occupational exposure to cadmium on the OSHA 300 form.

1. **Training**

Each employee exposed or potentially exposed to cadmium will participate in the Cadmium Compliance plan. Employees will be trained at the time of initial assignment to a job potentially exposed to cadmium and annually thereafter.

Employees will be informed of the information found in the Employee Information and Training Record. Each employee participating in the training will be required to sign the form upon completion of the training. A copy of the form will be provided to the employee. The original copy will be maintained in the Safety Department.

Employees can request a copy of the information and training of this compliance plan.

1. **Emergency Action Plan (Sustained Cadmium Release)**

During a sustained cadmium release all non-essential employees will evacuate the property and assemble at the rally point upwind of the release.

Please consult the Emergency Action Plan for additional details on the proper procedures in the event of a sustained cadmium release.

1. **Signage**

We have established regulated areas where employee exposure to cadmium exceeds or are expected to exceed the permissible exposure limit. These signs are posted in the regulated area(s) as well as the approaches to the regulated area(s). The signs are illuminated and cleaned so they are readily visible.

Warning signs contain the following information:

* DANGER
* CADMIUM
* CANCER HAZARD
* CAN CAUSE LUNG AND KIDNEY DISEASE
* AUTHORIZED PERSONNEL ONLY
* RESPIRATORS REQUIRED IN THIS AREA

We have also established warning labels for containers containing cadmium components, contaminated clothing, equipment, waste, scrap, or debris. Warning labels contain the following information:

* DANGER
* CADMIUM
* CANCER HAZARD
* AVOID CREATING DUST
* CAN CAUSE LUNG AND KIDNEY DISEASE

1. **Recordkeeping**

Exposure monitoring will be maintained on file for at least 30 years. The exposure monitoring information will include the following information:

* Date, duration and 8-hour time-weighted average sample results.
* Name, social security number and job classification of monitored employee or employee’s assumed to have similar exposures.
* Sampling and analytical methodology used including accuracy of methodology.
* Respiratory protection utilized by employee if any.
* Notation of any conditions that might have affected monitoring results.

The use objective data for exemption from requirements of initial monitoring, including information demonstrating product or material, process, operation or activity that can not release cadmium dust or fumes above the Action Level even under worse case release conditions. This information must be kept on file. This information can be from industry wide or laboratory product testing. The data must be obtained under work place conditions closely resembling processes, types of material, control methods, work practices and environmental conditions in current operations.

Records of objectable data will be maintained for at least 30 years.

Medical surveillance information on each employee will be maintained on file [or maintained by the medical clinic performing the surveillance] for the duration of employment plus 30 years. Medical surveillance records will include the following information:

* Employee name, social security number and description of duties.
* Copy of physician’s written opinion and explanation sheet of biological monitoring results.
* Copy of medical history, results of any physical examination, all test results required to provided, or obtained to further evaluate conditions related to cadmium exposure.
* Employee’s medical symptoms that might be related to cadmium exposure.
* Copy of information provided to the physician.

Employees can request a copy of or examination of their medical records. The records will be provide within 15 days of the request. These records will be provided to the employee, designated representative, anyone having specific written consent or employee’s family members (after death or incapacitation).

The Employee Information and Training Record form is used to certify that each employee with exposure or potential for exposure to cadmium has been trained. The form includes date of training, and an area for the trainer and employee to sign. The training form certification record will be maintained on file for at least one year beyond date of training of employee.