



SECTION 31

CADMIUM



1. CADMIUM

- A. **Scope:** This written compliance program applies to all Maul Electric, Inc. employees or employees of Maul Electric, Inc. subcontractors who may be exposed to cadmium at or above the prescribed action level of 2.5 micrograms per cubic meter of air averaged over any eight hour period. (2.5ug/m3). The permissible exposure limit(PEL) for cadmium 5 micrograms per cubic meter of air, averaged over any 8-hour period. (5ug/m3).
- B. **Application:** Maul Electric, Inc. is not a user of cadmium. However, this material may be found at many of our client's facilities. Maul Electric, Inc. should request copies of any plot plan or unit map indicating the location of regulated areas. All employees must be trained, as part of their initial site training, as to the hazards of cadmium exposure, signs, symptoms, necessary protective measures and the location of regulated areas.
- C. **Exposure Monitoring:** Air samples, taken by certified technicians and analyzed by approved Environmental Laboratories, must be taken from air that is representative of each employee's exposure to cadmium over an eight-hour period.
1. Exposure for monitoring purposes is defined as exposure that would occur if the employee were not using a respirator.
 2. Full shift personal samples must be collected for each shift, each area and one sample for each classification in each work area.
- D. **Initial Monitoring:** Initial monitoring is required to accurately determine the employee's exposure to cadmium. All employees will be notified within 7 working days, in writing, of the results of any monitoring samples that represent the employee's exposure. If the results of monitoring conducted indicate exposure above the permissible exposure limit, a written notice will be provided. The written notice must include as statement that the PEL was exceeded and a description of the corrective actions taken to reduce the exposure below the PEL.
1. If the initial monitoring discloses exposure below the action level, additional monitoring will not be required unless:
 - a) There has been a change of production, process, control, or personal change that may result in new or additional



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exposures.

- b) Whenever the company, the employee or the client has any other reason to suspect a change that may result in new or additional exposures.
 - c) Whenever an employee reports that they may be exposed above the action level.
2. If the initial monitoring discloses exposure at or above the action level and below the PEL, air monitoring and personal air sampling of 25% of the represented work force will be conducted.
 3. If the initial monitoring discloses exposure above the PEL, air monitoring will be conducted periodically to confirm cadmium levels are below the action level. If our initial determination reveals that employee's exposures will be above the PEL, attempts will be made through administrative and engineering controls to reduce exposures below the PEL. Engineering and administrative controls will include, but are not limited to wetting down contaminated dust and rotating employees in regulated areas. If this should fail to reduce the exposure level, employees shall wear the appropriate level of personal protective equipment(PPE) necessary to reduce exposures below the PEL.
- E. **Accuracy Of Measurement:** Sampling devices and equipment used to monitor exposure must be accurate (with a confidence level of 95%) . Only certified laboratories will be selected for analyzation.
- F. **Regulated Areas:** Regulated areas will be established where employee exposures are in excess of the PEL.
1. The regulated area must be segregated from the rest of the work place in a manner that will minimize the number of persons who will be exposed.
 2. Access to the regulated area must be limited to persons authorized, trained, and designated as having access to the area.
 3. All persons entering a regulated area must be trained, qualified, fit tested, and provided with respiratory protection in accordance with the Respiratory Protection Program. Documentation of training must be on file with the Project Supervisor and Safety Director.



4. Food, beverages, smoking products, chewing tobacco, or other smokeless tobacco, and chewing gum will not be consumed in the regulated area. Cosmetics will also not be applied. Drinking water may be consumed.
- G. **Respiratory Protection:** Respiratory protection must be used if engineering and work practices cannot reduce the exposure level below the PEL. Respirators will be used in the following circumstances:
1. While installing or implementing feasible engineering or work practice controls.
 2. During maintenance and repair work when the client has established that engineering controls are not feasible.
 3. Where engineering controls and supplemental work practice controls are not sufficient to reduce the exposure.
 4. Respirator selection will be accomplished in accordance with the Respiratory Protection Program.
 5. Respirators will not be issued to any employee not trained in the use, care, and selection. Respirators will not be issued to any employee not fit tested in the specific respirator issued.
- H. **Protective Work Clothing:** Protective Work Clothing will be provided at no cost to the employee as follows:
1. Coveralls or similar full-body work clothing.
 2. Gloves and shoes or coverlets
 3. Face shields or vented goggles when necessary to prevent eye irritation. Impervious clothing for employees exposed to arsenic trichloride.
 4. Cleaning and replacement will be provided at least once weekly in a freshly laundered, clean, and dry condition. If the employee is exposed to cadmium of over 50 ug/m³ or in an area where more



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- frequent washing is needed to prevent skin irritation, clothing will be provided daily.
5. Clothing shall be repaired or replaced to maintain its protection factor.
 6. Clothing will only be removed in designated change rooms and will be disposed of in containers clearly marked with the following:
 - a) **CAUTION:** Clothing contaminated with cadmium; do not remove dust by blowing or shaking. Dispose of cadmium contaminated wash water in accordance with applicable Local, State, or Federal Regulations.
 7. Contaminated clothing and/or equipment will not be shaken out by employees or taken outside of the designated change trailer.
- I. **Housekeeping:** All surfaces must be maintained free from accumulations of cadmium. Shoveling and brushing of floors and surfaces will be allowed only if vacuuming with a HEPA equipped vacuum has failed to clean the surfaces. Air blowing is not permitted at any time.
- J. **Hygiene Facilities:** The following hygiene facilities will be provided to employees working in regulated areas.
1. Change Facilities will be provided with clean rooms equipped with storage facilities for street clothes and separate storage for protective clothing and equipment.
 2. Showers will be provided where employees working in regulated areas.
 3. Lunchrooms that have a temperature controlled positive pressure filtered air supply and readily accessible to employees working in regulated areas.
 4. Employees must wash hands and faces prior to eating.
 5. Lavatory facilities shall be provided.
 6. Vacuums will be provided to clean protective clothing and shoes worn in areas where the exposure exceeds 50 ug/m³, in an area before entering change rooms, lunchrooms, or shower rooms



required.

- K. **Signs And Labels:** Signs will be posted around the perimeter of the regulated area and labels will be used to identify samples, waste, contaminated clothing, and equipment will be utilized.
1. Signs stating the following will be posted in and around the regulated work area:

**DANGER CADMIUM
CANCER HAZARD
CAN CAUSE LUNG AND KIDNEY
DISEASE
AUTHORIZED PERSONNEL ONLY
NO SMOKING OR EATING
RESPIRATOR REQUIRED IN THIS AREA**

2. Labels must be applied to all shipping and storage containers of cadmium:

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

- L. **Medical Monitoring:** Maul Electric, Inc. supports the practices necessary for early detection of cadmium exposure. The medical surveillance program supplements the primary goals of the cadmium exposure control program of preventing disease through elimination or reduction of airborne concentrations of cadmium, and sources of ingestion. The medical surveillance provisions incorporate both initial and ongoing medical surveillance.

1. Maul Electric, Inc. will provide initial medical surveillance to employees who are occupationally exposed to airborne cadmium levels greater than the action level 30 days a year or above the PEL for greater than 10 days a year. This monitoring consists of



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visits with the physician to include a detailed occupational history and laboratory analysis per 1926.1127(l)(2), as required. To ensure appropriate medical surveillance is performed, we provide to the physician and/or representative copies of the regulation and appendices, a description of the employees duties, a list of the personal protective equipment worn by the employee, and past exposure assessment data.

2. All medical examinations, procedures, and blood Cadmium level sampling/analysis shall be conducted by licensed healthcare practitioners and/or physicians. Our medical surveillance program shall meet the requirements of 29 CFR 1926.1127(l).

M. **Medical Removal:** Maul Electric, Inc. will remove employees from work who have exposures to cadmium at or above the action level each time a periodic and a follow-up blood sample indicates that medical removal is necessary as required by 1926.1127 (l)(3),(4), & (6). We also remove employees from work who have exposures to cadmium at or above the action level when a health care professional determines that they have medical conditions which, when exposed to cadmium, places them at greater risk for those health problems. Employees who are removed from work will receive all wages, benefits, for a period of 18 months without loss of seniority or promotion opportunities. The company reserves the right to place an employee in a position, of equal responsibility, where the employee will not be exposed occupationally to cadmium.

N. **Employee Training:** No employee will be allowed to perform any task which may result in exposure above the action level without training in this policy and the contents of 29 CFR 1926.1127 (cadmium), 1926.59 (hazard communication), and respiratory protection. Maul Electric, Inc.

will ensure its employees receive the required training and all training records are kept on file for at least one year. Documented training records will include the identity of the employee trained, signature of the instructor and date of training. Additionally, training must be provided in the following:

1. The health hazards associated with cadmium.
2. The quantity, location, manner of use, storage, source of exposure, and the nature of the operation which could result in exposure and any necessary protective steps. The purpose, proper use, and limitations of respirators.
3. The purpose and description of the medical surveillance



program, engineering controls, and work practices associated with the job.

- O. **Monitoring Data Record Keeping:** As a minimum, the following records will be maintained and accessible to the employee, client designated representative, and employee designated representative. **Monitoring records must be retained and maintained for a period of at least 30 years of the objective data relied upon.**
1. All environmental monitoring data including the date, number, duration, location, and results of each of the samples taken, including a description of the sampling procedure used to determine representative employee exposure.
 2. A description of the sampling and analytical method used and evidence of their accuracy.
 3. The type of respiratory protection worn, if any.
 4. The name, social security number, and job classification of the employees' monitored and all other employees whose exposure the samples represent.
 5. The environmental variables that could affect the measurement of the employee's exposure.
- P. **Medical Records Retention:** The employer or the Physician must maintain medical records for at least 30 years. A medical surveillance record will be established and maintained as an accurate record for each employee subject to medical surveillance. The record shall include as a minimum:
6. The name, social security number and description of the employee's duties.
 7. A copy of the Physicians written opinions.
 8. The results of any exposure monitoring done for the employee and the representative exposure levels supplied.
 9. Any employee medical complaints related to exposure to cadmium.



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10. A copy of the medical examination results including medical and work history
 11. A copy of the information provided to the physician as required by 1926.1127(l)(9).
- Q. Emergency Situations:** In emergency situations, which involve substantial release of cadmium, Maul Electric, Inc. shall ensure workers are protected by following all aspects of this program. This will include limiting access to authorized employees, provision and use of PPE, exposure monitoring, medical surveillance, hygiene facilities, work practices, fugitive emission controls, and proper disposal.
- R. Maintenance of Ventilation Systems:** If performing maintenance on ventilation systems, Maul Electric, Inc. will utilize dust suppression techniques and safe work practices to minimize exposure to cadmium. If engineering controls fail to reduce cadmium levels below the action level, appropriate PPE including gloves, coveralls, boots, head coverings, goggles, and respirators will be utilized.
- S. Program Review:** This program will be evaluated at least every six months. All facets of the program will be included in the evaluation. The program will be reviewed to ensure it meets the requirements of 29 CFR 1926.1127.