



SECTION 17

INORGANIC ARSENIC



1. INORGANIC ARSENIC

- A. Scope:** This policy applies to all Maul Electric, Inc. employees or employees of Maul Electric, Inc. subcontractors who may be exposed to inorganic arsenic. The action level, as prescribed by 29 CFR 1926.1118, is 5 micrograms per cubic meter of air averaged over any eight hour period. (5ug/m³). The permissible exposure level has been established at inorganic arsenic concentrations greater than 10 micrograms per cubic meter of air, averaged over any 8-hour period. (10ug/ms).
- B. Notification Of Use:** _____ is not a user of inorganic arsenic. However, this material may be found at many of our client's facilities. OSHA required notification of use documents to be filed by every employer by October 1, 1978 or within 60 days of introduction of the material to the work site the establishment of regulated areas was required. _____ 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 inorganic arsenic exposure, signs, symptoms, necessary protective equipment, 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 inorganic arsenic 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 (a minimum of 7 hours) 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 inorganic arsenic. All employees will be notified within 5 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:



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- a) There has been a change of production, process, control, or personal change that may result in new or additional 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, monitoring will be repeated at least every six months. Monitoring will continue until at least two consecutive samples taken within 7 days or each other disclose exposure levels below the action level.
 3. If the initial monitoring discloses exposure above the PEL, the monitoring will be conducted at least quarterly. Monitoring will continue until at least two consecutive samples taken within 7 days of each other disclose exposure levels below the PEL (refer to 4.2 above for monitoring frequency) or below the action level.
- E. Accuracy Of Measurement:** Sampling devices and equipment used to monitor exposure must be accurate (with a confidence level of 95%) of measuring concentrations of inorganic lead. 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.



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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 inorganic arsenic of over 100 ug/m³ or in an area where more frequent washing is needed to prevent skin irritation, clothing will be provided daily.



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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 inorganic arsenic; do not remove dust by blowing or shaking. Dispose of inorganic arsenic 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 inorganic arsenic. 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 100ug/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
INORGANIC ARSENIC
CANCER HAZARD
AUTHORIZED PERSONNEL
NO SMOKING OR EATING
RESPIRATOR REQUIRED**

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

**DANGER
CONTAINS INORGANIC ARSENIC
CANCER HAZARD
HARMFUL IF INHALED OR SWALLOWED
USED ONLY WITH ADEQUATE VENTILATION OR
RESPIRATORY PROTECTION.**

- L. Medical Monitoring:** All employees who may be expected to be exposed above the action level, without regard to the used of respirators for at least 30 days per year shall be examined by a physician.

1. The initial examination shall include a work history and a medical history including a smoking history, pulmonary function test, and examinations for symptoms such as breathlessness, cough, sputum production, and wheezing.
 - a) A 14" by 17" posterior-anterior chest x-ray and ILO U/C rating.
 - b) A nasal and skin exam
 - c) Sputum cytology examination
2. Periodic exams must be provided annually for employees who are under 45 years of age with fewer than 10 years exposure over the action level.
3. Additional examinations will be conducted if the employee develops signs or symptoms associated with exposure.



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M. 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 1926.1118 (inorganic arsenic), 1926.59 (hazard communication), respiratory protection. Additionally, training must be provided in the following:

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.

N. 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 40 years or for the duration of employment plus 20 years whichever is longer.**

2. 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.
3. A description of the sampling and analytical method used and evidence of their accuracy.
4. The type of respiratory protection worn, if any.
5. The name, social security number, and job classification of the employees' monitored and all other employees whose exposure the samples represent.
6. The environmental variables that could affect the measurement of the employee's exposure.

O. Medical Records Retention: The employer or the Physician must maintain medical records for at least 40 years or the duration of employment plus 20 years. A medical surveillance record will be established and maintained as an accurate record for each employee



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subject to medical surveillance. The record shall include as a minimum:

2. The name, social security number and description of the employee's duties.
3. A copy of the Physicians written opinions.
4. Results of any exposure monitoring done for the employee and the representative exposure levels supplied.
5. Any employee medical complaints related to exposure to inorganic arsenic.
6. A copy of the medical examination results including medical and work history
7. A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results.
8. The initial x-ray.
9. The x-rays for the most recent 5 years
10. Any x-ray with a demonstrated abnormality and all subsequent x-rays
11. The initial cytological examination slide and written description for the most recent 5 years.
12. Any cytological examination slides with demonstrated atypia, if such atypia persists for 3 years and all subsequent slides and written descriptions.