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## Purpose

To protect employees from over exposure to lead and comply with OSHA Standard 1926.62.

## Scope

This procedure shall apply to each and every employee involved in operations involving metallic lead, inorganic lead, inorganic lead compounds and/or organic lead soaps where the work procedure requires heating, grinding, burning, abrasive blasting or other operations that may cause lead contamination. These operations will be considered as producing atmospheres above the “action level”, without regard to respirators until the following procedures prove otherwise.

**NOTE: SESAC - operations do not normally involve the processing of lead; however the following precautions shall be taken in the event that contractual requirements make it necessary to expose any or all employees to lead as described in “Scope”.**

- 1) The Safety Office will be notified by the Project Manager prior to starting any work involving lead as defined in “Scope” of this procedure.
- 2) The Safety Office will determine what controls are needed on an individual job basis and ensure employees’ safety by using any or all of the following procedures at his discretion.
- 3) Exposure monitoring (Exposure Monitoring refers to the exposure which would occur if the employees were not using a respirator).

Exposures monitoring shall be carried out for a full shift (at least 8 hours) by use of personal samples and monitored by a trained technician.

One sample per shift per each job classification per each work area shall be required.


3.2.1 The sample shall represent the regular daily exposure.

The safety officer, by reviewing of monitoring results, shall determine if any employees is exposed to lead above the action level.

3.3.1 Action level is employee exposure without regard to the use of respirators to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 ug/m) averaged over an 8-hour time weighted average. This will be the initial determination and will be based on:

3.1.1 Any information, observations or calculations which would indicate employee exposure to lead;

3.1.2 Any previous measurements of airborne lead; or

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### 3.1.3 Complaints of symptoms attributable to lead.

#### 1. Monitoring Frequency

When the initial determination indicates that no employee is exposed to lead above the action level, it will be considered a negative result.

All monitoring results relating in a negative result will be kept on file in written report form in the Safety Office.

Additional testing will be done only if there is a significant production, process control or personnel change.

When initial determination indicates air level concentrations above the action level, monitoring will be carried out on a quarterly basis, following the same procedure as used in the initial monitoring.

Two consecutive measurements taken at least seven days apart that indicate levels below the action level shall constitute a negative result.

Additional testing shall be done only if conditions change as noted in 4.1.2.

#### 2. Monitoring Accuracy

##### 5.1 All monitoring will be done by a trained monitoring Technician

The technician will be responsible for ensuring that all monitoring, monitoring equipment use and calibrations of equipment used are in compliance with OSHA Standard 1926.61(d)(9).

#### 3. Observation of Exposure Monitoring

Affected employees, their designated representatives, or OSHA representatives; upon request shall be given copies of all monitoring results.


Affected employees will also be allowed to observe any monitoring operations.

Within five (5) days after receipt of monitoring results the Safety Officer shall provide to affected employees, copies of results which represent his or her exposure.

If exposure exceeds 50 ug/m<sup>3</sup> without regard to respirators the Safety Officer shall provide a statement the permissible description of the corrective action taken or to be taken to reduce exposure to below the PEL.

#### 7. Respiratory Protection

##### 7.1 Respirators will be provided to SESAC, employees at no cost.

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7.2 Respirators shall be worn under the following circumstances:

7.2.1 When the TWA air level exceeds 50 ug/m3

7.2.2 During the time needed to install or implement work practice controls

7.2.3 In work operations in which controls cannot sufficiently reduce exposure to or below PEL.

1. Protective Work Clothing and Equipment

8.1 Employees working in areas where exposure to lead is above PEL shall be provided with full body work clothing, gloves, hats, disposable shoe covers, face shields, vented goggles and other protective equipment.

8.2 Supervisors shall assure that protective clothing and equipment is used properly and repaired or replaced as needed to maintain their effectiveness.

8.3 All protective clothing shall be removed at end of shift in change rooms only.

8.4 Contaminated, protective clothing shall be placed in labeled closed containers.

8.4.1 All contaminated protective clothing shall be disposed of in accordance with local, state and federal regulations

8.4.2 All containers of protective clothing and equipment shall be labeled as follows:

8.4.2.1 CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING

8.5 Removal of lead from protective clothing or equipment by blowing shaking or any other means which disperses lead into the air shall be prohibited.

9. Housekeeping


9.1 All surfaces shall be maintained as free as practicable of accumulations of lead.

9.2 Removal from floors and other surfaces of lead accumulations shall be vacuuming when possible.

9.2.1 Use of compressed air is prohibited;

9.2.2 Shoveling, dry or wet sweeping and brushing shall be used only when vacuuming or other equally effective methods have been tried and found ineffective.

9.3 When vacuum methods are selected, the vacuum shall be used and emptied in a manner which minimizes the re-entry of lead into the workplace.

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9.4 Lead-contaminated vacuuming debris shall be used and emptied with local, state and federal regulations.

## 10. Hygiene Facilities and Practices

In areas where exposure exceeds the PEL of 50ug/m<sup>3</sup> the presence, consumption or use of food, beverages, tobacco products and cosmetics shall be prohibited, except in change rooms and lunchrooms.

Change rooms will be provided for employees with separate storage facilities for work clothing and street clothing.

Employees working in areas where their airborne exposure to lead is above the PEL without regard to the use of respirators, shall not leave the workplace wearing any clothing or equipment worn during shift.

10.3.1 The Safety Officer shall ensure that each employee is instructed on proper care and laundering of any clothing worn during shift.

10.4 Separate lunch area facilities shall be provided for employees who work in areas where the exposure to lead is above the PEL without regard to the use of respirators.

10.5 The Safety Officer shall, by the way of instruction, assure that employees who work in areas where the exposure of lead is above the PEL without regard to the use of a respirator wash their hands and face prior to eating, drinking, smoking or applying cosmetics.

10.6 Employees shall not enter lunch area facilities with protective work clothing or equipment unless surface dust has been removed by vacuuming, down-draft booth, or other cleaning methods.


10.7 Lavatories shall be provided in accordance with OSHA Standard 1926.62(i).

## 11. Medical Surveillance

11.1 A medical surveillance program shall be provided, at no cost to employee, for all employees who are or may be exposed above the action level of 30 ug/m<sup>3</sup> for more than 30 days per year (not necessarily 30 consecutive days).

11.2 The Safety Officer is to assure that blood lead tests are made available to each employee exposed to airborne lead above the action level at the following listed frequencies:

11.2.1 At least every 2 months for the first 6 months and every 6 months thereafter for employees exposed above the action level for more than 30 days.

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11.2.2 At least every 2 months for each employee whose last blood level was at or above 40 ug/100g. This frequency shall continue until two consecutive blood samples indicate a blood lead level below 40 ug/100g.

11.2.3 At least monthly during the removal period of each employee removed from exposure due to an elevated blood lead level.

11.2.4 Within five working days after the receipt of biological monitoring results, the Safety Officer shall notify in writing each employee whose blood lead level exceeds 40ug/100g:

11.2.1 of that employee blood lead level and

11.2.2 that the standard requires temporary medical removal with medical removal protection benefits when an employee's blood lead level exceeds the criterion for medical removal.

## 12. Medical Examination

12.1 Medical examinations and consultations shall be provided to each employee exposed above the action level for more than 30 days per year.

12.2 The schedule for medical examinations shall be as follows:


12.2.1 At least annually for each employee with blood lead level at or above 40 ug/100g during the past 12 months.

12.2.2 Prior to assignment for each employee assigned for the first time to an area where airborne concentrations of lead are at or above the action level.

12.2.3 As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employees ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use.

12.2.4 As medically appropriate for each employee medically removed from exposure due to risk of sustaining material impairment to health or limited pursuant to a final medical determination.

12.3 The medical examination shall include the following:

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12.3.1 A detailed work history and a medical history, with particular attention to past lead exposure (occupational and non-occupational), personal habits (smoking, hygiene) and past gastrointestinal, hematological, renal, cardiovascular, reproductive, and neurological problems.

12.3.2 A thorough physical examination, with particular attention to teeth gums, hematological, gastrointestinal, renal, cardiovascular, and neurological systems. Pulmonary status shall be evaluated if respiratory protection will be used.

12.3.3 A blood pressure measurement;

12.3.4 A blood sample and analysis which determine:

12.3.4.1 Blood lead level

12.3.4.2 Hemoglobin and hematocrit determination, red cell indices and examination of peripheral smear morphology.

12.3.4.3 Blood pressure measurement

12.3.4.4 Serum creatinine

12.3.5 A routine urinalysis with microscopic examination; and

12.3.6 Any laboratory or other test which the examining physician deems necessary by sound practice.


12.3.7 If requested by an employee, the medical examination shall include pregnancy testing or laboratory evaluation of male fertility

12.3.8 The Safety Officer will provide the physician with the following specific information to aid in the medical examination:

12.3.8.1 A copy of lead procedure including a copy of OSHA 1926.62

12.3.8.2 Description of the employees duties as they relate to lead exposure

12.3.8.3 The employees exposure level to lead and to other toxic substances.

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12.3.8.4 Description of personal protective equipment,

12.3.8.5 Prior blood lead determinations

12.3.8.6 All prior written medical opinions concerning the employee.

12.4 The Safety Officer shall receive and furnish the employee with a copy of the written medical opinion of each examining or consulting physician.

12.4.1 The written opinion shall contain the follow information:

12.4.1.1 The physician's opinion as to whether the employee has any detected medical condition which would place the employee at increased risk from exposure to lead.

12.4.1.2 Any recommended special protective measure to be provided to the employee or limitations to be placed upon the employee exposure to lead.

12.4.1.3 Any limitation on the use of respirator, including a determination of whether the employee can wear a powdered air purifying respirator if it is determined that a negative pressure respirator cannot be worn

12.4.1.4 The written opinion shall not contain any diagnosis unrelated to the employee's exposure to lead.

12.5 The physician shall advise SESAC of any medical condition found by the physician regardless of whether the condition dictates further medical examination or treatment.

### 13. Chelation

13.1 Prophylactic chelation therapy shall not be carried out by an employee at any time.


13.1.1 If therapeutic or diagnostic chelation is to be performed, it must be carried out under supervision of a physician and in a clinical setting.

13.1.2 Employees shall be removed from exposure to lead during time of treatment.

### 14. Medical Removal Protection

14.1 Employees shall be temporarily removed from work on each occasion that an employee has been found to have been exposed to lead at or above the action level on each instance that a periodic or follow up blood sampling test conducted indicates that the employees blood lead level is at or above 50 ug/dl.



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14.2 Employees shall be removed from work in instances in which a medical determination has been made that a medical condition exist which places the employee at increased risk of material impairment to health from exposure to lead.

14.3 Employees removed due to elevated blood lead levels will be returned to work when two consecutive blood test indicate that the employees' blood lead level is at or below 40ug/dl.

14.4 Employees removed due to a medical determination will be returned to work when the condition that places the employee at risk is no longer detectable.

#### 15. Medical Removal Protection Benefits

15.1 SESAC shall provide to an employee up to 18 months medical removal protection benefits on each occasion that an employee is removed from exposure to lead or the employees work is otherwise limited.

15.2 Medical removal protection benefits include maintenance of earnings, seniority, and other employment rights and benefits, as though the employee has not been removed from normal exposure to lead or otherwise limited.

15.3 SESAC shall condition protection benefits on an employee's participation in the follow up medical surveillance program, which consists of medical examination, blood lead testing, and medical history.

15.4 SESAC protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for the earnings lost during the period of removal from employment with another employer made possible by virtue of the employees removal.

15.5 The Safety Officer shall ensure that the following measures are taken with respect to any employee whose blood lead level does not decline within 18 months of removal to a level permitting the employee to return to former job status.


15.5.1 The Safety Officer shall make available to the employee a medical examination

15.5.2 The Safety Officer shall assure that the final medical examination determination obtained indicates whether the employee may be returned to former job status, and, if not; what steps shall be taken to protect the employees' health in any new assignment.

15.5.3 If an employee is removed from exposure to lead or has limitations placed on him or her due to the effect of lead exposure on the employees medical condition, SESAC shall provide medical removal protection benefits to the employee until the employee returns to former job status or a final determination is made.

15.6 Where SESAC, although not required to do so, removes an employee from exposure to lead or places limitations on an employee due to the effects of lead on the employees medical condition, SESAC shall provide removal protection benefits to the employee equal to the requirements of OSHA Standard 1926.62(k)(2)(vi).



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## 16. Employee Information and Training

16.1 The Safety Department shall be responsible for informing the employee of the contents of Appendices A&B located in 1926.62.

16.2 When exposure is above the action level of 30ug/m<sup>3</sup> the Safety Department will institute a training program for present and new employees prior to initial job assignment.

16.3 The Safety Department shall assure that each employee is informed of the following:

16.3.1 Types of operations where the exposure is above the action level.

16.3.2 Chelating agents shall not be routinely used to remove lead and not used at all except under the direction of a physician.

16.3.3 The purpose and description of the medical surveillance program and medical removal, and shall include comments on adverse health effects with particular attention paid to reproductive effects on both males and females.

16.4 Upon request the training materials used shall be made available to OSHA representatives.

16.5 The Safety Department shall include as part of the training program shall distribute to employee, any materials pertaining to the OSHA Health Act, the regulations issued as a result of that ACT, and the OSHA standard 1926.62.

## 17. Record Keeping


17.1 Exposure monitoring and medical surveillance records shall be kept for 40 years or the duration of employment plus 20 years, whichever is longer.

17.2 The exposure monitoring record shall include the dates, number, duration, location and results of each samples taken, including a description of the sampling and analytical methods used and evidence of their accuracy; the type of respiratory protective devices worn, if any; the name, social security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent; and the environmental variables that could affect the measurement of employee exposure.

17.3 Medical removal records shall be kept for the duration of employment.

17.4 The medical surveillance record shall include the name, social security number, and description of the duties of the employee; a copy of the physicians written opinions; results of airborne exposure levels supplied to the physician; and any employee medical complaints related to exposure to lead.

17.5 The Safety Department shall maintain the following medical records;

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17.5.1 A copy of the medical examination results including medical and work history.

17.5.2 Description of the laboratory procedures and copy of any standards or guidelines used to interpret the test results and references to that information.

17.5.3 Copy of the results of biological monitoring.

17.6 Medical records shall include the name and social security number of the employee; the date on each occasion that the employee was removed from current exposure to lead as well as the corresponding date in which the employee was returned to his former job status; an explanation of how his removal was or is being accomplished; and a statement indicating whether or not the reason for removal was an elevated blood lead level.

17.7 SESAC, will make available upon request all records required to be retained, to the Assistant Secretary of Labor (OSHA) or Director (NIOSH). Environmental biological and medical removal records are to be provided upon request to the affected employee, former employees, or their representatives. The medical records are to be provided upon request to the employee, former employee, designated representatives for examination and copying.

17.8 SESAC, Inc ceases to do business, records shall be transferred to the successor employer. If there is no successor employer, the records are to be transferred to the Director of NIOSH. At the expiration of the retention period, SESAC, Inc. shall notify the Director of NIOSH at least 3 months prior to disposal of any records and transmit those records to the Director if requested within the period.

## **FAST FACTS REGARDING LEAD EXPOSURE**

### **Early Symptoms**

Include upset stomach, trembling, loss of weight, weak, tired, headache, aching bones and muscles, abdominal pain and decreased appetite.


### **Later Symptoms**

Anemia, pallor, "lead line" on gums, decreased hand grasp strength, severe constipation, intense abdominal cramping, decreased fertility, and loss of kidney function, hypertension, convulsions and progressive azotemia.

Lead can be swallowed or inhaled and you need not be working directly with lead to be overexposed.

Lead residue can be carried home on clothes and others may get contaminated.

The body can eliminate lead by taking chelating drugs but there is also a threat with using this treatment procedure. See Doctor for details on this type of treatment.

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## **LEAD EXPOSURE PROCEDURE**

The following basic steps shall be utilized to activate the Lead Exposure Procedure. These steps shall be accomplished in accordance with OSHA Standard 1926.62.

**NOTE: SESAC Inc. does not normally participate in operations involving lead. However, the following steps shall be utilized in the event that operations involving lead exposure take place.**

Step 1 Supervisors shall notify the Safety Department immediately upon discovery that operations may involve or do involve lead.

Step 2 The Safety Department will make arrangements to have samples taken to determine the concentration of lead in a specific work area.

Step 3 The Safety Department shall determine on the basis of the results of sampling what controls are needed to ensure the employees safety by enforcing the company lead exposure procedure.

Step 4 Supervisors shall participate in a training program to inform them of the hazards and precautions regarding operations involving lead exposure. The supervisor will in turn instruct his employees regarding same. Various methods of training will be available.

Step 5 Areas where overexposure to lead might occur are to be posted with proper signage.


Step 6 The Safety Director shall initiate a Medical Surveillance in accordance with SESAC, Inc. lead exposure procedure.

Step 7 Periodic articles emphasizing the hazards of lead and precautions to be taken shall be issued to employees involved in lead exposure.

Step 8 The Safety Department shall re-evaluate the procedure continually in order to update with current findings and information.

The Following is a list of items which are needed when working with or where there is a potential lead exposure. These items and cost associated with each must be considered prior to bidding on or performing any work in which lead may be present.

1. Training (materials and wages)
2. Biological Monitoring (sampling & analysis cost)
3. Respiratory Protection (cost of respirators, filters, pulmonary function test for those wearing the respirators)
4. Protective Clothing and Equipment (tyvek suits, gloves, shoes or disposable covers, face shields vented goggles etc.)

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5. Change facilities (including storage facility for street clothes, protective clothing and equipment to avoid cross contamination)
6. Hand Wash and Shower facilities (Rental fee and see #8)
7. Towels and Cleaning agents (cost of products, and cost to launder or dispose of towels)
8. Disposal of contaminated water (must be in accordance with the EPA & DOT, transportation fees, water samples and disposal fee)
9. Disposal of contaminated protective clothing and equipment (must be in accordance with the EPA & DOT, transportation fees, disposal fee, incineration or heavy metal cleaning, lead sampling, 55 gallon storage containers with labels affixed identifying contents as being lead)
10. Initial determination and assessment of hazards (including but not limited to air sampling and monitoring)
11. Engineering and work practice (based on assessment, cost associated to reduce the lead airborne concentration level)
12. Written Compliance Program for the project.
13. Containment of lead from debris emitted while performing job task
14. Administrative cost (notification of biological monitoring results, storage of records, etc)
15. Signs (posting of signs according to 29 CFR 1926.62)
16. Designated eating area and smoking area that are independent of the work area.