



**OHIO**  
UNIVERSITY



**Department of Environmental Health & Safety**

# Lead Program

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# OHIO UNIVERSITY LEAD PROGRAM

## 1.0 SCOPE

- 1.1 This program is intended to apply to all OHIO University (OHIO) facilities at the Main Campus and Regional Campuses. All employees at OHIO facilities are subject to the requirements of this program.

## 2.0 PURPOSE

- 2.1 The purpose of the OHIO Lead Program is to prevent lead exposure, to workers, students, visitors, and to help prevent the potential for building contamination from lead during demolition, maintenance and renovation activities. It is also the intent of this program to comply with the Public Employees Risk Reduction Program (PERRP) requirements, OSHA Lead Standard for Construction 29 CFR 1926.62, Ohio Department of Health Lead Rules, USEPA/HUD Notification Law, and other pertinent lead requirements.

## 3.0 REFERENCES AND DEFINITIONS

### 3.1 REFERENCES

- 3.1.1 OSHA Regulation: 29 CFR 1910.1025, Lead in General Industry  
OSHA Regulation: 29 CFR 1926.62, Lead in Construction
- 3.1.2 Ohio Department of Health, ORC 3742.01-.18, OAC 3701-32-01-11, OAC 3701-82-01-02, (Ohio Lead Law).
- 3.1.3 USEPA, 40 CFR 745, Subpart F - Lead Disclosure Law for Real Estate Transactions.
- 3.1.4 USEPA, 40 CFR 745, Subpart E – Residential Property Renovation
- 3.1.5 HUD, 24 CFR 35, Subpart B – General LBP Requirements and Definitions for All Programs (HUD).
- 3.1.6 HUD, Housing & Community Development Act of 1992, Title X
- 3.1.7 HUD, Guidelines for the Evaluation and Control of Lead Based Paint in Housing, June, 1995 (and subsequent revisions).

## 3.2 DEFINITIONS

- 3.2.1 Accessible surface - any interior or exterior surface such as sills and protruding surfaces that a child of six years of age can mouth or chew.
- 3.2.2 Action level - employee exposure without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 $\mu$ g/M<sup>3</sup>) calculated as an 8-hour time weighted average (TWA). Under OSHA, certain regulatory requirements are triggered by exposure above the action level.
- 3.2.3 Bare soil - soil or sand not covered with grass, sod, or some other similar vegetation and includes sand found in sandboxes.
- 3.2.4 Ceiling value - a permissible exposure limit that must never be exceeded even instantaneously; even though the 8-hour PEL is met.
- 3.2.5 Clinical laboratory - a facility for the biological, microbiological, serological, chemical, immune-hematological, hematological, biophysical, cytological, pathological, or other examination or substances derived from the human body for the purpose of providing information for the diagnosis, prevention, or treatment of any disease, or in the assessment or impairment of the health of human beings. "Clinical laboratory" does not include a facility that only collects or prepares specimens, or serves as a mailing service, and does not perform testing.
- 3.2.6 Competent person - one who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.
- 3.2.7 Director - the Director of the Ohio Department of Health (ODH) or his authorized agent.
- 3.2.8 Distinct painting history - the record of application over time, of paint or other surface coatings to a component of a building or structure.
- 3.2.9 Encapsulation - a method of abatement that involves the coating and sealing of surfaces with durable surface coating specifically

formulated to be elastic, able to withstand sharp and blunt impacts, long-lasting, and resilient, while also resistant to cracking, peeling, algae, fungus, and ultraviolet light, so as to prevent any part of lead containing paint from becoming part of house dust or otherwise accessible to children.

- 3.2.10 Enclosure - the resurfacing or covering of surfaces with durable materials such as wallboard or paneling, and the sealing or caulking of edges and joints so as to prevent or control chalking, flaking, peeling, scaling or loose lead containing substances from becoming part of house dust or accessible to children.
- 3.2.11 Engineering controls - measures other than respiratory protection or administrative control that are implemented at the work-site to contain, control or otherwise reduce exposure to lead-contaminated dust and debris.
- 3.2.12 Environmental lead analytical laboratory - a facility that analyzes air, dust, soil, water, paint, film, or other substances, other than substances derived from the human body, for the presence and concentration of lead.
- 3.2.13 Flushed sample - a one liter sample of tap water collected after the tap has been allowed to run at its maximum flow rate for a minimum of one minute before collecting the sample.
- 3.2.14 Friction surface - any interior or exterior surface that is subject to abrasion or friction.
- 3.2.15 Hands on assessment - an evaluation which tests a trainee's ability to perform specified work practices and procedures in compliance with Chapter 3701-32 of the Administrative Code.
- 3.2.16 Impact surface - an interior or exterior surface subject to damage by repeated impact.
- 3.2.17 Lead - metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.
- 3.2.18 Lead abatement (for purposes of Ohio Department of Health Regulated Projects) -
- (1) A set of measures, including the following, designed and intended to eliminate lead hazards:

- a Removal, encapsulation, or enclosure of lead hazards;
- b Replacement of lead contaminated surfaces or fixtures;
- c Removal or covering of lead contaminated soil; and
- d Preparation, cleanup, disposal, and post-abatement activities associated with the abatement.

(2) DOES NOT MEAN THE FOLLOWING SET OF MEASURES DESIGNED TO TEMPORARILY REDUCE LEAD HAZARDS:

- a. VACUUMING SURFACES OF A STRUCTURE WITH A VACUUM CLEANER EQUIPPED WITH A HIGH EFFICIENCY PARTICULATE AIR (HEPA) FILTER;
- b. CLEANING SURFACES OF A STRUCTURE WITH A LEAD SPECIFIC OR HIGH-PHOSPHATE DETERGENT;
- c. WET-SCRUBBING NO MORE THAN TWO SQUARE FEET OF A FLOOR WALL, OR CEILING SURFACE TO REMOVE PEELING, CHIPPING, CHALKING OR CRACKING PAINT PRIOR TO REPAINTING; OR
- d. ACTIVITIES TO CHANGE USE PATTERNS OR ESTABLISH BARRIERS BETWEEN CHILDREN AND LEAD-CONTAMINATED BARE SOIL INCLUDING THE TEMPORARY COVERING OF LEAD CONTAMINATED BARE SOIL WITH MULCH OR GRAVEL, THE PLANTING OF GROUND COVER OR SHRUBBERY, OR FENCING LEAD-CONTAMINATED BARE SOIL TO RESTRICT ACCESS.

3.2.19 Lead abatement activities - any aspect of a lead inspection, lead risk assessment, or lead abatement.

3.2.20 Lead abatement contractor - any individual who engages in or intends to engage in lead abatement and employs or supervises one or more lead abatement workers, including on-site supervision of lead abatement projects, or prepares specifications, plans, or documents for a lead abatement project.

3.2.21 Lead abatement project - one or more lead abatement activities that are conducted by a lead abatement contractor and are reasonably related to each other.

3.2.22 Lead abatement project designer - a person who is responsible for designing lead abatement projects and preparing a pre-abatement plan for all designed projects.

- 3.2.23 Lead abatement worker - an individual who is responsible in a non-supervisory capacity for the performance of lead abatement.
- 3.2.24 Lead based paint - any paint or other similar surface coating substance containing lead at or in excess of the level that is hazardous to human health as set forth in rule 3701-32-07 of the Administrative Code.
- 3.2.25 Lead contaminated dust - dust in or on structures that contain an area or mass concentration of lead at or in excess of the level that is hazardous to human health as set forth in rule 3701-32-07 of the Administrative Code.
- 3.2.26 Lead contaminated soil - soil that contains lead at or in excess of the level that is hazardous to human health as set forth in rule 3701-32-07 of the Administrative Code.
- 3.2.27 Lead hazard - material such as lead based paint, lead contaminated dust, lead contaminated soil, and lead contaminated water pipes containing a level of lead at or in excess of the level hazardous to human health as set forth in rule 3701-32-07 of the Administrative Code. (Note: This is the ODH definition which does not take into account the paint condition, thus, this is really a “potential” for a hazard, and not a real hazard if the condition is good.)
- 3.2.28 Lead inspection - a surface-by-surface investigation to determine the presence of lead based paint and the provision of a report explaining the results. The inspection shall use a sampling or testing technique approved by the public health council in rules adopted by the council under section 3742.09 of the Revised Code. A licensed lead inspector or laboratory approved under section 3742.09 of the Revised Code shall certify in writing the precise results of the inspection.
- 3.2.29 Lead inspector - any individual who conducts a lead inspection, provides professional advice regarding a lead inspection, or prepares a report explaining the results of a lead inspection.
- 3.2.30 Lead poisoning - the level of lead in human blood that is hazardous to human health as set forth in rule 3701-32-07 of the Administrative Code.
- 3.2.31 Lead risk assessment - an on-site investigation to determine and report the existence; nature, severity, and location of lead based

paint hazards in structures, including information gathered regarding the age and history of the structure and occupancy by children under age six, visual inspection, limited wipe sampling or other environmental sampling techniques, other activity as may be appropriate and provision of a report explaining results of the investigation.

- 3.2.32 Lead risk assessor - a person who is responsible for developing a written inspection, risk assessment and analysis plan; conducting inspections for lead based paint in a structure; taking post-abatement soil and dust clearance samples and evaluating the results; interpreting results or inspections and risk assessments; identifying hazard control strategies to reduce or eliminate lead exposures; and completing a risk assessment report.
- 3.2.33 O-bedroom dwelling - any residential dwelling in which the living area is not separated from the sleeping area. The term includes efficiencies, studio apartments, dormitory housing, military barracks, and rentals of individual rooms in residential dwellings.
- 3.2.34 Owner - a person, firm, corporation, guardian, conservator, receiver, trustee, executor, or other judicial officer who, alone or with others, owns, hold, or control the freehold or leasehold title or part of the title to property, with or without actually possessing it. Owner includes a vendee in possession, but does not include a mortgagee or an owner of a reversionary interest under a ground rent lease.
- 3.2.35 Paint - any substance applied to a surface as a surface coating, including, but not limited to, household paints, varnishes and stains.
- 3.2.36 Permissible Exposure Level (PEL) - an airborne exposure level established by OSHA with the force of law.
- 3.2.37 PERRP - "Public Employees Risk Reduction Program"; Ohio's "State OSHA" plan for public employees.
- 3.2.38 Replacement - a lead abatement activity that entails removing components such as windows, doors, and trim that have lead based paint on their surfaces and installing new or stripping components of lead based paint and repainting with non lead based paint.

- 3.2.39 Short Term Exposure Limit (STEL) - a permissible exposure limit averaged over a short period of time, generally 15 or 30 minutes.
- 3.2.40 Structure - any house, apartment, or building, used as an individual's private residence or commonly used as a place of education or child day-care center for children under six years of age, including all of the following:
- (1) The interior and exterior surfaces and all common areas of the structure;
  - (2) Every attached or unattached structure located within the same lot line, including garages, play equipment, and fences; and
  - (3) The lot or land occupied by the structure.
- 3.2.41 Student t-test - means a statistical analysis used to determine if the difference between pre-abatement and post-abatement soil lead levels are significantly different from each other. A confidence limit of 95 percent is used to establish statistical significance.
- 3.2.42 Target Housing - any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child who is less than six years of age resides or is expected to reside in such housing) or any O-bedroom dwelling.
- 3.2.43 Time Weighted Average (TWA) - a fluctuating airborne exposure level averaged over a period of time; for OSHA compliance this is typically an 8-hour workday.
- 3.2.44 Training hour - an average of sixty minutes of lead related training in an approved training course which may include a break of not more than ten minutes.
- 3.2.45 Training manager - the individual responsible for administering a training program and monitoring the performance of the principal instructors, work practice instructors, and guest instructors.
- 3.2.46 Window sill - the portion of the horizontal window ledge that protrudes into the interior of the room, adjacent to the window sash when the window is closed.
- 3.2.47 Window trough - the portion of the horizontal window sill that receives the window sash when the window is closed; often located between the storm window and the interior window sash, also known as the window well. If there is no storm window, the



window trough is the portion of horizontal window trim that receives the upper and lower window sash when the sashes are closed.

3.2.48 Window well - the portion of the horizontal window sill that receives the window sash when the window is closed; often located between the storm window and the interior window sash.

3.2.49 Work practice instructor - the individual who is responsible for teaching particular skills in a specific course.

#### **4.0 GENERAL**

4.1 Prior to maintenance, renovation or demolition activities of painted building surfaces at OHIO, an assessment shall be made of the materials to determine lead content of the affected surfaces.

4.2 This assessment shall be coordinated through OHIO Environmental Health & Safety (EHS). The assessment will be done by EHS or an outside contractor. (See Appendix F.)

4.3 If the lead content of the material is significant (see Table 1) then all provisions of the OHIO Lead Program are applicable.

4.3.1 EHS has a program to test all buildings on campus with a Niton XL X-Ray Fluorescent Spectrum Analyzer. See EHS Lead Program manager for lead paint testing results. Areas that have not yet been completed, can be tested on request.

4.4 All personnel who are occupationally exposed to lead shall undergo initial biological monitoring (see Section 6.0 - Medical Surveillance).

4.5 At the start of each project, exposed workers will be monitored to determine their exposure to airborne concentrations of lead.

4.5.1 Full shift personal samples shall be collected in the breathing zone of each worker.

4.5.2 All job titles shall be monitored during performance of work and work must be representative of average daily work activity.

- 4.6 When work is begun on materials known to contain lead, each worker will be provided with, and required to use, appropriate personal protective equipment.
- 4.7 Different lead related work activities will require different levels of personal protective equipment.
- 4.8 Use of compressed air for cleaning, dry sweeping, dry shoveling, dry sanding of lead containing debris and dry abrasive sawing of lead surfaces shall be prohibited.
- 4.9 All employees with potential involvement with lead should review the material safety data sheet carefully (Appendix A) and the OSHA Lead in Construction Standard (Appendix B)

**TABLE 1**

AGENCY	LAW/ STANDARD	TYPE	AMT/ UNITS	NOTES
HUD/ODH	LBPPPA/ODH *	Bulk Paint	0.5 %	Lead by weight, in paint existing in building (0.5% = 5000 ppm = 5000 mg/k - 5000 ug/g)
HUD/ODH	LBPPPA/ODH *	XRF	1 mg/cm <sup>2</sup>	HUD is ≥ 1.0 positive
OSHA	OSHA/Lead	Air-PBZ	50 ug/M <sup>3</sup>	TWA8/PEL
OSHA	OSHA/Lead	Air-PBZ	30 ug/M <sup>3</sup>	TWA8/AL

\* HUD Lead Based Paint Poison Prevention Act and Ohio Department of Health Lead Regulations.

## 5.0 WORK REQUIREMENTS

- 5.1 The following categories of work on lead-bearing surfaces do not require the use of respiratory protection if done for less than one hour per day with no other \* lead exposure:

\*Rationale: Lead exposures of one hour duration, coupled with no exposure for seven hours, would have to be in excess of 240 µg/M<sup>3</sup> to exceed the Action Level, and 400 µg/M<sup>3</sup> to exceed the Permissible Exposure Level. OHIO monitoring, even of dry scraping lead paint with high lead content, has never exceeded 200 µg/M<sup>3</sup>. Wet work methods have shown dramatically lower results. If proper work methods are used with wet methods, incorporated for jobs less than one hour, there is no reasonable expectation that employees would be over exposed. EHS will, however; monitor these jobs occasionally, and any job requested if there is reason to believe otherwise.

- 5.1.1 Removal of paint chips (minimal scraping) while misting the surface and chips with water.
- 5.1.2 Light wet sanding while misting the surface with water.
- 5.1.3 HEPA vacuuming of surfaces (with minimal disturbance).
- 5.1.4 Chipping of surfaces using power tools while misting surface with water or using HEPA attached tools.
- 5.1.5 Wet shoveling and wet sweeping of debris while misting debris with water.
- 5.1.6 Wet drilling or caring of holes or with use of HEPA attached tools.
- 5.2 If lead dust creating activities or spray painting activities are all conducted inside appropriate exhaust hood or paint booth, no specific personal protective equipment is generally required.
- 5.3 All other work involving longer duration or different activities on lead based material shall be done according to sections 5.6 through 5.13.
- 5.4 Use protective clothing as necessary.
- 5.5 Washing of hands at end of any activity involving lead exposure.
- 5.6 WORK ACTIVITIES LASTING MORE THAN ONE HOUR
  - 5.6.1 Work involving manual demolition of structures, manual scraping, manual sanding, heat gun applications, or power tool cleaning of surfaces which have lead containing coatings of paint, spray painting with lead containing paint, and area cleaning of lead containing debris by sweeping or shoveling, will require a half mask air purifying respirator equipped with high efficiency particulate air (HEPA) cartridges. These employees must be enrolled, trained, and fitted in the OHIO Respiratory Protection Program.
    - 5.6.1.1 Disposable coveralls, gloves, hats (head coverings), shoes (shoe coverings), face shields, goggles or other appropriate equipment shall be required to be worn when the work activities in section 5.6.1 are conducted.

5.6.1.2 If work falls into the classifications listed in section 5.6.1 then sections 5.8-5.13, 6.0, 7.0, 8.0, 9.0, 10.0, and 11.0 shall also be followed.

5.6.2 If EHS has established through air monitoring that lead protective measures are not necessary, the department supervisor will be notified. As long as work methods and conditions do not change, work can continue without lead requirements.

5.7 WORK ACTIVITIES WITH GREATER EXPOSURE POTENTIAL WHERE WORK WILL LAST FOR MORE THAN ONE HOUR

5.7.1 Work involving lead burning, use of lead mortar, rivet busting, power tool cleaning, or movement of abrasive blasting materials where lead coatings had been involved shall use a full face respirator with high efficiency filters, abrasive blast hood, or supplied air respirator. These employees must be enrolled, trained, and fitted in the OHIO Respiratory Protective Program.

5.7.1.1 Coveralls, gloves, hats (head coverings), shoes (shoe coverings), face shields, goggles or other appropriate equipment shall be required to be worn when the work activities in section 5.7.1 are conducted.

5.7.1.2 If work falls into the classifications listed in section 5.7.1 then sections 5.8-5.13, 6.0, 7.0, 8.0, 9.0, 10.0, and 11.0 shall also be followed.

5.8 Exposure monitoring shall be conducted for each person of each job category exposed to lead for job activities listed in sections 5.6 and 5.7. Supervisors must request this from EHS.

5.9 If the airborne exposure assessment is found to be greater than or equal to the action level of 30  $\mu\text{g}/\text{M}^3$  then work practices and engineering controls shall be reassessed.

5.9.1 Re-sampling shall continue at six-month intervals if exposures persist at greater or equal to the action level (30  $\mu\text{g}/\text{M}^3$ ).

5.9.2 Samples shall be collected every six months until at least two consecutive samples taken at least seven days apart are found to be less than 30  $\mu\text{g}/\text{M}^3$ .

- 5.9.3 If exposures are found to be less than the action level then no further sampling need be conducted, unless there is a process change.
- 5.9.4 If the exposure is found to be greater than 50 µg/M3 (PEL), monitoring shall be done quarterly until at least two consecutive samples taken at least seven days apart are below the PEL but greater than or equal to 30 µg/M3.
- 5.9.5 Employees shall be notified, in writing by EHS, of their exposure results within five working days after receipt of results.
- 5.9.6 If an employee is exposed to greater than or equal to the PEL (50 µg/M3) then a statement shall be included in the written notice which declares what steps shall be taken to reduce the employees' exposure through work practice of engineering controls.
- 5.10 All environmental samples shall be sent to laboratories participating in acceptable quality control programs, such as the "Environmental Lead Proficiency Analytical Testing" (ELPAT) program. Where applicable, laboratories must be approved by ODH.
- 5.11 Work requirements are determined, to a large extent, by the results of air monitoring per the OSHA Lead in Construction Standard. See Appendix C.
- 5.12 Work requirements for specific work tasks can be summarized in Appendix D. Detailed work procedures for these work tasks can be obtained by contacting EHS.
- 5.13 All lead abatement projects conducted specifically to remove, encapsulate or encase lead paint, or remediate lead hazards, must be referred to and managed by EHS. The cost of these projects must be borne by the departments, project account for renovations and capital improvements, or special funding sources established.

## 6.0 MEDICAL SURVEILLANCE

- 6.1 Blood tests for lead shall be offered to each employee who is occupationally exposed above the action level to lead for any one day (as a TWA) in twelve consecutive months.

- 6.1.1 If initial blood lead level (BLL) is greater than or equal to 50  $\mu\text{g}/\text{dl}$  then a follow-up test will be given within two weeks.
- 6.1.2 If the follow-up test indicates a BLL < 50  $\mu\text{g}/\text{dl}$  then blood samples will continue to be drawn every two months until two consecutive BLL < 40  $\mu\text{g}/\text{dl}$  > seven days apart are obtained.
- 6.1.3 At this point, no further blood monitoring is needed (see Appendix E).
- 6.1.4 If however, the follow-up test reveals a BLL of greater than or equal to 50  $\mu\text{g}/\text{dl}$  then the worker shall be removed from occupational exposure to lead. Employee will continue to be tested on a monthly basis until two consecutive samples taken at least seven days apart which are <40  $\mu\text{g}/\text{dl}$  are obtained then no further surveillance is necessary.
- 6.2 Employees occupationally exposed to airborne lead at or above the action level (30  $\mu\text{g}/\text{M}^3$ ) more than thirty days per year shall be offered an initial blood test and medical surveillance.
- 6.3 Only laboratories approved by the Occupational Health Clinic and the Ohio Department of Health shall be used to analyze blood for lead.
- 6.4 Blood tests for lead referred to in sections 6.1 and 6.5 shall be analyzed for lead and zinc protoporphyrin levels.
- 6.5 All employees meeting the criteria in section 6.2 shall be enrolled in the Medical Surveillance Program, under the direction of a licensed physician.
  - 6.5.1 If the initial BLL is < 40  $\mu\text{g}/\text{dl}$  then the blood sampling frequency shall be at least every two months for the first six months and every six months thereafter.
  - 6.5.2 If the initial BLL is found to be greater than 50  $\mu\text{g}/\text{dl}$  and the follow-up finds that the employee has a BLL of greater than or equal to 50  $\mu\text{g}/\text{dl}$ , the employee shall be removed from occupational exposure to lead.
  - 6.5.3 The blood sample frequency increases to once/month until two consecutive samples are less than or equal to 40  $\mu\text{g}/\text{dl}$  then every six months thereafter.

- 6.5.4 If the initial BLL is found to be  $< 40 \mu\text{g}/\text{dl}$ , blood monitoring shall continue every six months thereafter until two consecutive samples are  $< 40 \mu\text{g}/\text{dl}$  (see Appendix E).
- 6.6 Employees shall be notified, in writing, of their blood test results within five working days after receipt of the results by Occupational Health Services (OHS). The OHS will communicate results to EHS for any necessary follow-up in the workplace.

## **7.0 MEDICAL EXAMINATIONS AND CONSULTATIONS**

- 7.1 A complete and detailed work history shall be compiled for all employees occupationally exposed to lead under section 6.5.
- 7.2 A medical exam or consultation shall be arranged by the OHS for any employee who has had blood samples taken within the previous twelve months which indicated a blood lead level greater than or equal to  $40 \mu\text{g}/\text{dl}$ . The employee's department is responsible for paying all medical exams and testing, unless exempted by the OHS Director.
- 7.3 A medical exam or consultation shall be made available if signs or symptoms of lead intoxication occur, or if the employee wishes to seek medical advice.
- 7.4 A medical exam or consultation shall be made available, if appropriate, for any employee removed due to impairment of health, or limitations due to a final medical determination.
- 7.5 The following items shall be provided to the physician by EHS and the employee's supervisor:
- A copy of the regulations (29 CFR 1926.62);
  - A description of the employees job duties;
  - A record of the exposure levels to lead and other contaminants;
  - A description of PPE used;
  - Prior blood lead results (if available and not already on file at the Occupational Health Service), and prior written medical determinations (if available and not already on file at the OHS).
- 7.6 Employees are entitled to a second opinion (called Multiple Physician Review).

- 7.6.1 In order for the employee to obtain a second opinion at university expense, the employee must notify EHS within fifteen days of the initial physicians written opinion or their notification from the University concerning their right to seek a second opinion, whichever is later.
- 7.6.2 If the two physicians disagree, a third physician, agreed upon by the employer and employee, through their physicians, shall be chosen to review the findings of the two physicians to resolve the disagreement.

## **8.0 MEDICAL REMOVAL PROCEDURE**

- 8.1 An employee who has a blood lead result of greater than or equal to 50  $\mu\text{g}/\text{dl}$  shall be removed from occupational exposure to lead.
  - 8.1.1 An employee may also be removed from exposure if a physician, in a written opinion, recommends removal for a period of time due to potential for increased risk of impairment from continued lead exposure.
- 8.2 Returning a removed employee to former job status (medically).
  - 8.2.1 The employee may return when two consecutive blood lead samples are less than or equal to 40  $\mu\text{g}/\text{dl}$ .
  - 8.2.2 An employee may return to work when, in the opinion of the physician, the employee no longer has a physical condition which will be aggravated by exposure to lead.
  - 8.2.3 Employees who have been medically removed shall receive normal compensation and benefits for a period of eighteen months after initial removal.
  - 8.2.4 The employee must participate in medical follow-up provided by the University in order to receive the medical removal benefits described in section 8.2.3.

## **9.0 RECORDKEEPING**

- 9.1 EXPOSURE RECORDS shall be maintained by the EHS Department (Environmental Safety and Health Department).



9.1.1 Exposure records shall include air samples and any other environmental sampling related to the employee.

9.1.2 The records maintained by EHS shall include:

sample date	temperature (if different than Athens)
sample number	pressure (if different than Athens)
sample duration	analytical methods
sample location	name of person monitored
description of sample	job title of person monitored
respirator used	
social security number	

9.1.3 EHS shall maintain these records for the duration of employment plus thirty years.

## 9.2 MEDICAL SURVEILLANCE RECORDS

All medical records listed below shall be kept by the Occupational Health Service.

9.2.1 Medical surveillance records shall include the following information:

- name
- description of duties where exposure to lead can occur
- employee medical complaints
- social security number
- written opinions by physician

9.2.2 Medical records kept by the physician

- any employee medical complaints
- a copy of the medical exam
- a description of the lab procedures and copies of any standards or guidelines used to interpret test results
- a copy of the results of biological monitoring

The Occupational Health Service must maintain these employee records for the duration on employment plus thirty years.

### 9.2.3 Medical removal records

name  
social security number  
reason for removal  
where the person was placed

Occupational Health Service shall maintain these records until the employee leaves or retires.

## 10.0 POSTING OF SIGNS

10.1 Locations where employees could be exposed to lead in excess of the PEL shall be posted at all access points to the area.

10.2 Each sign shall have the following wording:

<p><b>Warning: Lead Work Area POISON NO SMOKING OR EATING</b></p>
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10.3 All signs shall be clearly visible.

10.4 If necessary illuminate signs to insure that they are visible.

## 11.0 TRAINING

11.1 Training shall be provided prior to initial assignment and annually thereafter for any employee potentially exposed to greater than or equal to 30  $\mu\text{g}/\text{M}^3$ .

11.2 Sources of lead exposure shall be communicated to exposed employees per the requirements of the OHIO Lead and Hazard Communication Programs.

11.3 Employees shall have access to a copy of the lead standard at their department or at EHS. [http://www.ohiou.edu/ehs/eh\\_leadsafety.htm](http://www.ohiou.edu/ehs/eh_leadsafety.htm)

11.4 Training shall include the following information:

The contents of the OSHA standard and its appendices.

What operations may cause exposure to lead in excess of the action level or PEL.

The purpose of, proper selection, limitations and use of, respiratory protection (this is typically done in OHIO Respiratory Protection Program).

The purpose of the medical surveillance program.  
How the medical program functions.  
The adverse health effects of lead to person or progeny.  
Review engineering and work practice controls.  
Contents of the compliance plan or program.  
The hazards of chelating agents.  
The employee's right to view their medical records.  
Question and answer period.

11.5 Summer student painters receive lead awareness training

**12.0 FACILITIES SUBJECT TO LEAD ACTIVITIES REGULATED BY THE OHIO DEPARTMENT OF HEALTH (ODH)**

12.1 "Structures" regulated by ODH are all houses, apartments, or buildings used as a private residence or for education or day-care of children less than six years of age: (exceptions - 0 - bedroom housing)

12.1.1 This includes, but is not limited to, the following:

- Mill Street Apartments
- Wolfe Street Apartments
- Residence Life Staff Apartments
- All university owned houses
- Guest apartments
- Ridges Child Development Center

12.2 To work in these "structures", all lead inspectors, risk assessments, abatement and contractors must be licensed by ODH.

- OHIO Employees
- Consultants
- Outside Contractors

12.2.1 The licensing and testing process can take several months.

12.3 See Appendix F - Decision Logic for Building Construction Work Involving Possible Lead Exposure by Outside Contractors

12.4 All OHIO personnel will be properly licensed when necessary. All departments will coordinate licensing activities with EHS.

12.5 All renovation and capital improvements, where lead abatement will occur on structures, will comply with ODH regulations.

**13.0 FACILITIES SUBJECT TO THE USEPA/HUD NOTIFICATION LAW FOR "TARGET HOUSING"**

13.1 USEPA, 40 CFR 745, Subpart F requires that lead based paint information be given upon the sale, lease, or rental of "target housing"

13.1.1 OHIO will comply with the Disclosure Law for "target housing" on campus.

13.1.2 "Target housing" on campus is all housings (apartments and houses) owned by OHIO and built before 1978, except "O-bedroom dwellings" (dorms) and housing for elderly or handicapped (none).

13.2 The OHIO Housing Office and all university employees who sell, rent, or lease "target housing" on behalf of the university will comply, as follows:

13.2.1 The appropriate disclosure form found in Appendix G will be completed and given to the buyer, renter, or lessee.

13.2.2 A copy of the pamphlet "Protect Your Family from Lead in Your Home" (Appendix G) will be given to the buyer, renter, or lessee. A camera-ready copy can be obtained from EHS.

13.2.3 If the "target housing" has been inspected for lead, this information will be provided to the buyer, renter, or lessee upon request to EHS.

13.3 USEPA, 40 CFR 745, Subpart E - Residential Property Renovation - requires that lead based paint information be given occupants of "target housing" to be renovated. OHIO will comply with this law.

13.4 OHIO housing, facilities management, facilities planning, and other applicable employees have been informed about these requirements and trained.

## Appendix A

### Lead MSDS

**\*\*LEAD\*\***

MATERIAL SAFETY DATA SHEET \_\_\_\_\_

FISHER SCIENTIFIC  
CHEMICAL DIVISION  
1 REAGENT LANE  
FAIR LAWN NJ 07410  
(201) 796-7100

EMERGENCY NUMBER: (201) 796-7100  
CHEMTREC ASSISTANCE: (800) 424-9300

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-----  
SUBSTANCE IDENTIFICATION GAS-NUMBER 7439-92-1 SUBSTANCE: **\*\*LEAD\*\*** TRADE NAMES/SYNONYMS: C.I. PIGMENT METAL 4; C.I. 77575; LEAD FLARE; KS-4; LEAD S 2; SI; SO; PLUMBUM; S0; PB-S 100; LEAD ELEMENT; L18; L24; L29; L27; T134; L246; PB; ACC12510 CHEMICAL FAMILY: Metal MOLECULAR FORMULA: PB MOLECULAR WEIGHT: 207.19

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=0 PERSISTENCE=3 NFPA RATINGS (SCALE 0-4): HEALTH=U FIRE=0 REACTIVITY=0

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## COMPONENTS AND CONTAMINANTS

COMPONENT: LEAD PERCENT: 99.8 CAS# 7439-92-1

OTHER CONTAMINANTS: BISMUTH, COPPER, ARSENIC, ANTIMONY, TIN, IRON, SILVER, ZINC

EXPOSURE LIMITS: LEAD, INORGANIC FUMES AND DUST (AS PB):

50 ug/m3 OSHA 8 hour TWA 30 ug/m3 OSHA 8 hour TWA action level

If an employee is exposed to lead for more than 8 hours per day the following formula is used:

Maximum permissible limit (in ug/m3)= 400 divided by hours worked in the day 0.15 mg/m3 ACGIH TWA (Notice of Intended Changes 1993-94) <0.10 mg/m3 NIOSH recommended 10 hour TWA

0.1 mg/m3 DFG MAK TWA; 1.0 mg/m3 DFG MAK 30 minute peak, average value, 1 time/shift

MEASUREMENT METHOD: Particulate filter, nitric acid/hydrogen peroxide; atomic absorption spectrometry; (NIOSH Vol. III # 7082).

1 pound CERCLA Section 103 Reportable Quantity Subject to SARA Section 313 Annual Toxic Chemical Release Reporting Subject to California Proposition 65 cancer and/or reproductive toxicity warning and release requirements(February 27, 1987)

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PHYSICAL  
DATA DESCRIPTION: Bluish-white, silvery gray, heavy, malleable metal BOILING POINT: 3164 F (1740 C) MELTING POINT: 622 F (328 C) SPECIFIC GRAVITY: 11.3 VAPOR PRESSURE: 1.3 mmHg Q 970 C SOLUBILITY IN WATER: insoluble SOLVENT SOLUBILITY: Soluble in nitric acid, hot concentrated sulfuric acid HARDNESS (MOHS): 1.5

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FIRE AND EXPLOSION  
DATA

FIRE AND EXPLOSION HAZARD: Negligible fire hazard in bulk form; however, dust, powder, or fumes are flammable or explosive when exposed to heat or flames.

FIREFIGHTING MEDIA: Dry chemical, carbon dioxide, water spray or regular foam (1990 Emergency Response Guidebook, DOT P 5800.5).

For larger fires, use water spray, fog or regular foam (1990 Emergency Response Guidebook, DOT P 5800.5).

### FIREFIGHTING:

Move container from fire area if you can do it without risk (1990 Emergency Response Guidebook, DOT P 5800.5, Guide Page 53).

Extinguish using agent suitable for type of surrounding fire. Avoid breathing vapors and dusts. Keep upwind.

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## TOXICITY

### LEAD:

TOXICITY DATA: 10 ug/m3 inhalation-human TCLo; 450 mg/kg/6 years oral-woman TDLo; 6879 mg/kg/5 weeks continuous oral-mouse TDLo; 1000 mg/kg intraperitoneal-rat LDLo; mutagenic data (RTECS); reproductive effects data (RTECS); tumorigenic data (RTECS).

**CARCINOGEN STATUS:** Human Inadequate Evidence, Animal Sufficient Evidence (IARC Group-2B for inorganic lead compounds). Renal tumors were produced in

animals by lead acetate, subacetate and phosphate given orally, subcutaneously or intraperitoneally. No evaluation could be made of the carcinogenicity of powdered lead.

**ACUTE TOXICITY LEVEL:** Insufficient data.

**TARGET EFFECTS:** Neurotoxin; nephrotoxin; teratogen. Poisoning may also affect the blood, heart, and the endocrine and immune systems.

**AT INCREASED RISK FROM EXPOSURE:** Persons with nervous system or gastrointestinal disorders, anemia, or chronic bronchitis.

**ADDITIONAL DATA:** May cross the placenta. Smoking may result in high blood lead levels.

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## HEALTH EFFECTS AND FIRST AID

### INHALATION: LEAD:

See information on lead compounds and metal fume fever.

### LEAD COMPOUNDS: NEUROTOXIN/NEPHROTOXIN/TERATOGEN.

**ACUTE EXPOSURE-** Absorption of large amounts of lead may cause a metallic taste, thirst, a burning sensation in the mouth and throat, salivation, abdominal pain with severe colic, vomiting, diarrhea of black or bloody stools, constipation, fatigue, sleep disturbances, dullness, restlessness, irritability, memory loss, loss of concentration, delirium, oliguria often with hematuria and albuminuria, encephalopathy with visual failure, paresthesias, muscle pain and weakness, convulsions, and paralysis. Death may result from cardiorespiratory arrest or shock. Survivors of acute exposure may experience the onset of chronic intoxication. Liver effects may include enlargement and tenderness, and jaundice. The fatal dose of absorbed lead is approximately 0.5 grams. Pathological findings include gastrointestinal inflammation and renal tubular degeneration.

**CHRONIC EXPOSURE-** Prolonged or repeated exposure to low levels of lead may result in an accumulation in body tissues and exert adverse effects on the blood, nervous systems, heart, endocrine and immune systems, kidneys, and reproduction. Early stages of lead poisoning, "plumbism", may be evidenced by anorexia, weight loss, constipation, apathy or irritability, occasional vomiting, fatigue, headache, weakness, metallic taste in the mouth, gingival lead line in persons with poor dental hygiene, and anemia. Loss of recently developed motor skills is generally observed only in children. More advanced stages of poisoning may be characterized by intermittent vomiting, irritability and nervousness, myalgia of the arms, legs, joints and abdomen, paralysis of the extensor muscles of the arms and legs with wrist and/or foot drop. Severe "plumbism" may result in persistent vomiting, ataxia, periods of stupor or lethargy, encephalopathy with visual disturbances which may progress to optic neuritis and atrophy, hypertension, papilledema, cranial nerve paralysis, delirium, convulsions, and coma. Neurologic sequelae may include mental retardation, seizures, cerebral palsy, and dystonia musculorum deformans. Irreversible kidney damage has been associated with industrial exposure. Reproductive effects have been exhibited in both males and females. Paternal effects may include decreased sex drive, impotence, sterility and adverse effects on the sperm which may increase the risk of birth defects. Maternal effects may include miscarriage and stillbirths in exposed women or women whose husbands were exposed, abortion, sterility or decreased fertility, and abnormal menstrual cycles. Lead crosses the placenta and may affect the fetus causing birth defects, mental retardation, behavioral disorders, and death during the first year of childhood. Animal studies indicate that reproductive effects may be additive if both parents are exposed to lead.

### METAL FUME FEVER:

**ACUTE EXPOSURE-** Metal fume fever, an influenza-like illness, may occur due to the inhalation of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns. Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur. Tolerance to fumes develops rapidly, but is quickly lost. All symptoms usually subside within 24-36 hours.

**CHRONIC EXPOSURE-** There is no form of chronic metal fume fever, however, repeated bouts with symptoms as described above are quite common. Resistance to the condition develops after a few days of exposure, but is quickly lost in 1 or 2 days.

**FIRST AID-** Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest.

Treat symptomatically and supportively. Get medical attention immediately.

**SKIN CONTACT: LEAD:**

See information on lead compounds.

**LEAD COMPOUNDS:**

**ACUTE EXPOSURE-** Contact with lead powders or dust may be irritating. Lead is not absorbed through the skin, but may be transferred to the mouth inadvertently by cigarettes, chewing tobacco, food, or make-up.

**CHRONIC EXPOSURE-** Prolonged or repeated exposure to the powder or dust may result in dermatitis. Systemic toxicity may develop if lead is transferred to the mouth by cigarettes, chewing tobacco, food, or make-up.

**FIRST AID-** Remove contaminated clothing and shoes immediately. Wash affected

area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). Get medical

attention immediately.

**EYE CONTACT: LEAD:**

See information on lead compounds.

**LEAD COMPOUNDS:**

**ACUTE EXPOSURE-** Lead dust or powders may be irritating. Metallic lead particles may cause an inflammatory foreign body reaction and injury is generally thought to be mechanical and not toxic.

**CHRONIC EXPOSURE-** Prolonged exposure may cause conjunctivitis.

**FIRST AID-** Wash eyes immediately with large amounts of water or normal saline,

occasionally lifting upper and lower lids, until no evidence of chemical

remains (approximately 15-20 minutes). Get medical attention immediately.

**INGESTION: LEAD:**

See information on lead compounds.

**LEAD COMPOUNDS: NEUROTOXIN/NEPHROTOXIN/TERATOGEN.**

**ACUTE EXPOSURE-** Absorption of large amounts of lead from the intestinal tract may cause all the same effects as detailed in acute inhalation. The fatal dose of absorbed lead is approximately 0.5 grams.

**CHRONIC EXPOSURE-** Prolonged or repeated exposure to low levels of lead may result in an accumulation in body tissues and adverse effects on the kidneys, heart and blood and on the nervous, reproductive, endocrine and immune systems as detailed in chronic inhalation.

**FIRST AID-** Do not induce vomiting. Qualified medical personnel should remove chemical by gastric lavage or catharsis. Activated charcoal is useful. Get



medical attention immediately.

#### ANTIDOTE:

The following antidote has been recommended. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel.

#### FOR LEAD POISONING:

Initiate urine flow first. Give 10% dextrose in water intravenously, 10-20 mL/kg body weight, over a period of 1-2 hours. If urine flow does not start, give mannitol, 20% solution, 5-10 mL/kg body weight intravenously over 20 minutes. Fluid must be limited to requirements and catheterization may be necessary in coma. Daily urine output should be 350-500 mL/m<sup>2</sup>/24 hours. Excessive fluids further increase cerebral edema.

For adults with acute encephalopathy, give dimercaprol, 4 mg/kg, intramuscularly every 4 hours for 30 doses. Beginning 4 hours later, give calcium disodium edetate at a separate injection site, 12.5 mg/kg intramuscularly every 4 hours as a 20% solution, with 0.5% procaine added, for a total of 30 doses. If significant improvement has not occurred by the fourth day, increase the number of injections by 10 for each drug.

For symptomatic adults, the course of dimercaprol and calcium disodium edetate can be shortened or calcium disodium edetate only can be given in a dosage of 50 mg/kg intravenously as 0.5% solution in 5% dextrose in water or normal saline by infusion over not less than 8 hours for not more than 5 days. Follow with penicillamine, 500-750 mg/day, orally for 1-2 months or until urine lead levels drops below 0.3 mg/24 hours (Dreisbach, Handbook of Poisoning, 12th Ed.). Antidote should be administered by qualified medical personnel.

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#### REACTIVITY

REACTIVITY: Stable under normal temperatures and pressures.

#### INCOMPATIBILITIES:

##### LEAD:

AMMONIUM NITRATE: Violent or explosive reaction.

CHLORINE TRIFLUORIDE: Violent reaction.

DISODIUM ACETYLIDE: Trituration in mortar may be violent and liberate carbon.

HYDROGEN PEROXIDE (52% OR GREATER): Violent decomposition.

HYDROGEN PEROXIDE (60% SOLUTION) AND TRIOXANE: Spontaneously detonable.

METALS (ACTIVE): Incompatible.

NITRIC ACID: Lead-containing rubber may ignite.

OXIDIZERS (STRONG): Incompatible.

SODIUM AZIDE: Forms lead azide and copper azide in copper pipe.

SODIUM CARBIDE: Vigorous reaction. SULFURIC ACID (HOT): Reacts. ZIRCONIUM-LEAD ALLOYS: Ignition on impact. -

#### DECOMPOSITION:

Thermal decomposition products are toxic oxides of lead.

#### POLYMERIZATION:

Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

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#### STORAGE AND DISPOSAL

Observe all federal, state and local regulations when storing or disposing of this substance.

**\*\*Storage\*\***

Store in a cool, dry place.

Store away from incompatible substances.

**\*\*Disposal\*\***

Lead - Regulatory level: 5.0 mg/l (TCLP-40 CFR 261 Appendix II) materials which contain the above substance at or above the TCLP regulatory level meet the EPA toxicity characteristic, and must be disposed of in accordance with 40 CFR part 262. EPA Hazardous Waste Number D008.

\*\*\* \*\*\*\*\*

**CONDITIONS TO AVOID**

May burn but does not ignite readily. Prevent dispersion of dust in air. Do not allow spilled material to contaminate water sources.

\*\*\*\*\*

**SPILL AND LEAK PROCEDURES**

**OCCUPATIONAL SPILL:**

Do not touch spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for later disposal. For small dry spills, with a clean shovel place material into clean, dry container and cover. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

Residue should be cleaned up using a high-efficiency particulate filter vacuum.

Reportable Quantity (RQ): 1 pound The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the National Response

Center must be notified immediately at (800) 424-8802 or (202) 426-2675 in the metropolitan Washington, D.C. area (40 CFR 302.6).

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**PROTECTIVE EQUIPMENT**

**VENTILATION:**

Provide local exhaust ventilation system to meet published exposure limits.

Lead (elemental, inorganic, and soaps): Ventilation should meet the requirements in 29 CFR 1910.1025(e).

**RESPIRATOR:**

The following respirators are the minimum legal requirements as set forth by the Occupational Safety and Health Administration found in 29 CFR 1910, Subpart Z.

**RESPIRATORY PROTECTION FOR LEAD AEROSOLS**

Airborne concentration of lead or condition of use  
Not in excess of 0.5 mg/m3 (10x PEL)  
respirator equipped with

Required respirator  
Half-mask, air purifying

high-efficiency filters. Not in excess of 2.5 mg/m <sup>3</sup> (50x PEL) respirator with high efficiency filters.	Full facepiece, air-purifying
Not in excess of 50 mg/m <sup>3</sup> (1000x PEL) respirator with high efficiency filters; or Half-mask supplied-air respirator operated in positive-pressure mode.	Any powered air-purifying
Not in excess of 100 mg/m <sup>3</sup> full facepiece, hood or helmet or suit, operated in positive pressure mode.	Supplied-air respirators with
Greater than 100 mg/m <sup>3</sup> , unknown concentrations or firefighting positive-pressure mode.	Full facepiece, self-contained breathing apparatus operated in

(Respirators specified for higher concentrations can be used at lower concentrations of lead).

(Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.)

(A high efficiency particulate filter means 99.97% efficient against 0.3 micron particles.)

The following respirators and maximum use concentrations are recommendations by the U.S. Department of Health and Human Services, NIOSH pocket guide to chemical hazards or NIOSH criteria documents. The specific respirator selected must be based on contamination levels found in the work place and be jointly approved by the National Institute of

Occupational Safety and Health and the Mine Safety and Health Administration.

#### LEAD, INORGANIC FUMES AND DUSTS (AS PB):

0.50 mg(Pb)/m<sup>3</sup>- Any supplied-air respirator.

Any air-purifying respirator with a high-efficiency particulate filter.

Any self-contained breathing apparatus.

1.25 mg(Pb)/m<sup>3</sup>- Any powered air-purifying respirator with a high-efficiency particulate filter.

Any supplied-air respirator operated in a continuous flow mode.

2.50 mg(Pb)/m<sup>3</sup>- Any air-purifying full facepiece respirator with a high-efficiency particulate filter.

Any powered air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.

Any self-contained breathing apparatus with a full facepiece.

Any supplied-air respirator with a full facepiece.

Any supplied-air respirator with a tight-fitting facepiece operated in a continuous flow mode.

50.0 mg(Pb)/m<sup>3</sup>- Any supplied-air respirator operated in a pressure-demand or other positive pressure mode.

100.0 mg(Pb)/m<sup>3</sup>- Any supplied-air respirator with a full facepiece and operated in a pressure-demand or other positive pressure mode.

Escape- Any air-purifying full facepiece respirator with a high-efficiency particulate filter.

Any appropriate escape-type self-contained breathing apparatus.

**FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:**

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

**CLOTHING:**

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

**LEAD (ELEMENTAL, INORGANIC, AND SOAPS):** Protective clothing should meet the requirements for protective work clothing and equipment in 29 CFR 1910.1025(g).

**GLOVES:**

Employee must wear appropriate protective gloves to prevent contact with this substance.

**LEAD (ELEMENTAL, INORGANIC & SOAPS):** Protective gloves should meet the requirements for protective work clothing

and equipment in 29 CFR 1910.1025(g).

**EYE PROTECTION:**

Employee must wear splash-proof or dust-resistant safety goggles to prevent eye contact with this substance.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain within the immediate work area for emergency use.

**LEAD (ELEMENTAL, INORGANIC, AND SOAPS):** Protective eye equipment should meet the requirements for protective work clothing and equipment in 29 CFR 1910.1025(g).

**AUTHORIZED - FISHER SCIENTIFIC GROUP, INC.**

**CREATION DATE: 12/10/34 REVISION DATE: 04/07/94**

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## **Appendix B**

### **OSHA Lead Standard for Construction - 1926.62 Title D**

Available from EHS upon request or found at:

[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARD  
S&p\\_id=10641](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARD&p_id=10641)

## **Appendix C**

### **Occupational Exposure - 1926.62 Title D, Appendix A**

Available from EHS upon request or found at:

[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARD  
S&p\\_id=10642](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARD&p_id=10642)

## **Appendix D**

### **Work Requirements - 1926.62 Title D, Appendix B**

Available from EHS upon request or found at:

[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARD  
S&p\\_id=10643](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARD&p_id=10643)

## **Appendix E**

### **Medical Monitoring - 1926.62 Title D, Appendix C**

Available from EHS upon request or found at:

[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARD  
S&p\\_id=10644](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARD&p_id=10644)

## **Appendix G**

### **Lead Reference Document**

Available from EHS upon request or found at:

<http://www.odh.ohio.gov/ASSETS/8ABE991385AB425E866C7D7413016493/FAQ.pdf>

## **Appendix G**

### **Occupant Disclosure Form**

Available from EHS upon request or found at:

<http://www.epa.gov/lead/pubs/leadpdf.pdf>