



Environmental Monitoring Systems, Inc.  
 3864 Leeds Avenue  
 Charleston, South Carolina 29405  
 TEL 800-293-3003 or 843-724-5708 FAX 866-724-5700  
 Email: info@emssales.net Website <http://www.emssales.net>

## Lead-Based Paint "Everything Sheet" and References – 20080908

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\*Additions or Corrections Solicited! Send these via email to Dr. James R.

Tucker. Email: jim@emssales.net

### LEAD EXPOSURE LIMITS

**PAINT** 600ppm - CPSC  
 1.0mg/cm<sup>2</sup> or 5,000ppm - HUD

**DUST** 40 ug/ft<sup>2</sup> - HUD & EPA Clearance for Floors  
 250ug/ft<sup>2</sup> - HUD & EPA Clearance for Window Sills  
 400ug/ft<sup>2</sup> - HUD & EPA Clearance for Window Wells

**DUST Lead Hazard Screens Only**  
 25 ug/ft<sup>2</sup> - Floors  
 125ug/ft<sup>2</sup> - Window Sills

**SOIL** 500-1000ppm EPA Superfund Limit  
 400ppm - High Contact Play Areas {Communicate}  
 1200ppm - Other Residential Yard Areas {Average}  
 5000ppm - Require Permanent Abatement  
 Background or <400ppm - EPA Replacement Soil

**AIR** 1.5ug/m<sup>3</sup> - EPA National Air Quality Standard (Quarterly)  
 30ug/m<sup>3</sup> - OSHA Action Level (8 Hour Avg.)  
 50ug/m<sup>3</sup> - OSHA Exposure Limit

**BLOOD** 10ug/dl (CDC) Level of Concern for children  
 40ug/dl (OSHA) Permissible Blood Lead Level  
 50ug/dl (OSHA) Worker Removal - Lead Level

**WATER** - 15ppb (ug/liter)

**HAZARDOUS WASTE** - Lead - 5ppm Leachable TCLP

**GASOLINE** - 0.1 g/gallon

**CERAMIC OR POTTERY GLAZES** - FDA - AOAC Method 973.32  
 3ppm Leachate - Plates, Saucers and other Flatware  
 2ppm Leachate - Small Hollowware - (Cereal Bowls)  
 1ppm Leachate - Large Hollowware  
 0.5ppm Leachate - Cups, Mugs and Pitchers

**HAZARDOUS WASTE** - Other Metals - Leachable TCLP  
 Arsenic (As) - 5ppm Lead (Pb) - 5ppm  
 Barium (Ba) - 100ppm Mercury (Hg) - 0.2ppm  
 Cadmium (Cd) - 1ppm Selenium (Se) - 1ppm  
 Chromium (Cr) - 5ppm Silver (Ag) - 5ppm

**CLEARANCE TESTING** (Dust Wipes)  
 Visual Examination - No Paint Chips, No Dust  
 Sample 4 Rooms  
 1 Floor + 1 Window Sill (Stool) +  
 1 Window Trough (Well) +  
 1 per 2,000 sq. ft. common areas +  
 1 Sample within 5 feet outside containment

### RESPIRATORY PROTECTION - TASK RELATED TRIGGERS

29 CFR 1926.62 & HUD Manual Chapter 9, Page 17  
 Up to 10XPEL - ½ face Negative Pressure APR  
 Manual Demolition Manual Scraping Manual Sanding  
 Heat Gun Use, Power Tool Paint Removal + HEPA Dust Collect

10X up to 50XPEL - Full Face Negative Pressure APR or PAPR  
 Cleanup Dry Abrasive Blasting, Enclosure Movement

Greater than 50XPEL - Supplied Air Respirator

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Abrasive Blasting, Welding, Torch Burning  
**INTERNET REFERENCES**

- 1) Environmental Monitoring Systems  
 Sampling Cassettes, Pumps, Calibration Equipment, Microscopes,  
 Air Scrubbers, HEPA Vacuums, Respirators, PPE, IAQ  
 Disinfectants and related IAQ Supplies. 3864 Leeds Avenue,  
 Charleston, SC 29405, TEL 800-293-3003,  
<http://www.emssales.net>
- 2) XRF Equipment (X-ray Tube) - <http://www.innovxsys.com>
- 3) XRF Equipment (Cd109 Source) - <http://www.niton.com/>
- 4) State RAD Regulations - <http://www.crcpd.org/Map/map.asp>
- 5) Training -  
[http://cfpub.epa.gov/flpp/search.cfm?Applicant\\_Type=training](http://cfpub.epa.gov/flpp/search.cfm?Applicant_Type=training)
- 6) Code of Federal Regulations <http://www.gpoaccess.gov/cfr/index.html>
- 7) HUD Guidelines - <http://www.hud.gov/lea/learules.html>
- 8) HUD/EPA Brochures - <http://www.epa.gov/lead/>
- 9) HUD Lead Hazard Control <http://www.hud.gov/lea/leahome.html>
- 10) HUD Office Reference Library -  
<http://www.hud.gov/offices/lead/healthyhomes/lead.cfm>
- 11) Evaluation of LBP Inspections <http://www.hud.gov/lea/xrfreport.html>
- 12) CDC Lead Program - <http://www.cdc.gov/lead/>
- 13) OSHA - <http://www.osha.gov>
- 14) OSHA Lead in Construction Tech Manual -  
[http://www.osha.gov/dts/osta/otm/otm\\_v/otm\\_v\\_3.html](http://www.osha.gov/dts/osta/otm/otm_v/otm_v_3.html)
- 15) OSHA Asbestos & Lead Manuals -  
<http://www.ehso.com/oshaguidance.php>
- 16) National Lead Information Center -  
<http://www.epa.gov/lead/pubs/nlic.htm>
- 17) Global Lead Network <http://www.globalleadnet.org>
- 18) Pb Poisoning Prevention <http://www.ncsl.org/programs/pubs/4648.htm>
- 19) Alliance to End Childhood Lead Poisoning -  
<http://www.cehn.org/cehn/resourceguide/ateclp.html>
- 20) CLEARCorps - Community Lead Education and Reduction Corps -  
<http://www.clearcorps.org/>
- 21) National Paint and Coatings Association (NPCA) <http://www.paint.org>
- 22) Real Estate Disclosure - <http://www.leadhelp.com/>
- 23) Lead Smart Homes - <http://www.leadsmarthomes.com/>
- 24) LBP and Historical Preservation  
<http://oldhouseweb.com/oldhouse/content/npsbriefs/brief37.asp>  
<http://gsa.gov/pbs/pt/call-in/tis/0176.htm>
- 25) National Institute of Building Sciences - LBP O&M and Specification  
<http://www.nibs.org/>
- 26) RS Means - LBP Abatement Cost Est- <http://www.rsmeans.com>
- 27) American Institute of Architects - <http://www.aialongisland.com>
- 28) ASTM Standards on Lead Hazards Associated with Buildings -  
<http://www.ASTM.com>
- 29) Steel Structure Painting Counsel - <http://www.sspc.org>
- 30) Lead Listing - <http://www.leadlisting.org/>
- 31) ELPAT Labs - <http://www.aiha.org/Content/LQAP/PT/ELPAT.htm>
- 32) American Lead Laboratory Accreditation Program (AL2AP)  
<http://www.a2la.org>
- 33) Association of Environmental Health of Soils - [www.aehs.com](http://www.aehs.com)
- 34) Lead Contamination in Soils - Impact on Public Health -  
<http://wonder.cdc.gov/wonder/prevguid/p0000015/p0000015.asp>

**35) ANALYTICAL METHODS, etc:**

PCS's - All XRF's - <http://www.hud.gov/offices/lead/lbp/hudguidelines/allpcs.pdf>  
 Method 6200 - Soil <http://www.epa.gov/epaoswer/hazwaste/test/6200.pdf>  
 Method 7702 - Air <http://www.cdc.gov/niosh/nmam/pdfs/7702.pdf>  
 Soil Sampling - <http://www.deq.state.mi.us/documents/deq-erd-vsr.pdf>  
**XRF STUFF:**

**Environmental Monitoring Systems**

Sampling Cassettes, Pumps, Calibration Equipment, Microscopes, Air Scrubbers, HEPA Vacuums, Respirators, PPE, IAQ Disinfectants and related IAQ Supplies. 3864 Leeds Avenue, Charleston, SC 29405, TEL 800-293-3003, <http://www.emssales.net>

Pace Dust Wipes-Performance Products (Paper), LG Best & Associates, Inc. 207 Rutherglen Drive, Cary, NC 27511, 919-467-9629

Aramco - Lead Dust Sampling Wipes (Rayon) #90085 - Lynx Products, Thorofare, NJ 800-767-1225

Lead-in-Soil Analysis (LISA) Sample Cups - Chemplex 3091 SE Waaler Street, Stuart, FL 34997-5923  
 TEL 800 424-3675 FAX 561-283-2774  
 XRF Sample Cup - Cat. # 1330 - 32mm OD  
 XRF Film Sample Supports - Cat.# 156 - 500 pieces/box  
 Mylar 0.0014"; 3.6um; 0.14mil

Leak Test Kits - Valley Safety Service Associates - 413-323-9571

Shareware - CAD Software - <http://www.dcad.com>

Pelican Cases - <http://www.casesbymasco.com> 800-772-1960

TLD Finger Ring Radiation Badges - ICN Dosimetry - <http://www.dosimetry.com> 800-251-3331

Landauer Dosimetry - Landauer Corporate Office, 2 Science Road, Glenwood, Illinois 60425-1586, (800) 323-8830, <http://www.landauerinc.com>  
<http://www.landauerinc.com/luxelosl.htm>

S.E. International, Inc. Radiation Alert Detectors and Dosimeters - <http://www.seintl.com> 931-964-3561

**HUD/EPA Evaluation Components:**

Analysis, Content or Use	Hazard Screen	Risk Assessment
Paint	Deteriorated	Deteriorated
Dust	2	6-8
Soil	No	2
Water	Optional	Optional
Air	No	No
Maintenance Status	Yes	Optional
Management Plan	No	Optional
Status of EBL's	Yes	Yes
Typical Applications	RA?	1,2,3,4
Final Report	9,13	10

Analysis, Content or Use	Inspection	EBL
Paint	Surface by Surface	Defective, Chewable, Friction
Dust	Optional	Contact Areas
Soil	Optional	Bare & Play Areas
Water	Optional	1 <sup>st</sup> Drawn Samples
Air	No	No
Other		Glazed Dinnerware Painted Furniture, etc.
Maintenance Status	No	Yes
Management Plan	No	Yes
Status of EBL's	Yes	Yes
Typical Applications	3,5,6,8	EBL's
Final Report	11	12
1. Interim Controls	2. Building nearing end of expected life	
3. Sale of property/turnover	4. Insurance (Document lead-safe status)	
5. Abatement	6. Renovation Work	
7. Weatherization	8. Remodeling/Repainting	
9. Determine if full RA is required		
10. Lead Hazard Control Plan or certification of LBP compliance		
11. Lead Concentrations for each surface tested.		
12. Lead Hazard Control Plan	13. Recommendations for additional testing	

**REGULATORY REFERENCES:**

**1956 Supreme Court** - Steiner V. Mitchell - "portal to portal" compensation for Battery Manufacturing workers including required showers and personal hygiene

**1971 LBPPPA Funding** - HUD, EPA and CPSC Research on LBP

**1978 CPSC** - LBP in consumer paints 600ppm = 0.06%

**1989 OSHA Lead in General Industry Standard** - 29 CFR 1910.1025 - PEL 50 ug/m3, Engineering Controls, Administrative Controls, Training, Work Practices, PPE and Written Compliance Plan

**1993 OSHA Lead in Construction Standard** - 29 CFR 1926.62 - PEL 50 ug/m3, Engineering Controls, Administrative Controls, Training, Work Practices, PPE, Written Compliance Plan, and Task Related Triggers

**1992 Title X** - Residential Lead-Based Paint Hazard Reduction Act of 1992 Disclosure of Known Lead Based Paint and/or Lead-Based Paint Hazards in Housing - 24 CFR 35 & 40 CFR 745

**1996 LBP Disclosure** - Final Rule - 10 day period for inspection for all residential real estate rentals or sales. 40CFR Part 745 & 24CFR Part 35

**1996 Requirements for LBP Activities** - Accreditation of Training Providers, Certification and Training for LBP Professionals, Work Practice Standards. 40 CFR Part 745

**1998/04/15 RESPIRATORY PROTECTION - 29 CFR 1910.134**

Unified Respiratory Protection. New Statute that requires employers to provide annual fit testing and a medical surveillance program for individuals issued air purifying and supplied air respirators, BOTH negative and positive pressure units.

**1998/06/01 HAZARD EDUCATION BEFORE RENOVATION**

**40 CFR Part 745** Requires persons who perform renovations for compensation to notify owners or residents of target housing prior to commencing renovation. Requires acceptance signature for EPA Pamphlet. Renovation is the removal or modification of painted surfaces or components >2 sq. ft.

**1998/06/01 IDENTIFICATION OF DANGEROUS LEVELS OF LEAD - 40 CFR Part 745** Proposed EPA Rulemaking New lower levels for dust and soil exposure limits. A guidance document is proposed.

**1998/12/18 MANAGEMENT AND DISPOSAL OF LBP DEBRIS; PROPOSED RULE AND TEMPORARY SUSPENSION OF TOXICITY CHARACTERISTIC RULE FOR SPECIFIED LBP DEBRIS; PROPOSED RULE - 40CFR745**

**1999/8/3 LOWERING OF REPORTING THRESHOLDS:**

**COMMUNITY RIGHT TO KNOW TOXIC CHEMICAL RELEASE REPORTING: Proposed Rule** 40 CFR Part 372 - Lowering of reporting limits for manufacturing of Persistent Bioaccumulative Toxins (PBT)

**1999/9/15 REQUIREMENT FOR NOTIFICATION, EVALUATION AND REDUCTION OF LBP HAZARDS IN FEDERALLY OWNED RESIDENTIAL PROPERTY AND HOUSING RECEIVING FEDERAL ASSISTANCE; Final Rule** 24CFR35 HUD consolidation of LBP regulations 1012/1013. Set new levels for LBP Clearance.

**1999/11/26 UNIFORM PHYSICAL CONDITION STANDARDS AND PHYSICAL INSPECTION REQUIREMENTS FOR CERTAIN HUD HOUSING; Final Rule** 24CFR Parts 5 et al. Sets uniform standards for safe, decent and sanitary Public Housing, retains LBP standards embedded in Housing Quality Standards.

**2001/01/05 EPA IDENTIFICATION OF DANGEROUS LEVELS OF LEAD; Final Rule** 40CFR745 EPA is issuing the final regulation to establish standards for lead-based paint hazards.

**2001/01/17 LEAD AND LEAD COMPOUNDS; LOWERING REPORTING THRESHOLDS; COMMUNITY RIGHT-TO-KNOW TOXIC CHEMICAL RELEASE REPORTING; Final Rule.** The EPA is lowering the reporting thresholds for lead and lead compounds.

**2001/01/22 LEAD NOTIFICATION REQUIREMENTS FOR LEAD-BASED PAINT ABATEMENT ACTIVITIES AND TRAINING; Proposed Rule** 40CFR745 This proposal seeks to establish procedures used to notify the Agency of Lead-based paint abatement and training activities prior to commencement as required by Title X (ten).

**2004/06/21 CONFORMING AMENDMENTS AND CORRECTIONS** 24CFR35, etc.: This final rule clarifies conforming amendments and corrections to HUD's LBP regulations.