



Procedure	Result	Units	Ref Interval	Accession	Collected	Received	Reported/Verified
Lead, Industrial, Whole Blood	50.0 H	ug/dL	[0.0-4.9]	18-255-900197	12-Sep-18 15:47:00	12-Sep-18 15:47:00	12-Sep-18 15:49:17
Zinc Protoporphyrin (ZPP) WholeBld Ratio	70 H	umol ZPP/ mol Hem	[0-69]	18-255-900197	12-Sep-18 15:47:00	12-Sep-18 15:47:00	12-Sep-18 15:49:17
Zinc Protoporphyrin, Blood	41 H	ug/dL	[0-40]	18-255-900197	12-Sep-18 15:47:00	12-Sep-18 15:47:00	12-Sep-18 15:49:17

12-Sep-18 15:47:00 Lead, Industrial, Whole Blood:  
 INTERPRETIVE INFORMATION: Lead, Industrial Exposure Panel,  
 Adults

Elevated results may be due to skin or collection-related contamination, including the use of a noncertified lead-free collection/transport tube. If contamination concerns exist due to elevated levels of blood lead, confirmation with a second specimen collected in a certified lead-free tube is recommended.

Reference interval and interpretive comments are based on the "Recommendations for Medical Management of Adult Lead Exposure, Environmental Health Perspectives, 2007." Thresholds and time intervals for retesting, medical evaluation, and response vary by state and regulatory body. Actions described by OSHA in 1978 and finalized in 1983 are shown below. Contact your State Department of Health and/or applicable regulatory agency for specific guidance on medical management recommendations.

"Occupational Safety and Health Standards: Lead (1983). 29 CFR Part 1910.1025 App C"

Action required for workers with Elevated Lead Values OSHA, Occupational Exposure to Lead, 1978

No. of tests	ug/dL Lead	Action Required
1	40.0 or greater	Notification of worker in writing; medical examination of worker and consultation.
3(average)	50.0 or greater	Removal of worker from job with potential lead exposure.
1	60.0 or greater	Removal of worker from job with potential lead exposure.
2	40.0 or less	Reinstatement of worker in job with potential lead exposure is based upon symptoms and medical evaluation.

OSHA requirements in effect since 1978 call for the measurement of whole blood lead and zinc protoporphyrins (ZPP) to evaluate the occupational exposure to lead. OSHA requires ZPP whole blood testing in units of ug/dL. For adults, conversion of ZPP units of ug/dL whole blood assumes a hematocrit of 45 percent. Conversion factor: umol/mol heme x 0.584 = ug/dL.

\* Abnormal, # = Corrected, C = Critical, f = Footnote, H = High, L = Low, t = Interpretive Text, @ = Reference Lab

Information sources for reference intervals and interpretive comments provided below include the "CDC Response to the 2012 Advisory Committee on Childhood Lead Poisoning Prevention Report" and the "Recommendations for Medical Management of Adult Lead Exposure, Environmental Health Perspectives, 2007." Thresholds and time intervals for retesting, medical evaluation, and response vary by state and regulatory body. Contact your State Department of Health and/or applicable regulatory agency for specific guidance on medical management recommendations.

Age	Concentration	Comment
All ages	5-9.9 ug/dL	Adverse health effects are possible, particularly in children under 6 years of age and pregnant women. Discuss health risks associated with continued lead exposure. For children and women who are or may become pregnant, reduce lead exposure.
All ages	10-19.9 ug/dL	Reduced lead exposure and increased biological monitoring are recommended.
All ages	20-69.9 ug/dL	Removal from lead exposure and prompt medical evaluation are recommended. Consider chelation therapy when concentrations exceed 50 ug/dL and symptoms of lead toxicity are present.
Less than 19 years of age	Greater than 44.9 ug/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.
Greater than 19 years of age	Greater than 69.9 ug/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

12-Sep-18 15:47:00 Zinc Protoporphyrin (ZPP) WholeBld Ratio:  
 TEST INFORMATION: Zinc Protoporphyrins

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

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12-Sep-18 15:47:00 Zinc Protoporphyrin, Blood:  
INTERPRETIVE INFORMATION: Zinc Protoporphyrin, Blood

For occupational exposure to lead, OSHA requires ZPP whole blood concentration to be reported in units of ug/dL. For adults, conversion of ZPP to units of ug/dL assumes a hematocrit of 45%.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: [aruplab.com/CS](http://aruplab.com/CS)