



APR 19 2019

Reply to the attention of:

Mr. Lucian Niemeyer
Assistant Secretary of Defense for
Energy, Installations, and Environment
Designated Agency Safety and Health Official
U.S. Department of Defense
3400 Defense Pentagon
Washington, DC 20301-3400

Dear Mr. Niemeyer:

Thank you for your September 11, 2018, letter requesting clarification on acceptable sampling techniques for monitoring employee exposure to hexavalent chromium. Following a discussion with your staff on the parameters of your request, we summarized your background discussion and responded to your paraphrased questions below.

Discussion: The Department of Defense (DoD) has been using generally-accepted air sampling methods¹ to conduct airborne monitoring for metallic chromium and chromium compounds to determine compliance with OSHA's permissible exposure limits (PELs), as expressed in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air. Recently, the American Conference of Governmental Industrial Hygienists (ACGIH) updated its occupational Threshold Limit Values (TLVs) that DoD components use as exposure guidelines. The new TLVs will require new equipment and a new sampling method, one that will provide results in inhalable fractions rather than total aerosol.

Question 1: If DoD can demonstrate conformance with OSHA's sampling method accuracy requirements as specified in 29 CFR 1910.1026(d)(5), is an inhalable sampling technique an acceptable method for characterizing worker exposure to hexavalent chromium?

Response: Yes, provided the method of monitoring and analysis can measure chromium (VI) as accurately as OSHA's standard requires. Paragraph (d)(5) of 29 CFR 1910.1026, *Chromium (VI)*, is a performance-based requirement and does not require an employer to use any specific sampling method. The paragraph only requires that the employer *use a method of monitoring and analysis that can measure chromium (VI) to within an accuracy of plus or minus 25 percent (+/- 25%) and can produce accurate measurements to within a statistical confidence level of 95 percent for airborne concentrations at or above the action level ($2.5 \mu\text{g}/\text{m}^3$)*. Therefore, provided DoD's chosen sampler and analytical method meet the performance requirements of 29 CFR 1910.1026(d)(5), OSHA would deem DoD to be in compliance with that standard.

¹ OSHA Methods [ID-215](#), *Hexavalent Chromium in Workplace Atmospheres*; [ID-121](#), *Metal & Metalloid Particulates in Workplace Atmospheres (Atomic Absorption)*; National Institute for Occupational Safety and Health (NIOSH) Methods 7600 and 7605, etc.


Question 2: Can DoD compare the results from an acceptable inhalable fraction method with the OSHA PEL to evaluate whether DoD is in compliance with the OSHA standard for hexavalent chromium?

Response: Yes. An employer can use sampling results obtained via an acceptable inhalable fraction method to determine compliance with the OSHA PEL for hexavalent chromium at 29 CFR 1910.1026. *See also D. Dietrich, 2011 (inhalable dust measurements for particulates not otherwise regulated under 29 CFR 1910.1000).*

To address your closing statement referring to an “alternate standard request,” please be aware that while 29 CFR 1960.17, *Alternate standards*, allows an agency to *apply an alternate standard where deemed necessary*, it also requires the agency to request the Secretary of Labor’s approval for the alternate standard prior to implementing that standard. That request must include the information described in 1960.17(b)(1)-(b)(5). Given that your letter requests interpretation of existing OSHA standards for hexavalent chromium, and does not include the information that would allow evaluation of an alternate standard, this response does not approve any “alternate standard” under 29 CFR 1960.17.

Thank you for your interest in occupational safety and health. OSHA requirements are set by statute, standards, and regulations. This letter constitutes OSHA’s interpretation of, and decision regarding, only the documents, standards, and policies discussed above. Please note that our guidance may be affected by changes to OSHA rules and that from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA’s website at www.osha.gov. If you have any questions, please feel free to contact Mikki Holmes, Acting Director for OSHA’s Office of Federal Agency Programs at (202) 693-2122 or holmes.mikki@dol.gov.

Sincerely,



Patrick J. Kapust, Acting Director
Directorate of Enforcement Programs

cc: John F. Seibert
Assistant for Occupational Safety & Health
Office of the Assistant Secretary of Defense

Standard Interpretations / Use of IOM sampler for inhalable dust.

▪ **Standard Number:** 1910.1000

OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

November 8, 2011

Ms. Deborah Dietrich
Mr. Saulius Trakumas
SKC, Inc.
863 Valley View Road
Eighty Four, PA 15330

Dear Ms. Dietrich and Mr. Trakumas:

Thank you for your letter to the Occupational Safety and Health Administration's (OSHA) Directorate of Enforcement Programs concerning air sampling methods for dust. This letter constitutes OSHA's interpretation only of the requirements herein, and may not be applicable to any situation not delineated within your original correspondence. You have a rebuttal to an OSHA letter of interpretation, January 30, 2007, entitled, "Use of the IOM sampler for inhalable dust and compliance with the PNOR requirements of 29 CFR 1910.1000." Your position is stated below, followed by OSHA's reply. We apologize for the delay in responding to your request.

Rebuttal: The OSHA letter to Mr. Jesse Finney, dated January 30, 2007, contains a statement contrary to information published in peer-reviewed scientific literature. Specifically, the OSHA letter makes the following assertion regarding dust sampling cassettes containing 37-mm filters vs. Institute of Occupational Medicine (IOM) Samplers: "Side-by-side samples collected using the two sampling methods will usually show lower results with the IOM Sampler. This is especially apparent when an atmosphere has a greater concentration of larger particles."

Reply: Upon review of the scientific literature regarding the use of an IOM Sample¹ compared to the OSHA sampling method using a 37-mm cassette for sampling total dust² we agree that the IOM Sampler is more efficient than the 37-mm cassette in sampling small and large particles. The IOM Sampler is designed for sampling inhalable particles of up to 100 micrometers (μm) aerodynamic diameter. OSHA's Salt Lake Technical Center agrees that the IOM Sampler should provide higher results than a 37-mm cassette, especially where large particles are involved. Additionally, a 37-mm cassette and the IOM Sampler should provide very similar results up to about 20 μm in particle size. Thus, a Total Dust measurement collected with an IOM Sampler may be used as an equivalent method when measuring an employee's exposure to particulates not otherwise regulated (PNOR), and to determine whether exposure exceeds the PNOR permissible exposure limit (PEL) in 29 CFR 1910.1000. Therefore, OSHA's letter of interpretation to Mr. Finney, dated January 30, 2007, has been

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