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Heavy Metal Contamination

Heavy metals are commonly defined as those having a specific density of more than 5 g/cm³. Metals that pose the biggest threat to human health are lead, cadmium, mercury and arsenic. Although heavy metal usage has existed for thousands of years, however the dawn of the industrial age has significantly accelerated metal usage and inadvertent human exposures. Cadmium compounds are mainly used in re-chargeable nickel-cadmium batteries. Because cadmium containing products are often dumped with other household waste, emissions have increased dramatically during the 20th century. Cigarette smoking is also a major source of cadmium exposure. In non-smokers, food is a likely source of contamination. Health effects from cadmium exposure can include kidney damage and bone fractures. Mercury exposure is a very heated topic in current news. Thimerosal, a mercury containing organic compound, is used in vaccines and has been implicated as a possible trigger for autism. Although there have been a few studies aimed at examining the effect of Thimerosal exposure in young children, the correlation between exposure and autism has not been scientifically proven. Mercury exposure by way of amalgam fillings is also a debated topic. Amalgam induced illnesses have also not been scientifically proven. That said, that does not mean a cause and effect does not exist but rather that the mercury may play a small part and an individuals biology. Susceptibility and environment may also come in to play. Although the verdict is still out on mercury exposure, the most likely regarded source of contamination is through consumption of sea foods. Over-exposure to mercury is linked to neurological damage. Lead exposure comes via the air we breath and the food we eat in roughly equal proportions. During the 20th century, lead emissions from petrol have caused extensive environmental contamination. Although lead exposure has decreased dramatically over the past two decades, continuing to phase out remaining uses is encouraged. Lead can have neurotoxic effects, particularly in children. Arsenic exposure comes mainly through the food we eat and the water we drink. Over exposure is linked to skin cancer and skin lesions.

Heavy metal usage has many positive effects on our way of life as well. Fluorescent bulbs have dramatically increased energy efficiency and in a world where renewable sources are limited this transition will continue to have a positive impact for years to come. The standard fluorescent lamp contains approximately 20 milligrams of mercury. The Environmental Protection Agency (EPA) estimates that over 800 million lamps are produced each year to replace 800 million lamps that are disposed. Since 1 gram of mercury is enough to contaminate a 2-acre pond, there is enough mercury in those lamps to contaminate 20-million acres of water. For information on how to properly dispose of fluorescent bulbs in your state visit [EPA's bulb recycling site](#).



Fluorescent bulbs offer several energy advantages but metal contaminates from improper disposal can ruin their good intent.

Sampling for Methamphetamine

DataChem is pleased to announce the introduction of the "How-To" series on our website launching October 1st. This series will feature short instructional videos outlining steps for proper sampling for contaminants. The first video in this series provides step by step instructions for taking a property sample to analyze for methamphetamine contamination. Check back over the next several weeks for "How-To" videos that cover items such as using a SUMMA canister, both with or without a regulator. This video series is located on our website's [Featured Services](#) page.

DataChem's Capabilities are Growing

Our laboratories are skilled at providing an array of analyses. Industrial Hygiene, Environmental, Radiochemistry and Microbiological provide a good summary of our major capabilities but did you know we also analyze for adulterants in dietary supplements? Our project managers and chemists are skilled in the nutraceutical industry. For additional information on our dietary analytical capabilities [click here](#) or contact us at 1-800-356-9135.

Hexavalent Chromium Analysis from Paragon Analytics

All of the sister labs within the DataChem family analyze for Hexavalent Chromium contamination. Additionally, our Ft. Collins facility is specifically equipped to accept samples that may be radioactive. The Ft. Collins laboratory can analyze 200 air samples per week and is capable of providing 24 hour turn around on air and wipe analysis when requested. Ft. Collins is well suited to perform OSHA ID215 on radioactive samples, a method which accurately measures Hexavalent Chromium concentrations well below the OHSA action limit. For additional information on the capabilities of Paragon Analytics visit us at www.paragonlabs.com or contact us at 1-800-443-1511.

Analysis of the Month

Metals Analysis

DataChem is offering a discount on our metals analysis by NIOSH 7300 during the month of October. A panel of 27 elements for \$100, a single element for \$40 with additional elements at \$15 each.

For further details contact us at info@datachem.com

To take advantage of the offer simply refer to the newsletter in your analytical request. Discount is only available at our Salt Lake facility.

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