September 2019,
Issue 96

Army Industrial Hygiene News and Regulatory Summary

Hazardous Substances

OSHA, Health Canada issue joint guidance on GHS pictogram requirements

To support implementation of the Globally Harmonized System of Classification and Labeling of Chemicals, OSHA and Health Canada have released joint guidance on pictogram requirements for three hazard communication categories.

The categories are Hazards Not Otherwise Classified, Physical Hazards Not Otherwise Classified and Health Hazards Not Otherwise Classified. The guidance is part of the 2016-17 Regulatory Cooperation Council's plan for workplace chemicals. Both countries have vowed to reduce and prevent differences in regulations "while respecting the legislative and regulatory requirements of each country."

OSHA's Hazard Communication Standard (1910.1200) does not differentiate between PHNOCs and HHNOCs, and does not require label elements for an HNOC. Health Canada's Hazardous Products

Exclamation Mark

Regulations requires label elements for PHNOCs and HHNOCs.

Read more:
https://www.safetyandhealthmagazine.com/articles/18822-osha-health-canada-issue-joint-guidance-on-ghs-pictogram-requirements

Special Interest Articles:

Contents:

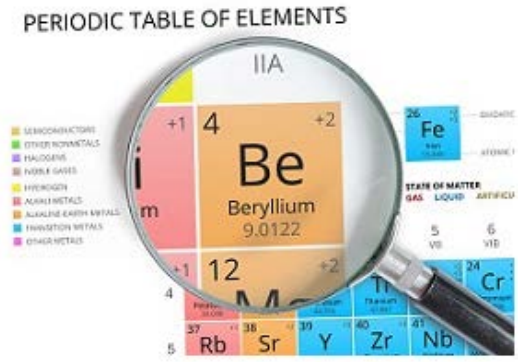
The Measurement of Wood in Construction Dust Samples: A Furnace Based Thermal Gravimetric Approach

A furnace-based thermal gravimetric method was developed to measure wood in inhalable construction dust. The application of this method showed that reliance on the inhalable concentrations alone may substantially overestimate carpenters' exposures to wood dust at construction worksites. Test samples were prepared by collecting aerosols of gypsum, calcite, quartz, concrete, and wood dust onto quartz fibre filters using the Button inhalable sampler. The average difference between the measured and loaded mass of wood is 2% over the whole analytical range. Ninety percent of thermogravimetric measurements on all test samples (n = 35) were 13% or less. The limit of detection was measured as 0.065 mg. The thermal gravimetric method was applied to samples collected from four new build construction sites and one shop fitting worksite. The workplace inhalable wood dust results ranged from 15% to 104% of the total inhalable

dust values. In addition, an x-ray diffraction (XRD) Rietveld method was applied as a complimentary approach to explain the composition of the remaining inhalable dust. Most combined thermal gravimetric and XRD measurements were within 10% of the total inhalable dust mass values, determined gravimetrically. Ninety-five percent were within 26%. The median proportion of mineral dust containing gypsum, calcite, quartz, dolomite, or rutile was 30%. The proportion of mineral dust on individual filters varied considerably.

Read more:
https://academic.oup.com/annweh/advance-article-abstract/doi/10.1093/annweh/wxz072/5573360?redirectedFrom=fulltext

Associations of Metrics of Peak Inhalation Exposure and Skin Exposure Indices with Beryllium Sensitization at a Beryllium Manufacturing Facility



Objectives

Peak beryllium inhalation exposures and exposure to the skin may be relevant for developing beryllium sensitization (BeS). The objective of this study was to identify risk factors associated with BeS to inform the prevention of sensitization, and the development of chronic beryllium disease (CBD).

Methods

In a survey of short-term workers employed at a primary beryllium manufacturing facility between the years 1994–1999, 264 participants completed a questionnaire and were tested for BeS. A range of qualitative and quantitative peak inhalation metrics and skin exposure indices were created using: personal full-shift beryllium exposure measurements, 15 min to 24 h process-specific task and area exposure measurements, glove measurements as indicator of skin exposure, process-upset information gleaned from historical reports, and self-reported information on exposure events. Hierarchical clustering was conducted to systematically group participants based on similarity of patterns of 16 exposure variables. The associations of the exposure metrics with BeS and self-reported skin symptoms (in work areas processing beryllium salts as well as in other work areas) were evaluated using correlation analysis, log-binomial and logistic regression models with splines.

Read more:
https://academic.oup.com/annweh/advance-article-abstract/doi/10.1093/annweh/wxz064/5560149?redirectedFrom=fulltext

NIOSH Investigates Potential Drug Exposures among Evidence Handlers

An employer's concerns about potential worker exposures to illicit drugs in a county evidence room prompted an invitation to NIOSH to investigate the workplace in September 2018, according to a report recently made available on the agency's website. NIOSH personnel conducted interviews with employees at the county state's attorney's office and observed work processes. Workers handled evidence in two locations: a temporary storage area for drug, biological material, or DNA evidence, and a separate area for evidence from older or inactive cases. Drug evidence included marijuana, cocaine, opioids, and other illicit drugs.

Read more: https://aiha.org/news/niosh-investigates-potential-drug-exposures-among-evidence-handlers

Robotic Direct Reading Device with Spatial, Temporal, and PID Sensors for Laboratory VOC Exposure Assessment

This study evaluated a novel robotic direct reading method that used a real-time location system to measure the spatial-concentration distribution of volatile organic compounds (VOCs) in a chemistry laboratory. The CEMWIP II is a custom-made sensor that measures VOCs, temperature, humidity, and location, sending data wirelessly in real time to a remote location for display and storage. In this study, the CEMWIP II device was mounted on a robotic platform to create a CEMWIP II-mobile platform. The autonomous mobile platform was released from a corner of the room and allowed to travel randomly along an open floor with the goal of characterizing the spatial distribution of VOCs and identifying their sources in the laboratory. The experiment consisted of 12 runs made of permutations

of four corner release sites and four beaker locations, with two beakers containing water and two containing the solvent acetone. The autonomous mobile platform was tasked with locating the two beakers of acetone. The sensor had a detection limit of 100 ppb and the confidence of detecting a source within a 1.46 m2 area was p = 0.0005 by ANOVA. The CEMWIP II-mobile platform was able to measure the spatial distribution of VOCs within a laboratory that were associated with open solvent containers.

Read more: Journal of Occupational and Environmental Hygiene, Published online 18 Sep 2019 (Available with AIHA membership)

Physical and Chemical Characterization of Mcintyre Powder: An Aluminum Dust Inhaled By Miners to Combat Silicosis

McIntyre Powder (MP) is a finely ground aluminum powder that was used between 1943 and 1979 as a prophylaxis for silicosis. Silicosis is a chronic lung disease caused by the inhalation of crystalline silica dust and was prevalent in the Canadian mining industry during this time period. The McIntyre Research Foundation developed, patented, and produced the MP and distributed it to licensees in Canada, the United States, Mexico, Chile, Belgian Congo, and Western Australia. In the province of Ontario, Canada it is estimated that at least 27,500 miners between 1943 and 1979 were exposed to MP. The present study was undertaken to examine the chemical and physical characteristics of two variations of MP (light grey and black). Chemical analyses (using X-ray Fluorescence and Inductively Coupled Plasma approaches) indicate that the black MP contains significantly higher concentrations of aluminum and metal impurities than the light grey MP ($p < 0.001$). X-ray diffractometry shows that while aluminum hydroxide dominates the aluminum speciation in both variations, the

McIntyre Powder Project

higher total aluminum content in the black MP is attributable to a greater proportion of elemental aluminum. Physical characterization (using electron microscopy, light microscopy, and dynamic light scattering) indicates that the light grey MP consists of particles ranging from 5 nm to 5 µm in diameter. Atomic Force Microscopy shows that the light grey MP particles in the nanoparticle range (<100 nm) have a mode between 5 and 10 nm. Consequently, it is possible that inhaled smaller MP nanoparticles may be transported via blood and lymph fluid circulation to many different organs including the brain. It is also possible for inhaled larger MP particles to deposit onto lung tissue and for potential health effects to arise from inflammatory responses through immune activation. This

MP characterization will provide crucial data to help inform future toxicological, epidemiological, and biological studies of any long-term effects related to the inhalation of aluminum dust and nanomaterials.

Read more: Journal of Occupational and Environmental Hygiene, Published online 18 Sep 2019 (Available with AIHA membership)

Crane Army Destroys Dangerous Munitions While Protecting Environment

Due to the nature of Crane Army's mission to provide munitions readiness to warfighters, ensuring the proper handling of these dangerous explosives is CAAA's hallmark. This includes demilitarizing, or destroying, out-of-service ammunition.

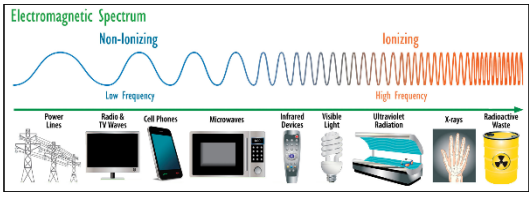
Hayley Smith of Crane Army Ammunition Activity reports a key aspect of Crane Army's demilitarization program is closed systems demil, the environmentally-friendly destruction of unusable munitions. Crane Army is a premier provider of closed systems demilitarization of ammonium picrate for the Department of Defense.

Read more:
http://www.wbiw.com/2019/10/01/crane-army-destroys-dangerous-munitions-while-protecting-environment/

Radiation

Development of a Job-Exposure Matrix for Assessment of Occupational Exposure to High-Frequency Electromagnetic Fields (3 kHz–300 GHz)

Objectives
The aim of this work was to build a job-exposure matrix (JEM) using an international coding system and covering the non-thermal intermediate frequency



(IF) (3–100 kHz, named IFELF), thermal IF (100 kHz–10 MHz, named IFRF), and radiofrequency (RF) (>10 MHz) bands.

Methods
Detailed occupational data were collected in a large population-based case–control study, INTEROCC, with occupations coded into the International Standard Classification of Occupations system 1988 (ISCO88). The subjects' occupational source-based ancillary information was combined with an existing source-exposure matrix and the reference levels of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) for occupational exposure to calculate estimates of level (L) of exposure to electric (E) and magnetic (H) fields by ISCO88 code and frequency band as ICNIRP ratios (IFELF) or squared ratios (IFRF and RF). Estimates of exposure probability (P) were obtained by dividing the number of exposed subjects by the total number of subjects available per job title.

Read more:
https://academic.oup.com/annweh/advance-article-abstract/doi/10.1093/annweh/wxz067/5564762?redirectedFrom=fulltext

Ventilation

Impact of Source Position and Obstructions on Fume Hood Releases

A fume hood is the most central piece of safety equipment available to researchers in a laboratory environment. While it is understood that the face velocity and sash height can drastically influence airflow patterns, few specific recommendations can be given to the researcher to guide them to maximize the safety of their particular hood. This stems from the issue that fundamentally little is known regarding how obstructions within the hood can push potentially harmful particles or chemicals out of the fume hood and into the breathing zone. In this work, we demonstrate how the position of a typical nanoparticle synthesis setup, including a Schlenk line and stir plate on an adjustable stand, influences airflow in a constant velocity fume hood. Using a combination of smoke evolution experiments and the aid of computational fluid dynamics simulations, we show how the location and height of the reaction components impact airflow. This work offers a highly visual display intended especially for new or inexperienced fume hood users. Based upon our studies and

simulations, we provide detailed guidance to researchers and lab technicians on how to optimally modify reaction placement in order to protect the breathing zone while working.

Read more:
https://academic.oup.com/annweh/advance-article/doi/10.1093/annweh/wxz062/5573358?searchresult=1

PPE

OSHA Approves Two Protocols for Respirator Fit Testing

OSHA has issued a final rule that adds two fit testing protocols to the agency's respiratory protection standard (1910.134).

According to a Sept. 25 press release, the additions are:

The modified ambient aerosol condensation nuclei counter quantitative fit testing protocol for full-facepiece and half-mask elastomeric respirators
The modified ambient aerosol CNC quantitative fit testing protocol for filtering facepiece respirators
These new methods are in addition to the standard's four existing protocols and are variations of OSHA's original ambient aerosol CNC protocol, but have fewer test exercises, shorter exercise duration and a more streamlined sampling sequence, the release states.

Read more:
https://www.safetyandhealthmagazine.com/articles/18957-osha-approves-two-protocols-for-respirator-fit-testing

Surgical Masks as Good As Respirators for Flu and Respiratory Virus Protection

Researchers may finally have an answer in the long-running controversy over whether the common surgical mask is as effective as more expensive respirator-type masks in protecting health care workers from flu and other respiratory viruses.

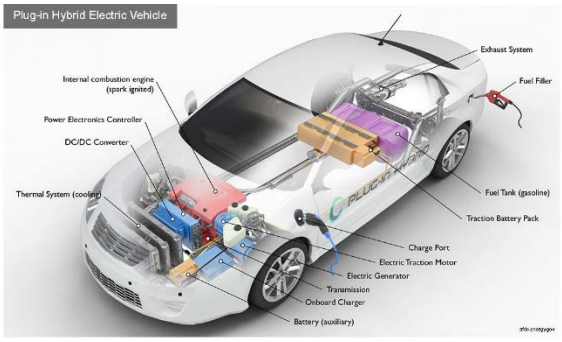
A study published today in JAMA compared the ubiquitous surgical (or medical) mask, which costs about a dime, to a less commonly used respirator called an N95, which costs around $1. The study reported "no significant difference in the effectiveness" of medical masks vs. N95 respirators for prevention of influenza or other viral respiratory illness.

Read more:
https://www.sciencedaily.com/releases/2019/09/190903134732.htm

Noise

Chirps, Beeps, or...Linkin Park? Electric Vehicle Owners Could Soon Select the Noise Their Car Makes

Jonathan Gitlin barely got out of the way when a Volkswagen e-Golf scooted through an intersection in Frankfurt, Germany earlier this month. The journalist and amateur car racer was lucky, but not unique, noting that there were a number of "pedestrians who weren't paying attention (and) had no idea they were walking in front of an electric car," he told NBC News.



Pedestrian crashes, in general, have been on the rise in recent years, and the National Highway Traffic Safety Administration estimates the risk of being hit by a vehicle operating in electric mode is 19 percent higher than with conventional vehicles. That's because electric vehicles operate almost silently and are easy to miss until it's too late.

Read more:
https://www.nbcnews.com/business/autos/chirps-beeps-or-linkin-park-electric-vehicle-owners-could-soon-n1056541

Preventive Medicine

Hand Sanitizer Shown Less Effective than Hand Washing Against Flu

A new study from Japanese researchers challenges the idea that ethanol-based disinfectants are effective at completely destroying influenza A viruses quickly in all situations. The study was published yesterday in mSphere.

In a series of tests, the researchers from the Kyoto Profectural University of Medicine found that ethanol-based disinfectants, or hand sanitizers, would have be in contact for at least 4 minutes with the influenza A virus before killing it, a much longer duration than typical use. After 2 minutes of use, the virus was still active.

Read more:
http://www.cidrap.umn.edu/news-perspective/2019/09/hand-sanitizer-shown-less-effective-hand-washing-against-flu

Vitamin E Chemical Is 'Key Focus' in Vaping Illness Investigation, Health Officials Say

An investigation into the link between vaping and severe lung illnesses has yielded the discovery of extremely high levels of the chemical vitamin E acetate in nearly all cannabis-containing vaping products that were analyzed, New York health officials said Thursday.

At least one vape product containing this chemical has been linked to each person who fell ill and submitted a product for testing in the state.

Read more:
https://www.cnn.com/2019/09/05/health/

vaping-chemical-new-york-investigation-bn/index.html

Your Energy-Efficient Washing Machine Could Be Harboring Pathogens

For the first time ever, investigators have identified a washing machine as a reservoir of multidrug-resistant pathogens. The pathogens, a single clone of Klebsiella oxytoca, were transmitted repeatedly to newborns in a neonatal intensive care unit at a German children's hospital. The transmission was stopped only when the washing machine was removed from the hospital. The research is published this week in Applied and Environmental Microbiology, a journal of the American Society for Microbiology.

Read more:
https://www.sciencedaily.com/releases/2019/09/190927135202.htm

Metabolites May Predict Lung Injury in 9/11 First Responders

Metabolic signatures may be able to help doctors determine who is most likely to be protected from lung injury after exposure to toxic particles like those that filled the air and lungs of first responders on September 11, 2001, scientists report in a study published today (September 3) in Scientific Reports. The researchers identified 30 metabolites that seem to be associated with protection from lung disease after hazardous exposures and many of them may be related to a person's diet.

Many people's lungs are exposed to hazardous air based on their occupations or where they live, but it's difficult to study environmental hazards "unless you have a clearly defined exposure," says Ross Summer, a pulmonologist at the Sidney Kimmel Medical College. The firefighters who responded to the disaster site on 9/11

provide that clearly defined sample of individuals who were all exposed to similar toxins for similar amounts of time. "This may provide insight to all of us that are exposed to pollutants. . . .That's the major strength of looking at [first responders from 9/11]."

Read more: https://www.the-scientist.com/news-opinion/metabolites-may-predict-lung-injury-in-9-11-first-responders-66384

CDC Warns Deer Infected with Tuberculosis Can Pass Disease to Hunters

The agency published a report last week that looks at a 2017 case from Michigan in which a 77-year-old man was diagnosed with pulmonary tuberculosis caused by mycobacterium bovis.

The man had no known exposure to a person with tuberculosis and did not drink unpasteurized milk, but he did hunt and field-dress deer for 20 years, according to the CDC. Field-dressing is removing the organs of an animal after they've been killed.

Read more: https://www.msn.com/en-us/news/world/cdc-warns-deer-infected-with-tuberculosis-can-pass-disease-to-hunters/ar-AAI1tzs

Uterine Vaccination Could Enhance Worker Safety

Researchers with VIDO-InterVac are exploring the effectiveness of administering vaccine directly into the uterus of the pig during artificial insemination.

Speaking to Farmscape, Dr Heather Wilson, a research scientist with the Vaccine and Infectious Disease Organization at the University of Saskatchewan, says, because

most of the important swine diseases impact reproduction or newborn piglets, the idea was to develop a vaccine to target the uterus to immunise the mother, who could then deliver passive immunity to her babies through her colostrum.

Read more: https://thepigsite.com/news/2019/09/uterine-vaccination-could-enhance-worker-safety

Environmental Health

Researchers Develop a Gel-Like Fluid to Prevent Wildfires

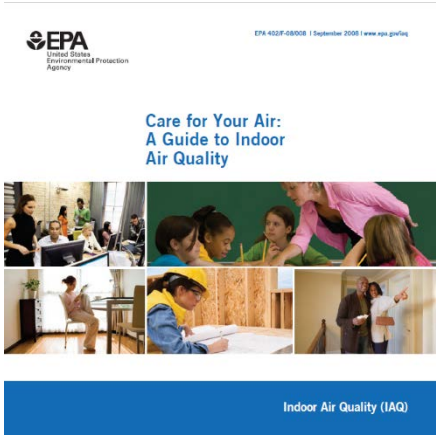
A preventive treatment developed by Stanford researchers could greatly reduce the incidence and severity of wildfires. The approach, outlined Sept. 30 in Proceedings of the National Academy of Sciences, involves an environmentally benign gel-like fluid that helps common wildland fire retardants last longer on vegetation.

Applied to ignition-prone areas, these materials retain their ability to prevent fires throughout the peak fire season, even after weathering that would sweep away conventional fire retardants. By stopping fires from starting, such treatments can be more effective and less expensive than current firefighting methods.

Read more: https://phys.org/news/2019-09-gel-like-fluid-wildfires.html

The Use of Bluetooth Low Energy Beacon Systems to Estimate Indirect Personal Exposure to Household Air Pollution

Household air pollution (HAP) generated from solid fuel combustion is a major health risk. Direct measurement of exposure to HAP is burdensome and challenging, particularly for children. In a pilot study of the Household Air Pollution Intervention Network (HAPIN) trial in rural Guatemala, we evaluated an indirect exposure assessment method that employs fixed continuous PM2.5 monitors, Bluetooth signal receivers in multiple



microenvironments (kitchen, sleeping area and outdoor patio), and a wearable signal emitter to track an individual's time within those microenvironments. Over a four-month period, we measured microenvironmental locations and reconstructed indirect PM2.5 exposures for women and children during two 24-h periods before and two periods after a liquefied petroleum gas (LPG) stove and fuel intervention delivered to 20 households cooking with woodstoves. Women wore personal PM2.5 monitors to compare direct with indirect exposure measurements. Indirect exposure measurements had high correlation with direct measurements (n = 62, Spearman ρ = 0.83, PM2.5 concentration range: 5–528 μg/m3). Indirect exposure had better agreement with direct exposure measurements (bias: −17 μg/m3) than did kitchen area measurements (bias: −89 μg/m3). Our findings demonstrate that indirect exposure reconstruction is a feasible approach to estimate personal exposure when direct assessment is not possible.

Read more:
https://www.nature.com/articles/s41370-019-0172-z

Studies Link Air Pollution to Mental Health Issues In Children

Three new studies by scientists at Cincinnati Children's Hospital Medical Center, in collaboration with researchers at the University of Cincinnati, highlight the relationship between air pollution and mental health in children.

A study to be published Sept. 25 in Environmental Health Perspectives found that short-term exposure to ambient air pollution was associated with exacerbations of psychiatric disorders in children one to two days later, as marked by increased utilization of the Cincinnati Children's emergency department for psychiatric issues. The study also found that children living in disadvantaged neighborhoods may be more susceptible to the effects of air pollution compared to other children, especially for disorders related to anxiety and suicidality

Read more:
https://www.sciencedaily.com/releases/2019/09/190925075731.htm

Microplastics in Fresh Water Are Mostly Laundry Lint

Plastic waste breaks down into ever smaller pieces, becoming tiny enough to waft in the air and flow in the water. A study published in June found that a person, on average, inhales or swallows at least 74,000 microscopic particles of plastic each year. And there are multitudes of miniscule plastic beads and fibers in the environment.

So what's the most common type of microplastic? Recent research finds that, in freshwater at least, it's tiny pieces of artificial fibers—from laundry lint.

Read more:
https://www.scientificamerican.com/podcast/episode/microplastics-in-fresh-water-are-mostly-laundry-lint/

Microplastics on the beach. Image credit: NOAA.

Emissions from Cannabis Growing Facilities May Impact Indoor and Regional Air Quality

The same chemicals responsible for the pungent smell of a cannabis plant may also contribute to air pollution on a much larger scale, according to new research from the Desert Research Institute (DRI) and the Washoe County Health District (WCHD) in Reno, Nev.

In a new pilot study, DRI scientists visited four cannabis growing facilities in Nevada and California to learn about the chemicals that are emitted during the cultivation and processing of cannabis plants, and to evaluate the potential for larger-scale impacts to urban air quality.

Read more: https://phys.org/news/2019-09-emissions-cannabis-facilities-impact-indoor.html

Ergonomics

Preventing Hand-Wrist Musculoskeletal Disorders

According to the Bureau of Labor Statistics, nearly 350,000 cases of work-related musculoskeletal disorders (MSDs) were reported in the U.S. in 2016. These ailments can affect the back, hands, wrist, leg, shoulders and other body parts that can become strained over the course of the workday.

One particular MSD that afflicts millions of Americans is carpal tunnel syndrome (CTS), which is caused by frequent, forceful hand exertions. Along with the multi-billion dollar annual medical care costs associated with

CTS, it also has the second highest rate of opioid prescribing by injury type among workers treated under workers' compensation.

Read more: https://www.assp.org/news-and-articles/2019/09/11/preventing-hand-wrist-musculoskeletal-disorders

Safety

Tractor Overturn Prediction Using a Bouncing Ball Model Could Save the Lives of Farmers

In 2016, 417 farmers and farm workers died from a work-related injury in the United States, and 312 in Japan, according to the Centers for Disease Control and Prevention's 2018 agricultural safety report. Overturning tractors are the leading cause of death for farmers around the world.

In order to reduce the rate of overturned tractors, researchers in Japan have developed a model for understanding the conditions that lead to a tractor overturning. They based their model on an unlikely source: A model used to understand the unpredictability of a bouncing ball.

Read more:
https://techxplore.com/news/2019-09-tractor-overturn-ball-farmers.html

Wheeled Trash Bins Lower Sanitation Workers' MSD-Related Absences: Study

Use of wheeled waste collection bins – instead of boxes, baskets or bags – may reduce musculoskeletal injuries and lost worktime among sanitation workers, according to a recent study out of the United Kingdom.

Researchers from the University of Greenwich analyzed solid waste worker absence data from 15 local authorities in the United Kingdom, using software to calculate absence rates in relation to occupational characteristics. They found that workers who worked in municipalities that used wheeled bins experienced a lower rate of absences attributed to MSDs. Further, when two workers used larger four-wheeled bins, even fewer absences were reported.

Read more:
https://www.safetyandhealthmagazine.com/articles/18967-wheeled-trash-bins-lower-sanitation-workers-msd-related-absences-study

Refuse and recyclable material collectors lift heavy garbage containers.

The Navy Is Finally Replacing Seahawk Gunner Seats That Cause Back Injuries

A seat so jarring and uncomfortable that fixing it was the Navy's No. 2 priority for all of aviation is finally going to become a thing of the past.

The Navy's Aircrew Systems Program Office installed the first two newly redesigned gunner seats for the MH-60S Seahawk this week in San Diego.

The Seahawk's current gunner seat was designed to improve survivability, but it actually caused chronic back injuries and led to medical groundings due to its uncomfortable design, according to past statements from Navy officials.

The first prototype for an improved seat was created three years ago, in September 2016. According to a news release from Naval Air Systems Command, rapid funding authorities were used to accelerate fielding.

Read more:
https://www.military.com/daily-news/2019/09/26/navy-finally-replacing-seahawk-gunner-seats-cause-back-injuries.html

Biology of Bat Wings May Hold Lessons for Cold-Weather Work, Exercise

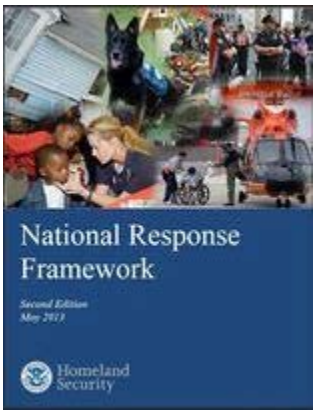
A new study finds that the muscles in bats' wings operate at a significantly lower temperature than their bodies, especially during flight.

Past research suggests that in most other creatures, including humans, muscles involved in exercise become warmer in response to movement. But the small muscles of a bat's wing are uniquely vulnerable to heat loss during flight, as they're covered by only a thin layer of skin—and warming them up would be inefficient from the standpoint of energy use.

Read more: https://phys.org/news/2019-09-biology-wings-lessons-cold-weather.html

Emergency Preparedness

HHS Lacked Adequate Staffing in 2017 Hurricane Responses, Watchdog Finds



During the 2017 record-breaking hurricane season, the Health and Human Services Department lacked in sufficient staff and failed to track patient evaluations and coordinate with partner agencies. These issues could negatively affect future large-scale disaster recoveries if not dealt with, according to a watchdog.

"While the scale, location, and timing of these storms complicated response efforts, the deficiencies [the Government Accountability Office] identified were in many cases a function of preparedness policies, or lack thereof," the report released on Friday stated. approximately 35 attacks.

Read more:
https://www.govexec.com/oversight/2019/09/hhs-lacked-adequate-staffing-2017-hurricane-responses-watchdog-finds/160077/

Deployment Health

Army Tests Airdrops of US-Produced Freeze-Dried Plasma near Battlefields

The Army is testing airdrops of freeze-dried plasma as a way of getting it closer to the battlefield to help improve the survival rate for wounded soldiers, it said in a statement released this week.

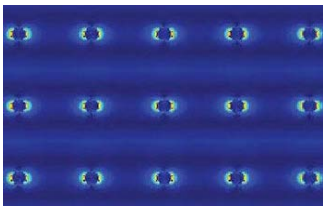
Soldiers from the Fort Bragg, N.C.-based 432nd Blood Support Detachment jumped out of a CH-47 Chinook with rehydrated, freeze-dried plasma packed in their ruck sacks, said the statement released Monday.

This delivery method, which was deemed infeasible with other blood products, could help reduce loss of life on the battlefield, where around 40% of combat deaths are caused by hemorrhaging, said the statement, citing the service's Medical Research and Materiel Command out of Fort Detrick, Md.

Read more:
https://www.military.com/daily-news/2019/09/30/army-tests-airdrops-us-produced-freeze-dried-plasma-near-battlefields.html

Nanotechnology

Tiny, Biocompatible Nanolaser Could Function Inside Living Tissues



Researchers have developed a tiny nanolaser that can function inside living tissues without harming them. Just 50 to 150 nanometers thick, the laser is about 1/1,000th the thickness of a single human hair. At this size, the laser can fit and function inside living tissues, with the potential to sense disease biomarkers or perhaps treat deep-brain neurological disorders, such as epilepsy.

Developed by NSF-funded researchers at Northwestern and Columbia Universities, the nanolaser shows promise for imaging in living tissues. Not only is the laser made mostly of glass, which is intrinsically biocompatible, but it can also be excited with longer wavelengths of light and emit at shorter wavelengths.

Read more:
https://nsf.gov/discoveries/disc_summ.jsp?cntn_id=299312&org=NSF&from=news

Regulatory Research & Industrial Hygiene Professional News

ASHRAE

What is ASHRAE 55? Basics of Thermal Comfort

With the onsurge of climate change and global push to become more energy efficient in all aspects of life including building ventilation, thermal comfort has become a hotly (pun intended) debated issue in recent years. The purpose of the

American Society of Heating, Refrigerating, and Air conditioning Engineers (ASHRAE) standard 55 is to specify the various combinations of indoor thermal environmental factors as well as personal factors that will produce thermal environmental conditions acceptable to a majority of the occupants within a space.

Read more:
https://medium.com/@SimScale/what-is-ashrae-55-basics-of-thermal-comfort-37814fc502f

AIHA

AIHA Survey Shows Members Average Salary of Over $110K

Industrial hygienists and occupational health professionals are making an average annual salary of $110,807, the American Industrial Hygiene Association (AIHA) found in a survey of its members. The average salary for new, uncertified safety professionals right out of college or university is $59,714, AIHA reported.

Read more:
https://ehsdailyadvisor.blr.com/2019/09/aiha-survey-shows-members-average-salary-of-over-110k/

OSHA

Trump Administration Reverses Course on Worker Safety Rule Involving Beryllium

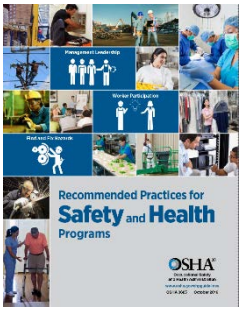
The Trump administration has scrapped plans to roll back safety rules protecting construction and shipyard workers from exposure to beryllium, a toxic, carcinogenic element found in abrasive powders often

used to remove rust and paint from ship hulls.

In a bulletin issued Friday, the U.S. Department of Labor's Occupational Safety and Health Administration said it will leave the protections in place for the construction and shipyard industries. The administration said it will develop a proposal to tailor the rule's requirements "more appropriately" for the two industries.

Read more:
https://news.yahoo.com/trump-administration-reverses-course-worker-205207520.html

OSHA Officials Discuss the Agency's Current Activities during Tech Session



Increases of various workplace hazards have spurred OSHA to update several National Emphasis Programs in recent years, the latest being its trenching and excavation program in October 2018. Several other NEPs will be updated and rereleased, said Patrick Kapust, deputy director of OSHA's Directorate of Enforcement Programs, during Wednesday's "OSHA Current Activities Update" Technical Session at the National Safety Council 2019 Congress & Expo.

Read more:
https://www.safetyandhealthmagazine.com/articles/18876-osha-officials-discuss-the-agencys-current-activities-during-tech-session

EPA

EPA Aims to Drastically Reduce Animal Testing

The Environmental Protection Agency announced that it will stop conducting or funding studies that involve testing on mammals by 2035. EPA administrator Andrew Wheeler says in a news release that the agency aims to reduce the money that goes to such experiments by 30 percent by 2025 and eliminate testing on mammals altogether by 2035. After that, any research

using mammals requested or funded by the EPA will need administrator approval.

Read more: https://www.the-scientist.com/news-opinion/epa-aims-to-drastically-reduce-animal-testing-66420

EPA Releases Significant New Use Final Rules For 145 Chemicals

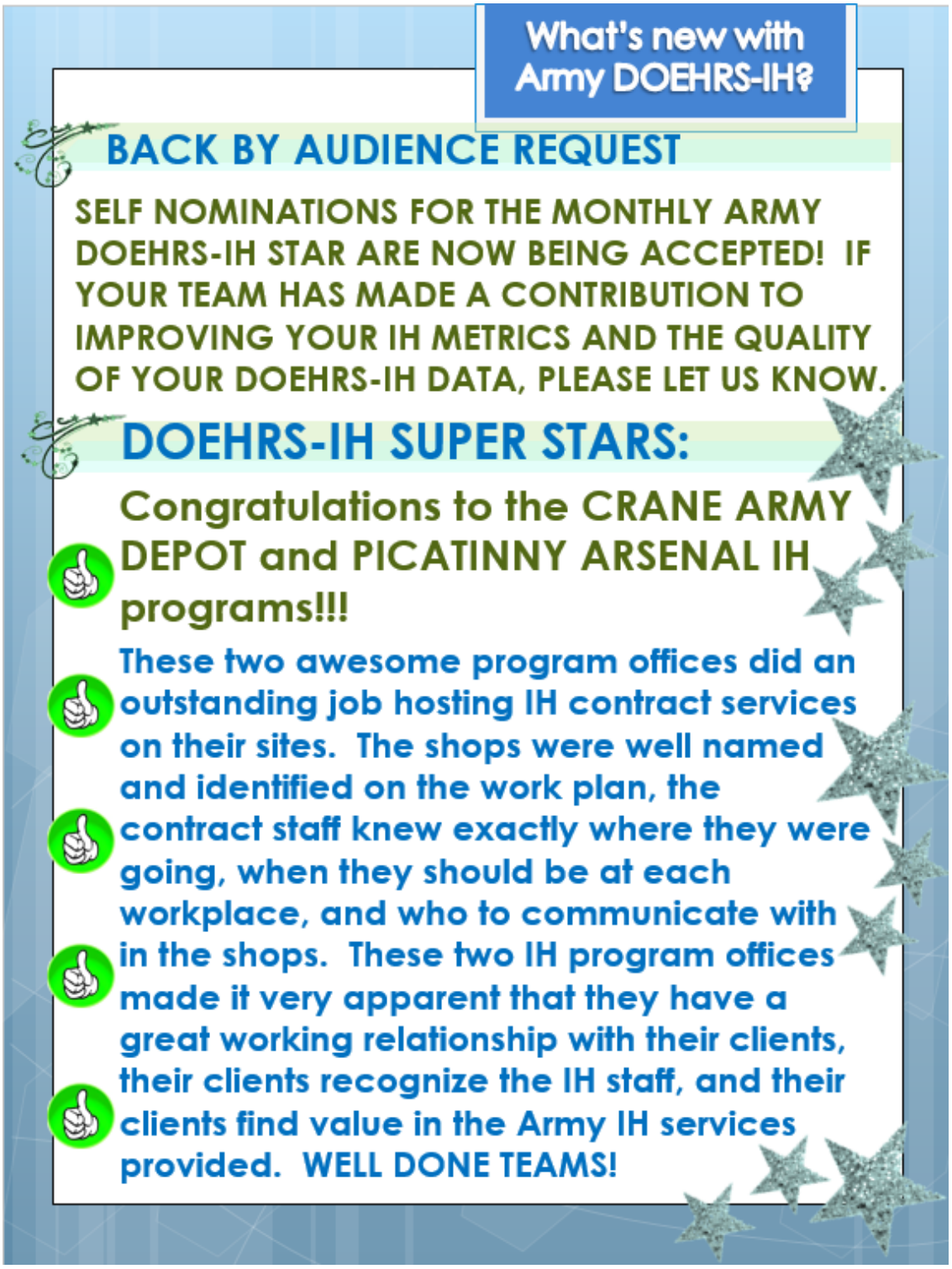
The Environmental Protection Agency, in accordance with the Frank R. Lautenberg Chemical Safety for the 21st Century Act, has issued final significant new use rules for 145 chemical substances that were subject to agency premanufacture notices.

Read more: https://www.safetyandhealthmagazine.com/articles/18819-epa-releases-significant-new-use-final-rules-for-145-chemicals

APHC

September DOEHRS-IH Super Stars

This month's DOEHRS-IH Super Stars award goes to Crane Army Ammunition Activity and Picatinny Arsenal IH Program Offices. Congratulations to these two installations for doing what it takes to improve their metrics and the quality of their DOEHRS-IH data.


What's new with Army DOEHRS-IH?
BACK BY AUDIENCE REQUEST
SELF NOMINATIONS FOR THE MONTHLY ARMY DOEHRS-IH STAR ARE NOW BEING ACCEPTED! IF YOUR TEAM HAS MADE A CONTRIBUTION TO IMPROVING YOUR IH METRICS AND THE QUALITY OF YOUR DOEHRS-IH DATA, PLEASE LET US KNOW.
DOEHRS-IH SUPER STARS:
Congratulations to the CRANE ARMY DEPOT and PICATINNY ARSENAL IH programs!!!
These two awesome program offices did an outstanding job hosting IH contract services on their sites. The shops were well named and identified on the work plan, the contract staff knew exactly where they were going, when they should be at each workplace, and who to communicate with in the shops. These two IH program offices made it very apparent that they have a great working relationship with their clients, their clients recognize the IH staff, and their clients find value in the Army IH services provided. WELL DONE TEAMS!

Training

New Online material (self-enroll/self-development)

2020 INTRODUCTION TO INDUSTRIAL HYGIENE 40HR COURSE

This course has a new look, shorter lessons, only 25 actual hours of lecture, and will include an interactive project that enforces enhanced stakeholder integration.

How IH Practices	What IH Controls	How IH Controls
• Army Business Practice • Standards & Regulations • Army IH Survey • Air Sampling Math • Work Environments • Analytical Chemistry • Data Management & Integrity • Toxicology • Biostatistics/Epidemiology	• Air Sampling • Biohazards • Noise/Hearing Loss • Indoor/Outdoor Air Quality • Radiation • Thermal Stress • Ergonomics	• Hierarchy of Controls • Non Engineering Controls • Engineering Controls/Ventilation • Hazard Communication • IH Acquisitions/Contract Management

SELF-ENROLL NOW ON BLACKBOARD

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil

ENROLLMENT IS OPEN NOW!

2020 ARMY DOEHRS-IH INITIAL COURSE (PHASE 1 ONLINE)

This course adds five new interactive lessons and allows for more space/time in the classroom Phase 2 environment for hands on activities.

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil
Students must request access pass code paula.c.steven.civ@mail.mil

AVAILABLE NOW ON THE APHC BLACKBOARD

2020 Training Schedule (traditional classroom events)

December 9-13, 2019 Army DOEHRS-IH Initial Course (1st Quarter)

February 17-21, 2020 Army DOEHRS-IH Initial Course (2nd Quarter)

April 20-24, 2020 Blueprint Reading & Design Review

April 27-May 1, 2020 Industrial Ventilation Course

May 4-8, 2020 Healthcare & Laboratory Ventilation Course

May 11-15, 2020 Army IH Professional Practice Course

May 18-22, 2020 Army DOEHRS-IH Initial Course (3rd Quarter)

August 17-21, 2020 Army DOEHRS-IH Initial Course (4th Quarter)

RESERVE SEATING QUOTAS NOW

Registration/Sign-up Rosters at
https://aiph-dohs.ellc.learn.army.mil

LOOKING FOR EXTRA CREDITS/POINTS?

FREE ITRC ONLINE TRAINING CLASSES
Sponsored by EPA http://www.itrcweb.org/training

FREE UNIV ALBANY ONLINE TRAINING CLASSES
Sponsored by Center for Public Health Continuing Education
https://www.albany.edu/sph/cphce/images/phl_topics_19-20.png

NIOSH Respiratory Protection Webinar Recordings
https://www.cdc.gov/niosh/npptl/Respiratory-Protection-Week-2019.html

COMING SOON! "Occupational Exposure Limits (30min)"

Certificate with 2 easy steps:
1-Completely view 30 minute lecture.
2-Answer the 7 embedded knowledge check questions with 70% minimum score.

ELO1: Describe **What They Are**
ELO2: Explain **Why We Use Them**
ELO3: Explain **How We Use Them**
ELO4: Give Examples of **When We Use Them**

COMING SOON TO APHC BLACKBOARD

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil

PREPARE FOR DECEMBER COURSE MAINTENANCE CYCLE

https://aiph-dohs.ellc.learn.army.mil

1. Complete courses that you are enrolled in prior to NOV 12 for your data to be included in the PHC report to Career Program 12.
2. If you've not participated in a course for more than 6 months, expect the system to delete you from that course in December.
3. If you'd like to re-take a course, you may re-enroll at the end of December.

COMING SOON!

2020 HAZWOPER REFRESHER 8HR

This course will be A-La-Carte. Users will select 8hrs of lecture from over a hundred hours of available related content. Users must upload a valid certificate to participate. This course will be available January 1, 2020 and must be completed before December 31, 2020.

COMING SOON TO APHC BLACKBOARD

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil

LOOKING FOR EXTRA CREDITS/POINTS?

FREE ITRC ONLINE TRAINING CLASSES

October 8

Part 1: Understanding LNAPL Behavior in the Subsurface

October 15

Part 2: LNAPL Conceptual Site Models and the LNAPL Decision Process

October 22

Part 3: Using LNAPL Science, the LCSM, and LNAPL Goals to Select an LNAPL Remedial Technology

All class times 1:00 p.m. - 3:15 p.m. ET Register for training https://clu-in.org/conf/itrc/LNAPL-3/ and view associated guidance https://lnapl-3.itrcweb.org/

LOOKING FOR EXTRA CREDITS/POINTS?

FREE ITRC ONLINE TRAINING CLASSES

October 10

Bioavailability of Contaminants in Soil: Considerations for Human Health Risk Assessment
1:00 p.m. - 3:15 p.m. EASTERN TIME
Register for training https://clu-in.org/conf/itrc/BCS/ and view associated guidance https://bcs-1.itrcweb.org/

LOOKING FOR EXTRA CREDITS/POINTS?

FREE ITRC ONLINE TRAINING CLASSES

October 24

Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management
1:00 p.m. - 3:15 p.m. EASTERN TIME
Register for training https://clu-in.org/conf/itrc/PVI/ and view associated guidance https://www.itrcweb.org/PetroleumVI-Guidance/

LOOKING FOR EXTRA CREDITS/POINTS?

UPCOMING FREE ITRC ONLINE TRAINING CLASSES *(Course registration opens at **www.itrcweb.org** four to six weeks prior to the course offering)*

November 5 (Tuesday)
1pm - 3:15pm EASTERN Geospatial Analysis for Optimization at Environmental Sites

November 14 (Thursday)
1pm - 3:15pm EASTERN Remediation Management of Complex Sites

November 19 (Tuesday)
1pm - 3:15pm EASTERN Characterization and Remediation in Fractured Rock

November 21 (Thursday)
1pm - 3:15pm EASTERN Long-term Contaminant Management Using Institutional Controls

December 3 (Tuesday)
1pm - 3:15pm EASTERN TPH Risk Evaluation at Petroleum-Contaminated Sites

December 5 (Thursday)
1pm - 2:00pm EASTERN ITRC Panel Event: Stormwater Best Management Practices Performance Evaluation

COMPETENCY VERIFICATION SELF ASSESSMENTS

- Curious about how you stand professionally?
- Not sure what specifics to target with self development?
- Looking for free exam prep questions?

No lessons, lectures, certificates, just sets of short quizzes to help bridge the gaps.

SELF-ENROLL NOW ON BLACKBOARD

Registration/Sign-up Rosters at https://aiph-dohs.ellc.learn.army.mil

Analytical Chemistry
Basic Science & Math
Biohazards
Health Hazards
Indoor/Outdoor Air
Noise
Sampling
Survey Equipment
Thermal Stressors
Toxicology
Industrial Work Environments

This monthly summary is published by the Industrial Hygiene Program Management Division for the Army Public Health Center.

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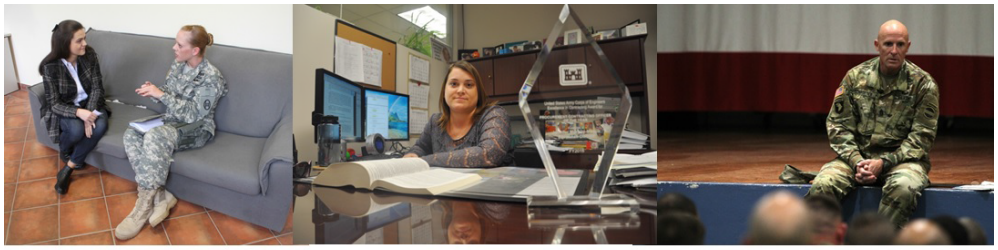
http://phc.amedd.army.mil/topics/workplacehealth/ih/Pages/default.aspx



Professional Development and Career Programs

For Army Industrial Hygienists and Industrial Hygiene Technicians, Professional Development is through the Army Safety and Occupational Health (SOH) Career Program, known as Career Program 12 (CP-12).

Career Programs were established to ensure there is an adequate base of qualified and trained professional, technical, and administrative personnel to meet the Army`s current and future needs.

Planned training and development are essential elements to building a successful career.