

Army Industrial Hygiene News and Regulatory Summary

February 2016,
Issue 54

Hazardous Substances

Lawyers See Limited Legal Options for Workers Sent In Zika's Way

Employees of U.S. companies seeking to avoid exposure to the Zika virus likely have few legal avenues to either refuse travel to affected areas or sue if they actually become sick from the virus. But it may be a different story if such workers subsequently give birth to Zika-infected babies.

Since Zika was detected in Brazil last year, the mosquito-borne virus has spread to 33 countries, most of them in the Americas. The World Health Organization declared an international health emergency because of strong suspicions that infections in pregnant women may cause microcephaly, a condition in which infants are born with abnormally small heads and can suffer developmental problems.



Read more:

http://in.reuters.com/article/us-health-zika-lawyers-idINKCNOVH0Z3?feedType=RSS&feedName=health&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+reuters%2FINhealth+%28News+%2F+IN+%2F+Health%29

Special Interest Articles:

- [Coffee Roasting](#)
- [Dried Plums Protect](#)
- [Superbug](#)
- [Allergy to Vibration](#)
- [Pesticides Rule](#)

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Contents:



[Hazardous
Substance..... 1](#)
[Radiation.....6](#)
[Ventilation.....8](#)
[PPE.....9](#)
[Noise.....10](#)
[Preventive
Medicine.....12](#)
[Environmental
Health.....16](#)
[Ergonomics.....18](#)
[Safety.....19](#)
[Emergency
Preparedness
& Response.....23](#)
[Deployment
Health.....25](#)
[Nanotech.....26](#)
[Regulatory
Research
& IH News.27](#)
[Training.....30](#)

Using Data from Well-Studied Substances, Map Can Predict Hazards Stemming from Those for Which No Safety Data Exists

SDS
Safety Data Sheet
per 29 CFR 1910.120

Researchers from the Johns Hopkins Bloomberg School of Public Health have created a map of the world's chemical landscape, a catalogue of 10,000 chemicals for which there is available safety data that they say can predict the toxicity of many of the 90,000 or more other substances in consumer products for which there is no such information.

The map, described online Feb. 12 in the journal *Alternatives to Animal Experiments* and being presented at the American Association for the Advancement

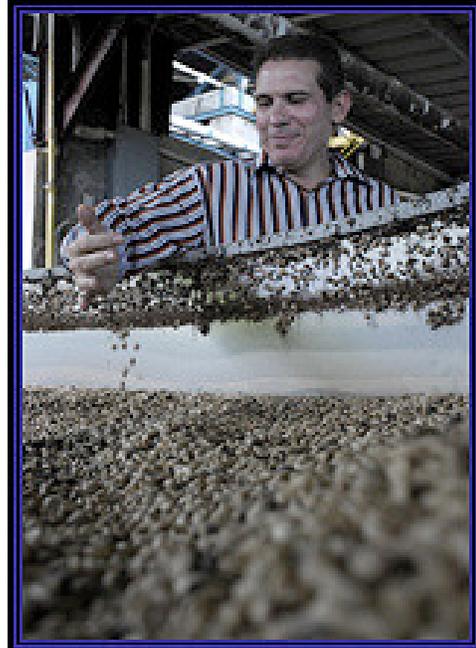
of Science conference the same day in Washington, D.C., was designed to help regulators, manufacturers and scientists get a good idea about whether chemicals for which there is little research are harmful or not. The research was done by creating a searchable database of the 816,000 research studies conducted on 10,000 chemicals registered in Europe, which includes information about whether they pose a hazard to humans and what type.

Read more:

<http://www.jhsph.edu/news/news-releases/2016/public-health-researchers-map-worlds-chemical-landscape.html>

CDC Pushes For Safety in Coffee Roasting Facilities

In preparation of releasing results from its first-ever testing of dangerous fumes from roasting unflavored coffee, the U.S. Centers for Disease Control and Prevention is highlighting ways coffee companies and workers can protect themselves from potentially deadly lung disease. The agency's newly designed web page warns coffee roasters that merely opening a hopper or bin of stored beans — including those that are unflavored — can expose workers to a blast of chemical compounds at levels far higher than those known to permanently destroy the lungs. The information is aimed at corner cafes that do small-batch roasting as well as larger processing facilities that roast tens of thousands of pounds of coffee a day. The chemicals, diacetyl and 2,3-pentanedione, are formed naturally in the roasting process and released in greater concentrations through grinding. The compounds — lauded for their buttery flavor — also are made synthetically and have been added to microwave popcorn, baked goods, candies and other products over the years to enhance the taste. The



added flavoring was tied to hundreds of injuries and at least a handful of deaths in food workers over the last 15 years.

Read more:

<http://www.jsonline.com/watchdog/cdc-pushes-for-safety-in-coffee-roasting-facilities-b99662179z1-367252871.html>

Variable Effectiveness: Assessing Methods to Adjust for Covariates in Biomonitoring

Human biomonitoring involves measuring chemical substances, or biomarkers, in people's blood serum or urine to estimate their exposures.¹ Investigators typically use statistical adjustments to account for variations in urine dilution or serum lipid levels, because failure to adjust for these

factors could result in biased estimates and loss of statistical power.² In this issue of *EHP*, researchers use simulated data to assess how well various standardization techniques, including their own novel approaches, estimate associations between health outcomes and environmental



chemicals measured in urine and blood serum.²

Better methods for standardizing biomarker measures “should improve our ability to estimate human health risks associated with environmental exposures,” says senior study author Clarice Weinberg, a biostatistician and epidemiologist at the National Institute of Environmental Health Sciences (NIEHS).

Read more: <http://ehp.niehs.nih.gov/124-A37/>

Effects of Laser Printer–Emitted Engineered Nanoparticles on Cytotoxicity, Chemokine Expression, Reactive Oxygen Species, DNA Methylation, and DNA Damage: A Comprehensive *in Vitro* Analysis in Human Small Airway Epithelial Cells, Macrophages, and Lymphoblasts

Background: Engineered nanomaterials (ENMs) incorporated into toner formulations of printing equipment become airborne during consumer use. Although information on the complex physicochemical and toxicological properties of both toner powders and printer-emitted particles (PEPs) continues to grow, most toxicological studies have not used the actual PEPs but rather have primarily used raw toner powders, which are not representative of current exposures experienced at the consumer level during printing.

Objectives: We assessed the biological responses of a panel of human cell lines to PEPs.

Methods: Three physiologically relevant cell lines—small airway epithelial cells (SAECs), macrophages (THP-1 cells), and



lymphoblasts (TK6 cells)—were exposed to PEPs at a wide range of doses (0.5–100 $\mu\text{g}/\text{mL}$) corresponding to human inhalation exposure durations at the consumer level of 8 hr or more. Following treatment,

Army Industrial Hygiene News and Regulatory Summary

toxicological parameters reflecting distinct mechanisms were evaluated.

Results: PEPs caused significant membrane integrity damage, an increase in reactive oxygen species (ROS) production, and an increase in pro-inflammatory cytokine release in different cell lines at doses equivalent to exposure durations from 7.8 to 1,500 hr. Furthermore, there were differences in methylation patterns that, although not statistically significant, demonstrate the potential effects of PEPs

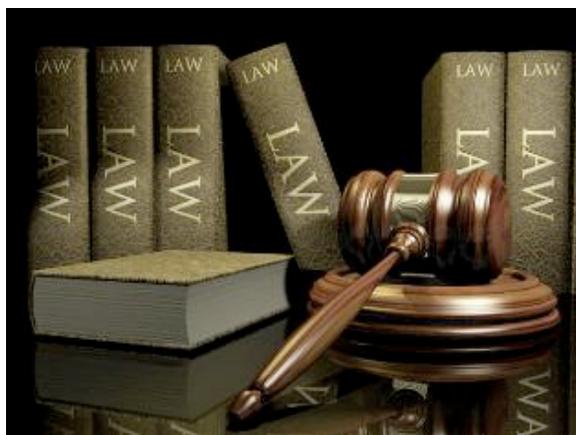
on the overall epigenome following exposure.

Conclusions: The *in vitro* findings obtained in this study suggest that laser printer-emitted engineered nanoparticles may be deleterious to lung cells and provide preliminary evidence of epigenetic modifications that might translate to pulmonary disorders.

Read more:

<http://ehp.niehs.nih.gov/1409582/>

America Is on the Cusp of the Biggest Fight against Toxic Chemicals in Decades



2016 marks the 40th anniversary of the Toxic Substances Control Act. But there is little to celebrate. Signed into law by President Gerald Ford in 1976, the TSCA has been sharply criticized for failing at what it was meant to do: protect public health and the environment from the tens of thousands of chemicals that saturate the

marketplace, and the hundreds of new ones that are introduced every year.

Adding to the concern is the fact that the law hasn't been significantly updated since it was enacted, during which time some 22,000 new chemicals have entered American commerce, with around 700 new ones rolled out each year. Many of these chemicals — most of which did not previously exist in nature — have been widely dispersed throughout the environment, into the air, soil and water where some will persist for decades, or even centuries.

Read more:

http://www.salon.com/2016/02/19/battle_lines_are_drawn_in_one_of_the_biggest_fights_against_toxic_chemicals_in_decades_partner/

What Will Be the Health Impact of 100+ Days of Exposure to California's Methane Leak?

One big unknown clouds the aftermath of the Los Angeles County methane disaster: the health effects for thousands of people living nearby who were exposed to the gas while it leaked for three and a half months. People from 600 households near the leak at the Aliso Canyon gas storage unit reported headaches, nosebleeds, nausea and other symptoms to county officials as thousands were evacuated from their homes. It isn't known which, if any, toxic

chemicals in the natural gas may have caused the symptoms, or whether there will be long-term health ramifications, according to environmental scientists.

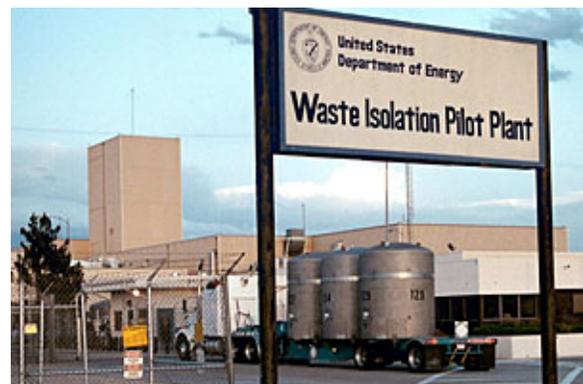
Read more:

<http://insideclimatenews.org/news/17022016/health-impacts-aliso-canyon-porter-ranch-methane-leak-california-socal-gas>

Radiation

Department of Energy Cites Nuclear Waste Partnership, LLC and Los Alamos National Security, LLC for Violations Related to Worker Safety and Health and Nuclear Safety

The U.S. Department of Energy (DOE) issued a Preliminary Notice of Violation (PNOV) to Nuclear Waste Partnership, LLC (NWP) for violations of DOE worker safety and health and nuclear safety requirements. Concurrently, DOE's National Nuclear Security Administration (NNSA) issued a PNOV to Los Alamos National Security, LLC (LANS) for violations of DOE's nuclear safety requirements. Issuance of these PNOVs marks the completion of DOE's investigations and enforcement process regarding two events in 2014 at DOE's Waste Isolation Pilot Plant (WIPP). NWP is the management and operating contractor for WIPP, located in Carlsbad, New Mexico. LANS is the management and



operating contractor for NNSA's Los Alamos National Laboratory (LANL), located in Los Alamos, New Mexico. Worker safety and health and nuclear safety are priorities for the Department, and DOE's enforcement program, implemented by the Office of

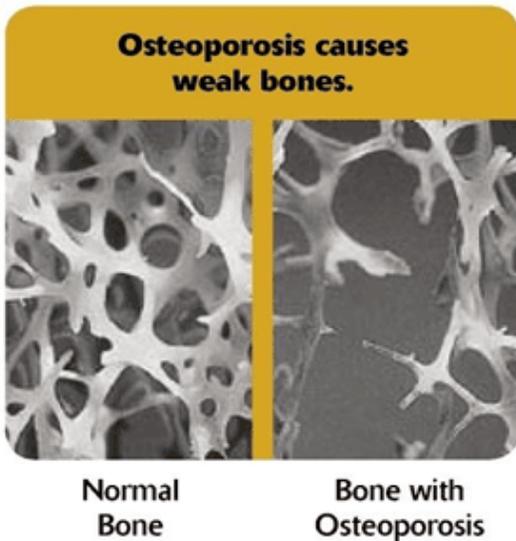
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Enterprise Assessments' Office of Enforcement on behalf of the Secretary of Energy, supports these priorities by holding contractors accountable for meeting regulatory requirements and maintaining a safe and healthy workplace.

Read more:

<http://energy.gov/articles/department-energy-cites-nuclear-waste-partnership-llc-and-los-alamos-national-security-llc>

Dried Plums Protect from Bone Loss Due to Radiation



researchers who recently studied different interventions to protect from radiation-induced bone loss.

Their paper, "Dried Plum Protects from Bone Loss Caused by Iodizing Radiation," was recently published in *Scientific Reports* and can be found at <http://www.nature.com/articles/srep21343>.

Read more:

<http://www.laboratoryequipment.com/news/2016/02/dried-plums-protect-bone-loss-due-radiation>

A Texas A&M AgriLife Research scientist in College Station, was one of a team of

Ten Tips for Reducing Radiation Exposure during Interventional Procedures

Education "The main source of exposure to [physicians performing interventional procedures] and staff is scatter radiation," Machan, associate professor in the department of radiology, associate member of the division of vascular surgery and associate member of the department of

urologic sciences at the University of British Columbia, Vancouver, said during a presentation. Scatter radiation is even greater when treating patients with elevated BMI.

Scatter radiation comes from two main places: the interface between the patient's

Army Industrial Hygiene News and Regulatory Summary

body and the table, and from the edge of the image intensifier, he said. "Be very aware of where your face is in relation to the image intensifier," he said. Also, it is important to be mindful of automated dose control

Read more:

<http://www.healio.com/cardiac-vascular-intervention/practice-management/news/online/%7Bd6608eb5-10cb-42fd-aec0-ec1ee8309a52%7D/ten->



[tips-for-reducing-radiation-exposure-during-interventional-procedures](#)

Ventilation

Survey: Duct Leakage Main Cause of Energy Loss in Commercial Buildings



In a survey on building-performance issues recently conducted by the Building Commissioning Association (BCA), an

overwhelming majority of engineers and other building professionals said they believe duct leakage to be a significant cause of energy loss in commercial buildings, AeroSeal LLC, developer of a method of sealing central heating and cooling and ventilation ductwork, is reporting.

Read more: <http://hvac.com/iaq-ventilation/survey-duct-leakage-main-cause-energy-loss-commercial-buildings>

PPE

Evaluation of the User Seal Check on Gross Leakage Detection of 3 Different Designs of N95 Filtering Facepiece Respirators



BACKGROUND:

The use of N95 respirators prevents spread of respiratory infectious agents, but leakage hampers its protection. Manufacturers recommend a user seal check to identify on-site gross leakage. However, no empirical evidence is provided. Therefore, this study aims to examine validity of a user seal check on gross leakage detection in commonly used types of N95 respirators.

METHODS:

A convenience sample of 638 nursing students was recruited. On the wearing of 3 different designs of N95 respirators, namely 3M-1860s, 3M-1862, and Kimberly-Clark 46827, the standardized user seal check procedure was carried out to identify gross leakage. Repeated testing of leakage was followed by the use of a quantitative fit testing (QNFT) device in performing normal breathing and deep breathing exercises. Sensitivity, specificity, predictive values, and

likelihood ratios were calculated accordingly.

RESULTS:

As indicated by QNFT, prevalence of actual gross leakage was 31.0%-39.2% with the 3M respirators and 65.4%-65.8% with the Kimberly-Clark respirator. Sensitivity and specificity of the user seal check for identifying actual gross leakage were approximately 27.7% and 75.5% for 3M-1860s, 22.1% and 80.5% for 3M-1862, and 26.9% and 80.2% for Kimberly-Clark 46827, respectively. Likelihood ratios were close to 1 (range, 0.89-1.51) for all types of respirators.

CONCLUSIONS:

The results did not support user seal checks in detecting any actual gross leakage in the donning of N95 respirators. However, such a check might alert health care workers that donning a tight-fitting respirator should be performed carefully.

Read more:

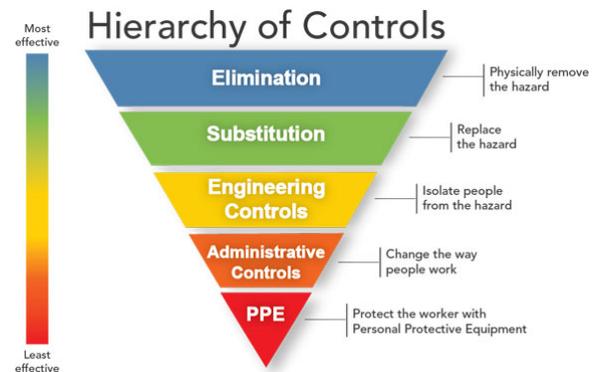
<http://www.ncbi.nlm.nih.gov/pubmed/26831273>

PPE – Prevention before Protection

The most important consideration when evaluating health and safety protocol is that PPE should only be implemented as a last resort. All too often, procurement managers fall into the trap of automatically reordering existing protective equipment and issuing 'worst case scenario' PPE as standard.

Although this may be perceived as the most efficient safeguard in accident reduction, this is not necessarily the case. The first port of call for managerial staff should be a thorough and regular risk assessment of the working environment, which should then be re-evaluated following the installation of any new machinery, tools or working processes.

Ideally, businesses should aim to adopt a 'prevent then protect' mentality, reducing the need for PPE by eliminating risk. For example, where workers are required to wear protective gloves or face masks in the handling of hazardous chemicals, efforts should be made to identify a non-toxic



alternative, reducing the likelihood of injury or illness in the production process. Alternatively, if essential the use of such materials should be isolated to a remote or cordoned-off area of the workplace, thus significantly reducing the number of employees that come into contact with the potentially harmful substance.

Read more:

<http://www.shponline.co.uk/ppe-prevention-before-protection/>

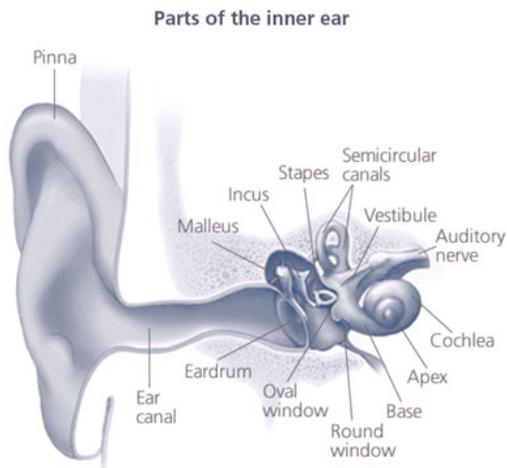
Noise

NIOSH Study Pinpoints Industries with Hearing Problems

Sensorineural hearing impairment is the A newly published study from NIOSH examined hearing difficulty and tinnitus in various industries, based on data from the 2007 National Health Interview Survey. This

provided detailed, self-reported information on hearing difficulty, tinnitus, and exposures to occupational noise. The researchers found that:

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- Seven percent of U.S. workers never exposed to noise on the job had hearing difficulty, 5 percent had tinnitus, and 2 percent had both conditions. Among workers who had at some point in their working careers been exposed to occupational noise, the prevalence was 23 percent, 15 percent, and 9 percent, respectively.

- Workers in agriculture, forestry, and the fishing and hunting industry had a significantly higher risk of hearing difficulty, tinnitus, and their co-occurrence. Manufacturing workers also had significantly higher risks for tinnitus and the co-occurrence of tinnitus and hearing difficulty.
- Workers in life, physical and social science occupations, and personal care and service occupations had significantly higher risks for hearing difficulty. Workers in architecture and engineering occupations also had significantly higher risks for tinnitus.
- Workers in sales and related occupations had significantly lower risks for hearing difficulty, tinnitus and their co-occurrence.

Read more:

<https://ohsonline.com/articles/2016/02/02/niosh-study-pinpoints-industries-hearing-problems.aspx>

Focus Group Works to Shield Marines against Deafening Noise Levels

We protect the Marines today, to ensure their future tomorrow," said Staff Sgt. Jesse Doing, Range Management Branch range control staff, following a Hearing Conservation Focus Group at The Basic School aboard Marine Corps Base Quantico. Leaders discussed the existing technology and current policies of impulse noise protection throughout the Department Of Defense (DoD). Today's warfighters are in need of hearing protection with high levels of situational awareness to prevent hearing loss and remain tactically effective.



Leaders from the Naval Health Base Clinic audiology department, NHBC Industrial

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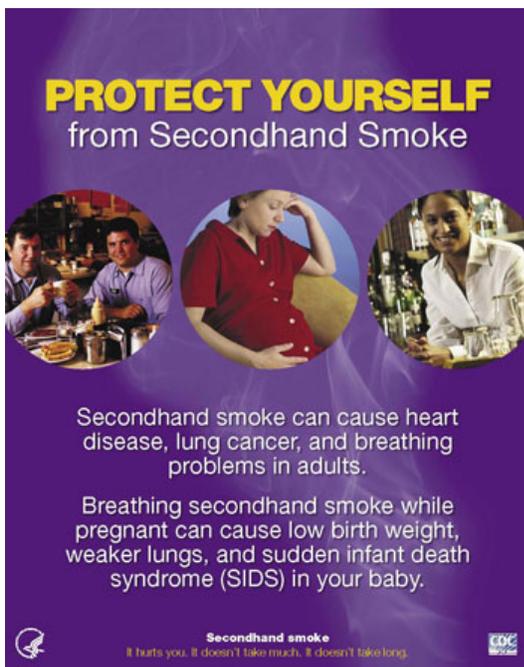
Hygiene, The Basic School range manager and TBS Range Management Branch are all part of the audience most affected by the negative results of sound pollution. Many veterans treated at NHBC suffer from significant damage to their hearing after serving as little as four years. "It doesn't physically hurt to lose your hearing. I see a lot of young Marines who don't realize the damage being done due to lack of hearing

conservation gear," said Jolene Mancini, occupational audiologist at Naval Health Clinic Quantico.

Read more: <http://img.military.com/daily-news/2016/01/08/focus-group-works-shield-marines-against-deafening-noise-levels.html>

Preventive Medicine

Smoking Bans Reduce Harm from Passive Smoking, Study Finds



Bans on lighting up in public and working spaces have reduced the harms from passive smoking, a review has concluded. The Cochrane collaboration, a respected not-for-profit organisation of 14,000

academics, examined 77 studies from 21 countries with smoking bans and found a general reduction in hospital admissions for heart disease.

Among the evidence cited was a study showing that heart attack admissions in Liverpool fell by 42% in the first five years of the ban on smoking in enclosed public places and the workplace in England. Another study found a 19% reduction in admissions for acute coronary syndrome among ex-smokers and a 21% reduction for nonsmokers (as well as a 14% reduction for smokers) in the first year after Scottish legislation came into effect. Scotland's ban was introduced in 2006, a year before England's.

Read more: <http://www.theguardian.com/society/2016/feb/04/smoking-bans-reduce-harm-from-passive-smoking-study>

Arsenic Exposure and the Western Diet: A Recipe for Metabolic Disorders?

Chronic arsenic exposure is common in many areas worldwide owing to naturally occurring contamination of well water.¹ Arsenic has been shown to contribute to various cancers, skin lesions, and cardiovascular disease.¹ Epidemiological studies on arsenic and metabolic outcomes such as nonalcoholic fatty liver disease, obesity, and diabetes have yielded mixed results, however,^{2,3,4,5} although regional variations in factors such as diet could explain the discrepancies. A new mouse study in this issue of *EHP* suggests that prenatal and early-life exposures to low-level arsenic, combined with a Western-style diet, may induce developmental changes that heighten the risk of future

metabolic disorders and nonalcoholic fatty liver disease.⁶



Read more: <http://ehp.niehs.nih.gov/124-A39/>

US Hispanics Have Low Lyme Disease Rate but More Complications



Compared with other groups, Hispanic people in the United States have a lower incidence of Lyme disease but are more

likely to be diagnosed with disseminated infection, which can cause arthritis, facial palsy, heart problems, and meningitis, according to a study today in *Emerging Infectious Diseases (EID)*.

Outdoor work is associated with a greater risk of exposure to ticks that carry Lyme disease, and approximately 43% of the outdoor (grounds maintenance, farming, fishing, and forestry) workforce in the US is Hispanic, the report says.

Researchers from the Centers for Disease Control and Prevention (CDC) evaluated 148,444 cases of Lyme disease with

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information about the patient's ethnicity reported between 2000 and 2013. Hispanic people had a lower annual incidence of Lyme disease (0.8 cases per 100,000 population) compared with non-Hispanics (4 cases per 100,000).

Read more:

<http://www.cidrap.umn.edu/news-perspective/2016/02/news-scan-feb-10-2016>

A Scary New Superbug Gene Has Reached at Least 19 Countries

Just two months ago, researchers in China identified a gene that can make bacteria resistant to a last-resort antibiotic called colistin. It was a bombshell discovery for people who follow superbugs. Now that gene has been detected in at least 19 countries, and scientists are alarmed. Colistin is what doctors give you in the U.S. when nothing else works. Because it's toxic, it can have some harmful side effects, but colistin can help defeat infections that shrug off every other antibiotic in their arsenal. If bacteria resist everything, including colistin, you're out of luck.



Read more:

<http://www.bloomberg.com/news/articles/2016-01-22/a-scary-new-superbug-gene-has-reached-at-least-19-countries>

No Disinfectants Tested Completely Remove Bacterial Biofilms from Water Lines, Research Suggests

Bacteria lurking in the water lines at the dentist's office are tougher than we thought, according to a new paper published in *Water Research*. The study reveals that the disinfectants recommended by companies that manufacture the water lines don't actually shift all the bacteria in

the lines, which means they're never completely clean. Dental equipment is particularly prone to contamination with bacteria, yeasts and other microbes because it comes into

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contact with people's mouths. Dentists use dental unit water lines to keep their electrical equipment cool.

Read more:

<http://www.infectioncontroltoday.com/news/2016/02/no-disinfectants-tested-completely-remove-bacterial-biofilms-from-water-lines-research-suggests.aspx>

Immune Response to Flu Vaccine Linked to Recipients' Ethnic Background

How well a flu shot protects you from the virus can depend on your ethnic background and other inherited factors, report Dana-Farber Cancer Institute scientists. The researchers, led by Wayne Marasco, MD, PhD, a cancer immunologist and virologist at Dana-Farber, found unexpected ethnicity influences on genetic variation in a key immune system gene that generates antibodies that can recognize and ward off the common influenza A virus. The results could lead to new tools for predicting how different individuals and populations will respond to influenza vaccines, according to a report in the *Nature* journal, *Scientific Reports*. Additionally, the authors said, these insights will be important in ongoing efforts to develop "universal" vaccines that would



provide multi-year protection against a wide variety of flu strains.

Read more:

<http://www.infectioncontroltoday.com/news/2016/02/immune-response-to-flu-vaccine-linked-to-recipients-ethnic-background.aspx>

Environmental Health

Toxins Found in 39% of U.S. Southeastern Streams



Scientists with the U.S. Geological Survey have found toxins produced by algae, known as microcystins, in 39 percent of the small streams assessed in the southeastern United States.

Their study looked at 75 streams in parts of Alabama, Georgia, North Carolina, South Carolina and Virginia.

Read more <http://ens-newswire.com/2016/02/21/toxins-found-in-39-of-u-s-southeastern-streams/>

Too Toxic: EPA Rejects Dow's Herbicide Enlist Duo

The U.S. Environmental Protection Agency says it will vacate its approval of the Dow AgroSciences herbicide Enlist Duo after determining that its combination of chemicals could be more harmful than initially believed.

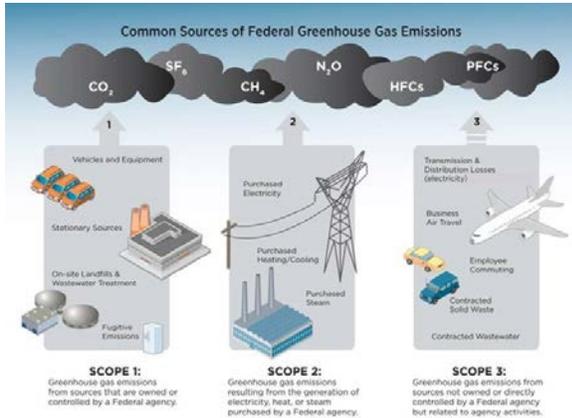
Responding to a lawsuit by conservation groups, in the Ninth Circuit Court of Appeals on Tuesday, the EPA moved for voluntary vacatur and remand of EPA's registration of Dow AgroSciences' Enlist Duo herbicide under the Federal Insecticide, Fungicide, and Rodenticide Act, FIFRA.



Read more: <http://ens-newswire.com/2015/11/25/too-toxic-epa-rejects-dows-herbicide-enlist-duo/>

Army Industrial Hygiene News and Regulatory Summary

Some States Forging Ahead With Emissions Reduction Plans, Despite Supreme Court Ruling



Not all states are suspending work on the Clean Power Plan despite the Supreme Court's bombshell decision on Tuesday to put a temporary hold on the tight new rules that are at the heart of the Obama administration's climate policies. Officials from more than a dozen states said they will continue the work they had

already begun to comply with the plan. That includes meeting with stakeholders, modeling energy and emissions scenarios and writing early drafts of implementation schemes that would fulfill the plan's requirement for states to steeply cut carbon dioxide emissions from coal-fired power plants over the next several decades to combat global warming.

Read more:

<http://insideclimatenews.org/news/11022016/some-states-emissions-reduction-plans-despite-supreme-court-ruling-obama-clean-power-plan>

Resignations, Lawsuit Flow From Flint Water Crisis

The U.S. Environmental Protection Agency's regional administrator responsible for the City of Flint has resigned, effective today, over her handling of the crisis caused by lead contamination in the city's drinking water.

"EPA Region 5 Administrator Susan Hedman has offered her resignation effective February 1, and EPA Administrator Gina McCarthy has accepted given Susan's strong interest in ensuring that EPA Region 5's focus remains solely on the restoration of

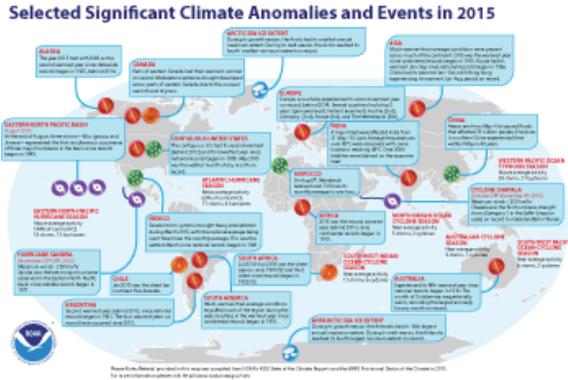


Flint's drinking water," the EPA said in a statement.

Army Industrial Hygiene News and Regulatory Summary

Read more: <http://ens-newswire.com/2016/02/01/resignations-lawsuit-flow-from-flint-water-crisis/>

Hottest Year Linked to 'Devastating' Human Disaster Toll



analysis by the UN Office for Disaster Risk Reduction, UNISDR. The disasters having the greatest impact were the 32 major droughts recorded during 2015, which amounted to more than double the 10-year annual average and affected 50.5 million people.

Read more: <http://yosemite.epa.gov/opa/admpress.nsf/d02490a60ecbb12285257f32005cc13a/e418f2bd321cad9f85257f390052f5be!OpenDocument>

At least 98.6 million people were harmed by natural disasters in 2015, the hottest year on record; and climate, intensified by a strong El Niño pattern, was the driver in 92 percent of those events, finds a new

Ergonomics

NIH Scientists Discover Genetic Cause of Rare Allergy to Vibration

Scientists at the National Institutes of Health have identified a genetic mutation responsible for a rare form of inherited hives induced by vibration, also known as vibratory urticaria. Running, hand clapping, towel drying or even taking a bumpy bus ride can cause temporary skin rashes in people with this rare disorder. By studying affected families, researchers discovered how vibration promotes the release of inflammatory chemicals from the immune



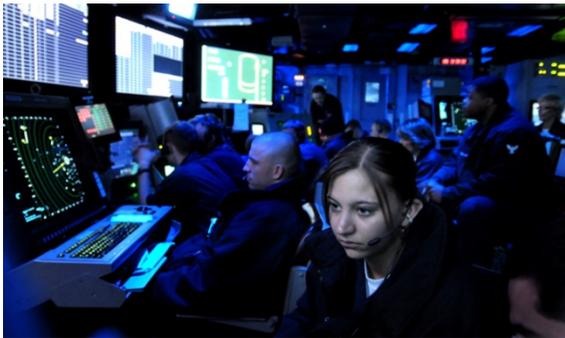
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system's mast cells, causing hives and other allergic symptoms.

[discover-genetic-cause-rare-allergy-vibration](#)

Read more: <http://www.nih.gov/news-events/news-releases/nih-scientists->

Ergonomics for the Eyes: Simple Adjustments to Your Office Environment Can Help Reduce Visual Fatigue



Long touted as good for backs and necks, proper desk ergonomics are also important for the health and comfort of the eyes. In support of Workplace Eye Wellness Month in March, the American Academy of Ophthalmology is offering tips to desk

workers everywhere whose eyes may need relief from too much screen time. Many people who spend long hours reading or working on a computer for their jobs experience eye discomfort. Focusing on tiny type for hours on end can cause eye strain, fatigue and headaches. Staring at screens for long periods can also leave eyes parched, red and gritty-feeling.

Read more: <http://www.virtual-strategy.com/2016/02/17/ergonomics-eyes-simple-adjustments-your-office-environment-can-help-reduce-visual-fatigue#ixzz40zov6AMT>

Safety

Monitoring Heat Injuries in a Hazmat Environment

Heat injuries are a major problem worldwide. In a study chronicling heat deaths in the U.S. from 1979 to 1999, a total of 8,015 deaths were associated with excessive heat exposure.¹ Weather conditions caused 3,829 (48%) deaths, and manmade conditions (kitchens, vehicles, boiler rooms, etc) caused 377 (5%) deaths,



Army Industrial Hygiene News and Regulatory Summary

particularly for those wearing protective clothing.¹

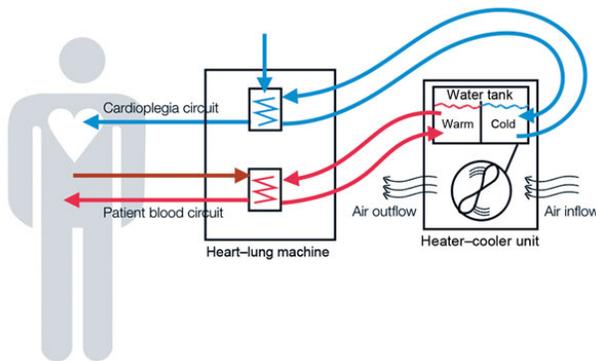
Military members who wear combat gear are especially vulnerable to heat injuries, but none more so than members who wear personal protective equipment (PPE). In this review, PPE is defined as self-contained breathing apparatus protective equipment (SCBA) levels B or C. The challenge of PPE is the inability of the individual to dispel heat through radiation, convection, and evaporation. The only close approximation of the PPE environment is combat and football protective equipment. In 2011, CDC reported that football players in uniforms, which resemble PPE for the purpose of this discussion, experienced heat injury at a rate

10 times higher than the average rate for other sports.² These heat injuries in football players occurred most often during August.² The injuries could be due to the application of protective clothing and the lack of the participants' acclimatization. Protective clothing impedes the wearer's ability to balance heat production with heat dissipation

Read more:

<http://www.fedprac.com/specialty-focus/stroke/article/monitoring-heat-injuries-in-a-hazmat-environment/834c9de8424ab05d8efdd4bca9aa23d0/ocregister.html>

Transmission of *Mycobacterium chimaera* from Heater–Cooler Units during Cardiac Surgery despite an Ultraclean Air Ventilation System



Heater–cooler units (HCUs) were recently identified as a source of *Mycobacterium chimaera* causing surgical site infections. We investigated transmission of this bacterium from HCUs to the surgical field by using a thermic anemometer and particle counter, videotape of an operating room equipped with an ultraclean laminar airflow ventilation system, and bacterial culture

sedimentation plates in a nonventilated room. Smoke from the HCU reached the surgical field in 23 s by merging with ultraclean air. The HCU produced on average 5.2, 139, and 14.8 particles/min in the surgical field at positions Off, On/oriented toward, and On/oriented away, respectively. Culture plates were positive for *M. chimaera* ≤ 5 m from the HCU in the test room. These experiments confirm airborne transmission of *M. chimaera* aerosols from a contaminated HCU to an open surgical field despite ultraclean air ventilation. Efforts to mitigate infectious risks during surgery should consider contamination from water sources and airflow-generating devices.

Read more:

http://wwwnc.cdc.gov/eid/article/22/6/16-0045_article

Motor Vehicle Deaths in 2015 Show Large Increase Year-Over-Year

Preliminary estimates from the National Safety Council (NSC) indicate motor vehicle deaths were 8 percent higher in 2015 than they were in 2014 – the largest year-over-year percent increase in 50 years. The group estimates 38,300 people were killed on U.S. roads, and 4.4 million were seriously injured, making 2015 the deadliest driving year since 2008.



Read more:

<http://ehstoday.com/safety/motor-vehicle-deaths-2015-show-large-increase-year-over-year>

OSHA and NIOSH Issue a New Hazard Alert on the Dangers of Tank Gauging



OSHA and NIOSH issued a new hazard alert for oil and gas workers who manually gauge or sample fluids on production and flowback tanks.

The hazard alert, which was issued after a number of preventable deaths tied to manual tank gauging, offers employers recommendations on how to protect workers opening tank hatches to manually gauge or to sample hydrocarbon levels. The recommendations outlined in the Health and Safety Risks for Workers Involved in Manual Tank Gauging and Sampling at Oil and Gas Extraction Sites cover three main categories: engineering controls, work practices and personal protective equipment.

Read more:

<http://ehstoday.com/osha/osha-and-niosh->

[issue-new-hazard-alert-dangers-tank-gauging](http://ehstoday.com/issue-new-hazard-alert-dangers-tank-gauging)

Lumber Liquidators Is Cratering after the CDC Raised the Cancer Risk of the Company's Flooring

Lumber Liquidators Holdings Inc.'s shares tumbled after a revised US federal agency report showed people exposed to some types of the company's laminate flooring were three times as likely to get cancer as previously estimated.

The Centers for Disease Control and Prevention said Thursday that they estimated the risk of cancer to be six to 30 cases per 100,000 people, compared with the two to nine cases the CDC had estimated in a February 10 report. The CDC said the revised results were preliminary. Lumber Liquidators' shares dropped by as much as 22% in early trading. Ahead of the market open, the stock was set for its biggest intraday percentage drop in six months.



Read more:

<http://www.businessinsider.com/r-lumber-liquidators-set-to-slump-after-revised-cancer-risk-report-2016-2>

New Pesticide Rules to Affect Documentation & Training



Farmworkers who apply pesticides must be trained more frequently, and farmers will

have to post new documents under federal farm safety regulations that will go into effect next year.

The Environmental Protection Agency's updated Worker Protection Standard is now in its final form, but "nothing new will be enforced this year," said Jim Harvey, a Penn State worker protection specialist.

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Read more:

<http://www.lancasterfarming.com/news/N>

[ew-Pesticide-Rules-to-Affect-Documentation--Training](#)

Coroner Warns Funeral Homes about Infectious Diseases

The Dougherty County Coroner and Public Health officials warned South Georgia funeral homes on Monday about protecting people from infectious diseases in the deceased.

OSHA requires embalmers to wear protective equipment like respirators and full protection suits when embalming a body, but officials worry they are often not used.

With new diseases or viruses like Zika spreading across the world, health officials said that the safety measures are necessary to protect the community.



[coroner-warns-funeral-homes-about-infectious-diseases](#)

Read more:

<http://www.walb.com/story/31285876/cor>

Emergency Preparedness & Response

Can Health Care Providers Afford to Be Ready for Disaster?



MORE than 200 people died in hospitals and nursing homes in Louisiana after Hurricane Katrina in 2005, leading to widespread agreement that health care preparedness in the United States needed dramatic improvement. One hospital, Memorial Medical Center, was so undone that two desperate doctors later said that they hastened the deaths of patients who had waited days in the heat for rescue.

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The chaotic evacuations of more than 6,400 hospital and nursing-home patients in New York City after Hurricane Sandy in 2012 — where some were separated from their records and untraceable by their families for weeks — reinforced concern about the readiness of health care providers during emergencies.

Read more:

http://www.nytimes.com/2016/02/14/sunday-review/can-health-care-providers-afford-to-be-ready-for-disaster.html?_r=0

Workplace Violence Prevention: DHS Promotes “Active Shooter Preparedness” Programs – Is Your Company Ready?

Violence, often involving firearms, is an increasingly common occurrence in the 21st century workplace. The Federal Bureau of Investigation notes that even though homicide is “the most publicized form of violence in the workplace, it is not the most common.”

The FBI defines workplace violence as “any physical assault, threatening behavior or verbal abuse occurring in the work setting.” While some types of these acts “may not be interpreted immediately as violence ... many people will witness them in their lifetimes.”

The FBI warns that it is “vital that employers create a sense of hypervigilance in their employees by providing formal training in workplace violence prevention.” To help employers prevent workplace violence, the



U.S. Department of Homeland Security (DHS) has recently released an “Active Shooter Preparedness” website intended to make training and other resources available to employers

Read more:

<http://www.jdsupra.com/legalnews/workplace-violence-prevention-dhs-51894/>

Deployment Health

Army's New Fitness Tests: New Details Emerge From Leadership



The Army is on the eve of rolling out new MOS-specific, gender-neutral fitness tests, and new details have begun to emerge. The tests “should be good to go by June,” said Patrick Murphy, acting Army secretary, in a Tuesday interview with Army Times. That plan, and others related to adding women into previously closed military occupational specialties, is contingent on Defense Department approval

Read more:

<http://www.militarytimes.com/story/military/2016/02/18/acting-army-secretary-gender-neutral-fitness-test-coming-soon-patrick-murphy-apft/80566724/>

Artificial Clotting Agent Could Treat Internal Bleeding In Combat Zones

After a traumatic battle wound, a soldier can bleed to death in less than 10 minutes. Though injectable blood-clotting agents could help medics stop internal bleeding at the scene of an injury, most of the agents under development aren't stable at the extreme temperatures in some combat zones. Now a group of researchers has designed nanoparticles that could address this need: They enhance clotting, improve survival in injured rats, and remain stable for a week at 50 °C (*ACS Biomater. Sci. Eng.* 2016, DOI: 10.1021/acsbioamaterials.



5b00493).

Army Industrial Hygiene News and Regulatory Summary

Several years ago, Erin B. Lavik of the University of Maryland, Baltimore County, and her colleagues designed a nanoparticle with a poly(lactic-co-glycolic acid) (PLGA) core that stemmed bleeding in injured rats and was stable at room temperature (*Sci. Transl. Med.* 2009, DOI: 10.1126/scitranslmed.3000397). But when she talked with members of the U.S. military about applying the technology in locations such as Afghanistan, they warned her that

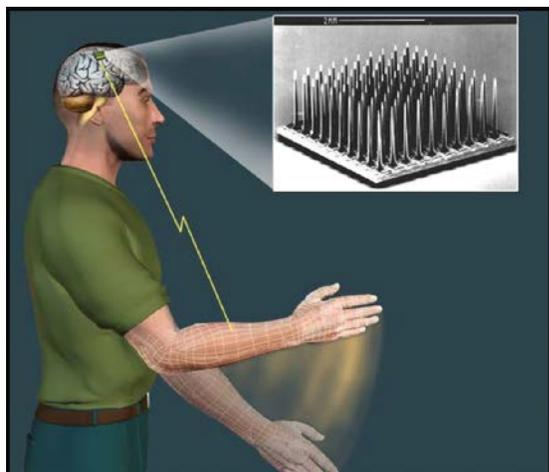
temperatures there can reach 50 °C. Heated to that temperature, the nanoparticles “turned into a blob,” she says. “We had to rethink the chemistry of the material.”

Read more:

<http://cen.acs.org/articles/94/web/2016/02/Artificial-Clotting-Agent-Treat-Internal.html>

Nanotechnology

The Artificial Skin that Could Deliver the Sense of Touch Directly to the Brain



Zhenan Bao at Stanford University has invested a lot of her research into building flexible circuits out of carbon nanotubes. Her team’s latest feat is an “artificial skin” that’s capable of providing the sense of touch directly into the brain cells of mice

and is initially aimed for use in prosthetic limbs to give the users the full sense of touch.

While the mechanism for transferring the sensory signals from the artificial skin to the brain is something called “optogenetics”—which uses light to control cells in living tissue—the basis for the artificial skin is a unique pyramidal geometry of carbon nanotubes (CNTs).

Read more:

<http://spectrum.ieee.org/nanoclast/biomedical/bionics/prosthetic-artificial-skin-delivers-the-sense-of-touch-directly-to-the-brain>

Regulatory Research & Industrial Hygiene Professional News

AIHA

Call for Public Comment on Three Proposed ERPGs

The Emergency Response Planning (ERP) Committee of the AIHA Guideline Foundation (AGF) has proposed values for Emergency Response Planning Guidelines (ERPGs) for lithium hydride, methyltrichlorosilane, and phenyl isocyanate. The ERP Committee develops ERPGs for responding to potential releases of airborne substances for use in community emergency planning. View the proposed ERPGs on the AIHA website.



Read more:

<https://www.aiha.org/publications-and-resources/TheSynergist/AIHANews/Pages/Call-for-Public-Comment-on-Three-Proposed-ERPGs.aspx>

ABIH

The American Board of Industrial Hygiene® and the Institute of Professional Environmental Practice® Announce a New Collaboration

The governing bodies of the American Board of Industrial Hygiene® (ABIH®) and The Institute of Professional Environmental Practice® (IPEP®) announce a new collaboration in 2016 to bring their respected credentials, the Certified Industrial Hygienist (CIH) and the Qualified

Environmental Professional (QEP)/Environmental Professional Intern (EPI), to a wider audience of professionals.

Independent governance of each organization and credential will remain intact, although the organizations will be

Army Industrial Hygiene News and Regulatory Summary

sharing operations and management services, allowing a greater portion of existing operational resources to be allocated to innovation and outreach. IPEP operations will move from Pittsburgh, PA, to ABIH headquarters in Lansing, MI.

Read more:

<http://www.webwire.com/ViewPressRel.asp?ald=201924>

EPA

EPA Announces 2017-2019 Enforcement Initiatives



health. Starting on Oct. 1, 2016, EPA will retain four of its current National Enforcement Initiatives, add two new ones, and expand one to include a new area of focus.

The EPA announced its seven National Enforcement Initiatives for fiscal years 2017-2019 on Feb. 18, saying they focus on national pollution challenges where EPA's enforcement efforts will protect public

Read more:

<https://ohsonline.com/articles/2016/02/19/epa-announces-2017-2019-enforcement-initiatives.aspx>

OSHA

OSHA to Seek Public Comment on Guidance for Determining Potential Health Hazards of Chemicals

As part of OSHA's efforts to protect workers from the hazards of chemicals, the agency plans to issue new guidance on how to apply the Weight of Evidence approach when dealing with complex scientific studies. On February 16, OSHA will begin accepting comments on its Guidance on Data Evaluation for Weight of Evidence Determination*, which is intended to help



Army Industrial Hygiene News and Regulatory Summary

employers consider all available information when classifying hazardous chemicals.

The “weight of evidence” approach assists manufacturers, importers and employers to evaluate scientific studies on the potential health hazards of a chemical and determine what information must be disclosed on the label and safety data sheet (SDS) for

compliance with the Hazard Communication Standard. This draft is a companion document to a recently posted Hazard Classification Guidance*.

Read more:

https://www.osha.gov/pls/oshaweb/owadi.sp.show_document?p_table=NEWS_RELEASES&p_id=29568

NIOSH

Draft Document Includes Proposed REL, Safe-handling Recommendations for 1-Bromopropane

REL

A new draft document from NIOSH includes an assessment of toxicological data for the solvent 1-bromopropane (1-BP) and recommendations for the safe handling of materials containing 1-BP. The agency has also proposed a recommended exposure limit (REL) for 1-BP of 0.3 ppm (1.5 mg/m³ of air) as an 8-hour time-weighted average (TWA) concentration during a 40-hour workweek.

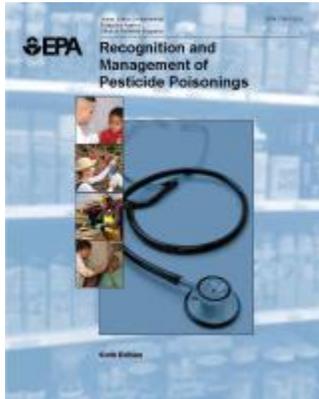
According to the draft document, this proposed REL is intended to reduce

workers’ risk of lung cancer associated with a 45-year working lifetime of occupational exposure. NIOSH also anticipates that the proposed REL will reduce the risk of other adverse health outcomes, including other cancers and non-cancer endpoints such as neurological, reproductive, and developmental toxicity. However, NIOSH urges efforts to reduce exposures to less than 0.3 ppm because of “residual risk of cancer at the REL.” Federal OSHA does not currently have a specific exposure standard for 1-BP.

Read more:

<https://www.aiha.org/publications-and-resources/TheSynergist/Industry%20News/Pages/Draft-Document-Includes-Proposed-REL,-Safe-handling-Recommendations-for-1-Bromopropane.aspx>

NIOSH Study Shows Scope of Illness Tied to Two Common Herbicides



A NIOSH study looking at illnesses and herbicide-related deaths discovered that most cases of illness related to paraquat poisoning were low to

moderately severe. According to the agency's news release, the study found 300 paraquat-related and 144 diquat-related acute illnesses were reported in 35 states and one U.S. territory; 76 percent of paraquat-related cases were work-related.

Although most of the illnesses were low to moderately severe—health effects

commonly included skin, eye, or neurological symptoms—these two herbicides make up 85 percent of herbicide-related deaths in the United States. Among the reported cases, 43 individuals had ingested paraquat and 25 ingested diquat. Most such cases were unintentional and frequently occurred because the pesticides were improperly stored, such as in beverage bottles.

Read more:

<https://ohsonline.com/articles/2016/02/05/study-shows-scope-of-illness-tied-to-two-common-herbicides.aspx?admgarea=ht.IndustrialHygiene>

Training

APHC

Something is Wrong, I Can't Get My Blackboard Certificate

Instructors are happy to issue students a certificate upon successfully completing a course in Blackboard. However, Blackboard can no longer send mail and certificates to your Army Knowledge Online (AKO) email address.

Army Industrial Hygiene News and Regulatory Summary

AKO EMAIL CHANGES

Want to receive e-mails from ATSC-ELLC at another e-mail address?

Users can now update their ATSC-ELLC Online profile to direct course communications to ANY email, whether .mil, .com or other. By updating their user profile email address, users can direct where course announcements, notifications, and course communication are delivered.

To enable, update the e-mail field located [here](#). Upon doing so, all e-mails sent from ATSC-ELLC Online will be sent to the address in your profile. **This WILL NOT impact messages sent from other systems.**

Non-Army AKO Holders: This change impacts the ATSC-ELLC profile only. To maintain AKO sponsorship, your AKO external email addresses will remain the same, and must remain populated with a .mil (non-AKO) email address.

AKO email addresses will no longer be valid as of March 31, 2015. Please update your Blackboard profile by changing your email address from AKO (@us.army.mil) address to the preferred military Enterprise address (@mail.mil).

If you have any questions or concerns, please contact the Army Training Help Desk at 1-800-275-2872 (option 2) or Email-athd@mailds01.csd.disa.mil, Subject: Blackboard.

Thank you,

ATSC-Blackboard Team

The Blackboard Administrator requested almost a year ago that all users change their email address from the outdated AKO format ([your.name@us.army.mil](#)) and replace it with the new enterprise format ([your.name.civ@mail.mil](#)). When students register for courses in Blackboard, the outdated AKO email automatically becomes the default email. If you don't update your email address using the new enterprise format ([your.name.civ@mail.mil](#)) BEFORE you begin to take a course and take the exam, you will not receive emails and certificates. In order to get credit for your hard work and receive CEUs, you must change your email address in Blackboard to

[your.name.civ@mail.mil](#) or [your.name.ctr@mail.mil](#), for contractors. You and only you have the capability to change your email address in Blackboard.

Once you have changed your email address to the proper format ([your.name.civ@mail.mil](#) or [your.name.ctr@mail.mil](#)), it can take up to 48 hours before it is registered in Blackboard. Wait 2 days, then log back into Blackboard and confirm the changes before proceeding to complete the course work and exam.

Please follow the instructions on the Blackboard website! Remember Blackboard no longer uses AKO email. To ensure that you can receive your Blackboard certificates and emails, change your email address to the new enterprise format. For more information about updates and changes, go to <https://amsc.elic.learn.army.mil> and log into Blackboard.

Army Industrial Hygiene News and Regulatory Summary

Upcoming Training



February 2016

- February 22-26 APG, MD DOEHRs-IH Initial Army Course
- February 22-26 APG, MD Industrial Ventilation Course



February/March 2016

- February 29-March 4 APG, MD Industrial Hygiene Intermediate Course (Phase 2)



May 2016

- May 16-20 APG, MD DOEHRs-IH Initial Army Course



August 2016

- August 1-5 APG, MD DOEHRs-IH Initial Army Course



October 2016

- October 24-28 APG, MD DOEHRs-IH Initial Army Course



August 2016

- August 1-5 APG, MD DOEHRs-IH Initial Army Course



TBD 2016

- Date/Location TBD Indoor Air Quality Course CP12 Sponsored



February 2017

- TBD APG, MD Blueprint Reading & Design Review Course

Army Industrial Hygiene News and Regulatory Summary

This monthly summary is published by the Industrial Hygiene and Medical Safety Management Program (IHMSMP) for the Army Public Health Center (Provisional).



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On the Web:

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



Training Announcements

Did you know?

- It is never too early to apply for funding for future courses!
- Careerists who have completed mandatory course work (Army DOEHS-IH Initial Course & Intermediate Industrial Hygiene Topics Course for 0690s) will receive first priority for seats and funding when requesting non-mandatory training.
- The 2017 Industrial Hygiene Intermediate Topics Course Phase 1 will open within the next month in Blackboard! For any 0690s that haven't had this mandatory course, now is the time to register.
- The 8-Hour HAZWOPER Refresher Course is now available on Blackboard. Its Blackboard Course ID: 124_HAZWOPER_REFRESHER__0102P59_2015_002_00_
- The next Blueprint Reading and Design Review Course will be held in 2017.

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