## Content

[click on page numbers for links]

### ENVIRONMENTAL
- Dating of the sediment accumulation rate and radioactive and heavy metal pollution in Van Lake [3]
- Method for manufacturing feed from poultry and swine faeces as well as animal/vegetable wastes through sulphuric acid disinfection and biological fermentation [3]

### MEDICAL
- A randomised, double-blind, placebo-controlled trial of olanzapine in the treatment of trichotillomania [5]
- Full quantification of selenium species by RP and AF-ICP-qMS with on-line isotope dilution in serum samples from mercury-exposed people supplemented with selenium-enriched yeast [6]
- GC-MS analysis of bisphenol A in human placental and foetal liver samples [6]
- HPLC MS/MS method for quantification of meprobamate in human plasma: Application to 24/7 clinical toxicology [7]

### OCCUPATIONAL
- Asbestos exposure and benign asbestos diseases in 772 formerly exposed workers: dose-response relationships [8]
- Assessment of airborne and dermal exposure to 2-ethoxyethyl acetate in an occupational environment [9]
- Occupational styrene exposure and neurobehavioural functions: a cohort study with repeated measurements [9]
- Construction of job-exposure matrices for the Nordic occupational cancer study (NOCCA) [10]
- Asthma and respiratory symptoms in hospital workers related to dampness and biological contaminants [11]

### PUBLIC HEALTH
- A comparison of deoxynivalenol intake and urinary deoxynivalenol in UK adults [12]
- Developing consistent data and methods to measure the public health impacts of ambient air quality for Environmental Public Health Tracking: progress to date and future directions [13]
### Content

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parenchymal and airway diseases caused by asbestos</td>
<td>13</td>
</tr>
<tr>
<td>Residential pesticides and childhood leukaemia: a systematic review</td>
<td>14</td>
</tr>
<tr>
<td>and meta-analysis</td>
<td></td>
</tr>
<tr>
<td>New Directions: Air pollution epidemiology can benefit from</td>
<td>15</td>
</tr>
<tr>
<td>activity-based models</td>
<td></td>
</tr>
<tr>
<td><strong>SAFETY</strong></td>
<td></td>
</tr>
<tr>
<td>Evaluation of the COSHH Essentials Model with a Mixture of Organic</td>
<td>15</td>
</tr>
<tr>
<td>Chemicals at a Medium-Sized Paint Producer</td>
<td></td>
</tr>
<tr>
<td>Morphophysiological responses and programmed cell death</td>
<td>16</td>
</tr>
<tr>
<td>induced by cadmium in Genipa americana L. (Rubiaceae)</td>
<td></td>
</tr>
<tr>
<td>A study for safety and health management problem of</td>
<td>17</td>
</tr>
<tr>
<td>semiconductor industry in Taiwan</td>
<td></td>
</tr>
</tbody>
</table>
In this study, sediment accumulation rates and $^{210}$Pb fluxes were calculated by using excess $^{210}$Pb profile distributions and C.R.S. model together, and the dating of each layer was determined in three sediment cores which were sampled from east side of Van Lake. $^{210}$Pb activity was obtained from activities which were measured with alpha spectroscopy of the $^{210}$Po. Average sediment accumulation rates in the cores were found as 0.031, 0.011, 0.046, 0.021, 0.077 and 0.051 g/cm²/year. It was observed that sediment accumulation rates were found in significantly high levels in the areas where there were high human activities and transportations from agricultural via stream erosion. In addition, there was investigation of the distributions of the $^{137}$Cs isotope which is a fission product along two sediment core, and it was determined that the concentrations of $^{137}$Cs at certain levels which were spread to area because of the nuclear weapon tests conducted in 1954-1963 and Chernobyl nuclear plant accident in 1986. According to the general trend of $^{137}$Cs distribution, it has pointed out that entry of $^{137}$Cs to the lake from the environment continuous already now. Furthermore, heavy metal concentrations (Cd, Cr, Cu, Pb) which were related to industrial, urban, agricultural wastes and geology of the basin were evaluated.

Authors: Yıldız, Nergiz; Yener, Gungör
Full Source: Ekoloji 2010, 19(77), 80-87 [Turkish]
To examine the US experience in treating CH with rFVIIa, a retrospective review of the Haemophilia and Thrombosis Research Society 2004-2008 database was conducted.

Cranial haemorrhage (CH) is a potentially serious complication in patients with severe congenital haemophilia with inhibitors (CHwI). Treatment includes bypassing agents, such as recombinant activated factor VII (rFVIIa). To examine the US experience in treating CH with rFVIIa, a retrospective review of the Haemophilia and Thrombosis Research Society 2004-2008 database was conducted. Among 29 patients with CHwI, 56 of the reported haemorrhages met the study criteria. Of these, 75% were traumatic and 80% were extracranial (ECH). The majority (8/11, 73%) of intracranial haemorrhages (ICHs) developed spontaneously. Conversely, most ECHs (39/45, 87%) followed trauma. ICHs were treated with a median/mean of 23/58 rFVIIa infusions over a median/mean of 7/9 days while ECHs were treated with a median/mean of 1/3 infusions (P < 0.011) over a median/mean of 1/1 day. The median/mean initial rFVIIa doses for all CHs were 106/137 µg/kg, and were similar for ICHs and ECHs. All ECHs were effectively controlled with rFVIIa; 44/45 bleeds were controlled within 24h, one bleed was successfully treated perioperatively, and 27 ECHs required only a single dose. Nine out of 11 ICHs were effectively treated with rFVIIa; six ICHs were controlled within 24h, one within 72 h and in two cases hemostasis was achieved during the perioperative period. No serious treatment-associated adverse events
In this study, the authors determined whether a dopaminergic treatment as used in tics and Tourette’s syndrome would be effective in trichotillomania. Twenty-five participants with DSM-IV trichotillomania participated in a 12-wk, randomised, double-blind, placebo-controlled trial of flexibledose olanzapine for trichotillomania. Recruitment occurred between August 2001 and December 2005, and follow-up was completed in February 2006. The primary outcome measure was the Clinical Global Impressions Improvement (CGI-I) scale, and secondary measures of efficacy included the Yale-Brown Obsessive Compulsive Scale for Trichotillomania (TTM-YBOCS) and the Clinical Global Impressions-Severity of Illness (CGI-S) scale. Eleven of 13 participants (85%) in the olanzapine group and 2 of 12 (17%) in the placebo group were considered responders according to the CGI-I (P 0.001). There was a significant change from baseline to end point in the TTM-YBOCS (P <.01) and the CGI-S (P < .001). The mean (SD) dose of olanzapine at end point was 10.8 ( 5.7 mg/day). Twenty-one of 25 patients (84%) reported at least 1 adverse event, but no adverse events resulted in early withdrawal from the study. The authors concluded that Olanzapine seems to be a safe and effective treatment for primary DSM-IV trichotillomania.

Authors: van Ameringen, Michael; Mancini, Catherine; Patterson, Beth; Bennett, Mark; Oakman, Jonathan
Full Source: Journal of Clinical Psychiatry (Memphis, TN, United States) 2010, 71(10), 1336-1343 [Eng]
Full quantitative of selenium species by RP and AF-ICP-qMS with on-line isotope dilution in serum samples from mercury-exposed people supplemented with selenium-enriched yeast
2011-04-02
Accurate determination of selenium (Se) species in biological samples is a critical issue because Se commonly occurs at low levels and in diverse species. The method for the full quantification of Se species in serum samples was proposed through combined ion-pair reverse-phase (RP) chromatography and affinity chromatography (AF) hyphenated to inductively coupled plasma-(quadrupole) mass spectrometry (ICP-qMS) with post-column isotope dilution analysis (IDA) and a collision cell technique (CCT). Different Se species like inorganic Se (Se4+ and Se6+), selenocystine (SeCys), selenomethionine (SeMet), selenoprotein P (SelP), selenoalbumin (SeAlb) and glutathione peroxidase (GPx) can be separated and quantified. The proposed methodology was used to qualitatively and quantitatively study the dynamic distribution of Se species in human serum samples from the Hg-contaminated area after supplementation with 100 Îg of Se daily as Se-enriched yeast for 180 days. SelP takes up almost half and even more of the total Se and increases with the Se administration. The repeatability in terms of relative standard deviation (R.S.D. %, n ) 10) is 6% for GPx and SelP and 5% for SeAlb. The detection limits are 0.1 Îg Se L-1 for GPx and other non-retained Se compounds, 1.0 Îg Se L-1 for SelP and 1.2 Îg Se L-1 for SeAlb, 1.3Îg Se L-1 for inorganic Se; 1.2 Îg Se L-1 for SeCys; 1.1 Îg Se L-1 for SeMet, respectively.
Authors: Li, Yu-Feng; Hu, Liang; Li, Bai; Huang, Xiaohan; Larsen, Erik H.; Gao, Yuxi; Chai, Zhifang; Chen, Chunying
Full Source: Journal of Analytical Atomic Spectrometry 2011, 26(1), 224-229 (Eng)

GC-MS analysis of bisphenol A in human placental and foetal liver samples
2011-04-03
A method based on extraction with acetonitrile, followed by solid-phase extraction, derivatisation with acetic anhydride, and isotope dilution gas chromatography-mass spectrometry (GC-MS) analysis was applied to determine levels of free and conjugated BPA in human tissues. â-Glucuronidase was used to de-conjugate the glucuronised BPA in the samples. The method was validated using various animal organ meat samples including pork liver and kidney, beef and calf liver, chicken liver
The authors described the development and full validation of rapid and accurate liquid chromatography method, coupled with tandem mass spectrometry detection, for quantification of meprobamate in human plasma with [13C-2H3]-meprobamate as internal standard.

HPLC MS/MS method for quantification of meprobamate in human plasma: Application to 24/7 clinical toxicology
2011-04-03

The authors described the development and full validation of rapid and accurate liquid chromatography method, coupled with tandem mass spectrometry detection, for quantification of meprobamate in human plasma with [13C-2H3]-meprobamate as internal standard. Plasma pre-treatment involved a one-step protein precipitation with acetonitrile. Separation was performed by reversed phase chromatography on a Luna MercuryMS C18 (20 mm, 4 mm, 3μm) column using a gradient elution mode. The mobile phase was a mix of distilled water containing 0.1% formic acid and acetonitrile containing 0.1% formic acid. The selected reaction monitoring transitions, in electrospray positive ionisation, used for quantification were 219.2 f 158.2 m/z and 223.1 f 161.1 m/z for meprobamate and internal standard respectively. Qualification transitions were 219.2 f 97.0 and 223.1 f 101.1 m/z for meprobamate and internal standard.
Since previous research has provided conflicting results, the authors of the current study investigated the relationship between the risk of benign asbestos-related diseases and different aspects of asbestos exposure in previous asbestos workers who underwent low-dose computed tomography (CT). CT scans were performed on 772 subjects. A questionnaire was used to collect data on smoking habits and duration, peak and cumulative exposure, and time since first exposure to asbestos. Multiple logistic regression models with stepwise selection of variables were used to evaluate the associations. The results showed fourteen (1.8%) cases of asbestosis, 187 (24.2%) of pleural plaques (PP), and 50 (6.5%) of diffuse pleural thickening (DPT). The significant risk factors were: cumulative exposure for asbestosis (P for trend <0.001); time since first exposure (P for trend <0.001), and peak exposure (P for trend <0.001) for PP; and time since first exposure for DPT (P for trend <0.024). The authors concluded that based on the findings from this study, parenchymal asbestosis and PP are associated with different aspects of asbestos exposure. DPT appears to be less specific for asbestos exposure.

Authors: Mastrangelo, Giuseppe; Ballarin, Maria N.; Bellini, Ernesto; Bicciato, Fabio; Zannol, Federica; Gioffre, Francesco; Zedde, Antonio; Tessadri, Gianna; Fedeli, Ugo; Valentini, Flavio; Scozzato, Luca; Marangi, Gianluca; Lange, John H.

Full Source: American Journal of Industrial Medicine 2009, 52(8), 596-602 (Eng)
During this study, the authors recruited 20 workers from a commercial label silk screening shop and they completed a questionnaire of demographic information.

Assessment of airborne and dermal exposure to 2-ethoxyethyl acetate in an occupational environment

Because of its chemical-physical properties, 2-ethoxyethyl acetate (EEAc) can penetrate through the skin. However, no actual occupational environmental studies or empirical dermal exposure measurements have been undertaken. During this study, the authors recruited 20 workers from a commercial label silk screening shop and they completed a questionnaire of demographic information. Environmental monitoring of EEAc exposure via respiratory and dermal routes was performed for five consecutive working days. The results indicated that the airborne EEAc concentration was over the permissible exposure limit of 5 ppm in 90% of the participants. The dermal EEAc concentration was highest on the palms. The EEAc concentration correlated with skin exposure level (P < 0.001). The dermal EEAc concentrations in individuals who did not wear gloves were higher than in those who wore gloves. The authors concluded that EEAc on the skin is strongly associated with airborne EEAc. Wearing impermeable gloves during high-risk tasks [cleaning process] can reduce EEAc dermal exposure on the palms.

Authors: Shih, Tung-Sheng; Kuo, Yu-Chieh; Liang, Ro-Han; Liou, Saou-Hsing; Chang, Ho-Yuan; Chou, Tzu-Chieh
Full Source: American Journal of Industrial Medicine 2009, 52(8), 654-661 (Eng)

Occupational styrene exposure and neurobehavioural functions: a cohort study with repeated measurements

In this study, the authors investigated objective associations between occupational styrene exposure and cognitive as well as psychomotor functions, with a view to answering three questions:

1. are the published results for neurobehavioural impairment reproducible;
2. if such effects exist, are they related to current or to chronic exposure; and
3. if effects exist, are there reductions in the effects during an exposure-free period.

Workers from a boat-building plant, some of whom were laminators, were investigated in groups of low (n=83, mean mandelic acid MA + phenylglyoxylic acid PGA ) 53 mg/g creatinine), medium (n=101, 230 mg/g creatinine) and high (n=29, 928 mg/g creatinine) levels of exposure to styrene. The mean job tenure was about 6 years. In addition,
This study describes principles and experiences of the construction of job-exposure matrixes (JEMs), an instrument to transform the history of occupational titles into quantitative estimates of exposure to potential carcinogenic substances.

Authors: Seeber, Andreas; Bruckner, Thomas; Triebig, Gerhard
Full Source: International Archives of Occupational and Environmental Health 2009, 82(8), 969-984 (Eng)

Construction of job-exposure matrices for the Nordic occupational cancer study (NOCCA)
2011-04-05
The Nordic Occupational Cancer study (NOCCA) is a cohort study based on employed populations in one or more censuses in Denmark, Finland, Iceland, Norway and Sweden. The large size of the cohort allows us to study rare cancers and to identify even small risks by occupation and
Technical

by specific occupational exposures. This study describes principles and experiences of the construction of job-exposure matrixes (JEMs), an instrument to transform the history of occupational titles into quantitative estimates of exposure to potential carcinogenic substances. Material and methods. For each Nordic country, a national JEM was constructed by a team of experts on the basis of the Finnish matrix (FINJEM) that has been used in similar national studies since the mid-1990s. The structure of the Nordic JEMs is three-dimensional (over 300 occupations, over 20 agents, 4 periods covering 1945-1994). Exposure is characterised by estimates of the prevalence and level of exposure. Important differences between the Nordic countries were observed for several exposures. The authors concluded that the selection of priority agent-occupation combinations and the adoption of general principles in the beginning of the work were necessary because of the high number of estimates to be evaluated (over 50 000/country). The selective modification of an existing JEM for use in other countries was a feasible, albeit challenging task, because exposure data and information about the use of chemicals in the past was scanty. As compared to the use of FINJEM for all Nordic countries, the modification process will probably increase the validity of dose-response and risk estimates of occupational cancer which is to be expected soon as the main outcome of the NOCCA project.
Authors: Kauppinen, Timo; Heikkila, Pirjo; Plato, Nils; Woldbaek, Torill; Lenvik, Kaare; Hansen, Johnni; Kristjansson, Vidir; Pukkala, Eero
Full Source: Acta Oncologica 2009, 48(5), 791-800 (Eng)

Asthma and respiratory symptoms in hospital workers related to dampness and biological contaminants

2011-04-05
The National Institute for Occupational Safety and Health investigated respiratory symptoms and asthma in relation to damp indoor environments in employees of two hospitals. A cluster of six work-related asthma cases from one hospital department, whose symptoms arose during a time of significant water incursions, led the authors to conduct a survey of respiratory health in 1171/1834 employees working the sentinel cases hospital and a nearby hospital without knowing indoor environmental concerns. An observational assessment of dampness, air, chair, and floor dust sampling for biological contaminants was conducted, and investigation of exposure-response associations for about 500 participants. Many participants with post-hire onset asthma reported diagnosis dates in a period of water incursions and renovations. Post hire asthma and work-related lower respiratory symptoms were positively
During the present study, the authors investigated the relationship between deoxynivalenol (DON) intake and first morning urinary DON in UK adults in order to validate the latter as a biomarker of human exposure. DON was assessed in first morning samples collected during a period of normal diet, a wheat-restriction intervention diet, and partial wheat-restriction intervention in which bread was allowed. During the partial intervention duplicate bread portions were collected for DON analysis. During the normal diet, partial intervention and full intervention, urinary DON was detected in 198/210 (geometric mean 10.1 ng DON mg⁻¹ creatinine, 95% confidence interval (CI) 8.6-11.6 ng mg⁻¹; range nd-70.7 ng mg⁻¹), in 94/98 (5.9 ng mg⁻¹, 95% CI 4.8-7.0 ng mg⁻¹; range nd-28.4 ng mg⁻¹), and 17/40 (0.5 ng mg⁻¹, 95% CI 0.3-0.7 ng mg⁻¹; range nd-3.3 ng mg⁻¹) volunteers, respectively. A strong correlation between DON intake and the urinary biomarker was observed (p <0.001, adjusted r² 0.83) in models adjusting for age, sex and body mass index. The authors concluded that the results demonstrate a quantitative correlation between DON exposure and urinary DON, and serve to validate the use of urinary DON as an exposure biomarker.

Authors: Turner, Paul C.; White, Kay L. M.; Burley, Victoria J.; Hopton, Richard P.; Rajendram, Anita; Fisher, Julie; Cade, Janet E.; Wild, Christopher P.
Full Source: Biomarkers 2010, 15(6), 553-562 [Eng]
Environmental Public Health Tracking (EPHT) staff at the state and national levels; are developing nationally consistent data and methods to estimate the impact of ozone and fine particulate matter on hospitalisations for asthma and myocardial infarction. Pilot projects have demonstrated the feasibility of pooling state hospitalisation data and linking these data to The United States Environmental Protection Agency (EPA) statistically based ambient air estimates for ozone and fine particulates. Tools were developed to perform case-crossover analyses to estimate concentration-response (C-R) functions. A weakness of analysing one state at a time is that the effects are relatively small compared to their confidence intervals. The EPHT program will explore ways to statistically combine the results of peer-reviewed analyses from across the country to provide more robust C-R functions and health impact estimates at the local level. One challenge will be to routinely share data for these types of analyses at fine geog. and temporal scales without disclosing confidential information. Another challenge will be to develop C-R estimates, which take into account time, space, or other relevant effect modifiers.

Authors: Talbot, Thomas O.; Haley, Valerie B.; Dimmick, W. Fred; Paulu, Chris; Talbott, Evelyn O.; Rager, Judy

Full Source: Air Quality, Atmosphere & Health 2009, 2(4), 199-206 (Eng)

Parenchymal and airway diseases caused by asbestos

2011-04-05

The extensive industrial use of asbestos for many decades has been linked to development of benign and malignant pleuropulmonary disease. This review summarises newer evidence and ongoing controversies that exist in the literature regarding asbestos-related parenchymal and airway diseases. Recent findings: Asbestosis represents a significant respiratory problem despite the improvement in the workplace hygiene and a decrease in use of asbestos. The management of asbestosis remains challenging as currently there is no specific treatment. The role of asbestos exposure alone as a cause of chronic airway obstruction remains uncertain. The relationship between lung cancer and asbestos exposure alone and in combination with smoking has also been investigated. The benefit of screening for asbestos-related pleuropulmonary disease.
In this study, the authors conducted a systematic review and meta-analysis of previous observational epidemiological studies examining the relationship between residential pesticide exposures during critical exposure time windows (preconception, pregnancy, and childhood) and childhood leukaemia. Searches of MEDLINE and other electronic databases were performed (1950-2009). Reports were included if they were original epidemiological studies of childhood leukaemia, followed a case control or cohort design, and assessed at least one index of residential/household pesticide exposure/use. No language criteria were applied. Study selection, data abstraction, and quality assessment were performed by two independent reviewers. Random effects models were used to obtain summary odds ratios (ORs) and 95% confidence intervals (CIs). Of the 17 identified studies, 15 were included in the meta-analysis. Exposures during pregnancy to unspecified residential pesticides (summary OR 1.54; 95% CI, 1.13-2.11; I² 66%), insecticides (OR 2.05; 95% CI, 1.80-2.32; I² 0%), and herbicides (OR 1.61; 95% CI, 1.20-2.16; I² 0%) were positively associated with childhood leukaemia. Exposures during childhood to unspecified residential pesticides (OR 1.38; 95% CI, 1.12-1.70; I² 4%) and insecticides (OR 1.61; 95% CI, 1.33-1.95; I² 0%) were also positively associated with childhood leukaemia, but there was no association with herbicides. The authors concluded that positive associations were observed between childhood leukaemia and residential pesticide exposures. Further work is needed to confirm previous findings based on self report, to examine potential exposure-response relationships, and to assess specific pesticides and toxicological related subgroups of pesticides in more detail.

Authors: Turner, Michelle C.; Wigle, Donald T.; Krewski, Daniel
Full Source: Environmental Health Perspectives 2010, 118(1), 33-41 (Eng)
The connection between air pollution and adverse health effects has been established clearly and consistently 15 years ago. In line with this, there has been a growing consensus that vehicle related air pollution may be more toxic or detrimental to public health than the general air pollution mixture. This hypothesis is based on the observation that tailpipe PM emissions generally fall within the Ultra Fine Particle (UFP), which may have health impacts additive to those attributed to PM. Notably, policy makers often refer to health effects to support specific policies, plans, projects and measures targeting the transport sector. Several recent epidemiological studies have employed the proximity of the home to major roads as a surrogate for exposure and proposed that proximity of people to motorised road traffic partly explains observed health effects. Nevertheless, it is suggested that exposure analysis could be improved by determining more accurately where people spend their time. People are only exposed to concentrations occurring in the areas where they are active at that time, which during the day is very often not at their home address. Hence, it is suggested that exposure modelling takes advantage of the new possibilities offered by Activity-based models. This new class of models is able to predict for individuals where and when specific activities are conducted. Policy makers can take advantage of the Activity-based paradigm to devise strategies that reduce exposure by changing time activity patterns.

Author: Panis, Luc Int
Full Source: Atmospheric Environment 2010, 44(7), 1003-1004 (Eng)

SAFETY

Evaluation of the COSHH Essentials Model with a Mixture of Organic Chemicals at a Medium-Sized Paint Producer
2011-04-03
Essentials model was evaluated using full-shift exposure measurements of five chemicals components in a mixture [acetone, ethylbenzene, Me Et ketone, toluene, and xylenes] at a medium sized plant producing paint materials. Two tasks, batch-making and bucket-washing, were examined. Varying levels of control were already established in both tasks and the average exposures of individual chemicals were considerably lower than the regulatory and advisory 8-h standards. The average exposure fractions using the additive mixture formula were also less than unity [batch-
Technical

Cadmium (Cd) originating from atmospheric deposits, from industrial residues and from the application of phosphate fertilisers may accumulate in high concentrations in soil, water and food, thus becoming highly toxic to plants, animals and human beings.
to plants, animals and human beings. Once accumulated in an organism, Cd discharges and sets off a sequence of biochemical reactions and morphophysiology changes which may cause cell death in several tissues and organs. In order to test the hypothesis that Cd interferes in the metabolism of G. americana, a greenhouse experiment was conducted to measure eventual morphophysiology responses and cell death induced by Cd in this species. The plants were exposed to Cd concentrations ranging from 0 to 16 mg l−1, in a nutritive solution. In TUNEL reaction, it was shown that Cd caused morphology changes in the cell nucleus of root tip and leaf tissues, which are typical for apoptosis. Cadmium induced anatomical changes in roots and leaves, such as the lignification of cell walls in root tissues and leaf main vein. In addition, the leaf mesophyll showed increase of the intercellular spaces. On the other hand, Cd caused reduction in the net photosynthetic rate, stomatal conductance and leaf transpiration, while the maximum potential quantum efficiency of PS2 (Fv/Fm) was unchanged. Cadmium accumulated in the root system in high concentrations, with low translocation for the shoot, and promoted an increase of Ca and Zn levels in the roots and a decrease of K level in the leaves. High concentrations of Cd promoted morphophysiological changes and caused cell death in roots and leaves tissues of G. americana.

Authors: Souza, Vania L.; de Almeida, Alex-Alan F.; Lima, Stella G. C.; Cascardo, Julio C. de M.; Silva, Delmira da C.; Mangabeira, Pedro A. O.; Gomes, Fabio P.
Full Source: BioMetals 2011, 24(1), 59-71 (English)

A study for safety and health management problem of semiconductor industry in Taiwan
2011-04-03
The main purpose of this study is to discuss and explore the safety and health management in semiconductor industry. The researcher practically investigates and interviews the input, process and output of the safety and health management of semiconductor industry by using the questionnaires and the interview method which is developed according to the framework of the OHSAS 18001. The result shows that there are six important factors for the safety and health management in Taiwan semiconductor industry.

1. The company should make employee clearly understand the safety and health laws and standards,
2. The company should make the safety and health management policy known to the public,
3. The company should put emphasis on the pursuance of the safety and

health management laws,
4. The company should prevent the accidents,
5. The safety and health message should be communicated sufficiently. 6. The company should consider safety and health norm completely.

Authors: Chao, Chin-Jung; Wang, Hui-Ming; Feng, Wen-Yang; Tseng, Feng-Yi

Full Source: Industrial Health 2008, 46(6), 575-581 [Eng]