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IN THIS ISSUE**ODDS & ENDS**

Occupational health assessment of chromite toxicity among Indian miners	2
Occupational allergic contact dermatitis: a clinical study in a tertiary care centre in central Kerala.	2
Occupational skin problems in construction workers.	2
Occupational allergic contact dermatitis among construction workers in India.	3
Cutaneous chromoblastomycosis mimicking tuberculosis Verrucosa Cutis: Look for copper pennies!	3
Non-healing verrucous plaque over upper limb for 1 year in a tea garden worker.	3
Skin conditions of baseball, cricket, and softball players.	3
Assessment of health risks with reference to oxidative stress and DNA damage in chromium exposed population.	3
Evaluation of skin diseases and disorders in photographers	4
Retinal damages in turner workers of a factory exposed to intraocular foreign bodies	4
Working condition: A key factor in increasing occupational hazard among bidi rollers: A population health research with respect to DNA damage	4

DID YOU KNOW 5**CURRENT CONCERN** 7**REGULATORY TRENDS** 8**ON THE LIGHTER SIDE** 9**BOOK STOP** 9**MINI PROFILE** 10**EDITORIAL**

The largest organ of the body is skin, it is exposed to physical and biological as well as chemicals risk factors but at present there is no scientific procedure for measuring the skin exposure risks of dermal contact. An occupational skin disease (OSD) is the result of workplace exposure to any physical, chemical or biologic hazard. Any occupational disease is identified when the disease is prevalently appear more in a specific type of workers than in other worker or general population. OSD accounts for a significant proportion of occupational disease in most of the countries and it is supposed to be the most common occupational disease. In some countries registries of OSD are being maintained, and thus there is availability of detailed statistical information on the causes of OSD but in India we do not have such kind of registries. In general terms, OSD is known as industrial or occupational dermatitis or professional eczema, but sometimes names related both to cause and effect are also used like Cement dermatitis, chrome holes, chloracne, fibreglass itch, oil bumps and rubber rash. There are three broad groups of occupational skin disease:

1. Irritant contact dermatitis
2. Allergic contact dermatitis
3. Other occupational skin disease

With the expanded uses of new materials, new skills and new processes as well as technological advances there are changes in the work environment and that has impaired the workers' health. One can say that occupational diseases, in general and skin diseases, in particular, are an unplanned by-product of industrial achievement. Unfortunately, there is no accurate assessment of the number of cases, causal factors, time lost or actual cost of occupational skin disease in most countries. Many dermatoses can be prevented by improved worker and workplace cleanliness. Workers should be counselled about personal hygiene and management, personnel should be advised about proper hand washing agents. Contact with organic solvents (e.g., mineral oils, paint thinner) should be avoided. Prevention is key since it not only protects the lives and livelihoods of workers and their families but also contributes to ensuring economic and social development. Concerted efforts are needed at national and international levels to raise awareness about occupational diseases.

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ODDS and ENDS

Occupational health assessment of chromite toxicity among Indian miners.

Elevated concentration of hexavalent chromium pollution and contamination has contributed a major health hazard affecting more than 2 lakh mine workers and inhabitants residing in the Sukinda chromite mine of Odisha, India. Despite people suffering from several forms of ill health, physical and mental deformities, constant exposure to toxic wastes and chronic diseases as a result of chromite mining, there is a tragic gap in the availability of 'scientific' studies and data on the health hazards of mining in India. Occupational Safety and Health Administration, Odisha State Pollution Control Board and the Odisha Voluntary Health Association data were used to compile the possible occupational health hazards, hexavalent chromium exposure and diseases among Sukinda chromite mine workers. Studies were reviewed to determine the routes of exposure and possible mechanism of chromium induced carcinogenicity among the workers. Our studies suggest all forms of hexavalent chromium are regarded as carcinogenic to workers however the most important routes of occupational exposure to Cr (VI) are inhalation and dermal contact. This review article outlines the physical, chemical, biological and psychosocial occupational health hazards of chromite mining and associated metallurgical processes to monitor the mining environment as well as the miners exposed to these toxicants to foster a safe work environment. The authors anticipate that the outcome of this manuscript will have an impact on Indian chromite mining industry that will subsequently bring about improvements in work conditions, develop intervention experiments in occupational health and safety programs.

[Indian J Occup Environ Med. 2011; 15(1): 6-13]

Occupational allergic contact dermatitis: a clinical study in a tertiary care centre in central Kerala.

Occupational allergic contact dermatitis (OACD) ranks first among all occupational diseases in many countries. There have been only a few published studies on OACD from South India. So authors decided to undertake a study with the aims of estimating the burden of OACD among patients with contact dermatitis (CD) attending clinic and to identify the common allergens causing OACD in this population. One hundred and four consecutive patients who attended author's CD clinic were studied [56 males (54%) and 48 females (46%)]. Mean age was 44.13 years. Patch test was positive in 70 patients (67%) after 48 hours. On reviewing the patients on sixth day, no late reaction was observed. Patch test positivity was considered clinically relevant in 60 patients. The allergen was found to be occupational in 47 of these patients (47/60; 78%) and they were diagnosed to have OACD. Patients with OACD were further analyzed. There were 26 males (26/47; 55.3%) and 21 females (21/47; 44.7%). Among males, the common occupational groups affected were construction workers (18/26; 69%), drivers (2/26; 8%) and carpenters (2/26; 8%). Among females, house wives (11/21; 52%) were the most common group affected, followed by construction workers (7/21; 33%). The commonest allergen detected in study was potassium dichromate (24/47; 51%) followed by fragrance mix (12/47; 25.5%) and parthenium (4/47; 8.5%). Sensitivity to multiple allergens was detected in seven patients (7/47; 15%).

A study done in Chandigarh also had identified potassium dichromate as the commonest allergen. High prevalence of sensitivity to potassium dichromate is probably explained by the current construction boom in this

part of the world. Parthenium was the commonest sensitizer recognized in studies conducted in Delhi and Pune. Differences in the pattern of allergens are probably due to the differences in the distribution of various natural allergens as well as factors related to occupation and life style of the population. Detergents might be the occupational source for fragrance among house wives in our study because most of them, belonging to low socioeconomic status group, were not in the habit of using any cosmetics. Parthenium is not a common plant in our place. The four patients with parthenium sensitivity developed dermatitis when they went for work in areas where the plant was commonly present. Thus OACD plays an important role among patients with CD. Counselling and educating the patients about the allergens, their possible sources and about any cross-reacting substances could help to reduce morbidity due to OACD. In Western countries, addition of ferrous sulphate to cement, which converts hexavalent chromium into less sensitising trivalent form, has resulted in a sharp decline in the incidence of OACD among construction workers. The feasibility of this step could be tried in our country also

[Indian J Dermatol. 2012; 57(5):409-10.]

Occupational skin problems in construction workers.

Construction workers handle cement which has constituents to produce both irritant contact dermatitis and corrosive effects (from alkaline ingredients, such as lime) and sensitization, leading to allergic contact dermatitis (from ingredients, such as chromium). The present study has been carried out among unorganized construction workers to find the prevalence of skin problems. The present cross-sectional study was conducted in 92 construction workers of Ahmadabad and Vadodara. All the workers were

subjected to clinical examination after collection of information regarding demographic characteristics, occupational characteristics and clinical history on a predesigned proforma. Of them, 47.8% had morbid skin conditions. Frictional callosities in palm were observed in 18 (19.6%) subjects while 4 (4.3%) subjects had contact dermatitis. Other conditions included dry, fissured and scaly skin, infectious skin lesion, tinea cruris, lesion and ulcers on hands and/or soles. The skin conditions were common in the age group of 20-25 years, males, those having ≥ 1 year exposure and those working for longer hours. Half of the workers not using personal protective equipment had reported skin-related symptoms.

[Indian J Dermatol. 2010; 55(4):348-51.]

Occupational allergic contact dermatitis among construction workers in India.

Allergic contact dermatitis is one of the important occupational hazards in construction workers and it often leads to poor quality of life of the workers with substantial financial loss. However, this is often a neglected entity. There are no past studies on the construction workers in Indian subcontinent. This pilot study has been done to assess the allergological profile among the workers engaged in construction of roads and bridges. The study was conducted among the workers working on construction of a bridge, flyover, and roads in West Bengal, India. Sixteen workers were selected on clinical suspicion. Ten were selected randomly and patch tested with Indian standard battery of patch test allergens. Analysis of reactions and relevance of positive test was assessed as per standard guidelines. All the workers were men. Average age of workers was 24.8 years (range, 19-34 years). Dermatitis affected exposed parts in 93.75% and covered areas in 62.5%. Total positive test was 24 and relevant 11. Most common allergens were chromate (relevant allergy/RA: in 60% of patch tested workers), epoxy resin (RA: 30%), cobalt (RA: 20%),

nickel (RA: 20%), thiuram mixture (RA: 10%) and black rubber mix (RA: 10%). Two cases (20%) had irritant contact dermatitis. The result indicated that chromate is the most frequent allergen among construction workers in this part of India. High frequency of involvement of the covered areas as well as the exposed areas highlighted the fact that the allergens had access to most body parts of the workers.

[Indian J Dermatol. 2009; 54(2):137-41.]

Cutaneous chromoblastomycosis mimicking tuberculosis verrucosa cutis: Look for copper pennies!

Chromoblastomycosis is a rare chronic fungal infection of skin and subcutaneous tissue. It is primarily a disease of tropical and subtropical regions and affects mainly the agricultural workers following trauma with vegetable matter. Cutaneous chromoblastomycosis may clinically mimic cutaneous tuberculosis as both the condition usually presents with hyper pigmented verrucous lesion of skin. Here in we report a case of chronic cutaneous chromoblastomycosis in a middle aged woman from north eastern part of India, who was initially misdiagnosed as Tuberculosis verrucosa cutis. In histopathology characteristic brown colored spores of the fungus (also known as copper pennies) were seen within dermal abscess. The organism isolated from culture of the biopsy material was *Fonsecaea pedrosoi* thus confirming our diagnosis of cutaneous chromoblastomycosis. The patient responded well to oral Itraconazole. The dermatologists and pathologists should be aware of this condition especially when dealing with verrucous lesion of the skin. The pathologists should search for fungal spores in cutaneous lesion with pseudoepitheliomatous hyperplasia and dermal abscess.

[Turk Patoloji Derg. 2013 Nov 7. doi: 10.5146/tjpath.2013.01197. (Epub ahead of print)]

Non-healing verrucous plaque over upper limb for 1 year in a tea garden worker.

A 55-year-old tea garden worker presented with a slowly growing

verrucous plaque on the right arm. The diagnosis of chromomycosis was confirmed by the identification of brown sclerotic bodies in a skin biopsy.

[Dermatol Online J. 2013; 19(3):12.]

Skin conditions of baseball, cricket, and softball players.

Each year in the United States over 80 million people participate in bat-and-ball sports, for example baseball and softball. Cricket, the world's second most popular sport, is enjoyed by hundreds of millions of participants in such countries as India, Pakistan, Australia, New Zealand, Bangladesh, South Africa, West Indies, Sri Lanka, United Kingdom, and Zimbabwe. Although any player can develop skin disease as a result of participation in these bat-and-ball sports, competitive team athletes are especially prone to skin problems related to infection, trauma, allergy, solar exposure, and other causes. These diseases can produce symptoms that hinder individual athletic performance and participation. In this review, we discuss the diagnosis and best-practice management of skin diseases that can develop as a result of participation in baseball, softball, and cricket.

[Sports Med. 2013; 43(7): 575-89.]

Assessment of health risks with reference to oxidative stress and DNA damage in chromium exposed population.

Trivalent chromium [Cr(III)] is widely used in tanning industrial processes. The population living in tanning industrial area is continuously exposed to Cr(III) which appears to be associated with both acute and chronic health problems. Therefore, the aim of this study was to evaluate the health risk with special reference to oxidative stress parameters (malondialdehyde - MDA, glutathione - GSH, and superoxide dismutase - SOD) and DNA damage in 100 Cr-exposed and 100 unexposed populations. The total blood Cr level, SOD level, MDA level and DNA damage were significantly ($p < 0.05$) higher and GSH level was signifi-

cantly ($p < 0.05$) lower in exposed group as compared to the unexposed group. The altered oxidative stress parameters and DNA damage were found to be slightly higher in female population of both groups. In simple and multiple correlation analyses (adjusted with potential confounders), blood Cr level showed negative significant correlation with GSH level and positive significant correlation with level of MDA, SOD and DNA damage in both groups. The overall prevalence of morbidity was found to be significantly ($p < 0.05$) higher in the exposed group as compared to the unexposed group. In the exposed group, the prevalence of respiratory illness is highest, followed by diabetes, gastrointestinal tract problems and dermal problems respectively. Our results concluded that the Cr(III) exposed population is at high risk for health hazards and the female population is slightly more susceptible to Cr(III) exposure.

[Sci Total Environ. 2012; 430: 68-74.]

Evaluation of skin diseases and disorders in photographers.

Occupational skin disease is very common and important among photographers due to the chemical substances used in photographic processes. In this cross-sectional study, 100 photographers were asked about their occupational exposures in their workplace. Physical examinations were done to find skin diseases and information about demographic factors and history of other skin diseases was collected via a questionnaire. This study examined 100 people, 86 men and 14 women; 37% of these 100 subjects were found to suffer from skin diseases and disorders: 24% contact dermatitis, 2% leukoderma, 3% nail hyperpigmentation. Less than half of these subjects (43%) were found to be working with nonmechanized (manual) printers whereas the other 57% worked with computerized printers. Employees working with nonmechanized printers were found to have a statistically meaningful increase in skin diseases compared with subjects who were

working with computerized printers (Odds ratio = 7.4, 95% CI = 2.59–21.92, $P = 0.001$). Some (41%) of these subjects did not use gloves and were found to have a statistically significant increased incidence of skin diseases compared with the ones who used gloves (Odds ratio = 4.11, 95% CI = 1.72–13.21, P value = 0.002). Generally, it seems that adequate ventilation and protective gloves are necessary for decreasing the prevalence of occupational skin diseases among photographers. Also, educating the photographers about the risks of the chemical substances in their workplace is very important.

[Indian J Occup Environ Med. 2009; 13 (2): 88-91.]

Retinal damages in turner workers of a factory exposed to intraocular foreign bodies.

Damages caused by an intraocular foreign body (IOFB) to the visual system, mainly the retina, mostly occur during certain occupational activities. Turners are among the labourers who are mostly exposed to IOFB. The aim of the present work is to survey the effect of an IOFB on the visual system, mainly the retina. Fifty labourers of a turner factory who were exposed to IOFB were selected. Electroretinography (ERG) was recorded in all the labourers. Beside these workers, 50 labourers with no incidence of IOFB were also selected. They were also tested using ERG. The results obtained in the two groups were compared together to search for the possible changes in the two groups. The ERG patterns of the case groups were found to be changed in comparison to the control group. The changes were observed in the area under the b-wave of the ERG pattern in the early stage of damage and in the late stages, the latency and amplitude of the ERG b-wave were also affected. Finally, from the result of the present study, one can conclude that ERG is a suitable technique to search for the retinal changes in the labourers exposed to IOFB.

[Indian J Occup Environ Med. 2008; 12(3): 136-138.]

Working condition: A key factor in increasing occupational hazard among bidi rollers: A population health research with respect to DNA damage.

The present investigation was undertaken to study the role of working conditions in occupational hazards among bidi rollers occupationally exposed to tobacco dust with reference to DNA damage in peripheral blood lymphocytes. Initially, biomonitoring was conducted by estimating urinary thioether to detect the extent of xenobiotic exposure, and genotoxicity was evaluated by assessing DNA damage and micronucleus frequency in buccal epithelial cells in female bidi rollers occupationally exposed to bidi tobacco dust. Student's t-test was used to test the significance between the means. Results showed a significant increase in urinary thioether level in during shift urine samples as compared to pre-shift samples, which indicated exposure of bidi rollers to xenobiotics compounds. A significant increase in DNA damage was observed in the rollers working in confined environment as compared to those who worked in open and mixed kind of working conditions. Keeping in view the adverse effects of tobacco inhalation on the genotoxic effects in bidi rollers as an occupational hazard and in order to minimize the hazardous effects, it is recommended that masks should be worn by the bidi rollers during work to minimize inhalation of tobacco dust. Gloves should be worn particularly if there are bruises etc. in the palm. To minimize the absorption through eyes, covered glasses should be worn. The entire process of bidi rolling may be done preferably under well ventilated conditions. Due care to be taken to sit in the direction facing the direction of wind to avoid inhalation of blown away tobacco dust.

[Indian J Occup Environ Med. 2011; 15(3): 139-141.]

DID YOU KNOW

Chemicals that Cause Occupational Allergic Contact Dermatitis

Agent Name	CAS #
Acrylates & Methacrylates	
Acrylic acid	79-10-7
BIS-GMA	1565-94-2
n-Butyl acrylate	141-32-2
Ethyl acrylate	140-88-5
Ethyl cyanoacrylate	7085-85-0
Ethyl methacrylate	97-63-2
2-Hydroxyethyl methacrylate	808-77-9
2-Hydroxypropyl acrylate	999-61-1
Methyl acrylate	96-33-3
Methyl 2-cyanoacrylate	137-05-3
Methyl methacrylate	80-62-6
Aldehydes	
Acetaldehyde	75-07-0
Cinnamic aldehyde	104-55-2
Formaldehyde	50-00-0
Glutaraldehyde	111-30-8
Glyoxal	107-22-2
Amines	
Cyclohexylamine	108-91-8
Diethylenetriamine	111-40-0
N,N-Dimethyl-1,3-propanediamine	109-55-7
Ethylenediamine	107-15-3
Hexamethylene tetramine	100-97-0
N-(2-Hydroxyethyl)ethylenediamine	111-41-1
Isophorone diamine	2855-13-2
Piperazine dihydrochloride	142-64-3
Triethanolamine	102-71-6
Triethylene tetramine	112-24-3
Anhydrides	
Maleic anhydride	108-31-6
Methyltetrahydrophthalic anhydride	26590-20-5
Phthalic anhydride	85-44-9
Aromatic Amines	
2-Aminophenol	95-55-6
4-Aminophenol	123-30-8
4-Aminodiphenylamine	101-54-2
2,4-Diaminotoluene	95-80-7
3,3'-Dichlorobenzidine	91-94-1

Agent Name	CAS #
4-Dimethylaminoazobenzene	60-11-7
Diphenylamine	122-39-4
4,4'-Methylenedianiline	101-77-9
p-Phenylene diamine	106-50-3
p-Toluylenediamine	95-70-5
m-Xylene alpha,alpha'-diamine	1477-55-0
Aromatic Nitros	
Dinitrotoluene, all isomers	25321-14-6
2-Nitro-4-phenylenediamine	5307-14-2
Picric acid	88-89-1
Tetryl	479-45-8
Beauty Culture	
Ammonium persulfate	7727-54-0
Ammonium thioglycolate	5421-46-5
Glyceryl monothioglycolate	30618-84-9
Carbamates	
Carbofuran	1563-66-2
Carbaryl	63-25-2
Methomyl	16752-77-5
Epoxy Resins	
Bisphenol A	80-05-7
Bisphenol A diglycidyl ether	1675-54-3
Epichlorohydrin	106-89-8
Glycidol	556-52-5
Triglycidyl isocyanurate	2451-62-9
Formaldehyde Resins	
p-tert-Butylphenol formaldehyde resin	
Melamine formaldehyde	13236-84-5
Phenol-formaldehyde resin	9003-35-4
Toluenesulfonamide formaldehyde resin	25035-76-1
Urea formaldehyde	9011-05-6
Fungicides	
Benomyl	17804-35-2
Chlorothalonil	1897-45-6
Captafol	2425-06-1
Maneb	12427-38-2
Ferbam	14484-64-1
Folpet	133-07-3

Agent Name	CAS #
Zineb	12122-67-7
Thiram	137-26-8
Captan	133-06-2
Mancozeb	8018-01-7
Triforine	26644-46-2
Bupirimate	41483-43-6
Fluazinam	79622-59-6
Metam-Sodium	137-42-8
Pentachloronitrobenzene	82-68-8
Plondrel	5131-24-8
Ziram	137-30-4
Organophosphates	
Dichlorvos	62-73-7
Malathion	121-75-5
Methidathion	950-37-8
Methyl parathion	298-00-0
Naled	300-76-5
Omethoate	1113-02-6
Phosdrin	7786-34-7
Trichlorfon	52-68-6
Herbicides	
Alachlor	15972-60-8
Barban	101-27-9
Dinocap	39300-45-3
Phenmedipham	13684-63-4
Glycidyl Ethers	
Allyl glycidyl ether	106-92-3
n-Butyl glycidyl ether	2426-08-6
Cresyl glycidyl ether	26447-14-3
Isopropyl glycidyl ether	4016-14-2
alpha-Naphtyl glycidyl ether	2461-42-9
Phenyl glycidyl ether	122-60-1
Isocyanates	
Hexamethylene diisocyanate	822-06-0
Isophorone diisocyanate	4098-71-9
Methylene bisphenyl isocyanate	101-68-8
Naphthalene diisocyanate	25551-28-4
Toluene diisocyanate	584-84-9
Metals	
Arsenic and compounds	varies
Chromium and compounds	varies
Cobalt	7440-48-4

Agent Name	CAS #
Gold and compounds	7440-57-5
Mercury	7439-97-6
Nickel and compounds	varies
Palladium155	7440-05-3
Platinum, soluble salts	7440-06-4
Tin, inorganic compounds	7440-31-5
Tungsten carbide	12070-12-1
Solvents	
Benzyl alcohol	100-51-6
Cyclohexanone	108-94-1
o-Dichlorobenzene	95-50-1
1,3-Dichloropropene	542-75-6
Dioxane	123-91-1
Hexylene glycol	107-41-5
d-Limonene	138-86-3
Propylene glycol	57-55-6
Turpentine	8006-64-2
Phenols	
Catechol	120-80-9
Hydroquinone	123-31-9
2-Methylol phenol	623-05-2
Pyrogallol	87-66-1
Resorcinol	108-46-3
Photography	
p-Amino-N,N-diethylaniline sulfate	6065-27-6
CD-1	2198-58-5
CD-2	2051-79-8
CD-3	25646-71-3
CD-4	25646-77-9
p-Methylaminophenol sulfate	55-55-0
Phenidone	92-43-3
Phthalate Esters	
Dibutyl phthalate	84-74-2
Diethyl phthalate	84-66-2
Dimethylphthalate	131-11-3
Preservatives/Disinfectants	
Benzalkonium chloride	8001-54-5
1,2-Benzisothiazolin-3-one	2634-33-5
Bioban CS-1246	7747-35-5
Bioban P-1487	37304-88-4
Bromonitrodioxane	30007-47-7
Bronopol	52-51-7
Butylated hydroxyanisole	25013-16-5

Agent Name	CAS #
Chloramine T	127-65-1
Chloroacetamide	79-07-2
4-Chloro-3-xyleneol	88-04-0
Dazomet	533-74-4
Diazolidinyl urea	78491-02-8
Dimethylol urea	140-95-4
DMDM hydantoin	6440-58-0
Grotan BK	4719-04-4
Imidazolidinyl urea	39236-46-9
Lauryl dimethyl benzyl ammonium chloride	139-07-1
Quaternium 15	51229-78-8
Thimerosal	54-64-8
Rubber Chemicals	
Azodicarbonamide	123-77-3
Black rubber mix	
Carba Mix	
Disulfiram	97-77-8
Ethylene thiourea	96-45-7
Mercaptobenzothiazole	149-30-4
Mercapto mix	
Santonox	96-69-5
Thiuram mix	
Miscellaneous	
Acrylamide	79-06-1
Acrylonitrile	107-13-1
Allyl propyl disulfide	2179-59-1
Benzoyl peroxide	94-36-0
Calcium cyanamide	156-62-7
Caprolactam	105-60-2
alpha-Chloroacetophenone	532-27-4

Agent Name	CAS #
o-Chlorobenzylidene malonitrile	2698-41-1
Cocamide DEA	68603-42-9
Cocamidopropyl betaine	86438-79-1
Cyanamide	420-04-2
Cyclohexanone peroxide	78-18-2
1,2-Dibromo-2,4-dicyanobutane	35691-65-7
Diglycolamine	929-06-6
1-Dodecanethiol	112-55-0
Drugs	
Ethylene oxide	75-21-8
Ethylenimine	151-56-4
Fenvalerate	51630-58-1
Glycidyl trimethyl ammonium chloride	3033-77-0
Hydrazine	302-01-2
Hydroxylamine	7803-49-8
Methyl isocyanate	624-83-9
Ninhydrin	485-47-2
Nitroglycerin	55-63-0
Phenylhydrazine	100-63-0
Portland cement	65997-15-1
Pyrethrum	8003-34-7
Pyridine	110-86-1
Rosin core solder	8050-09-7
Sodium metabisulfite	7681-57-4
Styrene	100-42-5
Textile dyes	
Triphenyl phosphate	115-86-6
Vinyl cyclohexene dioxide	106-87-6

Source: <http://www.haz-map.com/allergic.htm>

CURRENT CONCERN

Prevention is better than cure: Few steps for prevention of occupational skin disease

Recognition of cause	<ul style="list-style-type: none"> Employers and workers should be involved in identifying workplace hazards. This shouldn't just occur once – it should be an on-going process that can respond to changes in the workplace, and changes in knowledge. Evaluate the exposure to hazards, and assess the risk of harm. Maintain a register of accidents/incidents/occupational disease
Eliminate or enclose	<ul style="list-style-type: none"> Sometimes skin contact with the hazard can be avoided by using encapsulated machines or automated equipment, e.g. dishwashers and food mixer.

Minimise	<ul style="list-style-type: none"> • Where a hazard cannot be eliminated, it should be minimised. • Where possible, choose less harmful chemicals to do the same job • Rotate tasks to reduce individual exposure • Ensure appropriate ventilation and other engineering controls to minimise exposure to hazardous chemicals • Provide personal protective equipment: gloves, aprons, face shields etc. • Optimise skin barrier function with suitable emollients, barrier and moisturising creams • Provide safety data sheets • Train workers on causes of occupational skin disease • Train workers how to protect their skin from injury and dermatitis • Move at-risk individuals to alternative work
Monitor	<ul style="list-style-type: none"> • Where a hazard is minimised, monitor workers' health in respect of that hazard.
Appropriate treatment	<ul style="list-style-type: none"> • Topical or oral steroids, emollients, antibiotics etc. should be prescribed as indicated by medical professional

Source: <http://www.dermnetnz.org/reactions/occupational-dermatoses.html>

REGULATORY TRENDS

A good national OSH system is critical for the effective implementation of national policies and programmes to strengthen the prevention of occupational diseases; it should include:

- laws and regulations and, where appropriate, collective agreements incorporating the prevention of occupational diseases;
- law compliance mechanisms, including effective OSH inspection systems;
- cooperation between management and workers and their representatives in the implementation of OSH measures;
- provision of occupational health services;
- adequate mechanisms for the collection and analysis of data on occupational diseases;
- OSH information and training; and
- collaboration between ministries of labour, ministries of health and

social security schemes covering occupational injuries and diseases.

Linking health surveillance to the monitoring of the working environment helps determine workers' exposure to health hazards and whether a particular disease contracted by workers is related to the work they perform; it also contributes to preventing recurrence of the disease among other workers. As it takes time before there is sufficient knowledge and experience to set up well-defined diagnostic criteria for new diseases and to conclude on their aetiology, a system to monitor diseases suspected of being occupational in origin (sentinel events) provides a major contribution to developing awareness of the risks involved in work and stimulating preventive strategies. A number of countries, such as Denmark, Finland, Germany, New Zealand, South Africa and the United States, collect information on suspected occupational diseases. Recording of

disorders suspected of being occupational in origin is particularly meaningful in light of the changing patterns of work and technologies. Recognition that a disease is occupational in origin (whether wholly or in part) strengthens health surveillance provisions and raises awareness of appropriate preventive measures. Argentina, China, Finland, Malaysia, Portugal, Thailand, the United Kingdom and Viet Nam have established national OSH programmes with prevention of occupational diseases as a priority. India, Lao PDR, Papua New Guinea and South Africa have gone a step further by including the prevention of occupational diseases in their national OSH policies or programmes. Strengthening labour inspection is also important as a means of preventing occupational diseases through better compliance with legal requirements. http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_208226.pdf

ON THE LIGHTER SIDE

Operator : Hello Pizza Hut!

Customer: Hello, can you please take my order?

Operator : Can I have your multi purpose Aadhar card number first, Sir?

Customer: Yeah! Hold on... My number is 889861356102049998-45-54610

Operator : OK... you're... Mr Singh and you're calling from 17 Jalan Kayu. Your home number is 40942366, your office 76452302 and your mobile is 0142662566. You are calling from your home number now.

Customer : (Astonished) How did you get all my phone numbers?

Operator : We are connected to the system, Sir.

Customer: I wish to order your Seafood Pizza...

Operator : That's not a good idea Sir.

Customer : How come?

Operator : According to your medical records, you have high blood pressure and even higher cholesterol level, sir.

Customer : What !.. What do you

recommend then?

Operator : Try our Low Fat Hokkien Mee Pizza. You'll like it.

Customer : How do you know for sure?

Operator : You borrowed a book titled 'Popular Hokkien Dishes' from the National Library last week, sir.

Customer: OK I give up... Give me three family size ones then.

Operator : That should be enough for your family of 10, Sir. The total is Rs. 2,450.

Customer: Can I pay by credit card?

Operator : I'm afraid you have to pay us cash, Sir. Your credit card is over the limit and you owe your bank Rs. 1,51,758 since October last year. That's not including the late payment charges on your housing loan, Sir.

Customer: I guess I have to run to the neighbourhood ATM and withdraw some cash before your guy arrives.

Operator : You can't Sir. Based on the records, you've exhausted even your overdraft limit.

Customer: Never mind just send the pizzas, I'll have the cash ready. How

long is it gonna take anyway?

Operator : About 45 minutes Sir, but if you can't wait you can always come and collect it on your motorcycle.

Customer: What?

Operator : According to the details in the system, you own a motorcycle registration number 1123.

Customer: "?????" (hmmm.. these guys know my motorcycle number too!)

Operator : Is there anything else, sir?

Customer: Nothing.! .. by the way... aren't you giving me that 3 free bottles of cola as advertised?

Operator : We normally would sir, but based on your records, you're also diabetic... In the best interest of your health, we are holding this offer for you.

Customer: Teri

Operator: Better mind your language sir. Remember on 15th July 2007 you were imprisoned for 2 months and fined Rs.5,000 for using abusive language against a policeman...?

Customer faints... aur banao Aadhar Card.

BOOK STOP

Managing risks from skin exposure at work

Date of publication: 2009

ISBN: 9780717663095

Series code: HSG262

Addressing the reality that many working materials can directly affect or even pass through the skin to cause disease. In exploring the critical issue of skin exposure - the illnesses arising from it, how to

recognise and manage this potential hazard - this guide promotes compliance with the legal duties required in order to assess the known health risks. The broader scope of the issue is supported by more detailed coverage of how to reduce contact with harmful materials, procedures on choosing the correct protective equipment and skin care products and advice on how to check for early signs of skin disease.



MINI PROFILE OF POTASSIUM DICHROMATE

SYNONYMS: Bichromate of potash; Dipotassium dichromate; Potassium bichromate; Potassium dichromate (VI)

CAS RN : 7778-50-9

MOLECULAR FORMULA : $K_2Cr_2O_7$

MOLECULAR STRUCTURE :



MOLECULAR WEIGHT :

294.2 g/mole

PROPERTIES : Physical state and appearance : Solid; Odour : Odourless; Taste: Bitter. Metallic; Colour: Orange-Red; pH (1% solution/water): 4 [Acidic.]; Melting Point: 398°C (748.4°F); Solubility: Easily soluble in hot and cold water.

USES : Tanning leather, dyeing, painting, printing; decorating porcelain, photolithography, pigment-prints; bleaching palm oil, wax and sponges; waterproofing fabrics; oxidizer in manufacturing of

organic chemicals, corrosion inhibitor; depolarizer for dry cells, in electric batteries; pharmaceuticals aid, oxidizing agent.

TOXICITY DATA:

LD₅₀ Mouse oral 190 mg/kg

LD₅₀ Mouse ip 37 mg/kg

LC₅₀ Fischer 344 rat inhalation male 35 mg/m³/4 hr, female 29 mg/m³/4 hr

LD₅₀ Fischer 344 rat oral male 26 mg/kg, female 17 mg/kg

Route	Symptoms	First Aid	Target Organ
Inhalation/ Ingestion	Over-exposure by inhalation may cause respiratory irritation. Severe over-exposure can result in death.	Evacuate the victim to a safe area. Loosen tight clothing. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention. Do not induce vomiting. Loosen tight clothing. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.	Respiratory system Gastrointestinal system
Contact Eye/Skin	Extremely hazardous in case of skin contact (permeator). Prolonged exposure may result in skin burns and ulcerations. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.	Remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Do not use an eye ointment. Seek medical attention. After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical	Eyes, Skin

PERSONAL PROTECTION Keep locked up Keep container dry. Keep away from heat. Keep away from sources of ignition. Keep away from

combustible material Do not breathe dust. Never add water to this product In case of insufficient ventilation, wear suitable respiratory equipment

STORAGE: Oxidizing materials should be stored in a separate safety storage cabinet or room.



MAY WE HELP YOU

To keep abreast with the effects of chemicals on environment and health, the ENVIS Centre of Indian Institute of Toxicology Research, deals with :

Maintenance of Toxicology Information
Database on Chemicals

Information collection, collation and dissemination

Toxic Chemical related query response service

Preparation of monograph on specified chemicals of current concern

Publishing Abstract of Current Literature in Toxicology

for further details do write to

Scientist In-Charge

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