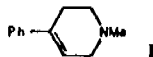


Helm: London, UK. A review with 103 refs. on the pharmacol. of EtOH [64-17-5]-seeking behavior in animals.

102:73554t Interaction of viruses with tumor promoters. Yamamoto, Naoki (Inst. Virus Res., Kyoto Univ., Kyoto, Japan 606). *Rev. Physiol., Biochem. Pharmacol.* 1984, 101, 111-59 (Eng). A review with 268 ref. of studies on the interaction between the persisting oncogenic herpes virus EBV and tumor promoters, with emphasis on virus induction and the transformation of normal human lymphocytes by EBV.

102:73555u MPTP neurotoxicity: an overview and characterization of phases of toxicity. Langston, J. William (Inst. Med. Res., San Jose, CA USA). *Life Sci.* 1985, 36(3), 201-6 (Eng).



A review with 18 refs. on the neurotoxicity of 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (I) [28289-54-5].

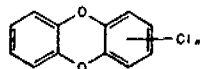
102:73556v Mechanism(s) of ethanol-drug interaction. Mu=hoherac, Barry B.; Roberts, Roderick K.; Hoyumpa, Anastacio M., Jr.; Schenker, Steven (Health Sci. Cent., Univ. Texas, San Antonio, TX USA). *Alcohol: Clin. Exp. Res.* 1984, 8(6), 583-93 (Eng). A review with 84 refs. on the effects of EtOH [64-17-5] on drug metab. at the microsomal level with emphasis on drug structure and the relations of cytochrome P 450.

102:73557w The assumptions used for exposure assessments. Jensen, Janice K. (Off. Pest. Programs, Environ. Prot. Agency, Washington, DC USA). *Stud. Environ. Sci.* 1984, 24(Determ. Assess. Pestic. Exposure), 147-52 (Eng). A review and discussion with 4 refs. on the procedures and assumptions used by the Office of Pesticide Programs in prepn. of pesticide exposure assessments.

102:73558x Formation of lipid peroxides and injury to tissues. Yagi, Kunio (Inst. Appl. Biochem., Japan 505-01). *Saishin Igaku* 1984, 39(7), 1368-73 (Japan). A review with 13 refs. on the formation of lipid peroxides by active O metabolites and of tissue injury by the lipid peroxides.

102:73559y Aquatic animals in toxicity testing. Couch, John A.; Hargis, W. J., Jr. (EPA Lab., Gulf Breeze, FL USA). *J. Am. Coll. Toxicol.* 1984, 3(6), 331-6 (Eng). A discussion with 7 refs. with general and specific examples of how aquatic animals are useful to toxicologists, as well as their bases for their use.

102:73560a Dioxins (toxicology). Yamaguchi, Seisuke (Tsukuba Univ., Ibaraki, Japan). *Tokishikoroji Forumu* 1984, 7(5), 541-52 (Japan). A review with 36 refs. on the toxicity of chlorinated



dibenzo-p-dioxins (I).

102:73561t Role of active oxygens in carcinogenesis. Nagata, Chikayoshi; Kodama, Masahiko (Biophysics Div., Natl. Cancer Cent. Res. Inst., Tokyo, Japan). *Saishin Igaku* 1984, 39(7), 1388-96 (Japan). A review with 43 refs. on active O as a factor in carcinogenesis in relation to diet or tobacco smoke.

102:73562u Staphylococcal exotoxins. Rottini, G. D.; Ohlemans, E. (Inst. Microbiol., Univ. Trieste, 34127 Trieste, Italy). *Boll. Microbiol. Indag. Lab.* 1983, 3(3), 3-24 (Ital). A review with 138 refs. on the biochem. characterization and biol. activities of the staphylococcal exotoxins, including leukocidin,  $\alpha$ -,  $\beta$ -,  $\gamma$ -, and  $\delta$ -toxins, enterotoxins A, B, C, D, E, and F, exfoliative toxins A and B, and the pyrogenic toxins A, B, and C.

102:73563v Avian endocrine responses to environmental pollutants. Rattner, Barnetta A.; Eroschenko, Victor P.; Fox, Glen A.; Fry, D. Michael; Gorsline, Jane (Patuxent Wildl. Res. Cent., Fish and Wildlife Serv., Laurel, MD 20708 USA). *J. Exp. Zool.* 1984, 232(3), 683-9 (Eng). A review with 33 refs. on the effects of chlorinated hydrocarbons, petroleum crude oil, and organophosphorus insecticides on the avian endocrine system.

102:73564w Triethyllead and cerebral development: an overview. Konat, Gregory (Med. Sch., Univ. Texas, Houston, TX 77025 USA). *Neurotoxicology* 1984, 5(3), 87-96 (Eng). A review with 44 refs. on the effects of triethyllead [5224-23-7] on cerebral development.

102:73565x Effects of early lead exposure on neurotransmitter systems in the brain. A review with commentary. Shellenberger, M. Kent (Kansas Cent. Ment. Retard. Res., Univ. Kansas, Kansas City, KS USA). *Neurotoxicology* 1984, 5(3), 177-212 (Eng). A review with many refs.

102:73566y Effect of lead intoxication on calcium homeostasis and calcium-mediated cell function: a review. Pounds, Joel G. (Food Drug Adm., Natl. Cent. Toxicol. Res., Jefferson, AR 72079 USA). *Neurotoxicology* 1984, 5(3), 295-331 (Eng). A review with many refs. on the toxicity of Pb to humans and lab. animals, esp. its effect on Ca metab.

102:73567z Harmful factors and mineral dusts. Chiyotani, Keizo (Keihai Rosai Hosp., Japan). *Rinsho Kensa* 1984, 28(11), 1330-7 (Japan). A review with 11 refs. on health hazard from mineral dusts after occupational exposure.

102:73568a Harmful factors and asbestos. Yokoyama, Kunihiko; Sera, Yoshisumi (Kokuritsu Ryooyoshu Kinki Hosp., Japan). *Rinsho Kensa* 1984, 28(11), 1338-44 (Japan). A review with 17 refs. on health hazard of asbestos after occupational exposure.

102:73569b Harmful factors and arsenic. Inamasu, Takeo; Ishinishi, Noburu (Med. Sch., Kyushu Univ., Fukuoka, Japan). *Rinsho Kensa* 1984, 28(11), 1396-401 (Japan). A review with 22 refs. on the toxicity of As and the quant. detn. of As in environmental and biol. samples.

102:73570v Harmful factors and organic solvents. Takeuchi, Yasuhiro (Med. Sch., Nagoya Univ., Nagoya, Japan). *Rinsho Kensa* 1984, 28(11), 1402-11 (Japan). A review with 19 refs. on the properties and toxicities of org. solvents.

102:73571w Harmful factors and hydrogen sulfide. Yamaguchi, Hiroshi (Med. Sch., Showa Univ., Japan). *Rinsho Kensa* 1984, 28(11), 1421-7 (Japan). A review with 23 refs. on poisoning by H<sub>2</sub>S.

102:73572x Harmful factors and vinyl chloride monomer. Suzumura, Mitsuru (Toa Gosei Kagaku Kogyo Co. Ltd., Japan). *Rinsho Kensa* 1984, 28(11), 1437-40 (Japan). A review with 5 refs. on the toxicity of vinyl chloride [75-01-4].

102:73573y Harmful factors and methyl bromide, methyl iodide, and methyl chloride. Matsui, Hisao (Med. Sch., Gunma Univ., Japan). *Rinsho Kensa* 1984, 28(11), 1447-50 (Japan). A review with 12 refs. on the toxicity of MeBr [74-83-9], MeI [74-88-4], and MeCl [74-87-3].

102:73574z Blood lead, urinary delta aminolevulinic acid and the diagnosis of lead poisoning in dogs. Canfield, P. J.; Fairburn, A. J.; Watson, A. D. J. (Dep. Vet. Pathol., Univ. Sydney, New South Wales, 2006 Australia). *Aust. Vet. J.* 1984, 61(10), 323-4 (Eng). A discussion with 11 refs. on the role of blood Pb and urinary  $\delta$ -aminolevulinic acid [106-60-5] in the diagnosis of Pb poisoning in dogs.

102:73575a Folate metabolism, the enterohepatic circulation and alcohol. Weir, Donald G.; McGing, Peter G.; Scott, John M. (Dep. Clin. Med., Trinity Coll., Dublin, Ire.). *Biochem. Pharmacol.* 1985, 34(1), 1-7 (Eng). A review with 123 refs. on the effects of EtOH [64-17-5] on folic acid [59-30-3] metab. Probably, folate deficiency in chronic alcoholism results from increased urinary excretion of folic acid.

102:73576b N-Nitroso carcinogens. Preussmann, R.; Stewart, B. W. (Inst. Toxicol. Chemother., Ger. Cancer Res. Cent., 6900 Heidelberg, Fed. Rep. Ger.). *ACS Monogr.* 1984, 182(Chem. Carcinog., 2nd Ed., Vol. 2), 643-828 (Eng). A review with 1013 refs. on recent advances of the chem. of N-nitroso compds. relevant to their toxicity, mutagenicity, teratogenicity, and carcinogenicity.

102:73577c Triazines [as carcinogens]. Kolar, G. F. (Inst. Toxicol. Chemother., Ger. Cancer Res. Cent., 6900 Heidelberg, Fed. Rep. Ger.). *ACS Monogr.* 1984, 182(Chem. Carcinog., 2nd Ed., Vol. 2), 869-914 (Eng). A review with 252 refs.

102:73578d Hydrazine derivatives, azo and azoxy compounds, and methylazoxymethanol and cycasin. Zedeck, Morris S. (Mem. Sloan-Kettering Cancer Cent., New York, NY 10021 USA). *ACS Monogr.* 1984, 182(Chem. Carcinog., 2nd Ed., Vol. 2), 915-44 (Eng). A review with 214 refs. on the metab. and biol. effects of the title carcinogens: hydrazine derivs., azo and azoxy compds., methylazoxymethanol [590-96-5], and cycasin [14901-08-7].

102:73579e Fusarial mycotoxins and cancer. Schoental, R. (R. Vet. Coll., Univ. London, London, UK NW1 0TU). *ACS Monogr.* 1984, 182(Chem. Carcinog., 2nd Ed., Vol. 2), 1137-69 (Eng). A review with 338 refs. on the relations between cancer in humans and lab. animals and the naturally occurring mycotoxins from *Fusarium*.

102:73580y Inhibition of chemical carcinogenesis. Slaga, Thomas J.; Digiovanni, John (Biol. Div., Oak Ridge Natl. Lab., Oak Ridge, TN 37830 USA). *ACS Monogr.* 1984, 182(Chem. Carcinog., 2nd Ed., Vol. 2), 1279-321 (Eng). A review with 273 refs. on the inhibition of chem. carcinogenesis with emphasis on the specific stage (initiation, promotion) of the process that is involved.

102:73581z Bioassay of carcinogens: in vitro and in vivo tests. Weisburger, J. H.; Williams, G. M. (Naylor Dana Inst. Dis. Prev., Am. Health Found., Valhalla, NY 10595 USA). *ACS Monogr.* 1984, 182(Chem. Carcinog., 2nd Ed., Vol. 2), 1323-73 (Eng). A review with 390 refs. on test systems for systematic approaches to health risk assessment through in vitro and in vivo bioassays of the carcinogenicity of chems.

102:73582a Toxicity and carcinogenicity of essential and non-essential metals. Costa, Max; Kraker, Alan J.; Patierno, Steven R. (Med. Sch., Univ. Texas, Houston, TX 77025 USA). *Prog. Clin. Biochem. Med.* 1984, 1(Essent. Non-Essent. Met., Metab. Antibiot. Act., Pharmacol. Benzodiazepines, Interferon Gamma Res.), 1-45 (Eng). A review with 340 refs. with emphasis on the toxicity and carcinogenicity of Al, As, Be, Cd, Cr, Pb, Hg, and Ni; other metals were discussed in less detail.

102:73583b Biological activities of Klebsiella 03 lipopolysaccharide. Nakashima, Izumi; Ohta, Michio; Kido, Nobuo; Fujii, Yasuaki; Yokochi, Takashi; Nagase, Fumihiko; Hasegawa, Takaaki; Mori, Masashi; Isobe, Kenichi; et al. (Sch. Med., Nagoya Univ., Aichi, Japan 466). *Bact. Endotoxin* 1984, 173-85 (Eng). Edited by Homma, J. Yuzuru. Verlag Chemie: Weinheim, Fed. Rep. Ger. A review with 40 refs. of chem. compn. and adjuvant activity of Klebsiella 03 lipopolysaccharide. A hypothetical model of interaction between the lipopolysaccharide and macrophage cell surface is also presented.

102:73584c Modeling of toxicological effects of fire gases: I. Incapacitating effects of narcotic fire gases. Kaplan, Harold L.; Hartzell, Gordon E. (Dep. Fire Technol., Southwest Res. Inst., San Antonio, TX 78284 USA). *J. Fire Sci.* 1984, 2(4), 286-305 (Eng). A review with 27 refs. on the modeling of the incapacitating effects of the narcotic fire gas toxicants based on correlation of obsd. effects with accumulated doses.

102:73585d Considerations of toxicological interactions in developing new chemicals. Wilkinson, C. F.; Murray, M. (Inst. Comp. Envir. Toxicol., Cornell Univ., Ithaca, NY 14853 USA). *Drug Metab. Rev.* 1984, 15(5-6), 897-917 (Eng). A review with 77 refs. on the metabolic activation of new chems., and the inhibition of monooxygenases and other enzymes with or without activation

to  $\text{SO}_2$  in open-top chambers at mean ambient concns. of 164, 70, or 19  $\mu\text{g}/\text{m}^3$  for 48 days. Exposure to  $\text{SO}_2$  had no effect on calorific value or ash concn. in subterranean clover or ryegrass, but exposure to 164  $\mu\text{g}/\text{m}^3$  of  $\text{SO}_2$  decreased leaf protein concns. in both species. Chlorophyll concns. were decreased by exposure to 164 and 70  $\mu\text{g}/\text{m}^3$  of  $\text{SO}_2$  in subterranean clover but not in ryegrass. Peroxidase [9003-99-0] activity increased with increasing  $\text{SO}_2$  concn. and reduction of exposure in subterranean clover, but not in ryegrass. Specific peroxidase activity was increased in both species by exposure to 164  $\mu\text{g}/\text{m}^3$  of  $\text{SO}_2$  only. Root and shoot dry wts. were not affected by exposure to  $\text{SO}_2$ .

102:1602j Toxicological studies of plastic used in medical and pharmaceutical fields. Paropkari, Sujata; Dahanukar, Sharadini A.; Karandikar, S. M. (Dep. Pharmacol., Seth G. S. Med. Coll., Bombay, 400 012 India). *Indian Drugs* 1984, 21(11), 495-7 (Eng). Biol. and physicochem. tests were performed on PVC [9002-86-2] and polyethylene [9002-88-4] materials used for infusion bags and i.v. sets manufd. in India from locally available materials. No toxic effects were obsd. in any of the tests performed. However, a biol. manifestation-like inflammation was seen in some samples.

102:1603k Preadult lethality in four populations of *Drosophila melanogaster* treated with formaldehyde. San Miguel Salan, E. (Fac. Biol., Univ. Leon, Leon, Spain). *Experientia* 1984, 40(8), 861-2 (Eng). Samples from 4 populations of *D. melanogaster* were treated with formaldehyde [50-00-0] by the larval feeding method, and induced lethality was scored. The results showed relevant differences among the populations analyzed.

102:1604m An investigation into the phytotoxicity of zinc, copper and nickel using sewage sludge of controlled metal content. Davis, R. D.; Carlton-Smith, C. H. (Sludge Contaminants Sect., Water Res. Cent., Stevenage, UK SG1 1TH). *Environ. Pollut., Ser. B* 1984, 8(3), 163-85 (Eng). A replicated factorial pot trial with perennial ryegrass and a sandy loam soil (pH 7.0) investigated the relative phytotoxicities of Zn, Cu, and Ni, and the nature of their interaction. Sewage sludge of controlled metal content made from enriched sewage was used for the soil treatments so that each pot received the same amt. of sludge dry solids while quantities of metals added were adjustable as required. Upper crit. concns. (total) of the 3 elements in soil were 319 mg Zn/kg, 105 mg Cu/kg, and 221 mg Ni/kg. The relative toxicities of Zn/Cu/Ni were 1.0/2.6/1.0 on a loading rate basis. The comparatively low toxicity of Ni was attributed to the pH value (7.0) of the soil used. At subcrit. levels in the soil, phytotoxic effects of mixts. of the 3 elements were independent but some additivity was seen when  $\geq 1$  element was already at a hypercrit. level. At subcrit. levels, the element present in the highest concn. relative to its crit. concn. detd. the phytotoxic effect on ryegrass yield of mixts. of Zn, Cu, and Ni in soil. But  $\geq 2$  elements exceeded their crit. soil concns., their combined phytotoxic effect could be taken as being additive. Thus, the 3 elements could be dealt with sep. in guidelines for sludge utilization on agricultural land.

102:1605n Lead (Pb) in spiders: a possible measure of atmospheric lead pollution. Clausen, Ian Henning Stenhold (Inst. Populationsbiol., Københavns Univ., Copenhagen, DK-2100 Den.). *Environ. Pollut., Ser. B* 1984, 8(3), 217-30 (Eng). Pb concns. were measured in 8 species of spider and the lichen *Lecanora conizaeoides*. Significant differences between spider species were found. The correlation between Pb in *Araneus umbraticus* (Y) and *L. conizaeoides* (X) was highly significant, it being possible to describe the relation by means of the formula:  $Y = 0.804X^{0.582}$ . Thus, Pb in *A. umbraticus* may be used as a measure of atm. Pb pollution.

102:1606p Trace metal residues in shellfish from Maryland waters, 1976-1980. Eisenberg, M.; Topping, J. J. (Off. Environ. Programs, Maryland Dep. Health Ment. Hyg., Baltimore, MD 21201 USA). *J. Environ. Sci. Health, Part B* 1984, B19(7), 649-71 (Eng). Levels of 7 heavy metal residues (As, Cd, Cr, Cu, Pb, Hg, and Zn) were monitored in samples of the American oyster (*Crassostrea virginica*), the soft shell clam (*Mya arenaria*), the hard shell clam (*Mercenaria mercenaria*), and the blue crab (*Callinectes sapidus*). Samples were taken from the Maryland section of the Chesapeake Bay and its tributaries over a 5-yr period (1976-1980). This study was undertaken to provide an est. of a baseline for values of trace heavy metals. Also, the oyster, being a nonmobile filter feeder, provides information regarding the level of metal residues in its environment (water and sediment), because heavy metal uptake is related to the surrounding metal concns. Addnl., this type of monitoring program is essential to ensure that shellfish sold for human consumption are within safe limits established for toxic substances by the United States Food and Drug Administration. Results of the study are consistent with data from previous years and no significant year-to-year trends were obsd. over the period of the investigation.

102:1607q Distribution of nickel in the roach (*Rutilus rutilus* L.) after exposure to lethal and sublethal concentrations. Van Hoof, F.; Nauwelaers, J. P. (I. V. Antwerpse Waterwerken N. V., B-2018 Antwerp, Belg.). *Chemosphere* 1984, 13(9), 1053-8 (Eng). To evaluate the impact of Ni in fish kills occurring in the Meuse river, Belgium, a series of expts. were performed in which the uptake and distribution of Ni in fish (roach, *R. rutilus*) was studied after administration of Ni alone and in combination with other metals. In decreasing order, the highest Ni concns. were found in the gill, opercle, kidney, liver, and muscle. After exposure to Ni in combination with Cu or Cr, levels in gill tissue increased significantly compared to levels encountered when fish were exposed to the same concn. of Ni alone. When the pH of the test soln. was lowered from 8.0 to 6.5, the lethal action and the accumulation of Ni in the gills

increased. Control fish collected from a surface water storage reservoir and from the river had higher Ni levels in the opercle than in the gills.

102:1608r Mercury and methylmercury in higher fungi and their relation with the substrata in a cinnabar mining area. Bargagli, R.; Baldi, F. (Dip. Biol. Ambientale, Univ. Siena, 53100 Siena, Italy). *Chemosphere* 1984, 13(9), 1059-71 (Eng). Higher fungi (195 specimens) and their substrata collected in a Hg-mining area of central Italy were analyzed for their total Hg content. Whereas wood decomposers and many species of mycorrhizal fungi accumulated the metal at a very low rate, some mycorrhizal species and all the humus decomposers accumulated  $\leq 100 \mu\text{g}/\text{g}$  of Hg and in the least contaminated sites,  $\leq 63$  times as much Hg as the substratum. The methylmercury content of 35 species (almost all edible), ranged between 0.01 and 3.7  $\mu\text{g}/\text{g}$ .

102:1609s Impairment of retinal protein synthesis and axonal transport along the optic pathway of albino rabbits by intraocular administration of methylmercury. Chihara, Etsuo; Sakugawa, Masanao; Tsukada, Takako (Fac. Med., Kyoto Univ., Kyoto, Japan 606). *Nippon Ganka Gakkai Zasshi* 1984, 88(9), 1224-8 (Japan). Impairment of retinal protein synthesis and axonal transport along the optic pathway was studied after an intraocular (vitreous) injection of 10-100  $\mu\text{g}$  methylmercury to rabbits. Protein synthesis in the retina (ganglion cells) was decreased after an intraocular injection of 10  $\mu\text{g}$  methylmercury, whereas the O/R ratio (amt. of axonally transferred radioactive protein in the optic nerve and tract vs. amt. of retinally synthesized radioactive protein) was not significantly affected. Intraocular administration of  $\geq 25 \mu\text{g}$  methylmercury caused impairment of both the retinal protein synthesis and axonal transport. The retinal protein synthesis decreased within 1 day after an injection of the methylmercury, and did not recover for a long period ( $>2$  mo). Protein synthesis of the ganglion cells seems to be primarily and directly affected by intravitreal methylmercury, because synthetic abnormality precedes changes in axonal transport.

102:1610k The autoradiographic localization of retained orally administered cadmium tracer within Paneth cells of rat duodenum. Philpotts, C. J. (Dep. Sci., Bristol Polytech., Bristol, UK BS16 1QY). *Toxicology* 1984, 33(1), 59-66 (Eng). Rats not previously exposed to Cd and rats whose sole source of drinking water for the previous 9 mo contained 0.2 g Cd/L were given intragastrically 100  $\mu\text{Ci}$   $^{109}\text{CdCl}_2$ . After 96 h more isotope was retained in the duodenums of rats not previously exposed to Cd than in the duodenums of Cd-exposed rats. In the rats not previously exposed to Cd, radioactivity was concd. in the Paneth cells at the base of the crypts of Lieberkuhn. This did not occur in Cd-exposed rats. Paneth cells are known to contain Zn and metallothionein but their retention of Cd has not previously been reported. Since exposure to environmental Cd is largely via contaminated food and water, the role of Paneth cells may be of significance in toxicol.

102:1611m Cerebral cytochrome a<sub>3</sub> inhibition by cyanide in bloodless rats. Piantadosi, C. A.; Sylvia, A. L. (Med. Cent., Duke Univ., Durham, NC 27710 USA). *Toxicology* 1984, 33(1), 67-79 (Eng). I.v. cyanide-induced transient increases in cerebral cytochrome a<sub>3</sub> [57-12-5] redn. level and subsequent redox recovery kinetics were similar in bloodless (i.e., perfluorocarbon emulsion-perfused) and normal blood circulated rats. Electroencephalog. activity was maintained until a 50% increase in the redn. level of cytochrome a<sub>3</sub> was induced with cyanide. Pretreatment with the cyanide antagonist  $\text{Na}_2\text{S}_2\text{O}_3$  also protected brain cytochrome a<sub>3</sub> from cyanide-mediated redox state changes by ~4-fold both in normal blood circulated controls and during the bloodless circulation. Apparently,  $\text{Na}_2\text{S}_2\text{O}_3$ , presumably acting at tissue sites of rhodanase activity, can prevent cerebral cytochrome a<sub>3</sub> redn. by cyanide even in the virtual absence of blood or circulating proteins.

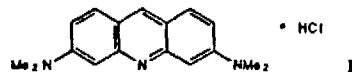
102:1612n Chronic lead exposure differentially affects dopamine transport in rat striatum and nucleus accumbens. Missale, C.; Battaini, F.; Govoni, S.; Castelletti, L.; Spano, P. F.; Trabucchi, M. (Dep. Pharmacol. Ther., Univ. Brescia, Brescia, Italy). *Toxicology* 1984, 33(1), 81-90 (Eng). Dopamine [51-61-6] release and uptake were studied in slices of striatum and nucleus accumbens of rats chronically exposed to Pb [2.5 mg  $\text{Pb}(\text{OAc})_2/\text{mL}$  in drinking water]. Pb poisoning inhibited striatal dopamine uptake and stimulated it at the mesolimbic level. Cocaine binding, that is related to the uptake system, was below normal in the striatum. Apparently, chronic Pb-poisoning interferes with dopaminergic transmission at the presynaptic level through specific and differential interactions with the uptake process depending on the area examd.

102:1613p Acute toxic action of di-n-butyltin dichloride influenced by meso-2,3-dimercaptosuccinic acid. Merkord, Jutta; Hennighausen, G. (Inst. Pharmakol. Toxikol., Wilhelm-Pieck-Univ. Rostock, DDR-2500 Rostock, Ger. Dem. Rep.). *Pharmazie* 1984, 39(8), 572-3 (Ger). In mice poisoned with 15 or 100  $\mu\text{mol}$   $\text{Bu}_2\text{SnCl}_2$  [683-18-1] (i.v. or orally, resp.), treatment with meso-2,3-dimercaptosuccinic acid (I) [304-55-2] (100  $\mu\text{mol}/\text{kg}$ , i.p.) 10 min after the poisoning moderated toxic effects of the Sn compd. (on thymus wt., thymocyte no., and bile duct diam.); later treatment (after 5-24 h) had no or even neg. effects. LD<sub>50</sub> of the Sn compd. was not affected by the treatment at any time after the poisoning. The effect of I against the poisoning was better than that of dimercaprol [59-52-9].

102:1614q Effect of cadmium on the mineral compositions in the serum, tibia and teeth of albino rat. Cho, Soo Yeul; Ahn, Choon Kil; Jeung, Jae Hong (Grad. Sch. Environ. Stud., Yeungnam Univ., S. Korea). *Han'guk Yongyang Sikhyong Hakhoechi* 1983, 12(3), 196-201 (Korean). Growth rate was significantly decreased as the feeding level of Cd increased. The wt. of the kidney heart

102: 91215n Carcinogenic activity of haloacetonitriles and haloacetone derivatives in the mouse skin and lung. Bull. R. J.; Robinson, M. (Health Eff. Res. Lab., Cincinnati, OH USA). *Report* 1984, EPA-600/D-84-185; Order No. PB84-215508, 19 pp. (Eng). Avail. NTIS. From Gov. Rep. Announce. Index (U. S.) 1984, 84(21), 79. The carcinogenicity in mouse skin and lung of chloro- [107-14-2], dichloro- [3018-12-0], trichloro- [545-06-2], bromochloro- [83463-62-1], and dibromochloroacetonitrile [3252-43-5] and of 1,1-dichloro- [513-88-2] and 1,1,1-trichloroacetone [918-00-3] was studied. The haloacetonitriles found in drinking water, with the possible exception of the dichloro compd., possessed carcinogenic properties. It was not possible to demonstrate such activity with the chlorinated acetones.

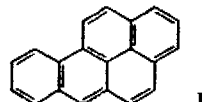
102: 91216p Mutagenic activity of some intercalating compounds in the *Drosophila zeste* somatic eye mutation test. Xamena, N.; Creus, A.; Marcos, R. (Fac. Cienc., Univ. Auton. Barcelona, Bellaterra, Spain). *Mutat. Res.* 1984, 138(2-3), 169-73 (Eng).



The toxicities of acridine orange (I) [65-61-2], acriflavine [65589-70-0], Et methanesulfonate (EMS) [62-50-0], ethidium bromide [1239-45-8], quinacrine [83-89-6], and chloroquine [54-05-7] to *D. melanogaster zeste* strain larvae were detd., being toxic compared to controls and intercalating agents for DNA, except EMS, which served as pos. control. All the intercalating compds. and EMS were mutagenic, based on an increased frequency of red eye spots in adult males after larval treatments. Thus, the *zeste* strain somatic mutation test is sufficiently sensitive to detect mutagenic potential of intercalating agents.

102: 91217q Carcinogenesis by N-nitrosohexamethyleneimine in NZO inbred mice. Goodall, C. M.; Lijinsky, W. (Med. Sch., Univ. Otago, Dunedin, N. Z.). *Toxicology* 1984, 33(3-4), 251-9 (Eng). The carcinogenic response of NZO/BIGd inbred mice of both sexes to oral N-nitrosohexamethyleneimine (NHEX) [932-83-2] was investigated at 2 differing dose rates, but equal cumulative doses. Mice received 52 mg NHEX (2 mg/g) in drinking water over either an 8-wk period (200 mg/L) or a 32-wk period (50 mg/L), and were then kept for their natural lifespans. The main sites of tumorigenesis were upper alimentary tract (oropharynx, esophagus, squamous and glandular stomach) and liver. Lymphomas and biliary epithelial tumors were also induced, but lung carcinogenic response was of marginal statistical significance. In contrast to previous reports, responses in mice very similar to the organ pattern of NHEX carcinogenesis in rats were found. A comparable previous study in rats found a more marked change in response pattern at the 2 NHEX dose rates, but total doses differed by 1.6-fold. With equal total doses of NHEX the mouse tumor patterns at the same 2 dose rates were nearly the same, but there were higher incidences of liver and lung tumors and of lymphomas at the high dose rate, in agreement with the rat study. There were no significant sex differences in carcinogenic response.

102: 91218r The pharmacokinetics of benzo[a]pyrene in the isolated perfused rabbit lung: the influence of benzo[a]pyrene, n-dodecane, particulate, or sulfur dioxide. Morgan, David D.; Warshawsky, David; Niemeier, Richard W.; Bingham, Eula (Med. Cent., Cincinnati Vet. Admin., Cincinnati, OH 45220 USA). *Toxicology* 1984, 33(3-4), 275-89 (Eng). The pharmacokinetics of benzo[a]pyrene

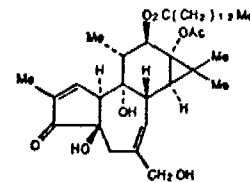


(BaP)(I) [50-32-8] in the isolated perfused rabbit lung (IPL) following pretreatment of the whole animal or simultaneous administration to the IPL with n-dodecane [112-40-3], Fe<sub>2</sub>O<sub>3</sub>, crude airborne particulate (CAP), fly ash, or SO<sub>2</sub> was investigated using a 1-compartment model. The rate const. for the appearance (k<sub>a</sub>) of BaP in the blood, the clearance of BaP from the blood, and the rate of appearance of BaP metabolites (RAM) were the kinetic parameters detd. BaP entered the blood rapidly with an av. half-life of 11 min in expts. in which the IPLs received only BaP on perfusion. The logarithms of the clearances from these expts. were linearly correlated with the RAMs. In these expts., pretreatment of the whole animal with BaP produced a 48-55-fold increase in BaP clearance whereas pretreatment with n-dodecane increased the clearance 4-fold in comparison with no pretreatment. Pretreatment with Fe<sub>2</sub>O<sub>3</sub> or Fe<sub>2</sub>O<sub>3</sub> and BaP increased the clearance by factors of 5.5 and 1.5, resp., over those of untreated and BaP-pretreated expts.

102: 91219s The reduction of chromium(VI) to chromium(III) by glutathione: an intracellular redox pathway in the metabolism of the carcinogen chromate. Wiegand, H. J.; Ottenwaelter, H.; Bolt, H. M. (Inst. Arbeitsphysiol., Univ. Dortmund, 4600 Dortmund, 1 Fed. Rep. Ger.). *Toxicology* 1984, 33(3-4), 341-8 (Eng). The capacity of GSH [70-18-8] to reduce Cr(VI) to Cr(III) in vitro was investigated. The reaction was detd. spectrophotometrically by following the absorption of Cr(VI) at 370 nm. At stoichiometric conditions (molar ratio Cr(VI)/GSH of 1:3) the redn. was strongly dependent on the soln.'s pH. It was much slower at pH 7.4 than at pH values <5. An excess of GSH (100- or 1000-fold) accelerated the reaction. In any case, 3 GSH mols. were required to reduce 1 mol. of chromate. Incubation of human red blood cells (RBC) with an excess of Na<sub>2</sub>CrO<sub>4</sub> (10 mM) decreased the GSH content of the cells to 10% of the original amt. This depletion of GSH was similar to that

obtained when RBC were incubated with 62 mM di-Et maleate (DEM), a well known GSH depleting agent. Sephadex G-100 chromatog. of lysates from human RBC incubated with radioactive chromate (<sup>51</sup>Cr(VI)) showed a strong affinity of <sup>51</sup>Cr for Hb: 97% of the applied dose was bound to Hb whereas only minor amts. of <sup>51</sup>Cr were found in the low-mol. fractions. However, incubations of prep. lysates (as opposed to intact cells) with 10 mM Na<sub>2</sub><sup>51</sup>CrO<sub>4</sub> markedly raised the Cr content of low-mol. fractions (probably GSH-Cr-complexes), probably indicative of a role of GSH in the intracellular redn. of Cr(VI) to Cr(III), the latter being regarded as the ultimately toxic species of this metal.

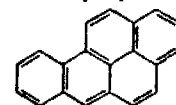
102: 91220k Regulation of glycophorin gene expression by a tumor-promoting phorbol ester in human leukemic K562 cells. Siebert, Paul D.; Fukuda, Minoru (Cancer Res. Cent., La Jolla Cancer Res. Found., La Jolla, CA 92037 USA). *J. Biol. Chem.* 1985, 260(1), 640-5 (Eng). The mechanism for redn. of glycophorin



expression was examd. By immunopptn. of metabolically labeled proteins, an 11-fold redn. in the incorporation of [<sup>3</sup>H]-labeled glucosamine [3416-24-8] into glycophorin after 48 h of TPA (I) [16561-29-8] treatment was detected. This was closely correlate with a redn. in <sup>35</sup>S-labeled methionine [63-68-3] incorporation, suggesting that regulation occurs at the level of protein synthesis and not glycosylation. TPA decreased the incorporation of [<sup>3</sup>H]glycosamine into glycophorin in another leukemic cell line, HEL. A time course showed that there was a 3-fold redn. in glycophorin biosynthesis as early as 4 h after TPA treatment. The level then decreased to 10% of the untreated control levels after 12 h of treatment. The redn. in glycophorin biosynthesis was reversible following removal of TPA from the culture medium. By immunopptn. of in vitro translation products directed by purified total cellular RNA, there is a corresponding decrease in glycophorin mRNA activity. Glycophorin mRNA activity was extensively reduced as early as 1 h after TPA treatment and by 12 h was nearly undetectable. Interestingly, the size of the primary translation product was 8 kdaltons larger than the fully processed apoprotein. These results are consistent with the transcriptional regulation of glycophorin expression by TPA.

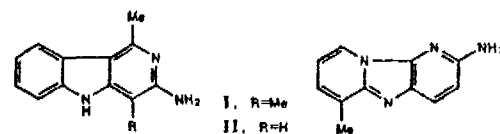
102: 91221m Malignant fibrous histiocytomas induced in rats by polymers. Maekawa, Akihiko; Ogiu, Toshiaki; Onodera, Hiroshi; Furuta, Kyoko; Matsuoka, Chiaki; Ohno, Yuko; Tanigawa, Hiroyuko; Salmo, Gilda S.; Matsuyama, Mutsushi; Hayashi, Yuzo (Div. Pathol., Natl. Inst. Hyg. Sci., Tokyo, Japan 153). *J. Cancer Res. Clin. Oncol.* 1984, 108(3), 364-5 (Eng). Five polymeric materials (3 types of PVC [9002-86-2], 1 polyhydroxyethyl methacrylate [25249-16-5], and 1 di-Me polysiloxane) were implanted into s.c. tissues of rats. S.c. tumors developed in all exptl. groups. The incidences of the tumors differed, however, for the different materials. Thus, chem. characteristics of the materials may influence the incidence of s.c. tumors. Many of the tumors were diagnosed as malignant fibrous histiocytomas.

102: 91222n Use of human blood cells treated in vitro for detection of potential genotoxicity of chemical agents. Ros, Y. (Unite Toxicol., Inst. Hyg. Epidemiol., B-1050 Brussels, Belg.). *Arch. Belg. Med. Soc., Hyg., Med. Trav. Med. Leg.* 1984, 42(5-6), 325-38 (Fr). In normal human peripheral lymphocytes incubated 72



h with benzo[a]pyrene (I) [50-32-8], EMS [62-50-0], mitomycin C [50-07-7], cyclophosphamide [50-18-0], or TPA [16561-29-8], the mitotic index was below normal and the incidence of nucleus deformation was above normal. Chromosome aberrations were induced by I, cyclophosphamide and TPA. Sister chromatid exchange was induced by mitomycin C.

102: 91223p Adsorption of pyrolyzate mutagens by vegetable fibers. Kada, Tsuneo; Kato, Masayuki; Aikawa, Katsuhiro; Kiriya, Shuhachi (Dep. Induced Mutat., Natl. Inst. Gen., Mishima, Japan 411). *Mutat. Res.* 1984, 141(3-4), 149-52 (Eng).



By detg. the mutagenicity of the amino acid pyrolyzates [Trp-P1 (I) [62450-06-0], Trp-P2 (II) [62450-07-1], and Glu-P1 (III) [67730-11-4]] in the Ames test before adsorption onto vegetable fibers and subsequent to treatment with vegetable fibers, it was established that the fibers decreased mutagenicity  $\leq 100\%$  in 1 h. Fractionation of the fiber-adsorbed mutagen showed the activity to be removed from the fibers partially by washing the water, but mainly by extn. with org. solvents.

reflected by Hg levels in urine (HgU) (means 52 and 37  $\mu\text{g/g}$  creatinine for males and females, resp.) and blood Hg levels (mean 1.4 and 0.9  $\mu\text{g/d L}$  for males and females, resp.). Several symptoms mainly related to the central nervous system (memory disturbances, depressive feelings, fatigue, irritability) were more prevalent in Hg-exposed subjects but were not related to exposure parameters. Slight renal tubular effects, i.e. increased urinary  $\beta$ -galactosidase [9031-11-2] activity and increased urinary excretion of retinol-binding protein, were more related to the current exposure intensity (HgU) than to the duration of exposure and were detected only when HgU exceeded 50  $\mu\text{g/g}$  creatinine. Changes in hand tremor parameters were detected in males, mainly for >10 yr exposure, and were more related to the integrated exposure than to current exposure. This study tends to validate the previously proposed biol. threshold limit of HgU of 50  $\mu\text{g/g}$  creatinine for workers chronically exposed to Hg vapor.

102: 118807w Respirator cartridge evaluation for isocyanate containing Imron and Centari enamels. Vasta, Julia F. (Cent. Res. Dev. Dep., E.I. du Pont de Nemours and Co., Newark, DE 19711 USA). *Am. Ind. Hyg. Assoc. J.* 1985, 46(1), 39-44 (Eng). Org. vapor respirator cartridges prevented isocyanate exposure during use with Imron [91932-19-3] and Centari [91931-41-8], 2 isocyanate contg. enamels, under conditions which approx. field conditions, although solvent breakthrough was obsd. under some conditions. During 4-h exposures to Imron, neither solvent nor isocyanate break-through was obsd. with the Wilson Products R21 org. vapor cartridge with R15 prefilter. On exposure of this cartridge to Centari, acetone [67-64-1] breakthrough, followed by other solvents, was obsd. after 10 h, but even after 25 h, isocyanate breakthrough was not obsd. Ethyl acetate [141-78-6] broke through the Mine Safety Appliances org. vapor cartridge and prefilter after 15 h, but isocyanate had not broken through even after 18 h of exposure.

102: 118808x Health examination and air monitoring evaluation for workers exposed to 2-nitropropane. Crawford, Gary N.; Garrison, Richard P.; McFee, Donald R. (Occusafe, Inc., Wheeling, IL 60090 USA). *Am. Ind. Hyg. Assoc. J.* 1985, 46(1), 45-7 (Eng). Comprehensive employee health exams. along with solvent extn. work-place area and personal monitoring were conducted to evaluate potential exposure to 2-nitropropane [79-46-9]. The employee cross section included in the study consisted of nearly all workers at the plant. The entire workforce was represented, including those who did not have contact with 2-nitropropane. No adverse health effects were found which could be connected with work experience. Body systems evaluated included lungs, liver, kidney, blood, skin and cardiovascular. Work area levels at specific locations sometimes exceeded 25 ppm, but personal time-weighted av. levels generally were below 25 ppm.

102: 118809y Cyanide intoxication among silver-reclaiming workers. Blanc, Paul; Hogan, Mary; Mallin, Katherine; Hryhorczuk, Daniel; Hessel, Stephen; Bernard, Bruce (Div. Occup. Med., Cook Cty. Hosp., Chicago, IL 60612 USA). *JAMA, J. Am. Med. Assoc.* 1985, 253(3), 367-71 (Eng). Thirty-six former Ag-reclaiming facility workers who had been exposed over a long time to excessive levels of CN<sup>-</sup> were studied to det. acute and residual toxic reactions. Questionnaire data showed that during the time of active employment, there was a high incidence of symptoms that are consistent with acute CN<sup>-</sup> toxic reactions. A significant pos. trend for prevalence of CN<sup>-</sup>-related symptoms measured against the levels of exposure supported a dose-response effect. Some symptoms that occurred  $\geq 7$  mo after exposure had ceased also exhibited a dose response-trend. Mild abnormalities in mean vitamin B<sub>12</sub> [68-19-9] and folic acid [59-30-3] levels and thyroid function suggested long-term CN<sup>-</sup> effects.

102: 118810a Determination of heavy metals in welder's working environment using nuclear analytical methods. Olah, L.; Tolgyessy, J. (Weld. Res. Inst., Bratislava, Czech.). *J. Radioanal. Nucl. Chem.* 1985, 93(1), 43-53 (Eng). An evaluation of the chem. quality of the working environment was made by means of radionuclide x-ray fluorescence anal. and activation anal. with fast neutrons. Welding aerosols were sampled by filtration on Synpor 4 membrane ultrafilters. For selected types of welding filter metals, detn. of heavy metals in aerosols was performed.

102: 118811t Studies on the parameters of the working environment during training at a rubber industry secondary polytechnical school. Kulikova, K.; Nedeva, V. (MA, Sofia, Bulg.). *Khig. Zdraveopaz.* 1984, 27(5), 456-61 (Bulg). The microclimatic conditions in rooms for training in secondary polytech. schools in rubber industry in Bulgaria meet the hygienic stds. for indoor air quality, however, the air in workshops for practical training often contains toxic substances, e.g., C<sub>6</sub>H<sub>6</sub> [71-43-2], vinyl chloride [75-01-4], oil aerosols, Et acetate [141-78-6], Bu acetate [123-86-4], CO, and styrene [100-42-5] at concns. exceeding the max. permissible levels. At the workplace, the levels of toxic compds. are close to the max. permissible concns.

102: 118812u A suggestion on how to use measurements of cadmium in blood as a cumulative dose estimate. Rogenfeld, Artur; Elinder, Carl Gustaf; Jaerup, Lars (Co. Health Care Unit, Granges Aluminium, Finspang, Swed.). *Int. Arch. Occup. Environ. Health* 1984, 55(1), 43-8 (Eng). The individual cumulative Cd dose was estd. for smelter workers in a Cd-Cu alloy plant. Two different principles were used: cumulative respiratory dose and cumulative av. annual blood-Cd dose. Out of 8 workers with a cumulative respiratory dose exceeding 500 mg Cd-h/m<sup>3</sup>, 2 of them (25%) had signs of a Cd-induced renal dysfunction. These 2 men were the only workers that had a cumulative av. annual blood Cd

dose >200  $\mu\text{g Cd-yr/L}$ . Measurements of Cd in the blood can be used as an indicator of the Cd exposure of each individual, and, in order to prevent renal dysfunction, the av. blood-Cd concn. should not be >10  $\mu\text{g Cd/L}$  over periods of many years (decades).

102: 118813v Hygienic characteristics of working conditions in producing vanadium oxychloride. Feigin, B. G.; Cheprasov, I. M. (Inst. Kraevoi Patol., Alma-Ata, USSR). *Gig Tr Prof Zabol.* 1985, (1), 51-2 (Russ). The prodn. of VOCl<sub>3</sub> is assocd. with emissions of Cl<sub>2</sub>, TiCl<sub>4</sub>, HCl, dust, and high temp. Measures for protecting worker health include installation of exhaust fans, automation, and enclosure of areas where VOCl<sub>3</sub> and its intermediates are in the open.

102: 118814w Early diagnosis of chronic poisonings by vinyl chloride. Langauer-Lewowicka, H.; Chaber-Garlinska, J.; Kalembe, K. (Inst. Labor Med. Coal Metall. Ind., Sosnowiec, Pol.). *Gig Tr Prof Zabol.* 1985, (1), 53-4 (Russ). A study of workers in a vinyl chloride (I) [75-01-4] prodn. and polymn. plant showed widespread incidence of liver enlargement (25%), lowered  $\gamma$ -glutamyltransferase activity (47%), dermatitis of the hands (5%), digestive tract pain (48%), headache (45%), and Raynaud syndrome (narrowing of the blood vessels in finger tips). All these observations suggest that frequent rotation of workers to areas without exposure to I is desirable.

102: 118815x Hygienic assessment of labor conditions in zinc hydrometallurgy. Nishchii, R. A. (NII Kraevoi Patol., Ust-Kamenogorsk, USSR). *Gig. Sanit.* 1985, (1), 93-5 (Russ). High temp. ( $\leq 35^\circ$ ), humidity ( $\leq 98\%$  satn.), dust, SO<sub>2</sub>, PbO, ZnO, As<sub>2</sub>O<sub>3</sub>, HCl, H<sub>2</sub>SO<sub>4</sub>, ZnSO<sub>4</sub>, and ZnCl<sub>2</sub> present in aerosols and vapors of Zn smelters present health hazards to the employees. Their combined effect results in clin. observable disturbances of the digestive organs, peripheral nervous system, and lungs.

102: 118816y Airborne fiber control in buildings during asbestos material removal by amended water methodology. Sawyer, Robert N.; Rohl, Arthur N.; Langer, Arthur M. (Environ. Sci. Lab., Mount Sinai Sch. Med., New York, NY 10029 USA). *Environ. Res.* 1985, 36(1), 46-55 (Eng). Removal of friable asbestos-contg. material can cause high levels of airborne contamination. The potential efficacy of control methods recommended by the Environmental Protection Agency (EPA) was evaluated by examn. of 503 air samples obtained in 40 removal projects in a no. of locations. The EPA methodol. with amended water for fiber emission control was utilized on all of the obsd. removal project. The projects were also considered to be well controlled and the study cannot be considered representative of common work practice. The EPA amended water methodol., when effectively utilized and administered, can provide a high degree of contamination control. Mean fiber (f) levels in the work area in this study (1.1 f/cm<sup>3</sup>) were well below those of dry removal (38.9 f/cm<sup>3</sup>) and control by application by untreated water (28.6 f/cm<sup>3</sup>). Airborne contamination was higher during bagging debris (3.8 f/cm<sup>3</sup>) than during material removal from structural surfaces. The range of fiber levels during removal was 0.0-37.6 f/cm<sup>3</sup> and fibers were detected from initial barrier construction through final cleaning. Contamination was also occasionally detected outside work area containment barriers. Air sampling produced 0.0 counts in areas of obvious contamination by settled dust and debris. Control methodologies, respiratory protection, and decontamination are discussed.

102: 118817z Accidental exposure to sarin: vision effects. Rengstorff, Roy H. (U.S. Army Med. Res. Inst. Chem. Def., Aberdeen Proving Ground, MD 21040 USA). *Arch. Toxicol.* 1985, 56(3), 201-3 (Eng). Two men were accidentally exposed to vapors of sarin [107-44-8], a cholinesterase [9001-08-5] inhibitor and extremely toxic nerve gas. Diagnosis was confirmed by depressed cholinesterase activity, and fixed extremely miotic pupils. No other signs of symptoms developed and neither man required treatment. Recovery to normal cholinesterase activity was gradual over a 90-day period. Pupillary reflexes were not detectable until 11 days after exposure; the miotic pupils dilated slowly over a 30-45 day-period. Eye pain and blurred vision did not occur; visual acuity and amplitude of accommodation were improved for several weeks. Other functions not affected significantly were intraocular pressure, visual fields, color vision, heterophorias, and vergences.

102: 118818a A methyl bromide monitor. Wiseman, J. R. (Div. Entomol., CSIRO, Canberra, 2601 Australia). *Dev. Agric. Eng.* 1984, 5(Controlled Atmos. Fumigation Grain Storages), 739-49 (Eng). A sensitive and accurate instrument is described for monitoring concns. of methyl bromide [74-83-9] in the range 1-20 ppm at numerous points in large work-areas. Its operation is entirely automatic, micro-computer management being used to continuously standardize and calibrate the instrument, monitor its performance, gather, process and record concn. data, and actuate alarms.

102: 118819b Zinc and copper concentrations in the hair of workers from zinc based industries in India. Raghupathy, L.; Sharma, V. N. (Biol. Sci. Group, Birla Inst. Technol. Sci., Rajasthan, 333031 India). *Sci. Total Environ.* 1985, 41(1), 73-8 (Eng). Some trace elements have been identified as potential hazards following long term exposure, and recently there has been intense work on different elemental exposure studies. Hair being the most convenient biopsy material has enabled the study of these elements in the human body and periodic sampling provides rates for this uptake. The present study has been done to compare the concn. of Zn and Cu in human hair of the workers from the Zn based industry at Udaipur. The concn. of Zn is higher in smelter workers than in the population of Udaipur city; the value of Zn in the mine workers is close to that of Udaipur city subjects. However, the correlation between the 2 elements is significant at  $p < 0.01$  for Zn mine workers.

102: 154113a Choice of a tracer for the determination of the concentration of some metals in aerosols. Oeseburg, F.; Vos, M. (Prins Maurits Lab., TNO, Rijswijk, Neth.). *Report* 1984, PMI-1984-IN-008; 16 pp. (Neth.). Avail ECN, POB 1, 1755 ZG Petten, Neth.. From *Energy Res. Abstr.* 1985, 10(2), Abstr. No. 1802. To investigate the pollution caused by smoke stacks it is necessary to add uncommon, extraneous, and yet easily detectable compds. to the stack gases as tracers. Air samples are taken and filtered with filter paper (Whatman 41).  $\text{Sr}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$  is recommended as a tracer compd. for stack gases.

102: 154114b Assessment of liberation of noxious substances in plasma cutting of metals with APR-type plasma cutting apparatus. Borisevich, O. A.; Kozlov, V. A.; Plekhov, E. V. (Leningr. Korablestr. Inst., Leningrad, USSR). *Svar Proizvod.* 1985, (2), 39-40 (Russ.). The concn. of dust in air near the plasma cutting of Steel 3, Steel 09G2, or Cu is  $0.0157-0.0024$ ,  $0.0187-0.0026$ , or  $0.0005-0.00075$  g/m<sup>3</sup> and its is independent of the metal plate thickness. These dust concns. exceed the max. allowable concns. Thus, air purifn. by filtration or cyclone dust removal is required.

102: 154115c Effect of air pollution by solvents from polyester manufacture on the enzymic activity of agricultural soils. Shimko, N. A.; Efremov, A. L.; Shcherbakova, T. A. (Inst. Eksp. Bot. im Kuprevichna, Minsk, USSR). *Vestsi Akad. Nauk BSSR, Ser. Biol. Nauki* 1985, (1), 17-21 (Belorussian). The activity of *phosphatase* [9013-05-2], *catalase* [9001-05-2], *invertase* [9001-57-4], and *amylase* [9000-92-4] enzymes in soils can be used as indicators of soil pollution by solvent vapors (MeOH [67-56-1], ethylene glycol [107-21-1], xylene [1330-20-7]) and polyesters (*di-Me terephthalate* [120-61-6]). A statistically significant decrease of enzymic activity is obsd. as the concn. of these chems. (esp. MeOH) in the soil is increased.

102: 154116d Chlorinated aromatics from the combustion of hazardous waste. Oberg, T.; Aittola, J. P.; Bergstroem, J. G. T. (Studsvik AB, S-611 82 Nykoping, Swed.). *Chemosphere* 1985, 14(2), 215-21 (Eng.). The prodn. and emission of chlorinated aroms. from a hazardous waste incinerator were shown to be influenced by the operating conditions.

102: 154117e Separation of radioactive inert gases from nuclear power plant emissions. Wilhelmova, Ludmila; Dvorak, Zdenek (Ustav Dozimetrie Zareni, CSAV, Prague, Czech.). *Ochr. Ozdusi* 1985, 17(1), 8-10 (Czech.). The removal is discussed of Kr and Xe isotopes (esp. long-lived <sup>85</sup>Kr) from nuclear plant and nuclear fuel reprocessing plant emissions by adsorption on active carbon beds. Empirical functions describing the adsorption of radioactive elements in such beds are provided.

102: 154118f The progress of renal dysfunction in cadmium-exposed persons. Piscator, M. (Univ. Pittsburgh, Pittsburgh, PA USA). *Ed. Proc. - Int. Cadmium Conf., 4th* 1983, 157-60 (Eng.). Edited by Wilson, David; Volpe, Rosalind A. Cadmium Assoc.: London, UK. A follow-up study on the glomerular function in workers with histories of long occupational exposure to Cd showed no changes in urinary protein excretion in cases with fully developed tubular proteinuria 20 yr ago, whereas there were significant increases in cases with low protein excretion at that time. A sudden increase in protein excretion occurred also in workers, whose renal function was normal 13 yr ago and in a worker, who showed a marked increase in  $\beta_2$ -microglobulin (I) excretion several years ago. This indicates that Cd nephropathy proceeds in several stages, i.e., a localized lesion resulting in a decreased reabsorption of I and other proteins; the spreading of the reabsorption defect to other parts of the proximal tubule at higher Cd concns.; and a more pronounced decrease in the reabsorption of other proteins, e.g. albumin.

102: 154119g Sulfide dust explosions in metalliferous mines. Enright, Roger J. (Sch. Civ. Min. Eng., Univ. Sydney, Sydney, 2006 Australia). *AIMM Proc.* 1984, 289(Oct.), 253-7 (Eng.). Tests of pyritic, pyrrhotitic, and siliceous dusts from the Elura mine, Australia, (primarily pyrite, pyrrhotite, arsenopyrite, sphalerite, and galena) which have a relatively high S content, showed that the dust can produce dangerous explosions. The max. explosive pressures were 360 kPa for siliceous and 440 kPa for pyrrhotitic dust; rates of pressure rise reached 5200 kPa/s. The major hazards of a sulfide dust explosion are pressure wave and flame front propagation and the toxic gases remaining after the explosion.

102: 154120a Controlling lead chromates in the workplace. Cowley, A. C. D. (Org. Div., Imp. Chem. Ind. PLC, Blackley/Manchester, UK). *Congr. FATIPEC* 1984, 17th(2), 59-80 (Eng.). Time-weighted Pb in air levels at 11 major paint manufacturers in the UK were well below 0.075 mg/m<sup>3</sup>. Blood Pb values in several groups of workers indicate very low exposure levels. Prodn. of Pb chromate pigments and paints does not cause appreciable health risks.

102: 154121b Studies on the stability of esters in blood in vitro. Ghittoni, S.; Imbriani, M.; Borlini, F.; Pezzagno, G.; Zadra, P. (Cent. Med. Pavia, Fond. Clin. Lavoro, Pavia, Italy). *Boll. - Soc. Ital. Biol. Sper.* 1984, 60(11), 2207-13 (Ital.). Esters, used as industrial solvents and of interest as occupational exposure hazards, were incubated for 1-8 h in H<sub>2</sub>O or in blood and the extent of hydrolysis was detd. No hydrolysis occurred in the pure aq. soln. but progressive hydrolysis of all the esters except *iso-Pr acetate* [103-21-4] and *tert-Bu acetate* [510-88-5] took place in blood. The instability of the esters (and particularly of some acetates) in blood argues against the advisability of detg. the blood/air partition coeffs. of such compds. and renders their assay problematic in expired and alveolar air, blood, and other biol. fluids. Presently, the permissible environmental limits for these esters are higher than those for the corresponding alcs., but, because of the propensity to hydrolyze, the permissible limits for some acetates such as *sec-Bu*,

*iso-Bu*, *Bu*, and *Me acetate* should be reduced to those of the resp. alcs.

102: 154122c Considerations on the relations between concentrations of mercury in air and biological fluids in mercury-exposed workers. Mazarrasa Mowinkel, Olav; Duenas Molina, Carlos; Arce Recio, Roberto; Arribas Jimeno, Siro (Inst. Nac. Seguridad Hig. Trabajo, Santander, Spain). *Med. Segur. Trab.* 1985, 31(121), 13-20 (Span.). The concns. of Hg in urine and blood of workers exposed to elemental Hg vapors showed a significant correlation ( $r = 0.67$ ,  $p < 0.01$ ) between the 2 parameters. The results of measurements in groups classified on the basis of blood Hg values were best described by a nonlinear function ( $r^2 = 0.96$ ). Hg levels in workplace air and the urine of workers over 7 workdays and 2 rest days were significantly correlated ( $r = 0.86$ ,  $p < 0.01$ ) with a Hg air/urine ratio of 1:1.12. The urinary Hg concns. were very similar on work and rest days.

102: 154123d Relation between the respiratory function test and radiology in 25 cases of asbestosis. Gomez Uroz, G. L.; Nadal Cabrero, M. C. (Dispensario Cent. Enferm. Prof., Spain). *Med. Segur. Trab.* 1985, 31(121), 32-7 (Span.). Workers diagnosed as having asbestosis were studied to establish the possible correlation between the results of a radiol. examn. and those of a respiratory function study. There seems to be a correlation between the type of opacity found and the degree of respiratory function affected, verified by studies of vital capacity, max. respiratory capacity in 1 s, and alveolar-capillary diffusion capacity (CO transfer method). The degree of deterioration of pulmonary function progresses increasingly from profusion 1/1 up to 3/3. The presence of pleural plates is assocd. with deterioration of vital capacity by 5% of the theor. value, max. respiratory capacity by 5.5%, and alveolar-capillary diffusion by 15%.

102: 154124e Pulmonary function and respiratory symptoms in poly(vinyl chloride) fabrication workers. Baser, Michael E.; Tockman, Melvyn S.; Kennedy, Thomas P. (Dep. Environ. Health Sci., Johns Hopkins Med. Inst., Baltimore, MD USA). *Am. Rev. Respir. Dis.* 1985, 131(2), 203-8 (Eng.). Preshift and postshift spirometry were performed and a standardized respiratory symptoms questionnaire was administered to white males currently employed in poly(vinylchloride) (PVC) [9002-86-2] fabrication to examine the acute and chronic respiratory effects of work exposure. Although there were no significant differences between the in-plant comparison group and any department with potential exposures, there was evidence for respiratory effects in the combined group of comparison and exposed workers. In the combined group, duration of employment was significantly assocd. with decrements in adjusted cross-shift ratio of forced expiratory vol. in 1 s to forced vital capacity (FEV<sub>1</sub>/FVC) preshift FEV<sub>1</sub>/FVC, and prevalence of chronic cough and chronic phlegm. In nonsmokers, the prevalences of chronic wheeze and chest tightness were high (36.0 and 50.5%, resp.). The age-adjusted prevalence of chronic wheeze in nonsmokers was also elevated 3.54-fold when compared with that in a community study in the lit. The cross-sectional design and in-plant comparison group may mask the effects of exposures on the entire plant population, and that employment in this plant is assocd. with patterns of obstructive air-flow limitation and respiratory symptoms consistent with exposure to pulmonary irritants. Possible agents of pulmonary effects in PVC fabrication are not limited to vinyl chloride monomer, PVC dust, and PVC thermal degradn. products.

102: 154125f Control technology for fermentation processes: walk-through survey report of Miles Laboratories, Inc., Elkhart, Indiana. Martinez, K. F. (Eng. Control Technol. Branch, Natl. Inst. Occup. Saf. Health, Cincinnati, OH USA). *Report* 1984, CT-116-16A; Order No. PB84-243518, 14 pp. (Eng.). Avail NTIS. From *Gov. Rep. Announce. Index (U. S.)* 1984, 84(25), 49. A walk-through survey was made to assess control technol. at the enzyme prodn. facility. The enzyme prodn. operation was essentially a closed system. Employee contact with the process, once the raw material were deposited into individual containers, was minimal other than for equipment maintenance or manual broth sample extn. The facility maintained a clean occupational environment and good work practices. Although the health program was maintained at the corporate level, the facility was in the process of developing a procedure for detecting trace quantities of enzymes in the ambient air. Preplacement and selected periodic medical evaluations were performed. Personal protective equipment was used when potentially hazardous operations were performed.

102: 154126g Control technology assessment of hazardous waste disposal operations in chemicals manufacturing: walk-through survey report of Olin Chemicals Group, Charleston, Tennessee. Crandall, M. S. (Natl. Inst. Occup. Saf. Health, Cincinnati, OH USA). *Report* 1983, CT-103-20; Order No. PB84-241637, 13 pp. (Eng.). Avail NTIS. From *Gov. Rep. Announce. Index (U. S.)* 1984, 84(25), 47. A walk-through survey was conducted to assess control technol. for hazardous waste disposal operations. Hazardous wastes generated at the facility included brine sludge, thick Hg butter, and  $\text{Ca}(\text{ClO})_2$ . An estd. 500 tons of waste were disposed of annually. The Hg waste underwent a retorting process that recycled the Hg. The final detoxified waste, as well as the brine sludge and  $\text{Ca}(\text{ClO})_2$ , was landfilled. No control beyond those normally used at such sites were found at the landfills. Periodic monitoring of Hg vapor concns. was conducted by the company. Medical monitoring of urine for Hg exposure was conducted. Specific limits set for urinary Hg concns. When these limits were exceeded the workers were removed from exposure. Personal protective equipment consisted of hard hats, safety glasses, and respirators specially designed for Hg exposure. The hazard is