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Pierre Gervais (Univ. of Paris). *Occupational Health Rev.* 17(1), 19-24(1965)(Eng). The principal chem. reactions, industrial uses, and toxicological studies of epoxy resins are reviewed. Sensitization tests were conducted in guinea pigs with an epoxy resin (Epicote 87.3-Shell) and a versamide hardener (Polyamide-General Mills). Tests of animals sensitized with the resin and hardener alone were neg. A pos. reaction was obtained when Freund adjuvant was used in conjunction with the resin, neg. with the hardener. Epoxy substances evidently provoke sensitization to the extent that they are capable of covalent linkage on the proteins. When elementary precautions are taken, it is always possible to avoid the dermatitis due to industrial handling of hardeners and resins.

P. J. Parisek
Damage to health by thorium and thorium-containing materials. G. Irmscher. *Proc. Natl. Conf. Aerosols, 1st, Liblice near Prague 1962*, 485-90(Pub. 1965)(Ger). Petroleum refinery personnel prior to 1939 were exposed to ThO_2 dusts and the radiation from Th and its decay products by virtue of its use in a contact-catalyst mixt. having diatomaceous earth as the matrix. Max. of $360 \times 10^{-7} \mu\text{c.}$ of thoron/cm.³ and doses of 30 mr./hr. were measured in the involved areas of the plant; often the workers, clothes were contaminated. Three persons exposed to these conditions died with chronic interstitial pulmonary fibroses, and metaplasia of the pulmonary epithelial cells; one had a peripheral epithelioma. Direct causality admittedly could not be established, but it was felt that the superposition of radioactive materials upon the known fibrogenic capacity of silica dusts was most prone to produce the observed pulmonary changes.

H. D. Bruner
Asbestos, asbestosis, and mesothelioma of the pleura. W. J. Smither. *Proc. Roy. Soc. Med.* 59(1), 57-9(1966)(Eng). The chem. and phys. properties of various forms of asbestos (I) and the pathol. aspects of asbestosis are described in relation to contact with different forms of I.

W. C. Tobie
Peculiarities of hygiene conditions and degree of safety against exposure to silicosis in some Kazakhstan mines. V. Z. Khamitova. *Tr. Kazakhsk. Inst. Kraevoi Patol., Akad. Med. Nauk SSSR* 14, 22-7(1965)(Russ). The environmental conditions in the Leninogorsk polymetal and Zyryanovsk Pb-Zn combines, and in the Eastern Kounrad Mo and Bes-Tubinsk Au mines, were studied over a 10-17-year period, including the amt. and compn. of dust in the air of the shafts under various operational setups, as well as the records of periodical medical examns. of the workers, and of some exptl. work on animals exposed to the particular dusts. The main source of dust generation was traced to the drilling and blasting operations, which, through the introduction of wet drilling and intensive ventilation in blasts, reduced the amt. of dust in the air of the shafts to the permissible norm of 3-5 mg./m.³ from the original figures for the 4 mines of 50, 28, 85, and 50 mg./m.³, resp. The av. particle size of the dust depended on the mode of the mining operation, rock drilling producing 69% of dust of particle size $<2 \mu$, as against 47% for the dust from drilled, blasted rock, and 53.3% in scraper transport dust. The SiO_2 content in the dusts of the 4 mines averaged 48.9, 45, 65, and 49.1%, resp. Examn. of the health records revealed that it took an av. of 8, 9, 5, and 13 years, resp., for a

worker to develop silicosis of the 2nd stage of severity, and 10, 11, and 8 years in the polymetal, Pb-Zn, and Mo mines to also get tuberculosis, none of the latter being found among workers of Au the mine. Complete quant. analysis revealed the presence in the dusts of the polymetal, Pb-Zn, and Mo mines of various amts. of 15-17 elements, while dust from the Au mine had only admixts. of 0.05% Sb_2O_3 and 0.26% As_2O_3 . Expts. on animals (no details given) revealed that mine dusts of complex compn. caused intensive silicosis with pronounced exudative processes in the bronchi and alveoli.

A. A. Horvath

American Society for Testing and Materials: Air Pollution Measurement Methods (ASTM Special Technical Publication, No. 352). Philadelphia: ASTM. 1963. 77 pp.

Peregud, Eva Abramovna, and Gernet, E. V.: *Khimicheskii Analiz Vozdukhia Promyshlennyykh Predpriyatiy; Rekomenduemye Metody Opredeleniya Predel'no Dopustimyykh Kontsentratsii Vrednykh Veshchestv v Vozdukhie* (Chemical Analysis of Air of Industrial Installations; Recommended Methods of Determining the Limits of Permissible Concentration of Harmful Substances in Air). Leningrad: Khimiya. 1965. 363 pp.

Spengler, Guenter: *Die Schwefeloxyside in Rauchgasen und in der Atmosphäre: Ein Problem der Luftreinigung (Sulfur Oxides in Flue Gas and in the Atmosphere: A Problem of Keeping the Air Pure)*. 2nd ed. Dusseldorf: VDI-Verlag. 1965. 186 pp. DM 19.80.

See also: Sewage and Wastes, Section 23. Pesticides, Section 72. Cosmetics and toiletries (Alexander) 29. Oxime of 2-(N-phenacyl-N,N'-diethylamino)ethyl benzilate chloride—a new antidote against organophosphorus poisoning (Bulete) 35. Precautions in work with a radioactive substance [ThO_2] (Pujol) 59. Losses of tropane alkaloids during their isolation from biol. material (Akopyan) 60. Some chromatographic problems in chem. toxicology of alkaloids—simple soln. (Fiori) 60. Mineral metabolism in sheep lupinosis—Cu (Gardiner) 64. Distribution of radioactive I in thyroid gland and blood in distinct form of silicosis (Nurmagametov) 66. Adrenal cortical function in exptl. alcoholism in dogs (Ellis) 66. Effect of influenza virus on detoxication of hellebrin (Link) 66. Inhibition of MeOH metabolism in mice with acetylsalicylic acid (Hassan) 68. Pharmacodynamic effects [of vitamins] in clearing the lungs [of dusts] (Schiller) 68. Species differences in toxicity of schistosomicide ABBOTT-16612 (Kimura) 68. Spectrophotofluorimetric method for Guthion residues in milk and animal tissues (Adams) 70. Photofluorimetric method for detn. of maretin (N-hydroxynaphthalimide diethyl phosphate) residues in animal tissues (Anderson) 70. Nature and extent of Guthion residues in milk and tissues resulting from treated forage (Everett) 70. Comparative metabolism of 2,6-dichlorothiobenzamide (Prefix) and 2,6-dichlorobenzonitrile in dog and rat (Griffiths) 71. Toxicity of paraquat and diquat (Howe) 71. Hydrogen content of the air (Kershaw) 16. Detn. of cantharidin in tissues and its subcellular location (Bagatell) 60. Microradiographic detn. of Pb in mineralized tissues (Philpson) 60.

70—FOODS

WILLIAM HORWITZ AND EDITOR EMERITUS H. A. LEPPER

Rapid method for the determination of manganese in food. Johann Firbas B., Giulio Vaccari H., and Luis Silva R. *Bol. Soc. Quim. Peru* 31(2), 57-66(1965)(Span). The A.O.A.C. method for Mn in food was simplified. Samples contg. 50-425 γ Mn were first ashed in 5% alc. $\text{Mg}(\text{OAc})_2$, then heated to 910° until a white ash was obtained. The cold residue was heated for 2-3 min. in 5 ml. of 1:1:1 H_2O -85% H_3PO_4 -65% HNO_3 until dissolved. Three to 4 ml. H_2O was added, filtered, and washed 3-4 times with hot H_2O . To the combined filtrates and washings were added 5 ml. of 1% KIO_4 in 20% H_3PO_4 and 1 ml. of standard soln. of Mn contg. 100 γ /ml. After 2 min. heating, the cooled soln. was dild. to 25 ml. with H_2O , and analyzed spectrophotometrically at 540 μ . Optimum results were obtained with samples contg. 2-17 γ Mn/ml. 23 references.

V. G. Moss
Enzymic proteolysis of raw and steamed meat. Aiko Kasugai (Women's Univ., Osaka, Japan). *Eiyo To Shokuryo* 17(6), 387-95(1965)(Japan). Minced raw or steamed foods (1-3 g.) (meats, poultry, seafoods, egg, cereals, and legumes) were incubated overnight at 30° with 20 ml. of enzyme soln. which contained 0.2 or 0.3% of com. enzyme powder (from *Rhizopus niveus*, *Aspergillus niger*, *Bacillus subtilis*, and pancreatin). The amt. of $\text{Cl}_3\text{CCO}_2\text{H}$ -sol. fraction was given as tyrosine equiv., analyzed by Folin reagent. The amt. of amino acid liberated was detd. using ninhydrin. In seafoods, raw materials were more digestible than steamed ones, except bream and shrimp treated with enzyme from *A. niger*; a similar tendency was ob-

after heat treatment, because of the inhibitory action of raw egg, esp. egg white. The digestibility of cereals and legumes was slightly improved with heat treatment. Katuhiko Noda

Reduction of aromatic nitro groups during acid hydrolysis in presence of carbohydrates. V. Handwerck, E. Bujard, and J. Mauron (Lab. Rech. Produits Nestle, La Tour-de-Peilz, Switz.). *Helv. Chim. Acta* 49(1), 419-23(1966)(Fr). The considerable loss of ϵ -(2,4-dinitrophenyl)lysine during its acid hydrolysis in the presence of many foods was due to the action of carbohydrates which reduce the nitro group to the amino group. This has been demonstrated by the absence of this loss during hydrolysis without any added carbohydrates, or in presence of nonreducing carbohydrates. Aromatic nitro compds. were reduced to the amino compds. by hydrolysis with 6N HCl in presence of reducing carbohydrates. N. A. Abraham

Flavonoids in food technology. Piotr Lewicki (Katedra Technol. Przemyslu Rolno-Spozywczego Szkoły Glownej Gospodarskiej, Wlaskiego, Warsaw). *Wiadomosci Chem.* 20(1), 47-58(1966)(Pol). A review of the chemistry and biosynthesis of flavonoid compds., their distribution in edible plants, and their influence on organoleptic properties of food. 34 references.

SXTT

Food additives. Cross-linked polyester resins. Anon. *Federal Register* 31, 290 (Jan. 11, 1966)(Eng); cf. C.A 63, 15434h. The previous regulation under the Federal Food, Drug, and Cosmetic Act is revised to provide for the use of the addnl. component from 4,4'-isopropylidenediphenol and enichlorohydrin in