FILE NAME: Chemical Abstracts (CHAB)

DATE: 1965

DOC#: CHAB051

OCUMENT DESCRIPTION: Abstract Originally Published in 1965 by Mastromatteo

...the sample with an air-tight syringe. ... procedure was followed mixts. contg. components as diverse as Me_2CO (b.p. 56°) and α-pinene (b.p. 154°) were analyzed with a standard deviation <5%. If sampling over a period of time is desired, bubbling through an absorption vessel with a fritted glass tube may be employed (Levadie and Harwood, *CA* 54, 14517*d*). When EtOH was used as the absorbent at room temp. only 50% of trichloroethane could be recovered. Reducing the temp. with dry ice resulted in complete recovery. In the 3rd method, the sample is passed through a glass tube packed with a suitable adsorbent, eg. dinonyl phthalate on Celite, which is then placed in series with the gas chromatography column (Cropper and Kaminsky, *loc. cit.*). By a judicious choice of column packings it is possible to retain some components in the adsorption column while others are being eluted.

Leslie S. Forster

Evaluation of the risks [of the use of widia]. J. Dantin Gallego and M. Lopez de Azcona (Inst. Nacl. Med. Seguridad Trabajo, Madrid). *Intern. Congr. Occupational Health, 14th, Madrid* 1963(2), 504–6(Pub. 1964)(Span). Possible hazards of the use of widia (I), a com. cemented tungsten carbide, are interpreted in relation to the inhalation of I dust. Atm. dust collected following the use of I in machining metals contained W 0.2, and Co 0.03%. However, floor dust and metal shavings were completely devoid of W or Co. Accordingly, dust hazards from the use of I are slight.

W. C. Tobie

Efficiency of molecular iodine removal from air. Howard J. Dworkin and Charles M. Simeck (Univ. Hosp., Ann Arbor, Mich.). *J. Clin. Endocrinol. Metab.* 25(11), 1505–10(1965)(Eng). The ingestion of airborne I through the lungs may account for apparent persistent neg. I balance studies. A study was made of the efficiency of the removal of I from the air by 2 types of trapping systems. The room air was drawn through a 25-ml. flask or generator contg. $Na^{127}I$ and variable amts. of $Na^{131}I$. The ^{127}I and the ^{131}I were released by adding 2 drops of a $K_2Cr_2O_7 + H_2SO_4$ soln. The 1st type of trapping system employed a liquid scrubbing system using 0.1*N* $Na_2S_2O_3$ as the trapping soln. In the 2nd type the I was trapped by passage through a dry system of glass boiling beads coated with $Na_2S_2O_3$. At the completion of the expt. the glass tubing in the Type *1* collecting system and the glass boiling beads in the Type *2* collecting system were flushed with 0.1*N* $Na_2S_2O_3$. The Type *2* system had a trapping efficiency of >90%, as well as better precision than the Type *1* system. Both systems were used to measure the I in the air of the Clinical Research Unit in the University Hosp. where I balance studies were in progress. Several 20-hr. expts. failed to reveal detectable amts. of I in the air. Substitution of $AgNO_3$ or NaOH solns. for the $Na_2S_2O_3$ did not increase the extn. efficiency and in some instances was less efficient.

N. R. Stephenson

Danger of carcinogenic pitch components in the environment. Tadeusz Gorski and Urszula Malchar (Inst. Onkologii, Gliwice, Poland). *Gaz, Woda Tech. Sanit.* 39(8), 268–70(1965)(Pol). Samples of deposits were collected from the surface of cooling pipes in a pitch cooler and from the snow surface 300 m. from the cooler hall. The tarry substances contained in the deposits were extd. with C_6H_6 and the exts. were dild. with C_6H_6 to obtain 20% solns. These were then applied once a week onto the skin of mice. Deposits from cooling pipes contg. 70% of tarry substances caused the appearance of skin cancer within several weeks of treatment. All mice of this group died within 14 months. Mice treated with an ext. soln. of substances collected on snow in the vicinity of the pitch cooling establishment survived longer, but in ~1/5 of the group cancerous growths were also observed.

Irena Kloczko

Industrial hygiene and health of workers in the hexachloran industry. V. N. Trefilov and P. I. Kalyaganov. *Gigiena Truda i Prof. Zabolevaniya* 9(9), 7–12(1965)(Russ). Detns. of hexachloran (I), Cl, and C_6H_6 were conducted on the air of various parts of a plant engaged in the production of tech. I consisting mainly of a mixt. of isomers of hexachlorocyclohexane, among them 10–13% of the γ-isomer, which is chiefly responsible for the toxicity of I. While the permissible concns. of I, Cl, and C_6H_6 in the air were 0.1, 1.0, and 20 mg./m.^{3}, the resp. av. concns. of these compds. in the synthesis section were 0.3, 1.5, and 20 mg./m.^{3}, in the melt-crystn. plant 0.8, 0.6, and 10.1 mg./m.^{3}, in the C_6H_6 distn. plant to 0.17, 0.6, and 21 mg./m.^{3}, and in the transportation part of the plant 0.3, 1.0, and 15 mg./m.^{3} In the distribution and storage areas for I, its concns. in the air were 0.8 and 0.3 mg./m.^{3}, resp. These conditions are blamed on obsolete equipment and inadequate ventilation, which permitted the concn. of I vapor during various stages of the crystn. process to reach 4.0–4.5 mg./m.^{3} Clin. examn. of 100 workers revealed in most of them slight disturbances in the function of the autonomic nervous system, the heart, and the liver, moderate methemoglobinemia, a lowering of the alkali reserve of the blood, and increased excretion of phenols in the urine.

A. A. Horvath

Evaluation of the external respiration function in persons exposed to the effects of silica-containing dust. L. G. Okhm... skaya, V. T. Petrova, and A. A. Vernikova (I... and Occupational Diseases, Moscow). *Gigiena Zabolevaniya* 9(9), 33–40(1965)(Russ). Under 2000 workers exposed to SiO_2, 98 patients with du... and 200 healthy persons. A new examn. technic... breathing dynamics is suggested, which makes possi... of early forms of silicosis.

Changes in the hemopoietic function of workers en... preparation of pyramidon. L. B. Yushkevich (F... Inst. Hyg., Moscow). *Gigiena Truda i Prof. Zabole...* 50–2(1965)(Russ). Examns. were carried out in ... 90% of whom were women. Subjectively they oft... with headache, weakness, and vertigo. Leukopenia... was observed in 58.8%, <4000 in 8.5%, and abs. neut... <2450/mm.^{3} in 45.4%. The frequency of neutro... relative to the time of exposition. Toxigenic gran... neutrophiles was found in 8 cases. In most of the peop... there was a slight anemia. In bone marrow from one w... examd., an increase of myelocytes (76.7%) and of pla... (7.5%) was found. No antileukocyte antibodies were... blood.

Ivo ...

Graphite pneumoconiosis in carbon-electrode make... Okutani, S. Shima, and T. Sano. *Intern. Congr. Occu... Health, 14th, Madrid* 1963(2), 626–9(Pub. 1964)(Eng). P... coniosis from the inhalation of graphite (I) dust has n... viously been reported from Japan. New data are given ... incidence of I pneumoconiosis in 256 Japanese workers ex... to I dust. This form of pneumoconiosis developed earlier... other forms of the disease but the pathol. effects tended... relatively mild, with little disturbance of respiratory fun... even in advanced cases (which showed marked opacity of... lungs in radiological examns.). Dust samples from bench... in a factory (where atm. I dust exceeded allowable limits) ... subjected to x-ray diffraction. The amt. of free C was >99... and the amt. of free silica <0.1%. The pathol. and che... findings disproved reports that C dusts alone cause only pigmen... tion but no fibrosis. Although it appeared that I dust caus... only slight tissue reaction, excessive inhalation could produ... malignant pneumoconiosis of the alveolar type. The develo... ment of pneumoconiosis depended not only on the phys. an... chem. properties of I dust but on the amt. inhaled.

W. C. Tobie

Removal of exhaust odors from solvent extraction operation by activated charcoal adsorption. H. L. Barnebey. *J. Air Pollution Control Assoc.* 15(9), 422(1965)(Eng). Iso-PrOH at the rate of 35 gal./hr. in 2000 ft./min. of air at 120°F. is exhausted from a lemon pulp extn. operation. Particulates and acid fumes are scrubbed out with 1*N* Na_2CO_3 soln. The vapors are passed through a demister and are reheated to <100% relative humidity. The scrubber is followed by an automated charcoal system of 2 alternating units on a preset time cycle. Solvent recovery is 95% (5% handling loss). Operating costs are 14% of the recovered values. Odors are undetectable and the fire hazard is nil.

George E. Taylor

Recent occupational health experiences in Ontario. Ernest Mastromatteo (Ontario Dept. Health, Toronto, Can.). *J. Occupational Med.* 7(10), 502–11(1965)(Eng). Case reports of exposures to Hg in the hat industry, in chlor-alkali plants, and in the servicing of an outdoor advertising display with a mercury switch; to EtHgOAc in seed treating; to azodiisobutyronitrile in vinyl foam manuf.; to morpholine and related compds. in urethan foam manuf.; to tolylene diisocyanate during its manuf. or during thermal decompn. of urethan foam; to 4,4′-methylenebis(2-chloroaniline) during curing of isocyanate-contg. polymers; to 1,3,5-tricyanomethylhexahydro-*s*-triazine and (or) resorcinol in tire manuf.; to furfuryl alc.; and to asbestos are reported. Environmental data are given.

Andrew L. Reeves

Disruption of the function of the liver during the action on the organism of new vulcanization accelerators. Experimental study. R. S. Vorob'eva and N. V. Mezentseva. *Tr. 1-go [Pervogo] Mosk. Med. Inst.* 28, 217–21(1964)(Russ). The following accelerators were introduced into 22 rabbits: BTMA (2-diethylaminomethylenethiobenzothiazole)(I), Santocure, (*N*-cyclohexyl-2-benzothiazolesulfenamide), *N*-oxydiethylene-2-benzothiazolesulfenamide (II)), thiuram (III), and captax (IV) in a dose of 20 mg./kg. During the action of I and II an increase was noted in bilirubin index. In animals subjected to the action of III there was a high aldolase activity. Increase of the aldolase content was less significant in rabbits subjected to I and II. Increase of the aldolase content was accompanied by hyperbilirubinemia. After action of III, death of the animals occurred. III, II, and I during introduction into the organism showed damaging action on the liver (toxic hepatitis). Toxicological study of other vulcanization accelerators (IV, Santocure) indicated no hepatotropicity. From *Ref... 1965, Abstr. No. 9I464.

Applications of ...

F. Lodi