

INDUSTRIAL DUSTS

- 1157 Optimum Conditions for the Colorimetric Microdetermination of Silicon. J. Tuma. *Mikrochim. Acta* No. 3, 512-523 (1962). (*Mikrochimica Acta*, Springer-Verlag, Moerkelbastei 5, Wien 1, Austria).

The best conditions for the formation of B-silicomolybdic acid and its reduction to molybdenum blue, in the presence of phosphate, iron, and some other interfering substances have been critically investigated to ascertain the most suitable method for the precise colorimetric microdetermination of silicon in biological material and minerals. The method of King and Stacy (1955) was modified by lowering the initial and increasing the final concentration of sulfuric acid, by securing the same electrolyte concentration in sample and standard and by lengthening the time allowed for reduction of the B-silicomolybdic acid. These improvements diminish the interfering effect of phosphate and iron and stabilize the molybdenum blue color. The proposed method permits determination of 20-50 micrograms of SiO_2 in the presence of up to 4.5 mg. of phosphate and 3 mg. of iron, with an accuracy of about ± 1 microgram of SiO_2 . Alkali fusion was found to be the most suitable way to produce the monomeric silicic acid solution necessary for the determination. Details of this method for determination of silica in tissues and minerals are described and some results are given.

-- APCA Absts.

- 1158 Hard Metal Disease. A. O. Bech, M. D. Kipling and J. C. Heather. *Brit. J. Ind. Med.* 19, 239-252 (Oct. 1962).

In Great Britain there have been no published reports of respiratory disease occurring among workers in the hard metal (tungsten carbide) industry. In this paper the clinical and radiological findings in 6 cases and the pathological findings in one are described. In two cases physiological studies indicate mild alveolar diffusion defects. Histological examination in a fatal case revealed diffuse pulmonary interstitial fibrosis with marked peribronchial and perivascular fibrosis and bronchial epithelial hyperplasia and metaplasia. Radiological surveys revealed the sporadic occurrence and low incidence of the disease. The alterations in respiratory mechanics which occurred in 2 workers following a day's exposure to dust are described. Airborne dust concentrations are given. The industrial process is outlined and the literature is reviewed. The toxicity of the metals is discussed and the authors' findings are compared with those reported from Europe and the United States. The authors are of the opinion that the changes which they would describe as hard metal disease are caused by the inhalation of dust at work and that the component responsible may be cobalt. -- Authors' abstr.

- 1159 Protective Clothing as a Factor in the Dust Hazard of Pottery. W. A. Risor and A. Dinadalo. *Brit. J. Ind. Med.* 19, 227-234 (Oct. 1962).

Investigations into the factors affecting dust concentrations in the breathing zone of pottery workers have shown that cotton gloves are a significant source of dust. Attempts to overcome this by the use of treatment of the material were not successful, so other types of materials were investigated. The paper was found to have outstandingly desirable properties: type of material, material and designs of clothing were defined. Factory tests showed that with this new protective clothing reductions of up to 55% in breathing zone dust concentrations were achieved. This type of clothing is now officially recommended by the Joint Standing Committee for the Pottery Industry.

-- Authors' abstr.

* Address not in current List of Periodicals.