

ELEMENTS OF INDUSTRIAL TOXICOLOGY

the red corpuscles. It is believed to be more toxic than either but is not so often encountered in industry.

In an investigation of workmen in a foundry who had been exposed to 0.1 to 1.0 mg of tellurium per 10 cu m of air, a large percentage of the men showed the garlic odor of the breath and sweat and also complained of dryness of the mouth and a metallic taste. Men with the highest exposures, who also had the highest rate of tellurium excretion, showed drowsiness starting in the early afternoon and later becoming more severe. Complaints of loss of appetite and nausea at these relatively low exposures were less common.

TEPP (tetraethyl pyrophosphate) is the active ingredient in an insecticide mixture that goes by the same name. Since the estimated fatal dose for a human being is approximately 600 mg taken orally, it is in the class of highly toxic materials.

In its use, toxic dust respirators or supplied air respirators and protective clothing which will completely prevent skin contact should be worn. Anyone with a severe headache or a feeling of tightness or constriction in the chest should be removed immediately from the exposure.

1,1,2,2-Tetrabromoethane (acetylene tetrabromide) is a high-boiling, heavy, yellowish liquid used as an indicator liquid in gauges and for separating minerals by density. Its low vapor pressure at room temperature makes it safer to handle than might be expected. The LD₅₀ for rabbits and guinea pigs is about 0.4 g per kg of body weight. Exposure to the vapor causes respiratory irritation and damage to the liver appearing a few days after a single acute exposure.

1,1,2,2-Tetrachloroethane (acetylene tetrachloride) is an excellent solvent for a number of paints and lacquers. It is also a very dangerous compound since inhalation of it at a concentration that is barely perceptible by odor can lead to extensive liver damage.

Tetrachloroethylene (perchloroethylene) is a chlorinated solvent used primarily for degreasing. It is similar in its properties to trichloroethylene except that its boiling point is slightly above that of water so that boiling degreasers containing it automati-

cally keep themselves dry without loss of solvent.

Its most important toxic effect is depression of the central nervous system. In experimental exposures of human subjects, those exposed to concentrations greater than 200 ppm promptly suffered central nervous system symptoms, while those exposed to about 100 ppm did not.

See *Hygienic Guide*

Tetraethyl lead—see *Lead*

Tetrahydrofuran (tetramethylene oxide) is used in chemical reactions and as a solvent for resins and plastics. Both acute and chronic exposures constitute a moderate health hazard. Symptoms of overexposure—nausea, dizziness, and headache—soon disappear when fresh air is inhaled. Kidney effects reported in early studies were probably due in part to impurities in the compounds tested.

See *Hygienic Guide*

Tetryl (2,4,6-trinitrophenyl-methylnitramine) is a high explosive notable for its ability to produce a severe dermatitis by direct contact and a high grade of sensitization in some persons. There is some evidence of a slight systemic toxicity, not as important in practice as the dermatitis.

The systemic toxicity seems to consist of general central nervous system symptoms and anemia, although there is some evidence of liver damage and lung involvement from heavy chronic exposures.

The dermatitis usually develops in the second or third week of contact with tetryl. It is commonly accompanied by irritation of the mucous membranes of the nose, nose-bleed, and yellow staining of the skin of the hands, face, and scalp. Loss of appetite, abdominal cramps, and anemia are often seen in tetryl workers.

Reduction of contact with the material by dust control measures accompanied by zinc oxide protective cream and work uniforms, including caps, will greatly reduce the hazard. Most people who develop the dermatitis in a mild form will respond to treatment and acquire a certain tolerance so that they can continue working. There is, however, no true immunity to tetryl. People who have worked with the material for years develop dermatitis if the exposure is increased. There are also some cases of