Short Communication

Tributylphosphine telluride

During the past several years we have been engaged in a general study concerned with the chalcogenides of the Group Vb elements, R_3MX, where M is a group V atom and X a group VI atom. We now report the first example of a phosphine telluride.

To a dry flask containing 20 g (0.1 mole) of tri(*n*-butyl)phosphine under an atmosphere of methane was added 12.8 g (0.1 mole) of finely-powdered tellurium. The mixture was refluxed for 21 h in 200 ml of sodium dried toluene. During the time of reflux, the solution slowly acquired a yellow color. At the end of this time, the excess tellurium was removed by filtration and the solution evaporated to a volume sufficiently small so that on cooling to dry ice–acetone temperature, a pale yellow crystalline solid separated. The solid was recrystallized from low boiling petroleum ether to a melting point 35.0–35.5°C. (Found: C, 43.75, 43.99; H, 8.17, 8.30; P, 9.62, 9.66; mol. wt., 338, 348. $C_{12}H_{27}PTe$ calcd.: C, 43.69; H, 8.25; P, 9.39%; mol. wt., 330.)

Tri(*n*-butyl)phosphine telluride very slowly deposits gray tellurium on standing. This decomposition seems to be catalyzed by contact with surfaces of all kinds, but does not appear to be too deleterious inasmuch as the analytical sample was one which was a week old and had already acquired a gray color.

Other members of this series are being prepared and details on their synthesis and physical properties will be reported.

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