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Preliminary communication

Reactions of tetraorganolead compounds with *N*-Bromosuccinimide

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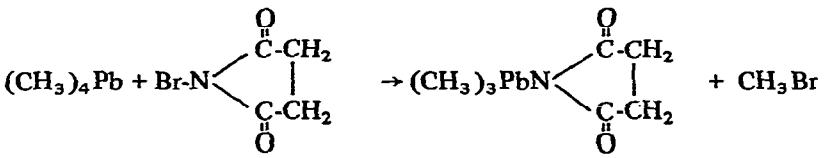
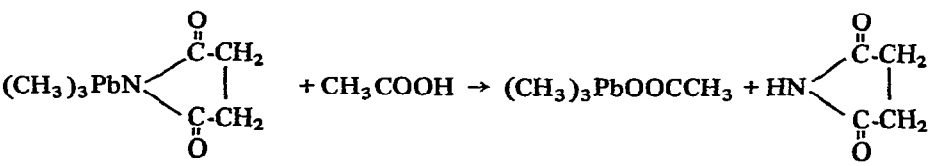
In general, tetraorganolead compounds react with halogen-containing inorganic[1] and organic[2] compounds yielding tri- or di-substituted organolead halides depending upon the experimental conditions. We have found that tetramethyllead reacts with *N*-bromosuccinimide in toluene yielding trimethyllead succinimide in almost quantitative yield at room temperature. The formation of methyl bromide was detected by infrared spectrum of the gaseous phase. Under similar conditions *N*-chlorosuccinimide did not react at all.



Similar reaction of *N*-bromosuccinimide with tetraphenyllead gave triphenyllead succinimide.

Both the products are crystalline white solids, not very soluble in common organic solvents but could be recrystallized from acetone. The products are soluble in water and ethanol. Attempts to cleave more than one methyl group from tetramethyllead were unsuccessful even with an excess of *N*-bromosuccinimide and elevated temperatures. The reactions of *N*-bromosuccinimide with a number of organolead compounds containing lead–sulfur, lead–oxygen, and lead–acetylene bonds are under investigation.

The reactions of trimethyl- and triphenyllead succinimide are also being investigated with a variety of reagents *e.g.*, with glacial acetic acid trimethyllead succinimide gives pure trimethyllead acetate and succinimide.



EXPERIMENTAL

Reaction between tetramethyllead and N-bromosuccinimide

A solution of tetramethyllead (19.2 g; 80% by weight in toluene) was stirred with *N*-bromosuccinimide (10.3 g) in toluene (150 ml) at room temperature. After an initial induction period of about 35 min an exothermic reaction occurred with the formation of a white precipitate. The mixture was stirred for an additional 5 h. The precipitate was filtered, washed with toluene, and dried under vacuum. Recrystallization from boiling acetone gave a white crystalline product (19.7 g, 98% yield) m.p. 177–178°. (*Anal.:* Found: C, 23.97; H, 3.73; N, 3.79. $C_7H_{13}NO_2Pb$ calcd.: C, 24.0; H, 3.74; N, 3.99%.)

Reaction between tetraphenyllead and N-bromosuccinimide

A mixture of tetraphenyllead (5.2 g) and *N*-bromosuccinimide (1.8 g) in toluene (200 ml) was stirred at room temperature for 20 h. The precipitate was filtered, dried, and recrystallized from boiling acetone to give pure crystalline product (4.9 g, 92% yield, m.p. 195–197°. (*Anal.:* Found: C, 49.49; H, 3.41; N, 2.58. $C_{22}H_{19}NO_2Pb$ calcd.: C, 49.24; H, 3.55, N, 2.60%.)

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