Journal of Organometallic Chemistry
Elsevier Sequoia S.A., Lausanne
Printed in The Netherlands

NOTE

AN OBSERVATION ON THE PREPARATION OF R_2TlX TYPES

H. GILMAN AND R. G. JONES
Department of Chemistry, Iowa State University, Ames, Iowa 50010 (U.S.A.)
(Received March 25th, 1969)

In an interesting paper[1] concerned with the synthesis of di-n-alkylthallium(III) bromides, reference is made to the following reactions of a synthesis previously described by us[2]:

$$RLi + RX + TlX \rightarrow R_3Tl \xrightarrow{HX} R_2TlX + RH \qquad (1a)$$

The statement is made that "Method (1a) although apparently straightforward, actually involves the intermediacy of RTl and the formation of the highly pyrophoric and explosive R_3Tl which must be carefully hydrolyzed with strong acid". In our report[2] it is stated that the trialkylthallium compounds do not have to be isolated or handled, and do not have to be hydrolyzed carefully with strong acid. In each of our experimental examples, a statement is made that water is added to the reaction mixture to give the R_2TlX compound (in high yield, up to 99% and 100% in some cases). The yields of the di-n-alkylthallium(III) bromides listed by them[1] fall in the range of 21% to 56%.

It appears that our procedure may have some merit for several reasons:
(1) All of the thallium, rather than only one-third (theoretically), is converted into the R_2TlX compound.
(2) The yields are very high.
(3) The method is applicable to aryl as well as alkyl compounds.

REFERENCES

1 A. McKILLOP, L. F. ELSOM AND E. C. TAYLOR, *J. Organometal. Chem.*, 15 (1968) 500; see also, N. A. NESMEYANOV AND R. A. SOKOLIK, *Methods of Elemento-Organic Chemistry, Vol. 1. The Organic Compounds of Boron, Aluminum, Gallium, Indium and Thallium*, North-Holland Publishing Company, Amsterdam, 1967.
2 H. GILMAN AND R. G. JONES, *J. Amer. Chem. Soc.*, 72 (1950) 1760.