

Book reviews

Gmelin Handbuch der Anorganischen Chemie. 8th Edition, Silber. Teil B5. Silber-Organische Verbindungen. Organische Silbersalze, Gmelin-Institut für Anorganische Chemie und Grenzgebiete der Max-Planck-Gesellschaft zur Förderung der Wissenschaften, R. Keim, editor, Springer Verlag, Berlin/Heidelberg/New York, 1975, vi + 187 pages, DM 322, \$132.10.

This new addition to the Gmelin series on organometallic compounds covers the σ - and π -bonded organic derivatives of silver as well as three simple silver carboxylates. The sections devoted to σ -bonded organosilver compounds are short, only 25 pages long, which is not surprising when one considers how unstable most of the members of this class are. Only the silver alkynyls, perfluoroalkyls and aryls with suitable *ortho* donor functions are reasonably stable and so this aspect of organosilver chemistry is rather undeveloped. On the other hand, it is impressive how much work has been done on olefinic and aromatic silver π -complexes, including the large number of structural studies. All the available data on these complexes, information on preparation, properties, stability, structure, if known, and chemical transformations, is presented in 95 pages of text. Many of these complexes were not isolated but were shown to be present in solution by spectroscopic or physical techniques and for many the formation constants were determined. A brief chapter deals with some special types of organosilver compounds: silver ketenide, silver derivatives of diazoalkanes, σ -bonded silver cyclopentadienyls, e.g., $\text{AgC}_5\text{H}_4\text{-FeC}_5\text{H}_5$ and $\text{AgC}_5\text{H}_4\text{Mn(CO)}_3$, silver derivatives of phosphorus ylides and silver isonitrile complexes.

The final 67 pages of this volume are devoted to a presentation of all available information on silver formate, silver acetate and silver oxalate. The general properties of silver salts of other carboxylic acids are summarized in a brief paragraph at the end and it is not intended to present further data on individual compounds.

The literature has been covered through the end of 1973 in the preparation of this volume, and some 1974 references can be found as well. A preface (in German and in English) and a short section on the pertinent review literature precede the compound compilations. The table of contents, as well as chapter and section headings are provided in German and in English.

In view of the current interest in silver ion-catalyzed rearrangements of strained hydrocarbons and other Ag^+ -catalyzed reactions of organic compounds, which often proceed by way of transient organosilver intermediates, this compendium on the more stable, isolable or at least detectable organosilver compounds is most timely and will be welcomed both by organometallic and organic chemists.