

*Gmelin Handbook of Inorganic and Organometallic Chemistry, 8th Edition, Thorium, Supplement Volume C4, Compounds with F, Cl, Br, I*  
Springer, Berlin and Heidelberg, 1993, 175 + xvi pages.  
DM 1080. ISBN 3-540-93661-1

This volume deals with halides, oxyhalides, and nitrido-halides of thorium in the usual Gmelin manner. Mixed halides with other metals, such as alkali metals, alkaline earth metals, and a few others are included. This will prove invaluable for those interested in the "simple" halides, their preparations and physical properties. Chemical properties are treated only cursorily, and a few simple adducts such as  $\text{ThBr}_4 \cdot 3\text{OPPh}_3$  are

mentioned, but there is no organometallic chemistry to speak of, doubtless reflecting the state of the art.

The production is, as usual, exemplary and the treatment comprehensive within the terms of reference prescribed. I found one typographical error. The rarity of such occurrences merely emphasises the extraordinarily high standards the Gmelin machine achieves.

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*Gmelin Handbook of Inorganic and Organometallic Chemistry, 8th Edition, Molybdenum. Part 5, Organomolybdenum Compounds*  
Springer, Berlin and Heidelberg, 1992, 430 + xiv pages.  
DM 2409. ISBN 3-540-93661-0  
*Part 9, Organomolybdenum Compounds*  
Springer, Berlin and Heidelberg, 1993, 332 + xiii pages.  
DM 1935. ISBN 3-540-93670-X.

These two volumes follow the usual Gmelin pattern. Part 5 (literature coverage to end of 1983) deals with mononuclear compounds with isocyanide, carbene, carbyne, alkynyl, alkene, alkyne, 3-carbon, and 4-carbon ligands, and Part 9 (literature coverage to end to 1989 for heteronuclear compounds and to end of 1992 for compounds with three CO groups) deals with heteronuclear compounds with 5-carbon ligands and two CO groups, and with tricarbonyl(cyclopentadienyl) derivatives.

The heroic endeavour to encompass all organomolybdenum chemistry is apparently proceeding with some difficulties. It must be said at the outset that these volumes follow the normal pattern, with the usual high standard of presentation and comprehensiveness, and the same ease of access to the required material. Thus Part 5 seems more dated than Part 9, and Part 5 is the third in the series, whereas Part 9 is

the fifth. We have already reviewed Part 7, the second in the series (published in 1991), Part 6 appeared in 1990, and Part 8 in 1992. The other 5-carbon ligands are considered in Parts 6, 7, and 8.

These volumes are invaluable, and should be available to every organomolybdenum chemist. They represent an intermediate stage between the primary and the secondary literature in that compounds are presented with all available detail, but with discussion generally omitted. They are better than abstracts, and at least as easy to search as a data base, if you know exactly what compounds you are looking for. They are expensive, of course, but it is not justified to compare them in price with "ordinary" books, because they are archival.

One exhausts superlatives, and cannot always find new things to say about these volumes. They may be among the last of the encyclopaedic productions so much favoured in earlier times. I hope that they long continue.

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