Journal of Organometallic Chemistry, 402 (1991) C63–C64
Elsevier Sequoia S.A., Lausanne

Book review

A Guide for the Perplexed Organic Experimentalist, 2nd Edition, by H.J. Loewenthal, Wiley, Chichester (and Salle und Sauerlander, Aarau), 1990, x + 239 pages, £25.00, ISBN 0-471-91712-5 (Wiley) and 3-7935-5542-9 (Salle und Sauerlander).

This admirable little book is reviewed here because although it is addressed to perplexed organic chemists much of it will be equally valuable to all perplexed organometallic chemists, and almost all of it to some of them.

The book is aimed at beginning research workers, whose supervisors, as the author points out, will mostly long since have left the laboratory bench and be busy "with administration, writing and refereeing research grant applications and scientific papers, and with teaching and thinking", and who "will have forgotten most of their practical knowledge and be unaware of later developments." It presents in very readable and often amusing fashion, sound and realistic guidance on preparing for and carrying out organic experiments. This guidance is offered under the chapter headings: (1) On searching the literature. The important sources. Using your head; (2) (written by E. Zass) On searching the literature—using the computer (and your head) to retrieve structures, references, reactions, and data online; (3) Basic safety rules; (4) Running small-scale reactions in the research laboratory; (5) Isolating and purifying the product; (6) Solvents; (7) Which base should I use; (8) On small scale distillation; (9) On hydrogenation—the Cinderella of the organic chemist; (10) On keeping it clean; (11) Bottling things up. (The last chapter contains an invaluable little section on labelling of containers containing substances prepared. How I wish my past students and postdoctoral fellows had had access to and had followed the guidance given here!)

There is one piece of advice that I am not sure I wanted to know about! This appears under the heading "Beware of explosive crystallization", and is expressed as follows:

> "...attention must be drawn to the fact that the process of crystallization can be very exothermic. This can cause a disaster, particularly when a solvent pair is used for recrystallization—the mixture may boil right out of the flask. Hence: have an ice-water bath handy just in case, and once again: *Never leave unattended!*"

I confess that I, and all the organic chemists I have consulted, in whose groups tens of thousands of recrystallizations have been carried out, had never known of this danger. In Britain, at least, in view of the severity of national regulations governing safety in university laboratories, recrystallization will now have to appear prominently in the list of safety hazards issued to research workers, and setting a solution aside overnight to crystallize will have to be a thing of the past!

0022-328X/91/$03.50

The book should certainly be read by those starting on research in organic or organometallic chemistry. It is not enough that a copy should be available in every laboratory since it will be too liable to 'borrowing', and all those to whom it is addressed should have their own copies, carefully locked away when not in use. Their supervisors should certainly read it also, and most experienced laboratory workers will find something of value in it.

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Erratum

Re: Chemistry of iridium carbonyl cluster complexes. Synthesis, chemical characterization and X-ray crystal structures of $[PPh_4][Ir_6(CO)_{15}Cl] \cdot C_4H_8O$ and $[PPh_4][Ir_6(CO)_{14}Cl]$; by Roberto Della Pergola, Luigi Garlaschelli, Secondo Martinengo, Francesco Demartin, Mario Manassero, Norberto Masciocchi, Robert Bau and Dong Zhao (*J. Organomet. Chem.*, 396 (1990) 385).

On page 387 Figure 1 should be replaced by that shown below:

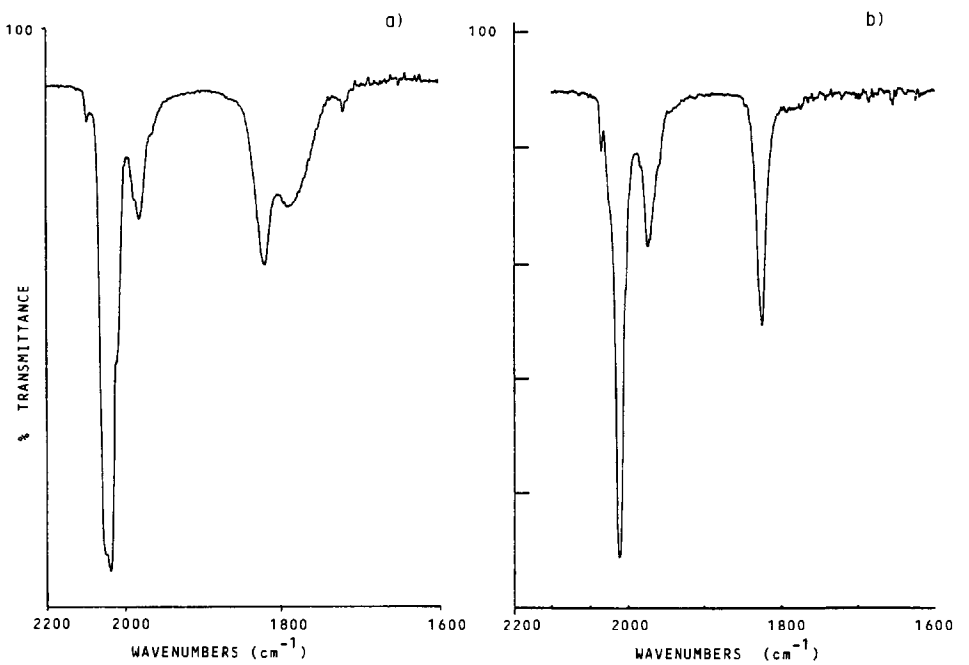

Fig. 1. (a) Infrared spectrum of $[PPh_4][Ir_6(CO)_{15}Cl]$ (**1**) in THF solution; (b) infrared spectrum of $[PPh_4][Ir_6(CO)_{14}Cl]$ (**2**) in THF solution.