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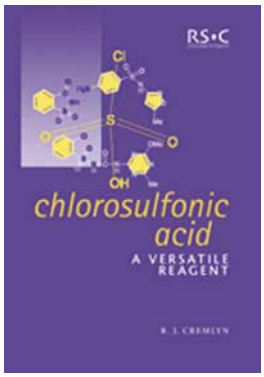
Aust. J. Chem. **2003**, *56*, 341–341

Reaction with Distinction

*Stephen J. Angyal**



Chlorosulfonic Acid: A Versatile Reagent

R. J. Cremlyn

Royal Society of Chemistry,
Cambridge, U.K.
2002, 307 pp.
ISBN 0-85404-498-1
Hardcover, 105 GBP.

It is rare for a book to be published on a single chemical; this distinction has now been awarded to chlorosulfonic acid, a chemical widely used. It is ironical that this reviewer, in his 60 years of chemistry, has never used this compound—I have much to learn. There are, indeed, many applications for chlorosulfonic acid; the book contains more than 1000 references. There is an appendix which brings the references up to the end of 2001. The author is well qualified to write about this subject: More than 90 of the references are to papers published by him. Some of these may have been duplicated but this cannot be easily ascertained because the references appear at the end of each chapter and, unfortunately, there is no author index in the book.

This is not a textbook; it is a reference book. If you intend to work with chlorosulfonic acid, you should look at it to see if you can obtain further information. If you do not, you might just as well look at it in case chlorosulfonic acid turns out to be a better reagent than the one you were going to use. The book could also be regarded as a reference book on sulfonic acids and sulfonyl chlorides since most of the reactions described yield these compounds. However, chlorosulfonic acid is not only a sulfonating and chlorinating agent but has a key role in promoting several different types of reactions, such as alkylation, halogenation, rearrangement, cyclization, and polymerization, which are all described in the book.

The material in the book is organized by chapters according to the nature of the reactions. The longest chapter, of course, is on the sulfonation and chlorosulfonation of aromatic compounds (weighing in at 110 pages), then shorter ones on aliphatic and heterocyclic compounds (34 and 45 pages). There are chapters on reactions with inorganic compounds and on commercial processes to produce agrochemicals, detergents, polymers, medicinal agents, and more. There is also a chapter on the reactions of sulfonyl chlorides. The manufacture and the properties of chlorosulfonic acid is also described. The mechanisms of the reactions involved are discussed in detail but there are no experimental procedures given.

It is practically impossible to produce a book without an error. I notice that the item ‘Carboxylic acid anhydrides 105–108’ in the subject index actually refers to anilides.

The book is well produced and printed in the usual RSC format; the style is clear and the formulae are well presented. It is unlikely that many individual chemists would buy this book but there should be a copy of it in every library that covers chemistry.

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 10.1071/CH00311_BR 0004-9425/03/04341