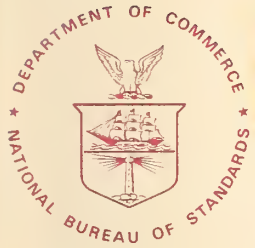

NBS SPECIAL PUBLICATION 630

U.S. DEPARTMENT OF COMMERCE/National Bureau of Standards

Oxidation of Sulfite Ion by Oxygen in Aqueous Solution-- A Bibliography

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Francis Westley

Center for Chemical Physics
National Measurement Laboratory
National Bureau of Standards
Washington, DC 20234

Prepared for:
Morgantown Energy Technology Center
U.S. Department of Energy
Morgantown, WV 26505
and
Office of Standard Reference Data
National Bureau of Standards
Washington, DC 20234

U.S. Department of Commerce, Malcolm Baldrige, Secretary
NATIONAL BUREAU OF STANDARDS, Ernest Ambler, Director

Issued March 1982

Library of Congress Catalog Card Number: 82-600507

National Bureau of Standards Special Publication 630
Nat. Bur. Stand. (U.S.), Spec. Publ. 630, 34 pages (Mar. 1982)
CODEN: XNBSAV

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1982

OXIDATION OF SULFITE ION BY OXYGEN IN AQUEOUS SOLUTION

- A BIBLIOGRAPHY -

Francis Westley

National Bureau of Standards
Chemical Kinetics Division
Center for Chemical Physics
Washington, DC 20234

A list of references is provided for published papers and reports containing rate constants or mechanisms for the oxidation of S(IV) by oxygen in aqueous solution, with or without catalysts. Three hundred and twenty papers are listed, the period covered extending from 1897 to 1981.

Key words: aqueous solution; bibliography; bisulfite ion; chemical kinetics; oxidation; oxygen; sulfite ion; sulfur dioxide.

INTRODUCTION

This bibliography lists papers and reports on the aqueous solution kinetics of sulfite oxidation, with or without catalysts, as well as other closely related papers.

The oxidation of sodium sulfite in solution has wide applications in various fields such as scrubber chemistry, photography, enzymology, biology, photochemistry, polarography, atmospheric chemistry, and the chemistry of aerosols and fog droplets. The first study on the oxidation of sodium sulfite in solution was performed by W. P. Jorissen in 1897 on the basis of an observation stated by Friederich Mohr in 1855 that a solution of sodium arsenite containing an excess of $NaHCO_3$ is quickly oxidized by O_2 if a small amount of sulfite is added to the solution. Jorissen's study was followed by the works of Bigelow (1898), Haber and Bran (1900), Young (1902), Titoff (1903), Lumiere, et al. (1905), and Pinow (1912). With the exception of the periods 1914 - 1918 (World War I) and 1942 - 1944 (World War II), the study of sulfite oxidation in aqueous solution has continued without interruption from 1912 through today. The present bibliography includes 320 papers dealing with sulfite oxidation in solution or closely related papers.

The list is arranged chronologically by year, then within the same year alphabetically by author(s). For each paper there is a full reference including the names of the authors, the title of the paper and the name of the journal. On the left side of each reference is the so-called "short reference," which includes the last two digits of the publication year, followed by the first three letters of author's name. If the paper has more than one author, the first three letters of the second author's name are also given. A slash separates the first three letters of the first author from the first three letters of the second author. The full reference format is demonstrated below:

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NBS-114A (REV. 2-8C)

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET (See instructions)	1. PUBLICATION OR REPORT NO. NBS SP 630	2. Performing Organ. Report No.	3. Publication Date March 1982

4. TITLE AND SUBTITLE

Oxidation of Sulfite Ion by Oxygen in Aqueous Solution--
A Bibliography

5. AUTHOR(S)

Francis Westley

6. PERFORMING ORGANIZATION (If joint or other than NBS, see instructions)	7. Contract/Grant No.
NATIONAL BUREAU OF STANDARDS DEPARTMENT OF COMMERCE WASHINGTON, D.C. 20234	8. Type of Report & Period Covered Final

9. SPONSORING ORGANIZATION NAME AND COMPLETE ADDRESS (Street, City, State, ZIP)

Morgantown Energy Technology Center
U.S. Department of Energy
Morgantown WV 26505

Office of Standard Reference Data
National Bureau of Standards
Washington, DC 20234

10. SUPPLEMENTARY NOTES

Library of Congress Catalog Card Number: 82-600507

☐ Document describes a computer program; SF-185, FIPS Software Summary, is attached.

11. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here)

A list of references is provided for published papers and reports containing rate constants or mechanisms for the oxidation of S(IV) by oxygen in aqueous solution, with or without catalysts. Three hundred and twenty papers are listed, the period covered extending from 1897 to 1981.

12. KEY WORDS (Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons)

aqueous solution; bibliography; bisulfite ion; chemical kinetics; oxidation; oxygen; sulfite ion; sulfur dioxide.

13. AVAILABILITY	14. NO. OF PRINTED PAGES
☒ Unlimited ☐ For Official Distribution. Do Not Release to NTIS ☐ Order From Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. ☒ Order From National Technical Information Service (NTIS), Springfield, VA. 22161	34 15. Price

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