You have Guest access to ScienceDirect Find out more...

Login: **±** Register

Home Browse My Settings Alerts H Quick Search All fields	lelp Author
? search tips Journal/book title	Volume Issue Page Clear S Go
The Elsevier Grand Challer Knowledge Enhancement in the Life S	nowannounced.
Fuel Volume 79, Issue 2, January 2000, Pages 211-216	Font Size: 🔲 🖥



in organic acids

M. K. Baruah ^a, P. C. Gogoi^a and P. Kotoky^b

^a Department of Chemistry, NNS College, Titabar-785630, Assam, India

^b Geoscience Division, Regional Research Laboratory, Jorhat 785006, Assam, India



Received 14 January 1999; revised 23 June 1999; accepted 28 June 1999 Available online 24 November 1999.

Abstract

The solubility of gypsum in organic acids namely acetic, oxalic, tartaric and succinic acids at low temperature (30°C) was studied. The results show that sulphate sulphur content increases with increasing acid concentration from 0.1 to 0.25 M and decreases again at higher concentration. It is suggested that different behaviour of the acids beyond 0.25 M solution could be due to incorporation of sulphate into the co-ordination sphere of calcium-organic complexes. It is suggested that the occurrence of free and fixed sulphate in the solution is highly pH dependent. The nature of incorporation of sulphate in a system containing calcium species and natural organic matter has also been studied. Humic acids, extracted from forest and tea-garden soils, were treated with a solution of gypsum (CaSO4·2H2O) at room temperature and the infrared spectra of the gypsum treated samples reveal that sulphate has been incorporated into the calcium complex as a monodentate ligand. Further an inorganic-sulphur free high-sulphur coal when treated with the gypsum solution, incorporated sulphate as bidentate ligand. It is concluded that the nature of the



Related Articles in ScienceDirect

- The nature of metals—sediment—water interactions in f... Earth-Science Reviews
- Chemical factors influencing the rates and sequences of...
 Geochimica et Cosmochimica Acta
- The roles of organic matter in the formation of uranium...
 Ore Geology Reviews
- The role of humic acids from Tasmanian podzolic soils i...
 Geochimica et Cosmochimica Acta
- Some observations upon the natural history of Gypsum Proceedings of the Geologists' Association

. '	View.	More	Related	Articles
	VICVV	VIOLC	1 Clatca	7 11 11 11 11 11 11

View Record in Scopus

1 of 2 6/3/2009 3:18 PM

organic matter plays an important role for the occurrence of various fixed sulphates either as monodentate or bidentate ligand in natural systems. This work is a novel breakthrough for the occurrence of varying sulphate content in some of the natural environments and has considerable environmental and geochemical interest.

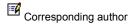
Author Keywords: Gypsum; Solubility; Sulphate; Coordination; Organic matter

Article Outline

- 1. Introduction
- 2. Experimental
- 3. Results and discussion
 - 3.1. Effect of organic acid on the extent of free sulphate formation
 - 3.2. Spectroscopic evidence of sulphate incorporation
 - 3.3. Effect of acidity in the system
 - 3.4. Sulphate behaviour in natural systems

Acknowledgements

References



Sponsored Links

Copper Sulphate

Reliable source, great quality over 25000 tpa availability www.cuso4.at

www.cuso4.

Elementar

German High Tech Manufacturer of Elemental & TOC Analyzers

www.elementar.de

Searching for Chemicals

FREE - More than 300.000 supply references - search for FREE www.Chemical-Suppliers.de

Fuel

Volume 79, Issue 2, January 2000, Pages 211-216

Home Browse My Settings Alerts Help



About ScienceDirect | Contact Us | Information for Advertisers | Terms & Conditions | Privacy Policy

ELSEVIER | Copyright © 2009 Elsevier B.V. All rights reserved. ScienceDirect® is a registered trademark of Elsevier B.V.

2 of 2