

[Available Issues](#) | [Japanese](#)>> [Publisher Site](#)Author: [ADVANCED](#) | Volume Page
Keyword: [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1348-2246

PRINT ISSN : 0910-6340

Analytical Sciences

Vol. 26 (2010) , No. 1 p.83

[\[PDF \(601K\)\]](#) [\[References\]](#)

Micellar-mediated Extractive Spectrophotometric Determination of Hydrogen Sulfide/Sulfide through Prussian Blue Reaction: Application to Environmental Samples

[Malingappa PANDURANGAPPA^{1\)}](#) and [Devaramani SAMRAT^{1\)}](#)*1) Department of Studies in Chemistry, Bangalore University, Central College Campus*

(Received August 22, 2009)

(Accepted October 19, 2009)

A sensitive surfactant-mediated extractive spectrophotometric method has been developed, based on the reaction of ferric iron with sulfide to form ferrous iron and its subsequent reaction with ferricyanide to form Prussian Blue, to quantify trace levels of hydrogen sulfide/sulfide in environmental samples. The method obeys Beer's law in the concentration range 2 – 10 μg of sulfide in 25 mL of aqueous phase with molar absorptivity (ϵ) of $3.92 \times 10^4 \text{ L mol}^{-1} \text{ cm}^{-1}$. The colored species has been extracted into isoamyl acetate in the presence of a cationic surfactant *i.e.* cetylpyridinium chloride, to enhance the sensitivity of the method with ϵ value $5.2 \times 10^4 \text{ L mol}^{-1} \text{ cm}^{-1}$. The relative standard deviation has been found to be 0.69% for 10 determinations at 4 μg of sulfide and the limit of detection was $0.009 \mu\text{g mL}^{-1}$. The interference from common anions and cations has been studied. The proposed method has been applied to the determination of residual hydrogen sulfide in the laboratory fume hood as well as ambient atmospheric hydrogen sulfide in the vicinity of open sewer lines after fixing the analyte in ionic form using suitable trapping medium.

[\[PDF \(601K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)

To cite this article:

Malingappa PANDURANGAPPA and Devaramani SAMRAT, *Anal. Sci.*, Vol. 26, p.83, (2010) .

doi:10.2116/analsci.26.83

JOI JST.JSTAGE/analsci/26.83

Copyright (c) 2010 by The Japan Society for Analytical Chemistry



[Japan Science and Technology Information Aggregator, Electronic](#)

