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Szechrome NAS

TECHNICAL DATA SHEET 239

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For Nitrate and Nitrite Analysis

INTRODUCTION

Szechrome NAS is a nontoxic reagent specific for nitrate or nitrite ions in sea or lake water, soil, plant, meat extracts, biological fluids, and fertilizers. This sensitive reagent reacts rapidly to produce stable colors suitable for precise quantitative determinations or rapid estimations in routine field work. Szechrome NAS offers several advantages over other methods for nitrate/nitrite testing:

- Stable
- Not toxic
- Stable color develops rapidly and is not temperature sensitive

Szechrome NAS produces color reactions which are specific and proportional to the nitrate content of the sample tested.

USES

Suitable for the determination of the nitrate content of natural waters, industrial waste effluents, soils, plant and meat extracts, tinned goods, biological fluids (sputum, urine), chemicals, fertilizers and drugs. Szechrome NAS has been used in place of the phenoldisulfonic acid, brucine and chromotropic acid methods used previously.

SZECHROME NAS

Preparation of Working Reagent Solutions: Mix equal volumes of analytical grade concentrated phosphoric acid (85-86%) and concentrated sulfuric acid (95-97%). **Let stand one week.** **NOTE:** Analytical grade sulfuric acid and phosphoric acid always contain a small amount of NO₃. Although the amount of NO₃ impurity is generally less than the admitted maximum, these acids cannot be used for the preparation of reagent solutions immediately after they are mixed together. Although it is impossible to obtain nitrate-free acids by the usual purification procedures, it has been found that the nitrate content diminishes if the mixtures are allowed to stand in closed flasks for several days. It is recommended to prepare the acid mixtures beforehand and to let them stand for at least a week before using them as solvents. Following these instructions colorless or slightly colored solutions will be obtained.

Sensitivity range is from 1 to 20mg nitrate/liter. To prepare stable reagent solution, dissolve 1 vial (5g) NAS in a liter of a mixture of equal volumes of nitrate-free concentrated H₃PO₄ and concentrated H₂SO₄ (see above). Close the flask tightly and shake until solubilized. Reagent is ready for use when the liberated gas is absorbed and the liquid clears.

PROCEDURES

Determination Procedure: 0.5ml aqueous nitrate sample is gently mixed with 5ml reagent solution. The violet color intensity is read at 570nm in a 1cm cell after 10-60 minutes or compared with color standards. Concentration range 2-20ppm NO₃. For samples containing up to 200ppm NO₃, use 0.05ml of test solution.

Detection Procedure: 1 drop nitrate sample is mixed with 15-20 drops reagent. Development of a violet color in a few minutes indicates the presence of NO₃ at a level of 0.1µg or greater.

Various ions have little test influence. Estimations are not disturbed by considerable amounts of oxidants such as persulfate, chromate, and chlorine or reducing agents such as sulfite and hydroxylamine. Precise quantitative determinations can be made in the presence of up to 1000ppm of chloride and large amounts of nitrite and solvents such as ethyl acetate or chloroform.

REFERENCES

1. Microb. Ecol., **6**, 95 (1980)
2. Talanta, **19**, 1429 (1972)
3. Isr. Chem. Soc. 43rd Annual Meeting. Proceedings, p. 107 (1975)
4. Isr. Chem. Soc. 43rd Annual Meeting. Proceedings, p.106 (1975)

ORDERING INFORMATION

Cat. #	Description	Size
08762	Szechrome NAS	5g

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