

## A n a l y s e s o f S e a S a l t s

Subtitles ① Determination of Mg and Ca Ions in Solar Salts by Ion Chromatography

② High Performance Liquid Chromatographic Determination of Al and Fe in Solar Salts in the Form of Their PMBP Chelates  
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### Summary

① A method for the simultaneous determination of Mg and Ca ions in solar salt was studied by ion chromatography with a conductivity detector. The samples, about 25 g, were dissolved in about 150 ml of water and the solution was filtered through a filterpaper into a 250 ml volumetric flask. Then 1 ml aliquot of this solution was pipetted into a volumetric flask and diluted to 100 ml with water. A 100  $\mu$ l aliquot of the sample solution was analyzed by an ion chromatograph equipped with a precolumn (PCX 1, 50 mm  $\times$  4.6 mm i.d.) and a separation column (SCX 1, 250 mm  $\times$  4.6 mm i.d.) using 2 mM ethylenediamine - 4 mM tartaric acid as a mobile phase (2 ml / min ).

Linear calibration curves were obtained up to 2.0 ppm for Mg and Ca. The detection limits (S / N = 3 ) were 5 ppb for Mg and 7 ppb for Ca. Relative standard deviations ( n = 5 ) were less than 3.1 % for 0.016 - 0.09 % of Mg and 2.8 % for 0.042 - 0.20 % of Ca in solar salt for the simultaneous determination of these elements.

② Aluminum and iron ions in solar salts were separated and simultaneously determined in the form of their 1- phenyl- 3-methyl-4-benzoyl-5-pyrazolone (PMBP) chelates by HPLC. Four imported solar salt samples were subjected to this investigation. The samples were dissolved in diluted nitric acid solution with heating. An aliquot of the solution was pipetted and adjusted to pH 3 with acetate buffer, then 10 ml of 0.02 M PMBP - methanol solution was added. The obtained chelates were dissolved in dioxane ; 10  $\mu$ l of it was injected and analyzed by HPLC. The determinations were within 20 min and recoveries of each metal were satisfactory. Di-valent metal ions did not interfere at the same chromatographic conditions.