

# DETERMINATION OF SOLUBILITY PRODUCTS AND SATURATION CONDITIONS OF SALTS PRECIPITATED DURING SOLAR SALT PRODUCTION

Vesna VANCINA<sup>1</sup>, Halka BILINSKI<sup>2</sup> and Dana R. KESTER<sup>3</sup>

<sup>1</sup> Faculty of Graphic Art, University of Zagreb, Zagreb, Croatia

<sup>2</sup> Ruder Boskovic Institute, Zagreb, Croatia

<sup>3</sup> Graduate School of Oceanography, University of Rhode Island, Narragansett, R I 02882 USA

During production of NaCl at the solar salt work in Seca, Portotroz, Slovenia, some macro- and microconstituents of seawater are concentrated in brines and some in brines and in sediments. Liquid samples collected at the solar salt work were : incoming seawater, brines of various densities from evaporation, lime, pickle and crystallising ponds and residual brines or bitters from bittern storage. Solid samples collected at the solar salt work were : cumulative sediments from evaporating, pickle and crystallising ponds. Microcomponets were determined by X-ray fluorescence spectroscopy. Macrocomponents were determined as follows : sodium, potassium and magnesium by atomic absorption specrometry, calcium and magnesium by complexometric titration with EDTA, bromide by volumetric titration with Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, chloride by modified Mohr's titration, and sulphate gravimetrically as BaSO<sub>4</sub>. The activity coefficients of macrocomponets have been calculated from analytical data at various brine densities employing Pitzer's approach for mixed electrolytes. These coefficients were used together with the measured molar concentrations to calculate the solubility products of precipitating salts during production of NaCl at the solar salt work. The values obtained were compared with those from the literature reported for low ionic strength.

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