

## POSTER SUMMARY

**ANALYSIS OF SULPHITES IN SUGAR BY ION CHROMATOGRAPHY**

DU CLOU H AND WALFORD SN

*Sugar Milling Research Institute NPC, c/o University of KwaZulu-Natal,  
Howard College Campus, Durban, 4041, South Africa  
hduclou@smri.org swalford@smri.org*

**Abstract**

One of the analytical services that the Sugar Milling Research Institute NPC (SMRI) offers to customers is the determination of sulphite in white sugar. The test method (TM) used, TM061, is entitled "Determination of the Sulphite in White Sugar by the Rosaniline Hydrochloric Colourimetric Method". The TM061 method is based on the International Commission for Uniform Methods of Sugar Analysis (ICUMSA) method GS2/1/7-33. Both methods rely on the colourimetric determination of sulphite via conversion to sulphur dioxide (SO<sub>2</sub>) and complexation with para-rosoaniline hydrochloride (rosaniline) in formaldehyde. Drawbacks of the rosoaniline methods used in the sugar industry include their limited applicability to all sugar streams and products, the lengthy procedures, and the potential toxicity of the reagents. Although the ICUMSA method is applicable for the sulphite determination of white sugar, cane juice and cane syrup it is only tentatively acceptable for very high pol raw sugar and is not suitable for raw sugars or other processing streams. The TM061 method is only validated for white sugar. The SMRI has investigated the use of an alternative chromatographic technique for the determination of sulphite in the sugar industry. Ion chromatography (IC) promises to deliver a quicker, simpler, more environmentally- and analyst-friendly method for the accurate determination of sulphite in sugar. This poster presents the development of a suitable solvent and eluent system for determining sulphites in sugar samples in the calibration range of 5-50 ppm by IC. Comparison with the existing method is also presented.

*Keywords:* sulphites, ion chromatography, rosoaniline, white sugar, raw sugar, formaldehyde