ANALYSIS AND RECOVERY OF IODINE FROM BRINE IN SOLAR SALT MANUFACTURING

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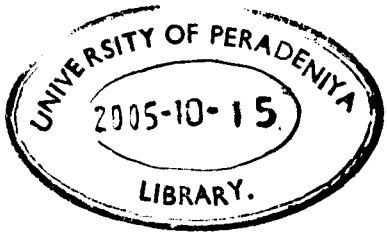

It is well known that the deficiency of iodine in the human diet can lead to several health related problems including endemic goitre. As a remedy for this problem, Sri Lanka has made it mandatory to iodise salt sold in this country. In Sri Lanka, salt is iodised with potassium iodate, which is imported from other countries. According to standards, the iodine content in salt should be 30 to 50 mg/L. In order to ascertain the conformation to these standards, relatively simple and reliable method of iodine analysis is required.

This report presents the results of a basic research carried out to find a suitable method for analysis of iodine content in salt and concentrated brines. In addition, an iodine separation method from brine was tested in order to study the possibility of iodine recovery from concentrated brines produced in the solar salt manufacturing process. Furthermore, several brands of commercially available salt in Sri Lanka were tested for iodine content using the proposed analytical method to see whether the iodine content is within the range specified by the standards.

The results indicate that colorimetric method for iodine analysis is reliable and that the proposed method of iodine separation has very good recovery efficiency. However, a cost analysis is required to assess the suitability of this separation method in industrial scale. According to this study, the iodine content in most of the commercially available brands of salt in Sri Lanka does not conform to the required standards.