

C
540
PRA

**EFFICIENCY OF REMOVING ARSENIC FROM DRINKING WATER
USING ALUMINUM OXIDE AND FERRIC OXIDE**

A PROJECT REPORT PRESENTED BY

K.A.D.P.PRASANGI

To the Board of Study in Chemical Sciences of the
POST GRADUATE INSTITUTE OF SCIENCE

*In partial fulfillment of the requirement
For the award of the degree of*

MASTER OF SCIENCE IN ANALYTICAL CHEMISTRY

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2004

590965

EFFICIENCY OF REMOVING ARSENIC FROM DRINKING WATER USING ALUMINUM OXIDE AND FERRIC OXIDE

K.A.D.P.PRASANGI

Department of Chemistry

University of Peradeniya

Sri Lanka

In recent years there has been widespread coverage in the media about the problems caused by arsenic in drinking water. Arsenic contamination in ground water in West Bengal, India, and neighboring Bangladesh has emerged into an international crisis. Over 100 million people are at risk of arsenic poisoning. More recently, because of the recognition that arsenic at low concentrations in drinking water causes severe health effects, extensive research has been carried out to remove arsenic from drinking water.

The purpose of this research is to reduce the arsenic level below $10\mu\text{g/L}$ in drinking water using Aluminum oxide and Ferric oxide. In this study batch adsorption tests were used to evaluate the effects of arsenic adsorption using five ratios of aluminum oxide and ferric oxide.

More than 50% of arsenic adsorption efficiency can be achieved by adding (70-100) g/L of total aluminum oxide and ferric oxide in concentrations from 2ppb to 10ppb arsenic.