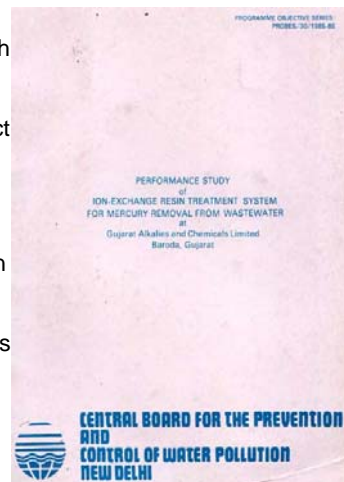


Performance Study of Ion - Exchange Resin Treatment System for Mercury Removal from Wastewater at Gujarat Alkalies & Chemical Ltd. Baroda, Gujarat

Foreword

A polluted environment is a potential health and ecological hazard, the manifestations of which are already being felt especially in big cities such as Bombay and Calcutta. Realising these hazards, the Government of India had introduced a legislation, the Water (Prevention & Control of Pollution) Act, 1974. Under this Act, the Central Board functions, to protect our water resources from pollution. While laws do serve to act as a deterrent, ultimately it is the social and moral responsibility of the industry to provide a clean and healthy environment to live .

This report deals with the pollution of the environment by mercury, used in the manufacture of caustic soda and chlorine by the mercury cell technology. Mercury is a toxic substance which gets biologically transformed into deadly poisonous methyl-mercury. Methyl-mercury enters the food chain through fish and the implication of this is quite dangerous. Hence, its discharges at industrial sources need to be controlled and therefore, the Minimal National



Standards (MINAS) for the effluent from the chlor-alkali industry had been developed by the Central Board. These standards were to be implemented and achieved by all such industries by January 31, 1984, by providing inplant control measures and by providing suitable treatment technology, if needed. The essential and basic measures for an effective reduction of the mercury emission to be pursued are : complete segregation of mercury-contaminated discharge water from \ uncontaminated water by adopting a separate sewer system for each | reduction of the mercury-bearing wastewater quantities by returning certain process water streams into the production process treatment and recovery of contaminated water and its re-use within the plant arrangement of the entire brine system and other treatment units in concrete pits to ensure that any overflowing or leaking mercury bearing fluids are collected and can be returned into the process and particular care taken to avoid spillage of mercury.

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Nilay Chaudhuri
Chairman, CPCB