

## **Minimal National Standards :Pesticides Manufacturing and Formulation Industry Comprehensive Industry Document Man-Made Fibre Industry**

### **Foreword**

The Minimal National Standards (MINAS) for liquid effluent discharge for a particular industry, by definition, are techno-economically achievable by the industry. The Central Board has developed MINAS for the following industries:

- Sugar
- Fermentation
- Textiles .( woollen and cotton)
- Fertilizer (nitrogenous and phosphatic)
- Caustic Soda
- Manmade Fibre
- Oil Refineries

In the present document, MINAS for Pesticide Manufacturing & units are presented. There are a few fundamental differences in the development of MINAS for pesticide manufacturing industry from others. In the pesticide industry, removal of toxicity is the primary objective of the treatment of waste- waters whereas in other industries it may be oxygen consuming, colour or turbidity causing and similar environmentally less injurious pollutants. Therefore, very strict standards are necessary for the industry. The treatment technology, to achieve the standards and methods for measurement of refractoriness & bio-degrad- ability of pollutants of the wastewater are described. A review of the various methods for treatment indicates that ozone treatment is the answer for pollution control. A section on environmentally sound layout of the production units in the industry is added.

The Pesticide Manufacturing & Formulation Industry, I hope, would react to the standards positively and responsibly. This summary document is the outcome of the exhaustive Comprehensive Industry Document prepared by Dr. Sivabrata Chatterjee, Consultant for the Central Board. The painstaking efforts put in in preparing the document and elucidating hitherto not too well known technologies for treatment of the wastewater is deeply appreciated. The bio-data of Dr. S. Chatterjee is annexed at the end of the report.

Shri B.K. Chaudhuri and Dr. K.R. Ranganathan of the Central Board pre- pared this MINAS document in consultation with Dr. S. Chatterjee. Shri Ashok Kashyap and Shri Jagdish Narula rendered excellent typing assistance. Shri K.K. Gupta prepared the drawings.

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