

## COMMUNICATION

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## REMOVAL OF COLOUR AND DETERGENTS FROM TEXTILE INDUSTRY WASTES

Technological investigations on the removal of textile wastes (finishing department, dye house) together with domestic sewage have shown that industrial wastes should be preliminary treated, mainly to remove the colour and reduce the concentration of detergents.

Textile wastes were characterized by the following parameters:

- pH — 11.2–11.5,
- colour — dark blue,
- transparency — 1.6–2.1 cm,
- permanganate value — 123–141 mg O<sub>2</sub>/dm<sup>3</sup>,
- BOD<sub>5</sub> — 205–225 mg O<sub>2</sub>/dm<sup>3</sup>,
- detergents — 7.8–12.9 mg/dm<sup>3</sup>.

In preliminary treatment the dyes were chemically precipitated with calcium chloride given alone or in mixture with ferrous sulphate. Optimal doses of reagents, with which the wastes were made colourless and their transparency was over 30 cm, were the following:

for calcium chloride — 1500 mg/dm<sup>3</sup>,

for the mixture: calcium chloride — 100 mg/dm<sup>3</sup>, copperas — 500 mg/dm<sup>3</sup>.

Copperas alone (100 mg/dm<sup>3</sup>) did not produce the desired effect of colour removal. The analysis of chemical deposit allowed to state a strong absorption of detergents, whose concentration in preliminary treated wastes amounted to 0.8–1.1 mg/dm<sup>3</sup>; the remaining indices were reduced to 50%: BOD<sub>5</sub> 105–115 mg O<sub>2</sub>/dm<sup>3</sup>, permanganate value — 61–69 mg O<sub>2</sub>/dm<sup>3</sup>. The pH of wastes was only slightly reduced (10.2–10.35). Further investigations are conducted to elucidate the role of calcium and ferrous ions in removal of dyeing substances.

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