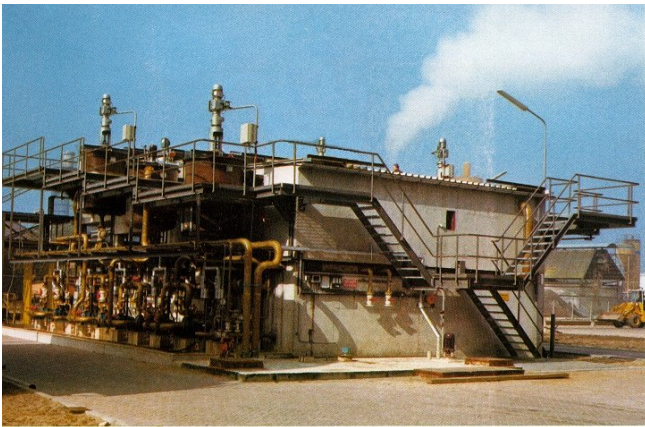


The Valberg Process

Recovery of Zinc from Rayon Manufacturing effluents

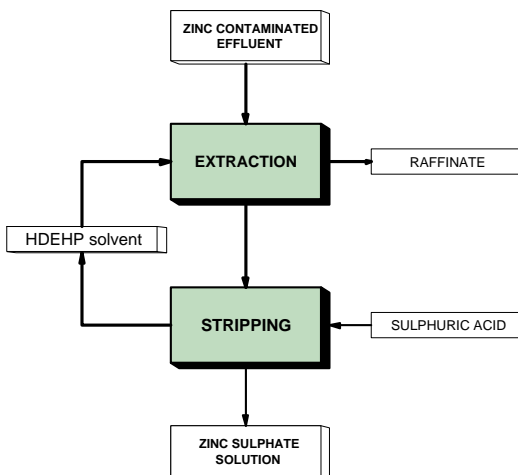


Zinc Extraction Plant at Enka AKZO, Holland

In the manufacture of rayon, rinse waters and other zinc-containing liquid effluents are produced. The total liquid effluent in a rayon plant may amount to several m³ per minute and the zinc concentration is 0.1 - 1 g/l. The pH is normally 1.5 - 2. In addition to zinc, the effluent contains surface-active agents and dirt (organic fibers and inorganic sulphide solids).

Recovery of zinc from the effluent has successfully been accomplished using solvent extraction. In the process, zinc is extracted to more than 95% (pH=2) with di-ethyl hexyl phosphoric acid (DEHPA) dissolved in kerosene in two or three stages. Stripping is performed with a sulphuric acid solution. By adjusting the net flow rate of the strip solution, the concentration of zinc in solution may be increased to 50 g/l or more. Thus, the resulting zinc sulphate solution can be re-used directly in the spinning bath.

Full-scale plants have been built and operated at Svenska Rayon AB in Sweden and at Enka AKZO in Holland.



Block diagram:
Extraction of Zinc from Weak Acid Effluents

References.

Solvent Extraction Process for Recovery of Zinc from a Weakly Acidic Effluent,
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