

Nanobubble Reactor for Removal and Recovery of heavy metals from Electroplating and Tannery Industrial Effluents

Electroplating and tannery industrial effluent contains high level of heavy metals such as chromium 6, zinc, nickel, lead, copper, arsenic and Mercury. These heavy metals at minimal concentration also affects the plants, animals and microbiota, through percolation into land and groundwater. These industries are failed to treat and releases in open environment and causes water and land pollution. Released effluent are above the pcb limits. Even industries with treatment system are failed to meet pcb standard limits. Conventional system requires high volume of chemicals -Alum and lime and results in release of large volume of solid waste (1000L treatment generates-25 kg of solid waste). Conventional system requires large area of land.

Nano Bubble reactor technology provides solution for both water and land pollution. Nano Bubble reactor technology (NBR) is a compact and provides customised solutions for effluents. NBR efficiently treats chromium 6 to chromium 3 upto 80-90%, zinc and nickel. System eliminates use of alum and lime. System doesn't requires pre filtration systems (physical and chemical). System consists of A Gas Generator, a Nano Bubble reactor and a ceramic filter. Post treatment in NBR, water filtered in Ceramic filter and directly taken to RO system. Solid waste generation is 10kg per 1000L effluent treatment.