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ELECTROWINNING CELLS

The Electrowinning Cells are designed for the recovery of gold and silver from pregnant solutions. Typical applications have found these electrowinning cells capable of recovering gold from low concentrations (0.5 to 10 PPM) or very high metal concentrations. The cell consists of a specialized electroplating cell, a rectifier and pertinent auxiliary equipment. The precious metals are plated onto a series of high surface area cathodes as the pregnant solution passes through the electrolytic cell. When one of the cathodes is fully plated, it is easily removed from the cell and replaced with a fresh one.

The Electrowinning Cells contain a series of dimensionally stable anodes and porous flow through metal cathodes. The cathodes have an active surface area approximately 10 times their geometric area. The extended surface area of these cathodes enables the user to obtain good current efficiency at high current density and low metal concentrations. The electrodes are held in place by a series of channels on the inside walls of the open topped cell tank. These channels maintain the electrodes in an aligned, spaced, parallel arrangement and facilitate the insertion and removal of the electrodes.

The Electrowinning Cell has an air sparging system to promote turbulence and mixing within the cell. A porous distributor plate at the inlet of the cell helps maintain even liquid flow through the electrodes. A ventilator cover prevents large objects from falling into the cell while allowing evolved gasses to escape. The operation of the cell is simple, it requires only the monitoring and replacement of the cathodes as the become completely plated.

This Series of Electrowinning Cells is available in sizes with working volumes ranging from 3.5 gallons to 89 gallons and cathode area ranging from 6.1 square feet to 175 square feet per cell. Cells are available as individual system, or may be used in series as a part of a system. A standard system configuration would include the cell, cathodes, anode, recirculation pump, air sparger and rectifier. Standard materials of construction is PVC for the cell and cathodes are constructed from polyurethane sponge with either a copper or nickel coating. The active surface area of a cathode is approximately 10 times the geometric dimension. Refer to the diagram below for a general schematic of the Electrowinning Cell.