

PHYSICAL AND CHEMICAL WASTEWATER TREATMENT

The Environmental Group of Epsilon Chemicals Ltd. specialises in the study and treatment of wastewater streams for the meat, poultry and fish industries. Its objective is to identify and develop innovative new products and optimised approaches to effluent treatment so that plants meet government standards and operate within permit compliance. Products and services include:

- *Flocculants, coagulants, pH control systems, TSS Monitors and other instrumentation.*
- *PLC controlled, turnkey wastewater treatment systems with remote monitoring capabilities.*
- *Roller Presses specifically designed for reducing water content of wastewater sludge.*
- *Full service laboratory for completing water and chemical analyses.*



ANIONIC FLOCCULANTS

EC-6350GR – A very high molecular weight anionic wastewater treatment polymer in **emulsion** form. This product is completely water-soluble and produces solutions that have a milky white appearance.

EC-703 – A granular, water-soluble flocculant with a high molecular weight. EC-703 is specifically formulated for treating packinghouse wastewater.

EC6853P – A granular, water-soluble flocculant with a very high molecular weight. EC6853P is NSF certified for potable water treatment.

CATIONIC FLOCCULANTS

EC483 – A granular, water-soluble flocculant with a high molecular weight.

EC-4840 – A low molecular weight cationic wastewater treatment polymer. EC-4840 is **completely water-soluble**.

EC-4350 – A high molecular weight cationic wastewater treatment polymer in **emulsion form**. This product is completely water-soluble and produces solutions that have a milky white appearance.

EC-4360 – A low molecular weight cationic wastewater treatment polymer in **emulsion form**. This product is completely water-soluble and produces solutions that have a milky white appearance.

COAGULANTS/ FLOCCULANTS

E-FLOC 501 – A powdered blend of polymers effective as a combined coagulant and flocculant for a wide variety of effluents from the food processing industry.

ENVIROFLOC A – A powdered blend of biological polymers and polyacrylamide. Used as a coagulant, Envirofloc A has been shown to be effective in the reduction of TSS, O/g, BOD, TKN and Total Ammonia in food processing effluent.

E-FLOC 218 – A **concentrated** blend of biological polymers and polyacrylamide. E-Floc 218 can be used as a combined coagulant and flocculant, depending upon the nature of the wastewater being treated.

ENVIROFLOC™

Computerized Turnkey Wastewater Treatment Systems for the Food Industry



E-Chem designs its waste treatment systems to meet the specific requirements of each customer. Our **Envirofloc™** technology involves adjusting the pH of the influent to the **isoelectric point** of the proteins present. Air is injected under pressure to aid in the



flotation process. The appropriate E-Chem polymer is then added. Dosage rates are calculated by the **Envirofloc Control Center** and are a function of flow rate and incoming suspended solid levels.



The treated effluent is transferred to a specifically designed treatment system. A separation occurs and the solids are removed from the clear liquid phase. This liquid phase has undergone a reduction of Total Suspended Solids (TSS) (90 - 95%), oil/grease (O/g) (90 - 95%), Biochemical Oxygen Demand (BOD) (60 - 80%) and protein (80 - 98%). The

variations in pollutant removal is a result of the different types of effluent used.

A sludge blanket is formed on top of the air flotation tank as a result of the reaction of the E-Chem polymer with the pH adjusted influent and dissolved air. Sludge removal is automatically controlled by the **Envirofloc Control Center**



ROLLER PRESS

An Economical and Simple Solution for Dewatering Sludge

The E-Chem **Roller Press** has been specifically designed to efficiently and cost effectively remove water from wastewater sludge.

The Roller Press has been designed with a view to ease of operation, low maintenance and high dewatering efficiency. Its compact frame is constructed of wear resistant stainless steel or powder coated mild steel. **BENEFITS:**

- Able to handle sludge from various origins
- Minimum volume of water required to keep belt clean
- Low to high solids content in sludge (3-16%) easily handled by press
- Solids at 30% after pressing
- Presses are custom built to handle a certain volume of sludge per hour
- Variable belt speed provides extra flexibility
- Drainage area permits additional dewatering and subsequent increased sludge loading on rollers



E-Chem's **Envirofloc™** Technology has been recognized in the scientific community:

- 1995 Alberta Science and Technology Award For Excellence in Industrial Research
- 1998 Emerald Environmental Award