

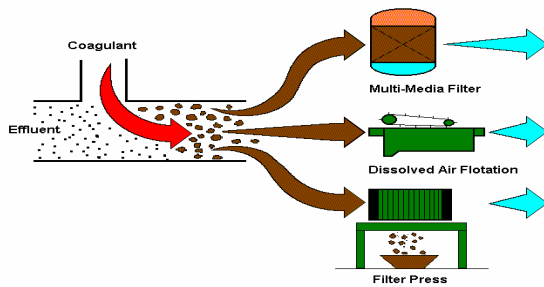
## Esmil Technology

***"Our goal is to satisfy your environmental and financial expectations by the design of proven "state of the art" treatment plants for challenging industrial effluents."***

Esmil Technology and expertise is applied to treatment plants that are designed "fit for purpose" by combining the advantages of conventional physico-chemical treatment processes with proven membrane technology.

### Advantages of Conventional Physico-Chemical Treatment Processes

Conventional treatment processes are ideal for the cost-effective removal of suspended solids from a liquid effluent by the process of coagulation followed by solid-liquid separation. Continued advances in coagulation chemistry enables process optimisation to mirror changes in your effluent composition and your water quality objectives. Benefits include:

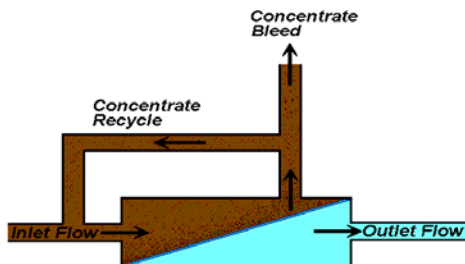


- Low capital cost
- Flexible operation
- Ideal membrane pre-treatment
- Reliable and easy to operate
- Modular and easy to upgrade

### Advantages of Membrane Technology

Membrane technology is now well established in the fields of filtration and fluid separation, increasingly replacing conventional filtration and separation technologies. Membranes are being adopted for complex effluent treatment, recycle and reuse and product purification and recovery in a broad range of industrial applications.

**The membrane acts as a physical barrier**, to selectively separate specific ionic and/or non-ionic species from the solvent. Effluent is fed into the membrane cartridge so that it flows parallel to the membrane surface. Concentrate, containing the non-permeated ionic and/or non-ionic species is recycled to pass through the membrane cartridge with the balance bled out of the system for re-use or disposal. Permeate is the portion of the effluent that filters through the membrane and can be recycled as process water. Benefits include:



- Optimum product recovery
- Effluent reduction, recycle and re-use
- Long term environmental compliance
- Reliable and easy to operate
- Modular and easy to upgrade

Membrane systems are classified as Ultrafiltration, Nanofiltration and Reverse Osmosis depending on the membrane pore diameter, which determines the degree of selectivity.

## SPECIALISTS IN THE TREATMENT OF CHALLENGING INDUSTRIAL EFFLUENTS

### Proven Membrane Applications

INDUSTRY	APPLICATION
Metal processing Metal preparation Metal finishing	Recovery and reuse of Sulphuric Acid Reclamation of metal salts Treatment and recycle of rinse water
Panel Board Industry Pulp & Paper Industry	Product (fibre) recovery from effluent Effluent treatment - reduction of suspended and soluble organics Treated effluent reduction, recycle and re-use
Textile Dye Manufacturing Industrial Laundries	Product (dye) concentration, purification and recovery Oily waste water treatment Treated effluent reduction, recycle and re-use
Food & Beverage Processing	Product concentration, purification and recovery Recovery and re-use of contaminated condensate Treatment and recycle of bottle washing effluent
Pharmaceutical Industry Biotechnology	Product recovery by separation and fractionation Effluent treatment - reduction of suspended and soluble organics Treated effluent reduction, recycle and re-use

---

**Esmil Process Systems Limited**  
**The Loft, 30 Abbey Barn Road, High Wycombe, HP11 1RW**  
**Tel: +44 (0)1494 526155    Fax: +44 (0)1494 474515**  
**Email: [info@esmil.co.uk](mailto:info@esmil.co.uk)    Web Site: [www.esmil.co.uk](http://www.esmil.co.uk)**