



FORMECO Acid Recycling Units



The minimisation of industrial waste and the recovery and reuse of chemical resources is the most cost-effective way to abate pollution for many industries. The cost and liability associated with routine disposal have a major impact on operation.

FORMECO Serie AR unit allows the continuous regeneration of acid based washing baths, with evident advantages:

- considerable save on raw materials provisioning,
- steady quality of the bath,
- drastic reduction of disposal costs for the polluted baths.

Diffusion Dialysis

The acids which are used in the industrial process are a blend of technical acid, 10-20% watered down.

The diffusion dialysis allows the passage of the acid across a membrane stack, discriminating it from the heavy metals and from the flow which forms the bath.

The technical acid, so purified, is reintroduced into the bath; the polluted flow will have to be disposed of.

The Cycle

The polluted solution to be treated is pumped from the process bath or from the storage tank to the recovery unit, and flows into one of the two sectors which constitutes the membrane stack ; the other sector is crossed counter-current by a proportionate quantity of pure water.

The acid passes through the membrane producing a new clean solution, with characteristics similar

Efficiency

Not all the acid will pass to the purified solution inside the membrane stack. A percentage, usually 10-15%, remains in the polluted stream which will be disposed of, after having been neutralized.

The new bath will have to be reintegrated with a proportional percentage of fresh acid.

Costs

The only maintenance required is the periodic cleaning or replacement of pre-filters.

The continuous working allows an optimal efficiency of the machine.

Although deionised water is the recommended solvent, city water does not change the quality of the bath.

Operating cost is very low, limited to the electric power for the two pumps of the liquids in treatment.

Membrane life is excellent and not a significant factor in the operational economics except when dealing with certain highly concentrated acids. Membranes can last as long as 20 years.

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