Why Use an APU®?

Large amounts of mineral acids - including sulfuric, hydrochloric, nitric, phosphoric and hydrofluoric - are used in both the primary extraction of metals as well as their subsequent finishing and treatment processes. Industries such as steel pickling, aluminum anodizing, and etching use such processes. Eventually these acid baths become spent due to high metal content and need to be replaced even though there is still an appreciable quantity of free acid that can be used.

The APU® addresses this issue by continuously purifying these acid solutions of the metal contaminants. The result is a reduction in acid purchases, neutralization costs, bath dumping and reformulation. The benefit is a consistent and predictable bath operation at all times.

How Does the APU® Work?

The APU® employs an ion exchange technique known as Recoflo® (reciprocating flow ion exchange) that incorporates specific resins that have the ability to sorb acids from solutions, while excluding metallic salts of those acids (Figure 1). The process is reversible in that the acid can be readily desorbed from the resin with water.
### Features vs. Benefits

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
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</thead>
<tbody>
<tr>
<td>Continuous recovery and recycling of spent acids</td>
<td>Pollution abatement</td>
</tr>
<tr>
<td>90% of a spent acid solution can be recovered and reused</td>
<td>Resource recovery</td>
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<tr>
<td>Minimal energy consumption for operation</td>
<td>Energy conservation</td>
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<tr>
<td>Reduced pickling times and improved surface finish consistency</td>
<td>Increased productivity and quality</td>
</tr>
<tr>
<td>Minimal space requirement due to small footprint equipment</td>
<td>Reduced line size</td>
</tr>
</tbody>
</table>

### Models

- **APU®**
  - Designed for most acid recovery and separation process needs

- **AnoPur™**
  - An APU® specifically designed for aluminum anodizing operations

- **MicroPur™**
  - An APU® specifically designed for smaller operations with the same efficiency

**Contact Eco-Tec For More Details.**

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**www.eco-tec.com**

**Eco-Tec Inc.**
1145 Squires Beach Rd., Pickering, Ontario
Canada L1W 3T9
Tel: (905) 427-0077 Fax: (905) 427-4477
E-mail: ecotec@eco-tec.com

**Prosep Technologies Limited**
Unit 6A, Zone 4, Burntwood Business Park
Burntwood, Staffordshire, England WS7 3XD
Tel: 44(0)1543 675731 Fax: 44(0)1543 679484
Email: ptt@eco-tec.com

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