Following several years of research, Agrovin has developed an effective and easy way of reducing potassium levels in white, rosé and red wines and in partially fermented grape musts.

This procedure allows users to remove the desired quantity of potassium to guarantee total tartaric stability without altering the wine’s characteristics.

It is a fast and automatic process that does not require specialist skills to handle the equipment and does not add any foreign substances to the wine or must.

One of the system’s key features is its high throughput, which can reach flow rates of over 400 hl/h.

Not only does the system achieve tartaric stability rapidly, it also produces the following positive effects:

- Slightly increases total acidity.
- Slight decreases pH.
- Makes red-wine colouring more vibrant.

Furthermore, it also partially removes other positively charged metal ions like calcium, iron and copper. This enhances the wine or must and reduces the risks associated with these ions.

It is also suitable for regulating pH levels in partially fermented musts to increase protection against bacterial attacks that could compromise the wine’s organoleptic qualities.

**Automatic Model**

**Construction details**

- Ion-exchange column made of anti-acid materials (food-grade polystyrene interior and fibreglass exterior). Stainless steel is not recommended for this purpose as it will be exposed to strong acid-based regenerant solutions.
- Chassis and enclosure made of stainless steel coated with an epoxy resin resistant to strong acid and alkaline solutions.
- 1-HP centrifugal process pump equipped with variable-speed drive to manage flow rates in the ion-exchange column (AISI 304).
- 17” IP65 touch-screen panel PC with control software.
- 2 pneumatic process pumps made of special anti-corrosion material for dosing regenerant and neutralizing solutions.
- 2 in-line electronic pH sensors to automate treatment and regeneration process management. Input and output pH monitoring.
- 1 in-line conductivity sensor to automate process phase management.
- 1 in-line selective (potassium) electrode and 1 in-line reference electrode to monitor output concentration.
- 1 electronic flow meter (output 1–5 V, 10–100 l/min).
- 1 pressure sensor (1–5 V) and pressure safety switch.
We offer a range of automatic and semi-automatic models designed for a variety of working flow rates.

All the systems (except the K1 model) may be set up to operate with one or two columns.

Ad-hoc configurations may also be employed. For example, two columns may be used with some models to make the process fully automatic (using two process pumps to eliminate downtime), or to treat various wines (white and red) without needing to carry out the usual cleaning procedures.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Ion-exchange working flow rate (l/h)</th>
<th>Volume treated per cycle * (hl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>1,000</td>
<td>20</td>
</tr>
<tr>
<td>K2</td>
<td>1,500</td>
<td>35</td>
</tr>
<tr>
<td>K3</td>
<td>2,000</td>
<td>45</td>
</tr>
<tr>
<td>K4</td>
<td>3,000</td>
<td>70</td>
</tr>
<tr>
<td>K5</td>
<td>4,000</td>
<td>95</td>
</tr>
<tr>
<td>K6</td>
<td>6,000</td>
<td>140</td>
</tr>
<tr>
<td>K7</td>
<td>8,000</td>
<td>200</td>
</tr>
</tbody>
</table>

* Provided the equipment’s working flow rate during the ion-exchange phase is known, and bearing in mind that the regeneration phase lasts approximately 45 minutes, equipment performance will depend on the following factors:

1.- Number of cycles per day (according to each winery’s working hours).

2.- Product mix ratio.

3.- Quantity of potassium in the product treated.

IMPORTANT: Use of stainless steel has been kept to a minimum due to the aesthetic and mechanical deterioration it suffers on contact with acid.