Tetra Alblend 5SP
In-line blending unit

Application
Tetra Alblend is optimized for high precision, continuous inline formulation of beverages. It is fully automated to ensure uniform product quality, outstanding savings on ingredients uncomprising food safety and production stability.

Tetra Alblend works technology for automatic mass compensation (AMC), using sophisticated software to assure high product quality, regardless of variations in the incoming ingredient.

Instruments regulate the flow of the ingredient, as required, to a high level of precision. This is all done inline, and continuously. It gives you the flexibility to achieve high throughput and quick product changeovers. The unit can be easily and efficiently installed in a line solution where it helps to eliminate product losses in the entire line.

Working Principle
The Tetra Alblend SD unit blends liquid components to formulate a final beverage. The unit works under pressure, enabling each individual valve always to operate at a point where maximum control accuracy can be achieved.

AMC technology keeps the process right on target all the time you run assuring that the outgoing blend is constant. Tetra Alblend saves product thanks to several product recovery functions that eliminate manual handling of rejects and significantly reduce product losses:

- **Production Start Recovery** in a line solution takes mix phases at start-up back to the Tetra Alblend unit and automatically concentrates them to the correct blend with the help of AMC.
- **Production Reject Recovery** takes care of all rejects from the pasteurizer and filler, eliminating the manual handling of rejects.
- **Concentrate Recovery** helps to recover concentrate / premix from premix tanks at the end of production.

Concept
Tetra Alblend is a skid-mounted machine with a PLC and operator interface (HMI), pre-assembled and tested with water prior to delivery.
Main components

Basic Unit
Software: AMC technology ensures that you are right on target all the time you run. Production Reject Recovery - handles rejects automatically in a line solution.
PLC: Siemens
Standard HMI: MP377
Or
PLC: Allan Bradley Control Logix 5000
HMI: TPOP
Stream 1: This stream, for treated water is equipped with a balance tank with centrifugal pump, mass flow meter and regulating valve. Capacity range: 4000 – 100 000 kg/h.
Stream 2: i.e. Syrup / premix / juice concentrate.
Stream 2 consists of a pressurizing lantern, equipped with level probe, sight glass, connection for CO2 over pressure, regulating valve and mass flow meter, which is then connected with amix-proof valve connection to the main header pipe. Capacity range: 20 – 10 000 kg/h
Buffer tank
The buffer tank is dimensioned to take care of rejects from processing equipment down the line. The buffer tank, with stirrer and jet mixer, ensures the blend is homogenous all the time your run. A densitometer checks that the blend is right on target and gives input to the AMC technology to keep the process on target.
Optional equipment
• Stream 3: Stream 3 is a small components stream. It consists of a pressurizing lantern, equipped with level probe, sight glass, connection for CO2 over pressure, regulating valve and mass flow meter, which is then connected to themain header pipe. This stream also contains a concentrate pump, frequency controller for feed pump, by-pass valve over feed pump for CIP. Stream 3 capacity range: 20 – 200 kg/h.
• Stream 4: Stream 4 is a small component stream. It consists of a pressurizing lantern, equipped with level probe, sight glass, connection for CO2 over pressure, regulating valve and mass flow meter, which is then connected to themain header pipe. This stream also contains a concentrate pump, frequency controller for feed pump, by-pass valve over feed pump for CIP. Stream 4 capacity range: 20 – 200 kg/h.
• Stream 5: i.e. Syrup / Quasi syrup / Juice concentrate Stream 5 is another large stream. It consists of a pressurizing lantern, equipped with level probe, sight glass, connection for CO2 over pressure, regulating valve and mass flowmeter, which is then connected with a mix-proof valve connection to the main header pipe. Stream 5 capacity range: 20 – 10 000 kg/h.
• Deaeration – Tetra Alrox W
• Production start recovery
• Production concentrate recovery
• Uninterrupted power supply, buffer block 24V DC
• Air-cooling for panel
• Ethernet

Tetra Alrox W - deaeration
For soft drinks and CSD products you can cut your cost in energy consumption by deairation with Tetra Alrox W. The only operating cost there is for this unit is electrical energy for the vacuumpump. The system works under low vacuum to reduce the oxygen levels to 0, 3-1 ppm. Water is fed from the top of a high column filled with package material.

Technical data

Capacity

<table>
<thead>
<tr>
<th>Final beverage, l/h</th>
<th>Final syrup, kg/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final syrup, °Brix</td>
<td>Final clear beverage, °Brix</td>
</tr>
<tr>
<td>Tetra Alrox W</td>
<td>Oxygen level, ppm</td>
</tr>
<tr>
<td>Power, kW</td>
<td>15 kW/h</td>
</tr>
</tbody>
</table>

Consumption data

<table>
<thead>
<tr>
<th>Power, kW</th>
<th>Instrumental air, Nl/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated water</td>
<td>2 Bar</td>
</tr>
<tr>
<td>Simple syrup</td>
<td>6 Bar</td>
</tr>
<tr>
<td>CIP</td>
<td>6 Bar</td>
</tr>
<tr>
<td>Instrument air</td>
<td>6 bar</td>
</tr>
</tbody>
</table>

Accuracy

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>Precision Std.Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final syrup, °Brix</td>
<td>±0,1 0,025</td>
</tr>
<tr>
<td>Final clear beverage, °Brix</td>
<td>±0,03 0,0075</td>
</tr>
<tr>
<td>Tetra Alrox W</td>
<td>0,3 - 1</td>
</tr>
<tr>
<td>Oxygen level, ppm</td>
<td>30 000 l/h</td>
</tr>
<tr>
<td>Power, kW</td>
<td>~15 kW/h</td>
</tr>
</tbody>
</table>

Deaeration Tetra Alrox W - deaeration
For soft drinks and CSD products you can cut your cost in energy consumption by deaeration with Tetra Alrox W. The only operating cost there is for this unit is electrical energy for the vacuum pump. The system works under low vacuum to reduce the oxygen levels to 0.3-1ppm. Water is fed from the top of a high column filled with package material.