NURION™
Ingredient Water Compliant Reverse Osmosis System
for the Food and Beverage industry
Our latest innovation for ingredient water

When water is used as an ingredient in infant nutrition and soft drinks, it must be free from undesirable taste, odor, color and impurities that could be harmful to the consumers and to the product quality.

Water used as an ingredient in such applications must fulfill quality requirements of the highest level such as the World Health Organization and the European Directive 98/83/EC on Drinking Water Standards. Depending on the region, the Local Drinking Water Guidelines may also apply: E.g. TVO in Germany, EPA Drinking Water Standards in the USA...

NURION™
Ingredient Water Compliant Reverse Osmosis System

Nurion™ is a skid-mounted, reverse osmosis (RO) system designed to produce high quality ingredient water. It differs from a standard industrial RO system, due to the materials of fabrication used to limit microbial contamination risks. In the development of the Nurion™, the two main principles are hygienic design and the production of high quality, compliant ingredient water. Nurion™ uses components for the production of potable water, such as stainless steel piping, and controlled welding. It also respects EHEDG guidelines on the permeate line. These elements coupled with appropriate pretreatment, ensures microbial control and a highly consistent water quality with no unwanted tastes or odors in the final product.

Uptime and efficient operation are guaranteed through the use of best-in-class components, service contracts supported by Veolia local teams and Aquavista remote diagnostic capabilities.

Veolia Water Technologies provides technological solutions to the food & beverage industry in terms of water by providing ingredient (production) water and utility water (steam and cooling water) and by treating wastewater.
High equipment reliability
- Piping, fittings and valves on feed, reject and permeate line in stainless steel
- Low energy membranes and ABB VFD result in lower operating pressures
- 12" touchscreen panel with TFT widescreen colour display
- PLC with Ethernet connection (Siemens)
- Programmable user interface; simple operation, monitoring and storage

Water Quality Consistency
- Treated water diverted at start-up; ensures constant water quality
- Permeate line design and certified components following EHEDG hygienic design principles to optimize microbial control throughout.
- All non-metallic materials (pressure vessels, membranes, sealings/gaskets) are in accordance to drinking water or FDA / NSF-61 regulations

Flexibility given by Options
- Inlet pH and ORP measurements
- 1st stage back pressure valve
- Concentrate recirculation line
- Allen Bradley PLC and HMI
- Frame in Stainless Steel
- Control cabinet in Stainless Steel

A full NURION™ range to suit your needs

Operating principle
- Raw water supply for the RO unit
- Recirculation of concentrate
- Production of permeate
- Permeate line complying with EHEDG guidelines
- Discharge of concentrates and rinsing before stops
- Rinsing of the Permeate

Key figures and Performances

Compact System Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>110x2</th>
<th>110x3</th>
<th>110x4</th>
<th>210x4</th>
<th>211x4</th>
<th>211x5</th>
</tr>
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<tbody>
<tr>
<td>Length</td>
<td>4000</td>
<td>4100</td>
<td>4850</td>
<td>4850</td>
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<tr>
<td>Width</td>
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<td>1750</td>
<td>1920</td>
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High Performance System

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<th>Model</th>
<th>110x2</th>
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<th>210x4</th>
<th>211x4</th>
<th>211x5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed water flow rate (m³/h)</td>
<td>6.3</td>
<td>9.4</td>
<td>12.5</td>
<td>18.8</td>
<td>25.0</td>
<td>31.3</td>
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<tr>
<td>Permeate flow rate (m³/h)</td>
<td>5</td>
<td>7.5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Typical Salt rejection (%)</td>
<td>96-98</td>
<td>96-98</td>
<td>96-98</td>
<td>96-98</td>
<td>96-98</td>
<td>96-98</td>
</tr>
<tr>
<td>Installed power (kW)</td>
<td>7.5</td>
<td>11</td>
<td>15</td>
<td>15</td>
<td>22</td>
<td>37</td>
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Pipe connections

<table>
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<th>110x4</th>
<th>210x4</th>
<th>211x4</th>
<th>211x5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw water feed line</td>
<td>DN 50</td>
<td>DN 50</td>
<td>DN 50</td>
<td>DN 50</td>
<td>DN 65</td>
<td>DN 65</td>
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<tr>
<td>Permeate water outlet</td>
<td>DN 40</td>
<td>DN 40</td>
<td>DN 40</td>
<td>DN 40</td>
<td>DN 50</td>
<td>DN 50</td>
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<tr>
<td>Concentrate outlet</td>
<td>DN 40</td>
<td>DN 40</td>
<td>DN 40</td>
<td>DN 40</td>
<td>DN 40</td>
<td>DN 40</td>
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</tbody>
</table>
Run on today’s most secure cloud-based systems

SOLYS standardized and plug and play solutions are delivered, installed and commissioned quickly, enabling the food & beverage producers to reduce their infrastructure and civil engineering costs.

- Most engineering tasks are done in advance, during product development
- Highly reduced costs of engineering in execution
- Standard lead-time
- Controlled supply chain ISO 9001:2015
- Experienced and certified staff for assembly and commissioning.

SOLYS can provide the appropriate standard technologies to be used as pre-treatment line upstream of the Nurion™, according to the inlet water quality (river, borehole water, potable water).

**Visitted FAT by end-user:**
Final Factory Acceptance Test of the fully pre-tested product are often organized in our workshops with the presence of the end-user.

**Commissioning support**
SOLYS can offer on-site commissioning support for the standard products purchased from us. The same Engineer can internally test, or witness test (when required) and be present at your site to commission the product.

**After-sales service**
Local aftermarket service and support teams offer preventive and corrective maintenance programs to ensure the long-term, efficient operation of installed plants.

**NURION™ complementary products**

- Cleaning in Place (CIP)
  SOLYS can provide the appropriate standard CIP station for cleaning of fouled or scaled RO membranes of the NURION.
- Chemical dosing
  Sets including pump, accessories and tanks, for sodium metabisulfite, antiscalant, hydrochloric acid, etc.
- Consumables, spare parts and emergency service kits
  A complete set of consumables is available eg. FILO cartridge filters, etc.
- HYDREX® chemicals
  Hydrex 4000 water treatment chemicals from SOLYS are recommended for optimised operation.

**GLOBAL OFFER**

**CUSTOMER CARE**

**AQUAVISTA™ DIGITAL SERVICES**

Digital services using IOT and advanced analytics AQuavista™
To enhance water treatment at your facility, Veolia Water Technologies has developed an all-in-one digital service called AQUAVISTA™. AQUAVISTA™ is securely stored in the cloud and accessible Anytime, Anywhere and on Any Device through a single private portal. This advanced service allows you to efficiently manage your water treatment equipment in real-time, 24/7. By using AQUAVISTA™, you can access to Veolia experts if you need any recommendation regarding your processes as well as supporting your team for troubleshooting and emergency support. AQUAVISTA™ will maximize productive uptime and will support you to reduce non-compliance events.

**Also available at SOLYS**

Pre-treatment line

SOLYS can provide the appropriate standard technologies to be used as pre-treatment line upstream of the Nurion™, according to the inlet water quality (river, borehole water, potable water).