Industries and Applications

Centec is a strong, privately owned group of companies. With a focus on processing industries, we are rapidly growing in the major world markets. We have a global structure for sales and service with our own subsidiaries and service centers on several continents and a network of qualified distributors.

Our production facilities are located in Germany and the Czech Republic. This outstanding infrastructure allows efficient logistics, short lead times and strict adherence to delivery deadlines. The quality of our products is outstanding, so is the price-performance ratio.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Dairy · Food · Beverage · Pharmaceutical · Chemical · Semiconductor · Energy · Power Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ion Exchange</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Reverse Osmosis</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>HPW Purification</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>WFI Distillation</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Pure Steam Generation</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Membrane Deaeration</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Column Deaeration</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Vacuum Deaeration</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Carbonation</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Decarbonation</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Nitrogenation</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Wort Aeration</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Yeast Dosing</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>High Gravity Blending</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Continuous Premixing</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Multi Stream Blending</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Additive Dosing</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Flash Pasteurization</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Sterile Filtration</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Dealcoholization</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Cleaning-in-Place</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
<tr>
<td>Sterilization-in-Place</td>
<td>X X X X X X X X X X X X X X X X X X</td>
</tr>
</tbody>
</table>

Global Knowledge for Local Applications

Germany
Centec Gesellschaft für Labor- und Prozesstechnik mbH
Wilhelm-Nordmann-Strasse 10
63477 Maintal
Tel.: +49 6181 18 78 0
Fax: +49 6181 18 78 50
info@centec.de

Czech Republic
Centec automatica s.r.o.
Pekeláká 6/801
155 00 Praha 5
Tel.: +420 257 084 111
Fax: +420 235 518 701
prodej@centec.cz

Serbia
Centec Serbia
Bogdana Žerajića 34/III
11000 Beograd
Tel.: +381 11 358 11 24
Fax: +381 11 358 11 24
info@centec.rs

UK
Centec UK
Stalworths, The Street
Great Tey, Colchester
Essex, CO6 1J6
Tel.: +44 1206 21 19 21
Fax: +44 1206 21 19 16
info@centec.uk.com

India
Centec RRR Systems & Sensors Pvt Ltd
RRR House, Plot 80, Sector 23
CIDCO Industrial Area, Turbhe Naka
Navi Mumbai - 400 705
Tel.: +91 22 2783 3655 & 2783 1348
Fax: +91 22 2783 4814
mail@centecrrr.com

USA
Centec LLC
P. O. Box 820
Germantown
WI 53022-0820
Tel.: +1 262 251 8209
Fax: +1 262 251 8376
info@centec-usa.com

Brazil
Centec América Latina Ltda
Largo de São Francisco de Paula nº 26 conj. 1108
Centro Cep. 20051 070 Rio de Janeiro
Tel.: +55 21 2223 2066
Fax: +55 21 2223 0324
centeclatina@terra.com.br

© Copyright 2013. All rights reserved.

More information at www.centec.de.
Water Deaeration

Our deaeration systems are typically used to remove O₂ from water in order to reduce microbiological activity and to extend the storage performance of many beverages and food. The presence of both O₂ and CO₂ in boiler feed water accelerates costly corrosion in heating systems.

In membrane and column deaeration units O₂ passes from the liquid phase into the gas phase. Vacuum and strip gas on the gas side create large partial pressure difference. Our special design maximizes the surface for the gas exchange.

For the reduction of water hardness, anion or cation exchangers are applicable. Mixed bed ion exchangers contain a mixture of anion and cation exchange resins. They are used for simultaneous and highly efficient exchange of both ion types.

Raw water conductivity can be reduced by membrane filtration and electrodionization. With reverse osmosis, all ions, viruses, bacteria and solids remain in the retentate. For sterilization and WFI, we provide pure steam generators and various evaporation technologies.

Water Purification

Depending on the composition of the incoming water and numerous customer driven needs, the requirements for each project can vary greatly. Our broad range of technologies enables us to provide the purification technology that perfectly meets all specifications. Water can be produced for standard industrial applications through to pyrogen-free deionised for injection purposes or ion-free for micro-electronic silicon chip production.

Carbonation, Nitrogenation and Oxygenation

One of the most common applications for our carbonation units is the addition of pressurized CO₂ to carbonate beverages like beer, soft drinks and sparkling water. Nitrogenation enhances the head stability of some beer. Oxygenation is an essential requirement for fermentation, e.g. in the brewing process.

Our carbonation and nitrogenation units are equipped with a specific Vortex-Venturi nozzle that injects pressurized CO₂ in fine bubbles and extremely homogeneously. Another type of system uses hollow fibre membranes in which CO₂ passes through microscopic pores.

Blending and Dosing

In beverage manufacture, our processes often produce concentrated syrups or a high gravity base which is diluted and mixed with other ingredients before carbonation and bottling.

A key to the performance of our blending and dosing systems is our unique ability to accurately monitor and control product characteristics such as density, concentration, alcohol content, etc. with incredible precision.

Widely applied across the globe in beverage, chemical and pharmaceutical industries, our Multi Stream Blender is designed to blend several streams of liquids. Accurate proportioning, rapid change-over and fast cleaning are essential attributes incorporated into this unit.

Our Additive Dosing System is used for the production of liquid food, cosmetics, personal care and chemical products. Various fluids from low viscosity solvents through to high viscosity polymers can be continuously and accurately blended.

Dealcoholization, Pasteurization and Cleaning

Dealcoholization plants by Centec remove alcohol from beer, cider and wine. Our rectification systems also highly concentrate the removed alcohol to produce a saleable product. The volatile aromas and flavours from the original product can be separated from the exhaust vapour in a specifically designed recovery system and added back to enhance the quality of the alcohol-free beverage.

No matter how complex requirements may be, Centec will provide the right solution. Our capabilities include the planning, delivery, assembly and commissioning of turn-key plants. We are more than familiar with GMP guidelines and demanding FDA requirements.

Automated process skids and high precision sensors from a single source. This is unique. This is Centec.


Excellent System Performance. Centec.