**Water is our element**

Water is our most important nutrient. It cannot be replaced by any other substance, but specific properties can be improved.

Berkefeld has the expertise, experience and system technology needed to develop fully optimized overall designs. From a multitude of existing individual technologies, we develop a solution tailored specifically for the individual customer – because reliability and profitability of a system are based on a meaningful combination of very different treatment processes.

For more than 110 years, Berkefeld has been a leader in the field of water purification and since October 2004 belongs to the largest water corporation, Veolia Water. Within the group, Berkefeld is assigned to the Veolia Water Solutions & Technologies, which is responsible for customized systems and standardized solutions as well as customer service, replacement parts, and consumables. Berkefeld offers the following services individually or as a complete package, depending on the customer’s requirements: planning support (basic and detailed planning), sales, documentation, manufacture, delivery, assembly, startup and of course comprehensive customer service.

In Germany alone, our extensive network has more than 80 sales and service specialists.

Our work is based on the highest quality standards – guaranteed by our DIN ISO 9001 certification.

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**Water Technology**

Berkefeld offers a wide selection of technologies and solutions for water purification.

**Range of products and services:**

- Filter technology
  - Protection and cartridge filters
  - Sand and multi-layer filters
  - Activated carbon filters
  - Disc filters
- Ion exchangers
- Softening
- Decarbonization
- Complete desalination
- Membrane technology
  - Microfiltration
  - Ultrafiltration
  - Nanofiltration
  - Reverse osmosis
- Disinfection
  - Chlorination
  - Oxone technology
  - UV technology
- Other processes
  - Measuring, control, and dosing technology
  - Calcium protection without chemicals
  - Electrodeionization
- Dosing products for
  - Drinking water
  - Cooling water
  - Boiler feed water
  - Swimming pool water
  - Mobile water technology

**Our customers include:**

- Architects
- Recreational centers
- Beverage manufacturers
- Wholesalers
- Heating system manufacturers
- Hotels
- Charitable organizations
- Industry/Trade
- Engineering consultants
- Installation professionals
- Pharmaceutical manufacturers
- Clinics
- Communities
- Educational institutions
- Private households
- Sanatoriums
- Swimming pool owners and operators
- Water treatment facilities
- Universities
- Research amenities
- And many more…

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Berkefeld in Celle

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Solutions for Breweries and the Beverage Industry

Planning and Engineering
Every application and every product places different requirements on the water. Berkefeld understands these aspects and incorporates them into the planning and design of your purification system. This includes the following aspects:

> Highest level quality
> Individualized consideration of operating costs
> Water storage and distribution
> Space requirements
> Long service life

> Degree of automation
> Operating safety
> Environmental compatibility
> Investment costs
> Integration in existing systems
> Service and consulting

Talk to us.
Soft Drinks and Fruit Juices

The Best Water for Successful Products

Water used in soft drink production must be treated particularly carefully to fulfill quality requirements of the highest level. The water must have a positive influence on the taste of the beverage, be crystal clear and biologically perfect, and despite different water compositions at different sources, must always be available with a consistent quality.

The most important requirements of the water for production of non-alcoholic beverages and fruit juices are:

- Low alkalinity
- No iron and manganese
- Low organic load
- Low nitrate content
- Low salt content
- Biological clean

Berkefeld has been knowledgeable for decades about the proven processes that today are often combined with the latest developments in membrane technology:

- Chlorination for disinfection and removal of organic matter
- Activated carbon filtration
- Direct filtration, multibarrier systems
- Flocculation, precipitation
- Ultrafiltration
- Reverse osmosis, nanofiltration
Mineral and Table Water

Natural Quality for the Water

Mineral and Table Water
The treatment of natural mineral water is permitted with limitations. Removal of iron and manganese, as well as particulate filtration using cartridge filters is often performed. Important: gentle water treatment without chemicals, but still safe and at the highest level of quality.

Worldwide references

Solutions for the new requirements on mineral and table water
Berkefeld develops and uses alternative filter materials for reducing and removing:
- Arsenic
- Uranium
- Ozone and fluoride
- Radium (226 and 228)
- Radioactivity
- Lead

Conditions for the additional rating as “Suitable for Preparation of Infant Nutrition” for mineral, well, and table water in comparison to limiting values per the TrinkwV (German Drinking Water Ordinance)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Maximum Concentration for Advertisement as Infant Nutrition, mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium</td>
<td>≤ 20.0</td>
</tr>
<tr>
<td>Nitrate</td>
<td>≤ 10.0</td>
</tr>
<tr>
<td>Nitrite</td>
<td>≤ 0.020</td>
</tr>
<tr>
<td>Sulfate</td>
<td>≤ 240.0</td>
</tr>
<tr>
<td>Fluoride</td>
<td>≤ 0.7</td>
</tr>
<tr>
<td>Manganese</td>
<td>≤ 0.05</td>
</tr>
<tr>
<td>Arsenic</td>
<td>≤ 0.005</td>
</tr>
<tr>
<td>Microbiological</td>
<td>Must be adhered to also upon delivery to the consumer</td>
</tr>
</tbody>
</table>

Filtration – an important element in beverage water treatment
Breweries

We “Brew” the Water for Your Beer

Water plays a central role in brewing operations:
As the essential raw material, operating medium for cooling and heating,
for cleaning, and for supplying the organization with drinking water.
The large demand makes water a significant cost factor in the brewery.
Berkefeld knows the requirements and delivers individual and optimized solutions.

Water – Purpose and Quality
Besides the traditional methods of drinking water treatment,
such as removal of iron, solids, or organic constituents, the following aspects are relevant:
Water as raw material in beer production
Adjustment of overall hardness and carbonate hardness, removal of nitrate, reduction of salt content (e.g. sodium chloride), special requirements (e.g. high gravity brewing)

Water for cleaning purposes
CIP systems, bottle washing machines (reduction of carbonate hardness, overall hardness, salt content, chloride, etc.)

Water for cooling and as energy carrier
Boiler house (softening, desalination, degasification systems, condensate purification, dosing technology)

Waste water reduction and avoidance
Rinse water recovery, modern regeneration processes (water recycling), multistage membrane systems, measuring technology and automation, system optimization
Perfected Process Technology

Always a Step Ahead

We employ all modern technologies, such as membrane technology and our own innovations (THM removal, recycling of bottle wash water, Spin DISC disc filters). But we don’t forget the proven classic processes such as ion exchangers or lime decarbonization.

Our philosophy:
› Leaving water largely as natural substance
› Purification to the extent necessary
› Minimal use of chemicals
› Conservative handling of water
› Safe technology and highest quality

Berkefeld Lime Decarbonization

Traditional and unbeatably cost-effective:
› Removal of organic matter
› Reduction of cloudiness
› Removal of iron and manganese
› Reduction of alkalinity and salt content
› Robust and operating reliability

Or as quick decarbonization:
› Fixed reactor core instead of sludge accumulation
› Space-saving installation
› Wastewater loss less than 1% due to rinse water recycling
› Dust-free lime storage and application station

Complete turnkey project work with building planning

Beverage Water
ELGA Berkefeld Ion Exchange Technology

Ion exchangers are versatile: suitable for decarbonization, desalination, and also for reducing hardness or nitrate.

The special advantages:
> Most effective use of chemicals
> Low water consumption
> Newest generation counter-current technology
> Berkefeld measuring technology (quality monitoring)
> Quality control via alkalinity or hardness monitor

Berkefeld UF Technology

Ultrafiltration for reducing organic matter and colloidal compounds, as well as for disinfection:

The special benefits:
> removal of smallest particles (< 0.05 μm)
> virtually sterile water – neither bacteria nor viruses can pass the membrane
> fully-automatic operation
> space saving design
> modular structure
> resistant to chemicals
> can be backwashed and disinfected
> reduction of THM forming potential
> high recovery
Future-proof Solutions

Water treatment in perfection

Berkefeld membrane technology
Technology for reducing salt content, e.g. with high chloride concentrations.

Our 40 years of experience with reverse osmosis:
- Service-ready frame construction
- Well thought out design
- High quality membranes with 3-year guarantee
- Individualized design
- High yield, 85% and more
- Low operating pressures – low energy membranes
- Integrated cleaning station
- Our own antiscaling chemicals

Reverse osmosis – an example of the Berkefeld membrane technology

Cross flow filtration
ExpressService

“Our strengths – your benefits”

As operators of water treatment plants you have a special responsibility. Water treatment is often a fundamental component of essential supply facilities. If faults occur they must be remedied professionally as soon as possible. Far-reaching consequential damage and the costs it incurs must absolutely be prevented.

Due to our being part of Veolia Water Solutions & Technologies, the worldwide leading company in water treatment, you benefit not only from a wide product selection but also from longtime know-how, ongoing new product developments and great financial strength. Our teams of experts continually research and develop state-of-the-art technologies and always have the best possible sparing of the environment and resources in mind. A customer-friendly and practical service culture has top priority for us.

With our local offices worldwide, our qualified service engineers are on location understanding your local needs. We offer a variety of flexible, cost-effective service contracts with short guaranteed response times to minimize your downtime. Whenever there’s a problem, we’ll be there until it’s solved.

Water analysis

For an optimal dimensioning of water treatment the quality of the feed water is often of decisive significance. With a water test, the parameters in drinking, industrial or process water can be precisely analysed. In our laboratory at the company site in Celle we analyse your water quality with the most modern analytic technologies. A great number of analysis processes can also be applied directly at your site.

How we support our partners

> Planning assistance and proposals
> Special field and process-related developments and planning
> System solving of special and problem cases by preliminary tests in our laboratory and pilot studies
> Planning catalogue with technical information, calls-for-tender texts, process descriptions, etc.
> Water analysis

> Project care
> Field-related problem-solving
> Technical application consultancy
> Running costs calculation
> Training programmes for planners and users

> 24-hour service
> We offer 24/7 support

> Local offices worldwide
> Professional competence for consultancy, planning and sales support

> International commissioning and start-up
> Experienced specialists for start-up and commissioning of delivered plants
> International wide after-sales service
> Fast and committed support
> Original Berkefeld spare parts
> Variety of flexible, cost-effective service contracts

You can get competent support via our service hotline.

+49 (0) 5141 803-466
Beverage Water

Innovative Water Technology

- Iron removal
- Manganese removal
- Deacidification
- Dechlorination
- Decarbonization
- Ion exchangers
- Demineralization and nitrate removal
- Disinfection/sanitization
- Ultrafiltration
- Water recycling
- Waster water re-use

- Domestic and Swimming Pools
- Hospitals
- Laboratories
- Beverages
- Pharmaceuticals
- Power
- Chemistry
- International Aid Organisations
- Marine
- Municipal
- Food- and Paper Industry

This brochure was printed climate neutral.

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