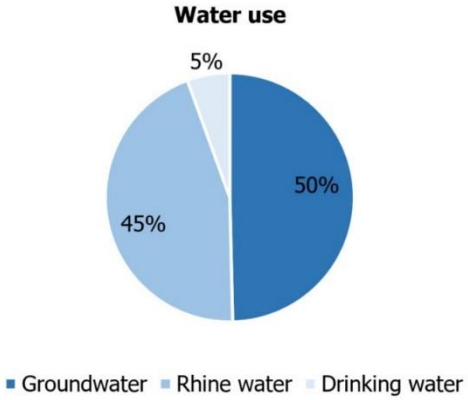
Environmental Statement 2021

Water consumption and pollution control

A total of approx. 2.5 million m³ of water are required annually for the production processes, the boiler house and the sanitary and social facilities at Budenheim Germany. The specific water consumption is approx. 17 m³ per ton of product.



Gesellschaftssitz | Seat of company: 55257 Budenheim, Germany
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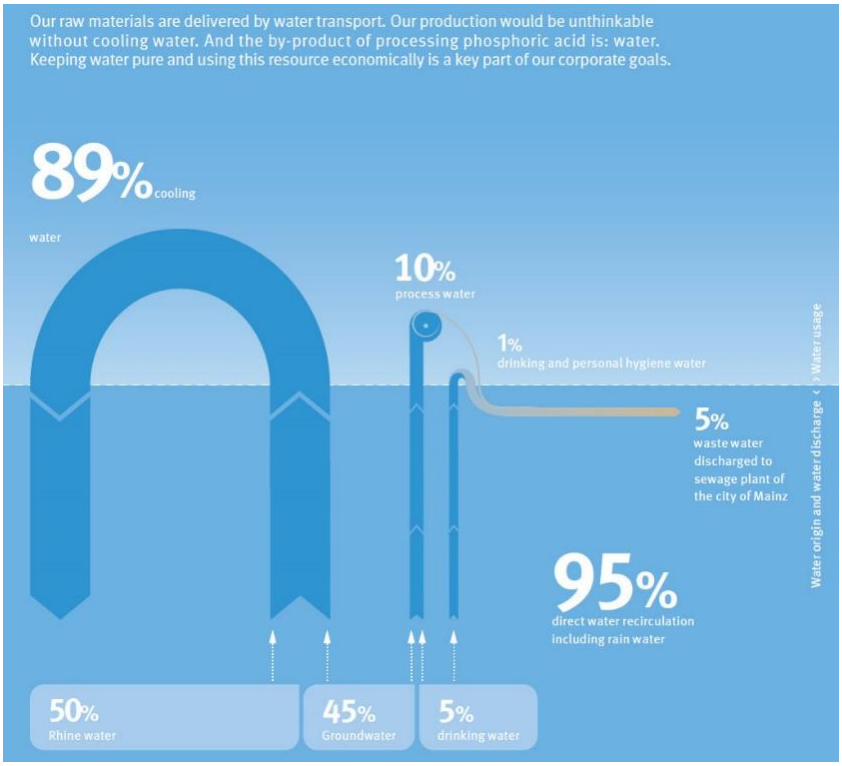
Renewable resources have to be preserved as well

Although groundwater, surface and spring water basically are renewable resources, human intervention can have a negative impact on flow regime and chemical composition. Drinking water, which we get from the municipal utilities Budenheim, is mainly used for the production of phosphate solutions and for the sanitary and social facilities. By consistently saving water and using an online water data collection system we have succeeded in significantly reducing our specific drinking water consumption since 1994.

Cool in, clean out

The cooling water required in production represents the largest share in total water consumption. For cooling purposes, only Rhine water and groundwater are used under normal conditions. The cooling system is a continuous flow cooling system. This means that after its abstraction, the water is transported to the facilities to be cooled and then the unpolluted water is fed into the River Rhine via a separate sewage system. In addition, cooling water cycle systems with cooling towers are used for the boiler house and some production units. Rhine water is taken from the river using a pumping station.



The groundwater is obtained from our own wells. These wells mainly pump river bank filtrate, i.e. groundwater fed from the River Rhine. Compared to Rhine water the groundwater has the advantage that its temperature is very low and above all constant, independent from the season. This constant temperature is imperative for the production of high-quality products. For the generation of process steam in the boiler house, pure and desalted water is required which is obtained by treating groundwater. The quantities of Rhine water and groundwater (river bank filtrate) available at the site are practically unlimited. Due to the limited annual abstraction quantity, these natural resources are managed sustainably.

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Last but not least: the wastewater

For wastewater treatment resources are used (raw materials, energy, land, water), both directly in our own central wastewater pre-treatment facility and indirectly in the municipal sewage plant. There is no risk of the direct or indirect discharge of the wastewater resulting in the accumulation of toxic substances. Wastewater treatment and disposal are subject to comprehensive legal regulations, the requirements of which are met.

Recycling process water

In order to minimise wastewater quantity and phosphate load as well as the associated environmental impact, numerous measures are taken at the site. The major part of the process water resulting from production is returned into the production cycle. Wastewater which cannot be returned into production is fed into the wastewater pre-treatment facility via the separate sewage system. This also applies to the wastewater from the workshops which has to pass a corresponding oil separator first.

In the wastewater pre-treatment facility the water is treated chemically and physically, in three process stages: neutralisation, precipitation, and filtration. Threshold values are monitored via online measuring devices complemented by analytical examinations before the wastewater is discharged. In the event of any malfunction, the operating staff is alerted and the wastewater is automatically fed back into the wastewater pre-treatment facility.

Sludge coming from wastewater pre-treatment

Disposing of the sludge from wastewater treatment as waste is of course not an option for Budenheim. At Budenheim, the sludge is processed into a useful product in a downstream production plant built especially for this purpose. This turns the sludge into a valuable raw material that we sell to fertilizer manufacturers, for example.

Better than the threshold values

In the wastewater discharged from the wastewater pre-treatment facility the phosphate concentration amounts to significantly less than the maximum permissible value of 10 mg phosphate per litre of wastewater. Via Budenheim's municipal sewer system, the wastewater thus pre-treated and monitored is fed into the sewage plant of the city of Mainz. Cooling wastewater is monitored by measuring all relevant parameters online. In the continuously attended control unit of the wastewater pre-treatment facility, the measured values are displayed and documented.

Measured values fall significantly below the maximum permissible limit of 3 mg phosphate per litre of wastewater. If there is any malfunction in the cooling water system, the operating staff is alerted, the discharge outlet of the cooling water into the Rhine is closed and the wastewater is retained in a tank provided for this purpose. Our cooling water protection concept ensures that in the event of possible malfunctions in the cooling system no contaminated water can end up in the River Rhine.

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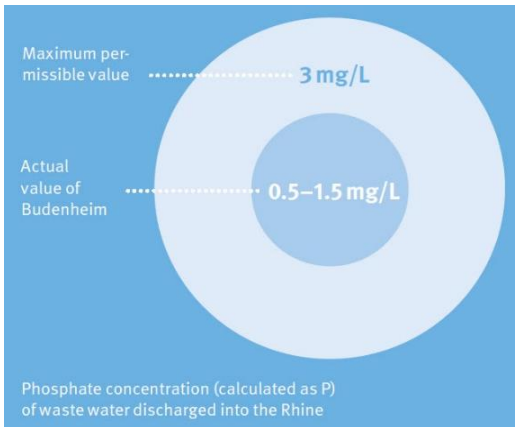
In addition, rainwater on the premises amounts to approx. 15,000 m^3 per year. The rainwater can contain phosphate coming from the dust emissions. Therefore, according to the permission required under water law, a part of the rainwater is retained in the tanks provided for this purpose. After analysis, the retained rainwater is discharged depending on its quality, either via the wastewater pre-treatment plant or directly into the municipal sewer system or the Rhine. All wastewater from the social and sanitary facilities is fed into the municipal sewer system of Budenheim.



By maintaining the implemented environmental protection measures, Budenheim protects life in water. This supports the availability of clean water as well as the sustainability in the community and cooperation with the community.

+++ This statement is computer generated and therefore not signed. +++

Created by Jens Voigt, Head of E&U
Approved by Dr. Andre Seemann, Member of General Managemt Budenheim Germany

Valid until further notice from August 2021