Water chemistry

From drinking water to personal hygiene and from industry to wastewater treatment

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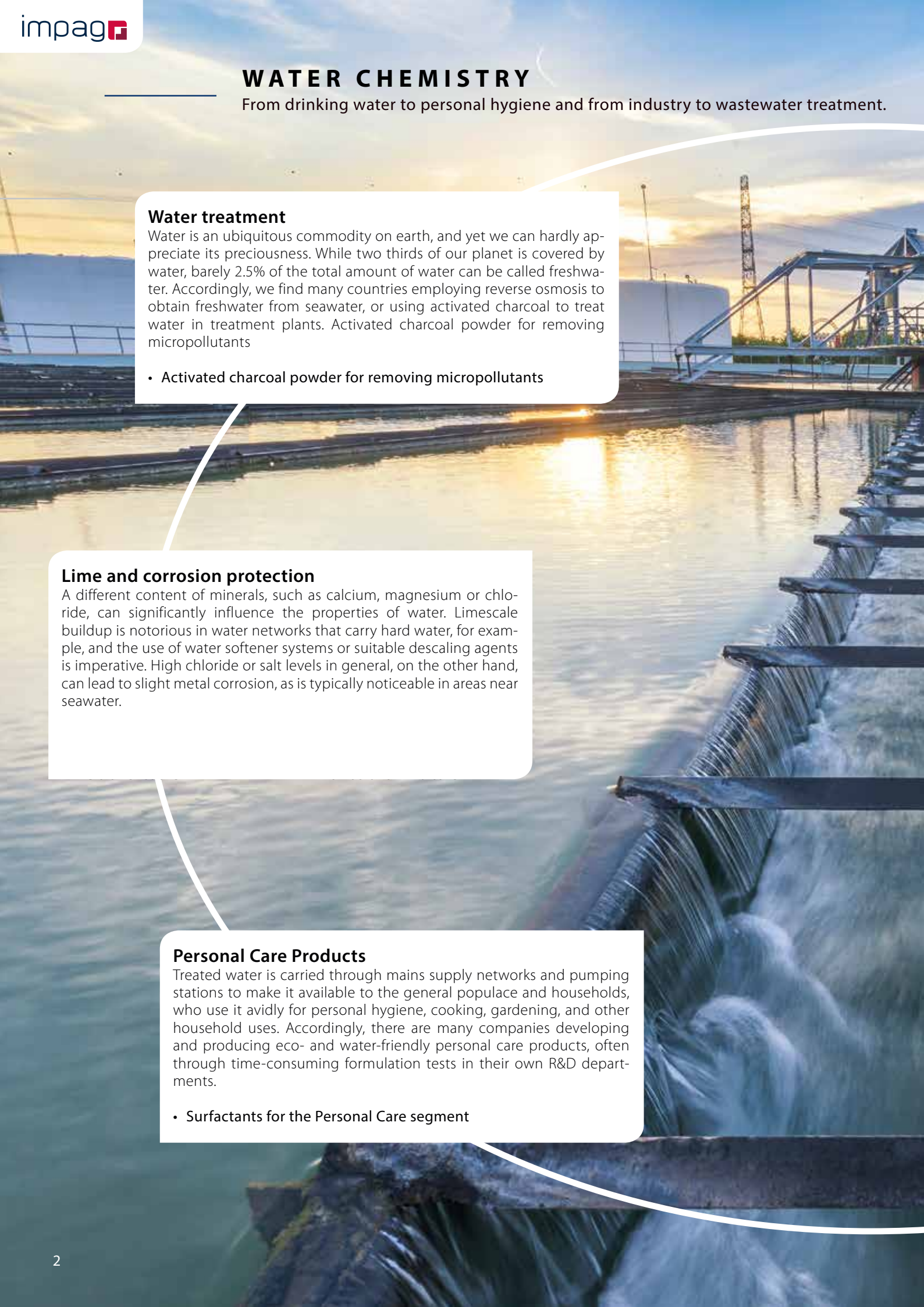

Water treatment

Water is an ubiquitous commodity on earth, and yet we can hardly appreciate its preciousness. While two thirds of our planet is covered by water, barely 2.5% of the total amount of water can be called freshwater. Accordingly, we find many countries employing reverse osmosis to obtain freshwater from seawater, or using activated charcoal to treat water in treatment plants. Activated charcoal powder for removing micropollutants

- Activated charcoal powder for removing micropollutants

Lime and corrosion protection

A different content of minerals, such as calcium, magnesium or chloride, can significantly influence the properties of water. Limescale buildup is notorious in water networks that carry hard water, for example, and the use of water softener systems or suitable descaling agents is imperative. High chloride or salt levels in general, on the other hand, can lead to slight metal corrosion, as is typically noticeable in areas near seawater.

Personal Care Products

Treated water is carried through mains supply networks and pumping stations to make it available to the general populace and households, who use it avidly for personal hygiene, cooking, gardening, and other household uses. Accordingly, there are many companies developing and producing eco- and water-friendly personal care products, often through time-consuming formulation tests in their own R&D departments.

- Surfactants for the Personal Care segment

Wastewater treatment

If we want the environment and our future generations to remain healthy in future, we need a clean supply of fresh drinking water. Because it is a closed cycle, we need to purify our wastewater before it can be released into the environment. This is already being done in technologically advanced, multi-stage wastewater treatment plants. A major part of all this is phosphate precipitation, which is done using iron flocculants. The removal of micropollutants is also playing an increasingly important role.

Water as cooling agent or heat carrier

As a liquid with an enormous capacity for absorbing heat, water is also an optimal medium for use in cooling circuits. This can be in power plants, for example, or in simple car engines, furnaces, local and district heating systems, or other industrial applications. Because even highly pure water can be corrosive in contact with metal surfaces, so-called corrosion inhibitors can be used to prevent such damage.

pH adjustment

Water is of course also used industrially in the manufacture of all kinds of goods or in the production of chemicals. Water thus serves many purposes in industry, for example as a solvent, as coolant or even as a chemical reagent. In this context, the pH of water is often very important – whether it is acidic as in Coca Cola or basic as in a soap solution. The pH value can be adjusted by adding acids or bases.

Bathing Water

Of course, a discussion about water would not be complete without mentioning health spas, thermal springs and swimming pools. Here are clearly defined requirements for hygiene, pH values, and maintenance of the bathing water. These are typical applications for the active disinfectant ingredient hypochlorous acid, which tends to hide behind a more colloquial chemical name like bleach or chlorine granulate.

Basic chemicals
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