

PURITE

Purite Water Purification Industrial Systems Guide

Water purification systems for
manufacturing and processing



WATER PURIFICATION SYSTEMS



The only water treatment provider you need

As leading water management specialists, we at Purite have been developing and supplying complete water purification solutions to manufacturing and processing industries for over 40 years. The industrial applications we cover range from borehole and boiler operations to data centres and the manufacture of semiconductors and microelectronics.

We have efficient technologies for treatment of everything from water-in to water-out, delivering whatever level of purity you require. That includes, where needed, ultrapure water with a resistivity of 18.2 MΩ-cm. As well as raw supplies, we treat boiler feed, make-up and process waters. We also deal with water storage and system washdown.

Along with high-performance water purification systems, custom-designed and engineered to meet your precise needs, we provide all ancillary equipment and turn-key installation services. Our robust products are backed by expert consultancy services, technical training and lifetime support to optimise their positive effect on your business. In short, all your water treatment needs are conveniently met from a single trusted source.

The systems vary in size from small, self-contained units, running at just a few litres per hour, to multi-million-pound capital assets integrated into major manufacturing and processing facilities.

In each case, our aim is to create an optimised, resilient solution that works reliably, compliantly, safely and efficiently, at the lowest possible cost and environmental impact. While we take care of all that, you can focus on what you do best: delivering outstanding products to your customers.



Key manufacturing and processing applications

Boreholes

The quality of water in boreholes, rivers, harvested rain and other raw sources is often insufficient for industrial use. Oxidised iron and manganese and other material deposits may accelerate corrosion on wetted surfaces and encourage microbiological growth. Water hardness, caused largely by calcium and magnesium, is a further problem, leading to scaling in pipes and downstream process equipment. Potentially harmful microorganisms may also be present resulting in increased H&S risks and biofilm formation.

Our filtration, softening and other solutions address these contaminants and more. For disinfection, we offer both chemical and non-chemical approaches.



Boilers

Boilers are essential to many industries, providing the large volumes of live steam needed by breweries, food factories and chemical plants, for instance. Correct treatment of feed water protects boilers from scaling and fouling, which can cause damage as well as reducing energy efficiency.

Our solutions also improve the management of blowdowns, which are essential in controlling boiler water quality and minimising the build-up of impurities. In doing so, we enhance performance and reduce the potential for energy waste. With rising gas and oil prices, this is becoming even more critical.



Data centres

Operational performance depends on a consistent supply of process water of the right quality. The mission-critical infrastructure of a data centre is highly demanding in this respect. At the same time, however, data centres are under growing pressure to reduce water consumption and increase energy efficiency to meet sustainability goals.

Through our cooperation and experience in this sector, and our response to its ever-changing challenges and drivers, we continue to produce innovative products and services. We create environmentally friendly and cost-efficient water treatment solutions for each project, however complex. They include new equipment, upgrades and retrofits for operations ranging from micro data centres to hyperscalers.



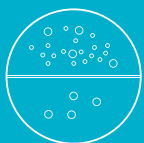
Semiconductors

In this sector, the highest level of water purity is required at every stage of the manufacturing process – from initial wafer cleaning to final fabrication of the semiconductors and microelectronic components. Our tailored systems meet the water quality parameters set by ASTM D5127 – the Standard Guide for Ultrapure Water Used in the Electronics and Semiconductor Industries. This is essential in avoiding costly rejection of defective products and components.

Our expertise in water processing engineering, together with our understanding of the industry's unique demands and specifications, is invaluable. We are well established as a turnkey partner in semiconductor and electronics manufacturing, offering a package of services that includes consultation, plant and distribution loop design, UK-based manufacture, installation and commissioning.



A wide range of water purification technologies



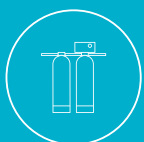
Filtration

Our solutions may start with filtration to remove larger particulates from, for example, borehole water or harvested rainwater. At another level, we can use submicron filters and ultrafiltration to remove fine particles, bacteria and viruses.



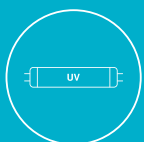
TOC reduction

These solutions reduce TOC (total organic carbon) by breaking down, adsorbing or exchanging organic compounds in the water. This includes carbon-containing molecules found in substances like organic solvents and surfactants.



Softening

These systems remove hardness salts, to prevent scale formation in pipes and on heat transfer surfaces, for example. This improves the functioning and energy efficiency of the affected equipment.



UV sterilisation

Our UV devices provide rapid biological inactivation at the point of installation. They prevent proliferation of microorganisms downstream in the water system, without the need to inject chemicals.



Reverse osmosis

This approach to reducing TDS (total dissolved solids), which removes particulates, bacteria, organic molecules, ions and other contaminants, is central to many of our systems. It is often used as a critical pre-treatment step before water polishing processes. We apply the latest low-energy membrane technology to achieve an ideal balance between optimising performance, minimising energy consumption and extending equipment life. As with any of our solutions, we assess your operation before determining whether a reverse osmosis system is needed, what its specifications should be, and how rapidly it will give a return on your investment.



Deionisation

We have service exchangeable deionisers of various capacities and grades which use ion exchange resins to remove dissolved ionic mineral impurities producing water up to and including 18.2MΩ-cm, with no need for chemicals.

For more demanding industries we offer continuous electrodeionisation (CEDI) systems with a focus on delivering cost efficient operational expenditure.



Nitrogen blanketing

We can use nitrogen blankets to maintain the quality of 18.2 MΩ-cm ultrapure water by preventing contact with oxygen or carbon dioxide. The nitrogen lightly pressurises the space above the water in the tank, to block ingress of air as well as microorganisms and dust.



Process water storage and pumping

Tanks for treated water must provide a critically controlled environment. Ours are constructed to the highest standards and can be equipped with monitoring and control systems to preserve water purity and prevent contamination. Our pumping solutions are energy efficient and designed to move and deliver water throughout its treatment, process and distribution journey, with appropriate pressure, speed and precision.



Customer-focused design and engineering

Every manufacturing and processing operation is different, and each business faces a unique set of circumstances and challenges. To meet their precise technical, commercial and environmental requirements, our water purification solutions are custom-designed and engineered.

Collaborating closely with everyone from engineering consultants to M&E contractors and end users, we take every issue into account before specifying the optimum system. Our designs and solutions ensure that you will reliably receive exactly the right purity and volume of water for your needs.

Our consultation and assessment processes consider factors such as the feed water quality, the nature of the application and its process conditions, and the flow rate, distribution and storage requirements. We also make sure our solution complies with the relevant industry regulations and fits with your CSR policies in relation to environmental impacts. At the same time, we resolve practical problems such as those relating to the availability of space and services.

Importantly, we carefully calculate the costs and benefits of our equipment configurations. In all cases, we aim to bring you value for money and a good return on investment. Savings are made through greater energy efficiency, reduced waste of water, and longer life of equipment and components. Meanwhile, profitability is increased through better system performance and reliability.

Our teams of technical sales, designers and engineers are highly qualified, skilled and experienced in all aspects of water purification and its industrial applications.

As a responsible and well-managed company, we hold all the professional accreditations and certifications you would expect. These include ISO 9001 (Quality), ISO 14001 (Environment), ISO45001 (Occupational Health and Safety), SSIP SafeContractor Gold and Alcumus SafeContractor.

We are a turnkey supplier of water purification installations, with access to all the expertise, capabilities and equipment necessary to design and fully implement your ideal solution.

Our services include:

- Water system audits
- Water quality testing
- Feasibility studies
- System design
- Project scope and technical specification
- System engineering, including controls and associated services
- Testing and certification
- Building, installation and commissioning
- Full technical support, including all documentation and training.

Total lifetime support

However large or small your system, operation or business, we are committed to providing you with total lifetime support. This applies throughout the whole life cycle of any of our products and solutions.

Our maintenance services include long-term contracts, with the option of premium 24/7 support where necessary. Our network of specialist service engineers is available to deal with any problems and to keep systems working dependably, efficiently and economically.







About Veolia Group

Veolia group aims to be the benchmark company for ecological transformation. In 2022, with nearly **220,000 employees** worldwide, the Group designs and provides game-changing solutions that are both useful and practical for **water, waste, and energy management**. Through its three complementary business activities, Veolia helps **to develop access to resources, preserve available resources, and replenish them**.

In 2022, the Veolia group provided **111 million inhabitants** with drinking water and **97 million** with sanitation, produced **44 terawatt hours** and recovered **61 million tonnes** of waste.

Group Key Figures

3 businesses activity:
Water, Waste, Energy

€42,885 million
in revenue, in 2022

Nearly 220,000 employees
worldwide, in 2022



111 million people supplied with drinking water
4,130 drinking water production plants managed
3,506 wastewater treatment plants managed
97 million people connected to wastewater systems
(2022 Key Figures)



533,759 business clients
61 million metric tons of treated waste
823 waste processing facilities operated
46 million people provided with collection services on behalf of municipalities
(2022 Key Figures)



46,922 thermal installations managed
680 heating and cooling networks managed
44 million MWh produced
2,716 industrial sites managed
(2022 Key Figures)

Our approach - multifaceted performance

We elevate our ambition by committing to **multifaceted performance**. That means we focus equally on the various types of performance, including financial performance, commercial performance, social performance, societal performance and environmental performance, all of which complement one another and form a virtuous circle

Veolia has publicly committed to 18 tangible performance indicators, based on and linked to the **UN 17 Sustainable Goals (SDG)**. Veolia plays a Part in all at different levels and has a direct impact on 13 of them which is integral to our **multifaceted performance** and cover the five types of performance. The fulfilment of the objectives will be regularly audited and evaluated by a third-party organization.

- **5 stakeholders:** Employees, Clients, Shareholders, Society, Planet.
- **5 commitments:** they express the dimensions according to which Veolia's performance must be evaluated & specify for each the course set by the Group by taking up the key axes of the text.
- **18 performance objectives:** they specify the Group's action priorities by dimension; they cover the text of the purpose and allow all the Business Units to commit to a common approach to implement this purpose close to the field.



Compliance with legislation and regulations

Helping you to take a proactive approach

Safety and compliance is at the top of the agenda in every market sector, and guidance from expert authorities on how to guarantee this will ensure best practice, optimum performance, organisational integrity and staff peace of mind.

The legislation surrounding water standards in various market sectors can often be confusing, and demands lengthy and in-depth consideration to ensure complete compliance.

We can help you to adopt a proactive approach to regulatory compliance with our expert consultancy services, advice and testing, which are backed by years of proven experience. In addition, all of our technologies and products meet the latest quality standards

Certifications and accreditations

- ISO 9001 (Quality)
- ISO 14001 (Environment)
- ISO 45001 (Occupational Health & Safety)
- SSIP - SAFEcontractor Gold
- Alcumus SAFEcontractor.

Company memberships

- Institute of Healthcare Estates and Estate Management (IHEEM)
- UK Trade Association for Instrumentation, Control, Automation (GAMBICA)
- Alcumus SAFEcontractor
- British Standards Institute (BSI)
- Reset Compliance.



PURITE

Get in touch

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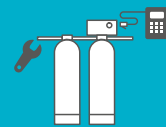
Design



Build



Install



Maintain

Founded over 40 years ago, the Purite brand has a long and proud heritage leading the way in water pre-treatment and process. We are now part of Veolia, one of the world's largest manufacturers and suppliers of specialist water treatment technologies, products and services.

Errors and Omissions excluded. Purite reserves the right to change the specification in accordance with our program of continual improvement.