Chlorine chemistry helps enhance life on land through its role in the manufacture of crop protection compounds.

The majority of crop protection compounds use chlorine as an intermediary in the manufacturing process, or in the final product. These agricultural inputs improve yields, reduce soil erosion, and help prevent habitat loss.

Organisations such as the World Chlorine Council (WCC) bring together key stakeholders to help achieve the 17 SDGs. By fostering dialogue between change-makers, and entering into global partnerships, more people and communities are being positively impacted by chlorine chemistry and its role in sustainable development.

WCC convenes an annual chlorine safety seminar to help improve the safe handling of chlorine, widening the reach of chlorine's many benefits. Additionally, WCC hosts water-focused events to help communities improve access to safe drinking water.

WORLD chlorine council®

ABOUT THE WCC

The WCC is a global network representing the chlorine and chlorinated products industries. Originally formed in 1993, it brings together national and regional trade associations, along with their member companies to promote best practices and the benefits of chlor-alkali chemistry.

We believe chlor-alkali chemistry can make an essential contribution to a sustainable world. Our mission is to promote health, safety, and environmental best practices in order to provide society with the benefits of the chlor-alkali industry.

For additional information visit
worldchlorine.org

WORLD chlorine council®

Chlorine chemistry

Making a global impact

In 2015, the United Nations (UN) announced 17 Sustainable Development Goals (SDGs) to achieve by 2030. Attaining these goals is no easy task and requires the best solutions to be deployed by a multitude of stakeholders working across borders.

One of these solutions is chlorine – an abundant building block element well known as a public health staple used to disinfect drinking water. Chlorine also has a lesser known, but critical, role in making many products that we benefit from daily. Often referred to as *chlorine chemistry*, it is a key component to help achieve many of the 17 SDGs. Learn more about the important ways chlorine chemistry is making today's challenges tomorrow's solutions for sustainable development.

Chlorine plays an especially critical role in making water safe to drink, disinfecting wastewater, and, as a component of water infrastructure, through PVC pipes.

Access to clean water provides many peripheral benefits that help attain other SDGs. When safe drinking water is readily accessible, people have more time for other activities. This helps reduce poverty (SDG 1) as more people can participate in the workforce and go to school (SDG 4). And because the burden of fetching water is often on women and girls, gender equality (SDG 5) is enhanced from improved access to clean water.

Chlorine chemistry is used in the manufacture of many critical pharmaceuticals and healthcare products. Surface disinfection using chlorine-based products can help curtail the spread of diseases.

Many pharmaceuticals are made possible by chlorine chemistry by either being a part of their synthesis, or present in the final formulations. Also, medical products like tubing and blood bags are made from PVC. Using chlorine-based products, surfaces in hospitals, schools, the home, and more, can be sanitised and disinfected, helping reduce the spread of pathogens.

Chlorine chemistry is a building block in the manufacture of key ingredients in solar panels, wind turbines, and hybrid car batteries.

In solar panels, chlorine chemistry is used to purify the silicon found in grains of sand that is used to make solar panel chips. Wind turbine blades are often made from chlorine-based epoxy resins. Energy efficient hybrid vehicles contain electric motors powered by longer-lasting nickel metal hydride battery packs that use potassium hydroxide as an electrolyte. Potassium hydroxide is a co-product of chlorine production.

Chlorine chemistry helps achieve sustainable cities and communities with affordable and durable housing materials, and telecommunications and computer technology.

Polyurethane foam insulation, advanced refrigerants, and PVC-based window frames, manufactured using chlorine chemistry, contribute to a greener built environment. Fiber optic cables and computer chips, that use chlorine chemistry to make the glass and silicon wafer components, help make cities 'smart' by communicating residents' movement to optimise transit systems.

Chlorine chemistry helps to recycle aluminum and reduce waste in chemical manufacturing processes.

Aluminum beverage cans are recycled by bubbling chlorine gas through molten aluminum scrap to reduce impurities for reuse. In addition, using chlorine chemistry to manufacture titanium and titanium dioxide results in less waste, conserves resources, and contributes to a circular economy.

Chlorine chemistry helps destroy invasive species that damage aquatic ecosystems

As ships traverse the globe, they can bring with them plants and animals from other areas in their ballast water, which has the potential to disrupt local ecosystems. By treating ballast water with chlorine-based disinfectants, these invasive species are exterminated, as is their impact on the environment.