



# Circular Chemistry

**Founded in Spoleto in 1998, Italmatch Chemicals is committed to making industry more sustainable. As well as optimizing its own production processes, the company participates in European projects on key green transition topics, such as battery recycling.**

When most people think of chemistry, images of grey skies, industrial fumes and polluting processes often spring to mind. However, chemistry can also drive sustainability and innovation. For many years, Italmatch Chemicals, an international group based in Genoa, has been operating in key sustainability sectors, including water treatment, lubricants, renewable energy and electrification. With over 1,100 employees, 20 production plants and seven research and development centres worldwide, Italmatch Chemicals demonstrates how chemistry can be compatible with the circular economy, even forming a vital part of it.

“Contrary to popular belief, chemistry is an enabling science by its very nature. According to a study published by Federchimica and Cefic (the European Chemical Industry Council), chemistry is present in 95% of industrial products

and plays a key role in many areas that affect our everyday lives, such as detergents, pharmaceuticals, food, construction, electronics and textiles,” says Sergio Iorio, CEO and founder of Italmatch Chemicals. “It is also a powerful facilitator of ecological transition, thanks to its contribution to areas such as renewable energy, electrification and the recovery of critical raw materials”

Since its foundation in 1998, Italmatch has made sustainability a key element of its strategy. “In recent years, we have received significant recognition, including EcoVadis Gold certification and a CDP A rating for climate change” Iorio continues. “In 2024, our emission reduction targets were approved by the Science Based Targets Initiative”. Sustainability goes together with innovation.

“With around 100 people working in this area, we are constantly investing in research and development

One of the main technologies is Eco Inhibitors, which was awarded the Responsible Care 2024 Prize by Federchimica. It is a chemical solution derived from fish industry waste and is used as an ecological alternative to methanol in the oil and gas anti-caking sector. Another example is Magpie, a technology that can be used to selectively recover precious metals from industrial water and electric vehicle batteries, such as nickel and cobalt. “At the same time, the group’s internal research focuses on optimizing production processes, paying particular attention to the reuse of by-products — waste substances derived from production that can be reintegrated into the production cycle and used to create new products”, says the CEO. “The goal is twofold: to reduce environmental impact and increase resource efficiency. With this in mind, we have developed a purification method that enables us to reuse phosphoric acid, a by-product of our Arese plant, in the production of new water treatment solutions and lubricants.”

Circularity plays a key role in two European projects led by Italmatch. One of Italmatch’s key areas of activity involves the recovery and recycling of end-of-life batteries, which is a crucial issue for the energy transition. The company is involved in the IPCEI – European Battery Innovation project





which aims to establish a continental supply chain for electric vehicle batteries, covering everything from production to end-of-life management. In this context, Italmatch supplies raw materials for current and future batteries in both liquid and solid form and coordinates a working group dedicated to the circular economy. "Our goal is to develop IoT chemical solutions for treating used batteries and recovering valuable metals such as manganese, nickel and cobalt, which would otherwise be lost. This is a fundamental step towards making the entire battery life cycle more sustainable in an industry that is booming and set to grow further in the coming years" explains Iorio.

Another Italmatch project is FlashPhos, a European consortium led by the University of Stuttgart that aims to recover phosphorus from urban and industrial waste through urban mining. Once again, Italmatch is the reference technology partner, thanks to its extensive experience in the production and management of phosphorus.

Italmatch is also working to reduce its environmental impact. "One example comes from our plant in Changzhou, China, where water is purified and 100% reused" says Iorio. "In addition, the company has redesigned its packaging to be more sustainable: using recycled plastic has saved 80 tons of virgin plastic and approximately 127 tons of emissions from its production. We have also launched a program involving the use of at least 50% renewable electricity (from solar and cogeneration sources) and are working to improve the efficiency of renewable energy plants, such as geothermal and wind farms." 



Sergio Iorio