



Progress beyond

RENEWING
THE ENVIRONMENT

SOLVAY TODAY

2022

Country name

We bond people,
ideas and elements to

REINVENT PROGRESS

Solvay is a science company founded in 1863, whose technologies bring benefits to many aspects of daily life. Our innovative solutions contribute to **safer, cleaner, and more sustainable products** found in homes, food and consumer goods, planes, cars, batteries, smart devices, healthcare applications, water and air purification systems.

In 2021, we delivered a strong financial performance and made significant progress toward achieving our sustainability goals. We raised the bar in all areas and shifted up a gear on our transformation journey. We are **REINVENTING** ourselves and the way we serve our stakeholders, creating more sustainable value for all.



Watch our Solvay solutions video



Watch our Solvay One Planet video

CONTENTS

3 Solvay in short

8 Electronics

11 Diversity, equity, inclusion

15 Working life

18-19 Solvay Tomorrow

4-5 Clean mobility

9 Agriculture and Food

12-13 Consumer goods

16 Water and Air

19-23 Solvay in Country

6-7 Solvay One Planet

10 Healthcare

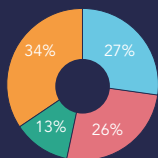
14 Citizen Day

17 Solvay Prize

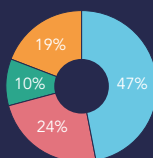
SOLVAY IN SHORT

2021 figures

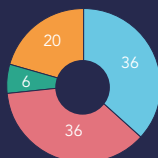
63
countries*



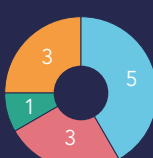
€10.1bn
Net sales



21,000+
Employees



98
Industrial sites



12
Major R&I centers

Europe

North America

Latin America

Asia & Rest of the world

*Legal entities

BUSINESSES

Materials



34%

Group EBITDA

Our unique, broad portfolio of high-performance polymers and composite technologies is used in sustainable Mobility, Healthcare and Electronics.

Chemicals



39%

Group EBITDA

Our businesses are world-leaders in essential chemicals to daily life. These are used in end markets like Building, Industry, Home and Personal care, Healthcare, Feed and Food.

Solutions



27%

Group EBITDA

Our unique formulation and application expertise helps customers maximize yield and efficiency while minimizing environmental impact in Agro, Food, Home and Personal care, Mining and Electronics.

CLEAN MOBILITY

MAKING VEHICLES CLEANER, LIGHTER AND MORE EFFICIENT

The aerospace and automotive industries have two main paths to follow towards decarbonisation: electrification and lightweighting. Solvay provides innovative solutions to help with both.

Our portfolio of products notably addresses challenges related to batteries and lightweighting, with composite materials for hybrid and electric vehicles (EVs).

To the EV battery value chain, we provide high-performance materials and technologies that answer the critical needs of the industry. Our **Solef® PVDF*** for Li-on battery components is essential for faster charging, increased drive range and improved safety.

We also provide a unique solution to help recycle batteries. We are the only company in the world proposing an environmentally-friendly extractant that optimizes the extraction and purification of up to 95% of critical metals from used batteries. **Cyanex® 936P** can transform these metals into high-purity raw materials for new batteries.

As part of our commitment to protecting natural resources, we have partnered with Veolia and Renault to optimize the reuse of critical materials in spent EV batteries.

Meanwhile, Solvay's strong expertise in high-performance polymers and composite technologies puts us in a unique position to lighten essential automotive, aerospace and urban mobility parts. Up to 40% lighter than aluminum, **SolvaLite®*** can be used to create more energy-efficient vehicles while enabling much faster production. Another example is **KetaSpire® PEEK**: It can replace metal in insulation systems to provide more efficient, smaller and lighter e-motors.



Watch our video on e-mobility



*Solef® PVDF and SolvaLite® have been labeled Efficient Solution by the Solar Impulse Foundation, meaning that they are both sustainable and profitable.

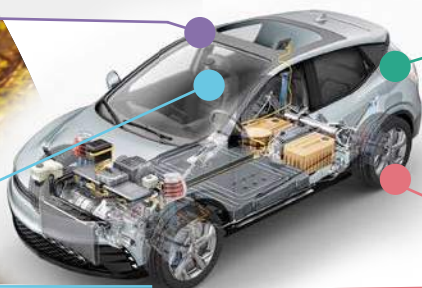


MORE SUSTAINABLE SOLUTIONS

Addibond™: Increases bonding between aluminum and adhesives, thereby reducing the need for bolts, screws or rivets. Lightens vehicles for better energy efficiency.



Augeo® SL191: Bio-based solvents made from renewable glycerin. Safer alternative to petroleum-based solvents in paints and coatings.



Amni® Virus-Bac OFF: New polyamide fiber "deactivating" 99% of viruses and bacteria on a textile surface within 2 hours, using a permanent additive.

Zeosil® Premium: High-performance silica reducing rolling resistance by 25%, increasing the longevity of tires and lowering fuel consumption by up to 7%.

A WORD FROM OUR EXPERT

How is Solvay advancing clean mobility?

We provide some of the most innovative solutions for clean mobility. Thanks to our unmatched portfolio of technologies, we make vehicles lighter and more efficient; we produce high-performance materials for lithium-ion batteries and the technologies to recycle them; and we are developing green hydrogen solutions which offer an alternative option for electrification, notably to power heavy industry, trucks and trains.

How about Solvay's contribution to the Battery industry in particular?

We help solve the major problem of range anxiety while enabling circularity with our unique technologies to recycle metals from spent batteries. We're also working on the next generation of batteries. As a European leader on this technology, we are investing in the most advanced pilot plant in La Rochelle, France.

Mike Finelli
President of Solvay
Growth Initiatives



SOLVAY ONE PLANET



RAISING THE BAR ON SUSTAINABILITY

The Solvay One Planet sustainability roadmap outlines 10 ambitious objectives by 2030, set to reduce our global impact in three areas: Climate, Resources and Better life. Let's see what happened recently.



We accelerated the **energy transition at our plants** across the world: **40 emission reduction projects** are already launched with an impact equivalent to taking more than 1.4 million cars off the road each year. Soon, more than 30% of the electricity purchased and used by our plants will come from renewable sources.

We have unveiled our **plan to reach carbon neutrality* by 2040** (2050 for our soda ash activity). We have been reducing our emissions about twice as fast as dictated by the Paris Agreement since 2018, and we are helping our suppliers and customers decrease their own impact.



Solvay's Paulinia site, with its rich biodiversity including 83 species of birds and more than 90 of plants, has received the **Gold Certification from the World Habitat Council (WHC)**. Solvay is the first company in the chemical industry in Brazil to receive this certification. It rewards our local activities including reforestation, riverbank recovery and education.

We deepened our **partnership with the Ellen MacArthur Foundation**, committing to more than double our revenues from renewables and recycled-sourced products by 2030.



Solvay technologies are essential to closing the circular economy loop. We're regularly developing **partnerships** while preserving resources across our value chains. These include partnerships with **Bridgestone/Arlanxeo** for more sustainable tires and **Renault/Veolia** on battery waste recovery.



Procter & Gamble joined our **Sustainable Guar Initiative (SGI)**, which aims to encourage sustainable guar farming practices and improve the lives of over 11,000 Indian farmers. Guar is a vegetable used to create sustainable products for personal care, agriculture, etc. The initiative launched in 2015 has already increased farmer revenues by 143% and guar yields by 125%. We trained around 1,500 women on improved nutrition through a kitchen garden initiative and raised awareness on menstrual hygiene.

The **Solvay Solidarity Fund** helps colleagues, their families and local communities facing hardship. Since its creation in April 2020, the Fund granted €6.4 million. We received 860 individual demands and supported 30 collective projects in 13 countries.



**Solvay
Solidarity
Fund**

*scope 1 & 2 emissions (direct and indirect)

OUR THREE SUSTAINABILITY PILLARS



€1.7bn

sales are solutions
reducing customers'
climate impact



€3.7bn

sales are solutions
reducing global
resources
consumption



€3.2bn

sales are solutions
improving quality
of life

Interox® Pico Plus hydrogen peroxide: An advanced cleaning solution to support the production of next generation semiconductors, which are increasingly small and complex. It can eliminate metallic impurities at the scale of a grain of salt on a soccer field.

Galden® PFPE: These fluids act as heat-transfer liquids in high temperature conditions, ensuring the long-term reliability and efficiency of advanced semiconductor applications.

Solvaclean® is an environmentally-friendly cleaning gas for semiconductor tools. It has been reducing the carbon emissions of the semiconductor industry since 2019.



ELECTRONICS

SHAPING THE DIGITAL ECONOMY

Our range of solutions helps meet growing demand for hyper-connectivity, miniaturization and electronic components that consume less energy.

We live in a world of constantly evolving technology. Industry and consumers expect the future generations of electronic devices to be increasingly compact, stylish, energy efficient, safe and interconnected. We meet these requirements with high-performance solutions for semiconductors, display and lighting elements, electronic components, as well as telecommunications and 5G networks.

One of our key markets is non other than smart sensing. Solvay's **Kalix®**, a high-performance polyamide, can replace metal in smartphones, tablets and laptops. It provides unparalleled design flexibility and even exists in a sustainable, bio-sourced variant made of from non-food competing and GMO-free castor oil. This new solution is produced with 100% renewable electricity.

AGRICULTURE AND FOOD

HEALTHIER PRODUCTS FROM FARM TO FORK

Solvay's solutions help meet one of the society's greatest challenges: feeding a growing population in a more sustainable manner.

Our contribution starts with the seeds. **AgRHO® S-Boost™***, a biostimulant derived from natural guar beans, helps crops germinate faster and stronger. It favors water and nutrient uptake with its unique mode of action, and it can reduce synthetic fertilizer use by up to 13% while optimizing water usage.

Building on 40 years as one of the industry leaders in agricultural formulation adjuvants, we have also created a new biocontrol formulation platform. It enables new sustainable crop protection and pest management solutions such as microorganisms and natural extracts.

Solvay even offers pioneering automation and digital technology, along with on-target drift control adjuvants for agricultural spray drones.

Our feed supplements can prevent and control livestock diseases while

optimizing the flow of nutrients. **Bicar®Z**, a simple and efficient sodium bicarbonate feed material, is 100% natural and helps enhance both productivity and animal well-being.

Our portfolio is completed with a set of flavors, aromas and ingredients for healthier food, as well as materials for safe, reliable and convenient food packaging.



Watch our video on agro solutions



NATURAL VANILLIN

Solvay's Rhovanil®

Natural CW is the market reference for the most popular food flavouring of the world: vanillin.

As sourcing this flavour from the vanilla bean has become difficult and very expensive, we provide a 100% vegetable-based, non-GMO alternative obtained through the bioconversion of ferulic acid found in rice bran oil.



*AgRHO® S-Boost™ has been labeled Efficient Solution by the Solar Impulse Foundation



We are a leading provider of biomaterials for implantable devices. Our **Solviva®** Biomaterials – a family of specialty polymers – display optimal performance and meet the requirements for long exposure to fluids and tissue in the human body. They are used in a wide range of implants including orthopedics, cardiovascular, spine, sports medicine, extremities, trauma, and more.



Radel® PPSU is a strong, lightweight polymer used in sterilization cases, trays, as well as surgical and dental instrument handles. It can be steam-sterilized for more than a thousand cycles without significant loss of properties. Meanwhile, our **Interox®** range of high-purity hydrogen peroxide (H₂O₂) can be used as a disinfectant for medical devices. It offers the highest possible quality for sterilization on the market.

HEALTHCARE

CARING FOR YOUR HEALTH, AT DIFFERENT STEPS

From innovative chemicals for pharmaceutical applications to advanced polymers for medical devices and equipment, Solvay offers much-needed solutions across the Healthcare industry.

Solvay is a world leader in thermoplastics used to manufacture dialysis membranes, which are essential to blood purification in patients with kidney failure. Thanks to **Udel® PSU** and **Veradel® PESU**, patients' blood can transit through the membranes and return to arteries without any risk.



Solvay is one of very few companies in the world capable of manufacturing a key ingredient of all PCR tests used to detect the COVID-19 virus: a reagent molecule called **RhodaPhos® phos**.



ONE TEAM, ONE DIGNITY



The One Dignity program was launched in 2021 to help shape cultural change at Solvay towards more diversity, equity and inclusion (DEI). The program is structured around three pillars and nine objectives to be reached by 2025.

What makes the Solvay One Dignity program unique?

We see equity and inclusion as the building blocks for diversity. We focus on these first to create an environment that will not only attract but also retain and develop diverse talents.

Tell us about the progress made so far ?

We are developing a new mindset and have reached concrete milestones related to our nine objectives. Our first priority has been to collect data in different areas, for instance to identify any unjustified pay gap or to create our baseline to measure inclusion.

We are setting up mentoring programs for women. Some 25% of female junior managers responded to a call for volunteers to take part in the *A Effect Ambition Challenge*, an international program designed to help them boost their careers.

To create a more inclusive culture, we also made disability a priority. Our comprehensive benchmarking project identifies areas for improvement in order to improve accessibility on Solvay premises.

What are the next steps?

We are not yet where we want to be, but we have momentum. In 2022, we will define specific KPIs, cascade DEI training down through the organization and conduct pilot initiatives, to see what works and can be scaled. We want to bring DEI to our production sites, to the shop floor, and have made it the central theme of our 2022 Citizen Day.



Nathalie van Ypersele
Chief Diversity, Equity and
Inclusion Officer

CONSUMER GOODS

FROM SMART TEXTILES TO PERSONAL AND HOME CARE

Solvay's innovative, sustainable and competitive polymers and surfactants are widely used in consumer goods. They help meet growing consumer demand for natural and bio-based solutions, enhanced performance and convenience, and personalized and premium products.

Take a look at your shopping trolley and you'll probably lay your eyes on Solvay products without even noticing. From textile to personal care, home care and even small household appliances, we provide solutions that improve your everyday life while constantly putting in efforts to reduce your ecological footprint.

We could, for instance, mention our hair and skin care portfolio, 80% of which is derived from products of natural origin. This includes our **Jaguar®** line, a range of ingredients that's over 90% plant-based and made from guar gum partially sourced through our Sustainable Guar Initiative (SGI) program.

On the textile front, we've recently launched **Bio-Amni®**, a bio-based polyamide yarn with 40 to 60% of its

monomers derived from sugar. This sugar is sourced from corn, beetroot, sugar cane and other plants. We even take concerns for your health a step further with **Emana®**. This smart yarn facilitates the creation of bioactive textiles equipped with a far infrared technology, which improves skin elasticity and reduces the appearance of cellulite.

Small household applications also benefit from Solvay's expertise. **Omnix® ReCycle HPPA**, which is made in part of recycled resin, delivers high durability, great mechanical properties and excellent surface appearance to OEMs who seek to increase the recycled content in their products without compromising on performance.

Solvay's Actizone™: A unique disinfectant solution that instantly destroys over 99.9% of microorganisms. This long-lasting protection helps keep you and your loved ones safe for up to 24 hours.

Augeo®: A line of bio-based solvents developed from glycerin, a renewable source. Used in air and surface care, offering a safer, more sustainable and high-performing alternative to petrochemical solvents.



Dermalcare® LIA MB: Readily biodegradable, 100% plant-based hair moisturizing emollient that can replace non-volatile silicones in hair care, body care and skin care applications.



Mackadet® OPR 2: Readily biodegradable solution made from almost 100% renewable resources. It gives your cleansing products their creamy white appearance and helps reduce carbon emissions in the value chain.



SOLVAY CITIZEN DAY



TAKING ACTION WITH LOCAL COMMUNITIES

Each year, Solvay's Citizen Day brings employees together around a cause close to our hearts. In 2021, we engaged 15,000 employees across the world in over 500 biodiversity actions.

For three years in a row, the Citizen Day has been providing Solvay employees with an opportunity to bond and do good for local communities.

In 2021, we focused on biodiversity and made one commitment: the more people would take part in local actions to raise awareness and help safeguard local wildlife, the more money we would donate to biodiversity associations.

All across the world, employees responded positively and participated in actions across 121 sites in the world. At our Tavaux site in France, for example, employees were set a challenge to reduce their digital carbon footprint,

with one tree planted at the site for every 100,000 emails they deleted.

In Thailand, around 300 volunteers came together to clean up ten local beaches, helping to save sea creatures and protect the environment. Meanwhile in Guatemala, employees created an on-site ecosystem for endangered native bees at their plant in Amatitlan.

[Learn more about Solvay's Corporate Citizenship](#)



This year's Citizen Day was a very inspiring experience. Sometimes the development of human society leads to conflicts with nature, but we have to learn to share the Earth with all other creatures, because if the environment deteriorates, the living conditions for mankind will deteriorate too.

Shen Wenting
Technology Team Leader,
Novacare GBU, China



WORKING LIFE

WE CARE ABOUT OUR EMPLOYEES

Solvay continuously strives to improve employees' working conditions. We want to create a fertile ground for ideas, where people can be themselves while growing both professionally and personally.

Our **One Pulse** employee surveys help us track any change in employee well-being and build corrective programs accordingly.

80%

of our employees feel they can bring their whole self at work.

The **Solvay Cares** package includes 16 weeks of parental leave, health insurance, as well as disability and life insurance coverage for all employees, worldwide.

Our **Employee Assistance Program** offers psychological support, life coaching to all employees and members of their households.

7,500+

of our people moved into a hybrid mode of working as part of our new mobile working framework.

We enable all aspiring leaders to shape their own development path through dedicated learning programs like **Care & Dare** and the **Leadership Academy**.

Leadership at Solvay is now oriented around a "Care and Dare" approach. **Care is about focusing on human development**, by opening up a much more human and personalized dialogue between manager and employees that considers subjects such as career development, well-being at work, work-life balance and inclusion. **Dare is about focusing on empowering employees** to achieve better performance and enabling smart risks to explore ideas and opportunities and help them reach their full potential.

Hervé Tiberghien

Member of the Executive Leadership Team, Chief People Officer



WATER AND AIR

CRUCIAL WORK TO PRESERVE VITAL RESOURCES

Solvay's tailored materials and chemical formulations enable the purification and reuse of natural resources, including the air we breathe and the water we use. With our products, industry can meet ever more challenging regulations while improving quality of life across the world.

Air and water pollution are causing the loss of millions of lives every year, and industry has a key role to play in tackling this problem. Industry plants are under strict scrutiny from government authorities willing to keep our air and water clean.

In this context, **SOLVAir®*** has been providing simple, innovative and efficient flue gas cleaning solutions. This sodium-based sorbent efficiently removes acid gases (HCl, SOx, HF, etc.) from exhaust for a range of sectors including energy from waste, industrial, marine and energy production.

Meanwhile on the water front, our researchers have developed **Udel® PSU** to purify water through various treatment processes. This high-performance polymer can be used for instance to manufacture reverse osmosis water treatment membranes, which are essential to removing contaminants and making fresh water out of seawater through desalination.

A critical step in municipal wastewater treatment is its final disinfection prior to discharge into the environment or reuse for irrigation and recreational purposes. **Oxystrong®** effectively removes pathogens and harmful microorganisms from wastewater during this final step, decreasing the risk of waterborne infections.

WALKING THE TALK

At Solvay, **every drop of water counts!** Reducing our freshwater consumption is one of Solvay One Planet's 10 objectives:



We consumed 17% less water in 2021 in Devnya, Bulgaria, compared to 2019.



We're decreasing consumption in cooling towers by 50% in Tavaux, France.



We decreased our water consumption by 13% per ton of product over two years in Paulina, Brazil.



*SOLVAir® and Oxystrong® have been labeled Efficient Solution by the Solar Impulse Foundation



SOLVAY PRIZE

KEEPING UP WITH MAJOR SCIENTIFIC DISCOVERIES

Created in 2013, the Solvay Prize perpetuates Ernest Solvay's lifelong support of – and passion for – scientific research. The award recognizes major scientific discoveries with the potential to shape tomorrow's chemistry and help human progress.

Not many people knew what a messenger RNA (mRNA) vaccine was before the COVID-19 pandemic, but now everybody does. This new generation of vaccines saved many lives and helped economies bounce back after two years of unprecedented crisis.

The rapid development of COVID-19 vaccines was made possible by Professor Katalin Karikó, whose work on the biochemical modification of synthetically produced mRNA opened the door to the use of mRNA for therapies and has potential for many applications in healthcare.

Professor Karikó received the **2022 Solvay Prize** on March 29. The ceremony marked the 100-year anniversary of the first Solvay Conference on Chemistry, an event that convened some of the brightest scientific minds, such as Albert Einstein, Max Planck and Marie Curie to discuss the world's most pressing challenges. This year's winner was selected by an independent jury of renowned scientists, including two Nobel Prize laureates.



Watch the Solvay Prize 2022 video

INDUSTRY MEETS SCIENCE



Science-based innovation drives Solvay's strategy and is an integral part of the company's DNA. For more than 45 years, the French National Centre for Scientific Research (CNRS) and Solvay have been working together on chemical research and its use in industry. Similar partnerships also exist in the US, China and other countries. This international network enables us to develop the sustainable solutions the world needs at a much faster pace.

SOLVAY TOMORROW

CREATING TWO STRONG INDUSTRY LEADERS

Solvay is taking another step in its reinvention process and will amplify its impact by separating itself into two brand new entities. The operation will be a turning point in the Group's history and will allow both companies to realize their full potential.

Over the past three years, we have accelerated the reinvention of the Group and amplified the impact we have in the world. We are now ready to change the game and demonstrate how we continue to Reinvent Progress.

The delivery of our G.R.O.W. strategy and business optimizations have led to the emergence of two distinct groups of businesses: Essential and Specialty chemicals. Both have incredible potential and are bold in their ambitions, but they have different needs, different operating requirements and different investment demands. In March 2022, we therefore

announced that we were reviewing plans to separate the Company along these lines, into two independent, publicly traded companies: Essential Company and Specialty Company.

Upon completion in 2023, the separation will establish two strong industry leaders benefitting from strategic and financial flexibility to focus on their distinctive business models, market and stakeholder priorities and achieve their full potential.



*Our talented and dedicated employees have worked hard to transform Solvay, and their efforts have enabled us to take this important next step towards the creation of two strong companies that **build on what Solvay has always been throughout history: Essential AND Special.***

We expect to create opportunities in each company for our employees to thrive and grow, and we are confident that both companies will maintain the same levels of customer focus and commitment to sustainable value creation.



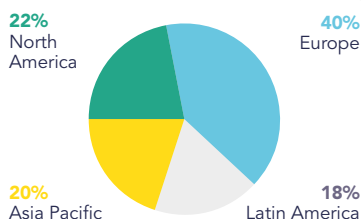
Ilham Kadri
Solvay CEO

Essential Company

Must-have technologies for attractive and resilient end markets

€4.1bn

2021 net sales



MARKET POSITIONS

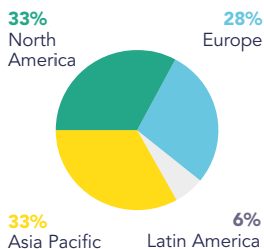
- #1 Soda Ash (global)
- #1 Bicarbonate (global)
- #1 Hydrogen peroxide (global)
- #1 Silica for tires (global)
- #1 Coatis (Latin America)
- #1 Rare earths for automotive catalysts (global)

Specialty Company

Innovative, value-added solutions supporting a more sustainable world

€6bn

2021 net sales



MARKET POSITIONS

Materials

- #1 High-performance polymers; leading position in thermoplastic composites
- Three Growth platforms:
 - Battery Materials
 - Thermoplastic Composites
 - Green Hydrogen

Consumer and Resources

- #2 Speciality surfactants and polymers
- #1 Flavors & Fragrances; Natural Vanillin
- #1 Mining reagents



Progress beyond

Using street art to promote biodiversity

Solvay partnered with the United Nations Decade for the Restoration of Ecosystems and the non-profit Street Art for Mankind to produce the 40-meter-high mural in Brussels pictured on the front of this brochure. The Alchemist depicts Mother Nature watching us as she tries to protect the natural world. It is the first of 50 murals to be created worldwide over the next ten years to raise awareness about taking urgent action to restore biodiversity. It was painted by Spanish contemporary urban artist Lula Goce, who is known for her huge, dark-colored portraits with vibrant flowers and whose spectacular works of art can be found on walls, at art festivals and in prominent art centers around the world.

"I see street art as a powerful and unique vehicle to connect with every citizen, every heart and mind, to embrace change and convey the message that we must link people, ideas and elements to reinvent progress to have a greater impact on the world."

Ilham Kadri, Solvay CEO

Solvay is playing an active part in the creation of these #SDGMurals, both as a sponsor promoting the UN's Sustainable Development Goals and as an actor committed to reducing our pressure on biodiversity by 30% before 2030.
The mural was inaugurated on September 29, 2021.

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