RENOLIT

Rely on it.

WITH PVC ON OUR WAY

TOWARDS A SUSTAINABLE FUTURE

Rely on sustainability

PVC AT A GLANCE

RENOLIT is an independent, family-owned company that has been manufacturing polymer films and products for over 75 years, focusing on various industries worldwide, including automotive, medical & pharmaceutical, home & building, transportation & marine and advertising & packaging. Many products are made from PVC, a versatile, safe and essential material that complies with all regulations and standards. PVC is one of the most important plastics in Europe and is part of the strong European plastics industry with a turnover of over 400 billion euros.





THE SUSTAINABLE MATERIAL PVC

Polyvinyl chloride, PVC, has extremely versatile material properties and has been used in a continuously growing number of products since the 1930s. PVC is considered to be the best-researched polymer and has constantly reinvented itself over time through consistent further development and has taken a leading position in many applications.

To produce the PVC material vinyl chloride, crude oil/natural gas and rock salt are used. Ethylene is produced from the crude oil/natural gas by cracking and chlorine is extracted from the almost inexhaustible supply of mineral salt. Due to the low ethylene content of only 47 per cent, PVC is significantly more resource-efficient than other polymers, which consist of 100 per cent fossil raw materials. In addition, the chlorine comes from the by-product of the important alkali chemical industry. PVC is therefore inherently designed for the circular economy.

At RENOLIT, this versatile material is used in high-performance surfaces for durable construction products such as vinyl windows, as self-adhesive films for the advertising and automotive industries and as components for particularly sensitive, vital applications in the healthcare sector.


Industries: Automotive, Medical & Pharmaceutical, Home & Building, Transport & Shipping and Advertising & Packaging.

Versatile applicable

Safe and durable

PVC Properties

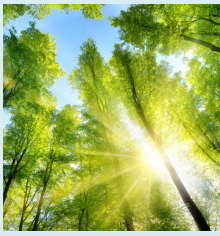
Powerful and resilient, intensively researched and proven a thousand times over.
Flame retardant and self-extinguishing.

Use in particularly sensitive areas such as patient care, hospitals, homes and swimming pools. Classified as non-hazardous by the OECD.

Harmless

Sustainable

Studies prove the ecological competitiveness of PVC.



SAFE AND DURABLE

Over 70 per cent of the PVC produced is processed into construction products that usually remain **in use for decades**. They are highly efficient: whether in terms of energy, resource utilisation, price-performance ratio, installation, use, care and maintenance, as well as their overall durability.

Intensively researched material
Products made of PVC are **very powerful and resilient**. Thanks to many years of experience and intensive research, the durability and safety of the products can be constantly increased through continuous improvements in the formulations.

Innovative Additives
When it comes to additives, plasticisers and stabilisers are of particular importance. **RENOLIT** only uses extensively tested and approved plasticisers here.

These have been **classified as safe** by several national and international authorities and fulfil the requirements of the European chemicals regulation REACH. Studies have shown that plasticisers do not accumulate significantly in the environment. Stabilisers give PVC sufficient heat stability during processing and protect the end product from changes caused by heat and UV radiation.

Fire behaviour
Compared to other thermoplastics, PVC is characterised by its **low flammability**. As the use of this material significantly reduces the risk of fires starting and spreading, PVC contributes to preventive fire protection. The toxicological properties of gases produced when polymers burn can be compared with those produced when natural materials such as wood and paper burn.

PROMOTING THE CIRCULAR ECONOMY

Successful recycling cycle

The industry has been successfully recycling and reusing old PVC construction products in continuously increasing quantities for many years with the help of well-established collection and recovery systems. As the material flow diagram for PVC in Germany 2021 commissioned by VinylPlus Deutschland and PlasticsEurope Deutschland shows, 42 per cent of recyclable materials are recycled and now make up almost 18 per cent of processed PVC. This saves energy and valuable resources. One example of this is Rewindo GmbH Fenster-Recycling-Service, which successfully practises this recycling process for windows, roller shutters and doors. Floor coverings and other soft PVC products are also recycled today. RoofCollect also offers a solution for recycling used plastic roofing and sealing membranes. The industry is also researching innovative recycling technologies such as chemical recycling and physical or solvent recycling.

One tonne of recycled PVC saves two tonnes of CO_2

In 2022, 813,266 tonnes of PVC were recycled and reused in new PVC products across Europe as part of the European VinylPlus® voluntary commitment: a quantity that enables savings of over 1.6 million tonnes of CO_2 and significantly reduces primary energy requirements. The aim is to recycle 900,000 tonnes of PVC per year by 2025 and one million tonnes by 2030. Since the start of the first European sustainability programme in 2000, 8.1 million tonnes of PVC have already been recycled, saving around 16 million tonnes of CO_2 emissions.

Sustainability of PVC

Long service life of PVC products

Window profiles are also often laminated with films and have a service life of 40-50 years.

Extended service life of other products

PVC films provide protection and extend the service life of original equipment or as a subsequent repair measure.

Contribution to climate protection

Roofing membranes reduce CO_2 emissions thanks to Solar Shield Technology.

Successful recycling system

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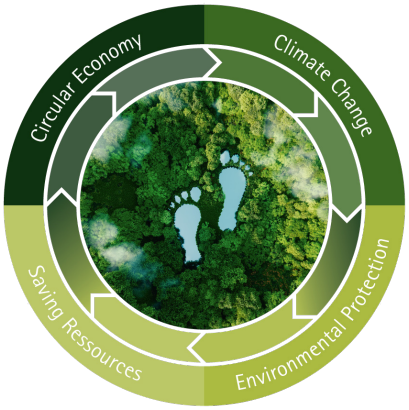

SUSTAINABILITY AT RENOLIT

As a globally active company, RENOLIT has set itself the task of making its contribution to sustainability - on an ecological, social and economic level. With regard to our core business - the production of high-quality polymer solutions and related products - we believe that we have a responsibility to future generations to conserve resources, reduce climate-damaging emissions and prevent polymers from being released into the environment in an uncontrolled manner. We want to fulfil this responsibility by committing ourselves to a more circular economy, promoting sustainable innovations and getting involved in associations and initiatives at national and European level.

RENOLIT already offers a range of recyclable polymer products as well as products with a high recycled content or made from renewable raw materials. The location **RENOLIT Hispania S.A.** is also ISCC Plus-certified and optimally prepared for the verifiable production of bio-based/bio-attributed PVC products.

At **RENOLIT**, films, sheets and other PVC products contribute to sustainability through their durability, their protective effect on other materials, their efficient production methods and their suitability for sensitive areas. Bio-based/bio-attributed (bio-mass-based BMB) raw materials are increasingly being qualified for use in the formulations. Film-laminated vinyl windows have been in use for decades and save energy thanks to their high level of thermal insulation, thereby also reducing CO_2 emissions. Corrosion protection films on steel towers of wind turbines and multi-layer facade films especially for flat metal facades also ensure greater longevity thanks to their protection. During their use, the applications usually require little care and hardly any maintenance. This reduces maintenance costs as well as environmental pollution and energy consumption.

We work in partnership with our customers to develop new products. One example is a recycling project in which residual materials from our customers that have already been processed are turned into new products, such as packaging material.

In addition, the Group has invested in its own recycling technologies and expanded internal recycling in order to be able to process and reuse residual materials from production. The aim is to realise an increasingly circular economy and to fulfil the voluntary commitment made to the Circular Plastics Alliance (CPA) to no longer sell residual materials from production to external parties by 2025. With the „**RENOLIT** Goes Circular" initiative, we want to increase the internal recycling rate of recyclable materials from around 60 per cent in 2022 to 100 per cent by 2025.

To promote the responsible use of energy sources, **RENOLIT** is carrying out a „cradle-to-gate" life cycle assessment together with a well-known service provider. The aim is to create a basis for future projects and potential savings in current operations and to raise awareness of the relevant processes.

RENOLIT also submits to a thorough sustainability assessment by EcoVadis. The ranking, which is based on international standards, considers the environment, labour and human rights, ethics and sustainable procurement.

REGULATORY REQUIREMENTS

The European PVC industry has continuously made its products more sustainable, safer and more future-orientated through a variety of measures. In addition, regulatory developments are influencing the future of the material.

Restriction of lead in PVC

The European PVC industry has taken on a pioneering role through the voluntary commitment of VinylPlus, as it has been avoiding the use of lead and cadmium compounds for years and instead uses products based on calcium-zinc, for example.

The industry is now being supported by the EU Commission in its efforts to reduce problematic substances in PVC products. Following the publication of the REACH regulation on the restriction of lead in May 2023, the import of lead-containing PVC products from third countries into the EU is now also prohibited.

ECHA investigation on PVC and PVC additives

VinylPlus® was also able to contribute validated, comprehensive information on PVC and PVC additives to the current investigation work on PVC and PVC additives, which is being carried out by the European Chemicals Agency ECHA at the request of the EU Commission. The re-evaluation of PVC additives opens up the possibility of promoting the use of safe additives and continuously strengthening the sustainable use of PVC. This will also have an influence on the future development of the material.

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In-depth information on polymers in general and PVC in particular:

- Stoffstrombild PVC in Deutschland – Zahlen und Fakten zum Lebensweg von PVC
  Ed.: PlasticsEurope Deutschland e. V. and VinylPlus Deutschland e. V.
- Stoffstrombild Kunststoffe in Deutschland 2021 – Zahlen und Fakten zum Lebensweg von Kunststoffen
  Ed.: PlasticsEurope Deutschland e. V., VinylPlus Deutschland e. V. a. o.
- VinylPlus: www.vinylplus.eu
- VinylPlus Deutschland e. V.: www.vinylplus.de
- European Plastics Converters: www.plasticsconverters.eu
- The Plastics Paradox – Facts for a better future
  Ed.: Chris DeArmitt

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