

SINGLE USE SUPPORT

SUSTAINABILITY REPORT

2024

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Dear stakeholders,

As the biopharmaceutical industry faces unprecedented challenges and opportunities, we at Single Use Support are committed to advancing our mission of developing and delivering innovative process solutions for pharmaceutical companies to improve the efficiency of the manufacturing process of drug substances and the safety of patients around the world.

To achieve this, we recognize that we must also uphold our responsibility to protect the environment and contribute to a more sustainable future for our planet.

One of the key areas where we can make a positive impact is fluid and cold chain management in the pharmaceutical supply chain, which is essential for ensuring the quality, safety, and efficacy of our customer's products. Fluid and cold chain management refers to the processes and technologies involved in filling, freezing, storing, transporting, and handling temperature-sensitive biological materials, such as vaccines, biologics and advanced cell and gene therapies.

However, fluid and cold chain management also poses significant environmental challenges, such as high energy consumption, greenhouse gas emissions, waste generation, and water usage.

At Single Use Support, we are determined to not only reduce our own environmental footprint but also that of our valued customers, while also enhancing our sustainability performance. We have set ambitious targets and implemented various initiatives to achieve said goals, such as:

- Reduction in F-Gas emissions
- Development of recyclable and reusable non-sterile consumables
- Integration of digital solutions and smart sensors to monitor and control temperature, humidity, and other parameters

By implementing these measures, we aim to not only reduce our environmental impact, but also improve our operational efficiency, cost-effectiveness, and customer satisfaction. We believe that sustainability is not only a moral duty, but also a competitive advantage and a strategic imperative for our business.

We are proud of the progress we have made so far, but we know that there is still much more to be done. We are constantly seeking new ways to innovate and improve our fluid and cold chain management practices, and we welcome your feedback and suggestions. We also invite you to join us in our sustainability journey, by taking actions in your own sphere of influence, such as reducing your energy consumption, recycling your waste, or choosing green transport options.

Thank you for your continued support and collaboration.

Sincerely,

Christian PraxmarerCEO of Single Use Support



CHAPTER ONE

COMMITMENT TO PROTECING LIFE AND THE ENVIRONMENT



It is and always has been one of humankind's biggest endeavors to prolong life by staying healthy, to improve the quality of life, reduce child mortality and the number of terminal illnesses. However, on a regular basis, entire shipments of vital and high-quality substances become useless due to faulty containers, contamination, disruptions of the cold chain, or simply because of inappropriate handling.

We have undertaken all efforts of developing and implementing a comprehensive process for a globally organized industry to prepare it for the market. In short, we are contributing to the quest for prolonging life.

Vision

Improving quality of life and human health by providing entire products & services that eradicate deficiencies in the pharmaceutical liquid transfer.



We pioneer innovative solutions around single-use technologies in the Biopharma market to increase patient safety.



Sustainability Goals

At Single Use Support, we are committed to sustainability and environmental responsibility in our business operations. We believe that our innovative single-use technologies can contribute to the reduction of waste, energy consumption, and carbon footprint in the biopharmaceutical industry. To achieve these goals, we have set ourselves ambitious targets for the next few years:

Obtain the ISO 14001 certification by 2025

ISO 14001 is an internationally recognized standard for environmental management systems that demonstrates our compliance with environmental laws and regulations, as well as our commitment to the continuous improvement of our environmental performance.



Achive the EcoVadis Platinum status

EcoVadis offers the leading solution for monitoring sustainability in global supply chains. With innovative technology and sustainability expertise, the system helps companies develop and implement sustainable business practices. Platinum is its highest level of recognition, reflecting excellence in four areas: environment, labor and human rights, ethics, and sustainable procurement. Single Use Support has already acted to pave the way for both initiatives by implementing concrete milestone timelines and we are confident to achieve our goals. These actions will help us create value for our stakeholders while also protecting the environment and supporting the transition to a circular economy.

ecovadis

Reduce Emissions by 30% by 2028

Single Use Support undertakes to monitor its environmental impact on an ongoing basis and to reduce its current 155 eq.tCO $_2$ Scope 1 emissions by at least 30% by 2028. Single Use Support is also committed to reducing the current 85 eq.tCO $_2$ Scope 2 emissions by at least 20% by 2028. In addition to increasing our own electricity production, we want to achieve this by optimizing the use of energy at our sites, among other things. Ongoing evaluation of the effectiveness of measures contributes to continuous improvement and is included in our IMS



Single-Use Technology Rooting for Sustainability

"Single Use" is in our company name and our DNA. For good reason.

Single Use Support's process solutions are rooted in single-use technology, which we strongly believe is the way forward for biopharmaceutical production in many aspects.

Compared to conventional stainless-steel production facilities, it does not only provide manufacturers with lower costs and higher flexibility, but it also enables us to achieve the industries' sustainability goals and to reduce our environmental impact. By applying singleuse technology, we can eliminate the need for cleaning and sterilizing stainless steel systems, which consume large amounts of water, chemicals, and energy. We can also avoid the risk of cross-contamination and increase the safety and quality of our products. Furthermore, we can optimize our utilization of space and save on transportation and storage costs.

As highlighted in the environmental life cycle assessment comparison of single-use and con-

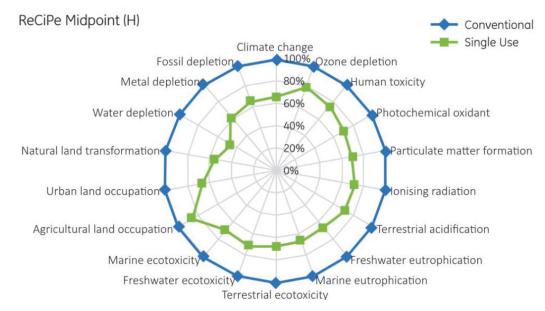
ventional bioprocessing technologies conducted by GE Healthcare Life Sciences¹, there are more factors that influence sustainability than only plastic waste.

It requires a holistic view of all environmental aspects including the needed resources of water, chemicals, material processing etc., as well as the impact on agricultural or urban land occupation, on ozone depletion or on ecotoxicity to evaluate the total impact on sustainability.

When comparing different solutions in biotechnology, single-use technology is more environmentally friendly than traditional multi-use stainless-steel solutions.²

This is mainly due to the fact that multi-use technologies, such as stainless-steel tanks, have a need for elaborate cleaning. Process freeze tanks, for example, need to be cleaned with high water pressure, chemicals and other treatments before they can be reused, which leads to extensive environmental harm.

Life cycle impacts of full process train (2000 L)



The implementation of single-use technology instead of conventional steel facilities helps both biomanufacturers and the environment to benefit from³:

- Reduced cleaning requirements: SUTs can reduce water & energy consumption by as much as 46% compared to stainless steel solutions.
- Decreased ecological footprint: SUTs have a 35% more favorable CO₂ footprint compared to stainless steel solutions.

- Reduced initial investment costs: SUTs require costs that are approx. 40% lower than stainless steel solutions.
- Reduced risk of product cross-contamination: SUTs enable closed systems in biopharmaceutical fluid management and increased process flexibility.

Why single-use is the way to go!



46%

decline in total water & energy consumption



35%

more favorable CO₂ footprint



40%

lower initial investment costs





SOCIAL IMPACT





Gender split and diversity

176 Employees 2024

20 Nationalities



35% Women (Single Use Support) (Single Use Support)

65% Men



14% Women (Industry Standard)



86% Men (Industry Standard)

Locations





Social Responsibility

Donations

We are not only comitted to curing diseases internationally but also to fostering the local community regionally. In 2024, we were once again supporting charities such as Herzensbrücke, MOMO and Sterntalerhof in their work in children's palliative care with a total of EUR 15,000. We believe it is our responsibility to make a contribution to the community and to be socially responsible.

Workspace Flexiblity

Single Use Support employees have the flexibility to work in the office or remotely if their jobs allow them to do so. The option of hybrid and smart working not only reduces the use of vehicles for commuting, but also supports employees in organizing their lives according to their personal preferences and home situations. Single Use Support arranges working hours with employees to suit their respective life situations and offers sabbaticals and parttime models under certain conditions.

Health Benefits & Employee Well-Being

To help improve their physical and mental wellbeing, Single Use Support offers free sports activities to all employees. Single Use Support wants to make sure that employees feel comfortable and therefore offers:

- weekly relaxing massages or invigorating physiotherapy sessions at the workplace
- weekly yoga sessions
- discounts for gyms and stores providing sports equipment and apparel
- free consultation sessions with an occupational psychologist
- free coffee, tea and healthy snacks
- the opportunity to lease a bike

In addition, Single Use Support takes care to offer employees suitable working conditions. This includes ergonomics in the workplace, part-time/ flexitime agreements, working from home, safety officer in the building, yoga/physio, events, etc.

We are committed to giving employees a space for social dialog, which is ensured through regular surveys and employee discussions.

Bike Challenge



green vehicles for commuting, and it promotes awareness for sustainability while encouraging a healthier lifestyle among Single Use Support employees. Once again, employees were motivated to commute to work by bike or ebike, and in 2023 they achieved a total of 12,400 km (7,700 miles) covered on two wheels. Incentivized by trophies for reaching 100 km to winning the bike challenge, both bike enthusiasts and newcomers participated in the initiative.

Single Use Support also organizes and participates in other athletic initiatives, such as Wings for Life Run, Company Running Races or Yoga events, all of which are free for staff

Employee Remuneration

Single Use Support is committed to defining attractive remuneration packages with its employees and allowing them to share in the company's success wherever possible.

This means that we pay well above the living wage and also ensure compliance with labor and human rights in the supply chain through ongoing supplier evaluation, e.g. also fostering social dialog on collective agreements.

Training & Education

The high level of professionalism and ongoing qualification of our employees is the basis of our success and is evaluated by Single Use Support in the course of regular employee appraisals and actively promoted through training and further education opportunities.

Our employees' ideas are recorded, evaluated and implemented in a defined process and rewarded accordingly. We provide evidence through completed training courses, identification of training needs in annual meetings or qualification matrix. In addition, goals for personal, long-term development are defined together with the employees.

Work Safety

We are committed to providing employees with a safe environment in which they are protected from the dangers of their work.

Each employee is provided with the safety equipment appropriate to the work to be carried out (ongoing instruction and training for each employee, safety shoes for staff, training for forklift trucks, etc.).





To date, Single Use Support has not been the subject of any complaints regarding cases of corruption or information security incidents and is taking targeted measures to continue to meet this high standard. Our established whistleblower procedure involves all employees accordingly.

Fighting Corruption

Single Use Support is actively committed to a corruption-free working environment. Our values include integrity, transparency and a sense of responsibility. Corruption has no place at Single Use Support. We act according to ethical principles and expect the same from our business partners. Our organization stands for absolute integrity. We reject any form of bribery or unfair practices.

Diversity, Discrimination & Harassment

We prohibit discrimination on the basis of race, color, age, gender, sexual orientation gender identity, ethnic origin, religion, disability, trade union membership or political affiliation.

With employees of 20 different nationalities we value inclusion, which means being supportive, respectful and accountable to stakeholders, suppliers, customers, communities and employees.

Preventing Child Labor & Exploitation of Migrant Workers

We, Single Use Support, are aware of our social responsibility and are actively committed to preventing child labor and the exploitation of migrant workers.

Our principles and measures include:

- Zero tolerance policy: we do not tolerate any form of child labor or exploitation in our supply chain. Our suppliers and partners are obliged to respect these principles.
- Transparency and monitoring: We closely monitor our supply chain and conduct regular audits to ensure compliance with ethical standards.
- Collaboration with NGOs and industry associations: We work with organizations that promote fair working conditions and share best practices.
- Fairtrade and certifications: We support fairtrade initiatives and look for certifications that demonstrate our efforts
- Communication with our customers: We inform our customers about our ethical practices and share our progress in sustainability reports.

We are committed to investigating our suppliers and their supply chains for violations of human rights. Especially child labor, forced labor & human trafficking.

The goal is to establish a supply chain that is free of child labor, forced labor and human trafficking.

Ultimately, our mission is to create a world where children can grow up free from exploitation and migrant workers are treated fairly. We are proud to be part of this change.



CHAPTER THREE

ENVIRONMENTAL IMPACT



Headquarters

Headquarters Energy Certificate

Single Use Support's headquarters were opened in 2022 and built according to the latest standards.



During the expansion of our premises in Kufstein, particular emphasis was placed on improving the general energy efficiency, and we achieved an overall rating of **A++**.

35,000 kWh is generated from Single Use Support's own electricity production and thus

around 8% of electricity consumption from the photovoltaic (PV) system.

100% of the remaining electricity is sourcedfrom renewable energy sources. These are composed of 95.5% hydropower and 4.5% other renewable energy sources.

Photovoltaic system

The photovoltaic system generates 35,000 kWh of solar power, which covers 8% of the total energy consumption.



Handicapped accessible building

The new Single Use Support headquarters are barrier-free and handicapped accessible. Elevators and wide access zonesthroughout the building allow barrier-free access to offices and production areas. This also enables FATs with handicapped customers or suppliers.

Focus on paperless communication

All internal and, where possible, external communication has been paperless from day 1. Our paperless environment results in more efficient communication, transparently filed documents and, above all, saves countless acres of patural resources.







Processes

Waste Management

Another very important aspect is waste management and separation. In general, Single Use Support aims to minimize the amount of waste and to dispose of it in an environmentally friendly manner. This includes the waste from employees as well as the waste generated by our operations.

We have implemented a comprehensive waste management system that covers all stages of our production process, from raw materials to finished products. We follow the principles of the waste hierarchy, which prioritize prevention, reduction, reuse, recycling, and recovery over disposal. We also adhere to the relevant regulations and standards for waste handling and reporting in the countries we operate in, Austria and the USA. By managing and separating waste effectively, Single Use Support achieves multiple benefits for the business and the environment. We contribute to the circular economy, create value from waste and encourage our employees to participate in the company's efforts.

Cleanroom Operations

Our cleanrooms are operated Monday to Friday with high air circulation that corresponds to Cleanroom ISO class 6, and they are cleaned and disinfected on Saturdays. In order to operate sustainably, the filter fan units (FFUs) required for operation during the week are shut down on Sundays. Before the start of operation on Monday, the FFUs are started up on a time-controlled basis to ensure safe operation again.

Staff Training & Working Hours

We invest in staff training and flexible working hours. Our belief is that educating our employees on the best practices and innovations in our field enhances their skills and motivation, reduces errors and waste, and improves their well-being and productivity. Additionally, regulated but flexible working hours help us optimize the use of energy and transport, lowering our carbon footprint.



Energy & Transport

Klimaticket

One of Single Use Support's sustainability initiatives is to offer all employees in Austria the "Climate Ticket", which gives them unlimited access to public transportation in the region at a discounted rate. In this way, we encourage them to use more eco-friendly modes of travel and reduce their dependence on cars.

Electric Cars

Single Use Support endorses sustainable mobility and therefore promotes electric cars among its staff. Several charging stations have been installed in parking lots in Kufstein and Hall in Tirol, where employees can recharge their vehicles for free. Electric cars not only reduce greenhouse gas emissions, but also lower fuel and maintenance costs.

Shuttle

Another sustainable mobility initiative is the introduction of a shuttle service to reduce the use of individual vehicles. Our employees can take a free shuttle bus to our headquarters in Kufstein every day and thus actively contribute to reducing $\rm CO_2$ emissions.

Energy product mix Hall & Kufstein

	Kufstein	Hall
Remaining electricity from renewable energy sources	100%	100%
Remaining electricity from hydropower	95.5%	88.4%
Remaining electricity from other renewable energy sources	4.5%	11.6%
Radioactive waste (mg/kWh)	0.00	

Business Trips

In general, business trips are to be reduced and are therefore only approved if physical presence is required. If a destination can be easily reached by public transport, e.g. by train, this is the preferred option. In any case, travel by plane will be avoided if the distance is less than 500 kilometers.

Office in the USA

The office in Lexington, MA, opened in 2024, is Single Use Support's first intercontintental location. The proximity to customers and potential customers will help Single Use Support to reduce the need for transatlantic flights. Sales, customer service and automation personnel will benefit from shorter travel distances to customers in the U.S., where the majority of Single Use Support platform systems are deployed.



Marketing





CHAPTER FOUR

INDUSTRY IMPACT



Innovations that Improve Efficiency

The cold chain sector, which includes the refrigeration and transportation of pharmaceutical products, contributes to greenhouse gas emissions through energy consumption and refrigerant leakage.

Single Use Support is committed to countering this trend

Single Use Support's approach to improving upon, or even replacing, conventional tech-

nologies has enabled its success. Customers and new users of Single Use Support's advanced platform systems and consumables benefit from unprecedented efficiency in their fluid and cold chain management.

Our innovative products help streamline and optimize manufacturing processes for manufacturers and CDMOs, and reduce the use of human and natural resources in the production process.



Efficiencies

Sterile and Non-Sterile Consumables

Single-use consumables provide a range of bioprocess containers, protective shells for single-use bags and bottles, single-use assemblies as well as smart cold-chain shipping containers and more.

Only single-use bioprocess containers, also known as single-use bags, and single-use assemblies have direct contact with the biopharmaceutical product. The RoSS® shell is a secondary packaging that protects the single-use bag during freezing, cold chain storage and shipping, while the shipping containers are tertiary packaging for cold chain logistics.

No Product Loss with RoSS® shell

The biggest challenge when using a single-use bag during cold chain management is to control its vulnerability to freezing temperatures when unprotected, as this results in a high loss rate of 0.5% to 5%. By implementing the RoSS® shell as a secondary protection, the single-use bag is able to maintain its integrity. The RoSS Shell, with more than 300,000 units sold, has a proven track record: whenever utilized, product loss could be reduced to <0.001%.

Minimizing product loss helps improve a manufacturer's productivity. Where it was common to accept a certain level of product loss and schedule production at more than 100%,



there is now greater assurance that production will not need to overrun. It also helps conserve resources and raw materials by reducing the amount of fluid that needs to be transferred.

Improved Temperature Transfer

The RoSS® shell enables plate-based freezing of disposable bags, which is an advanced method for cooling biologics. The stainless steel lids on the top and bottom of the shell serve as the only barrier between the bag and the cooling medium, allowing for efficient heat transfer. This direct cold exposure between the cooling plates and the single-use bag accelerates the freezing process, resulting in homogeneous freezing with controlled ice front growth from the bottom and top, preventing the effects of cryoconcentration. This results in improved product viability and, in turn, higher production yields.

In addition, the efficient heat transfer of the smart design reduces energy requirements during the chilling process.

Storage and Shipment Density of Bulk Drug Substances and Small Volumes

Biopharmaceutical manufacturing requires shipments of thousands of liters per day, be it for bulk media or buffer solutions, be it for small volumes for advanced therapies or for frozen APIs (active pharmaceutical ingredients) shipped in single-use bags, e.g. to fill & finish sites for final formulation and dispensing into vials and syringes.

As tertiary packaging for the transportation of frozen pharmaceuticals, RoSS.SHIP provides the highest possible storage density. Additionally, both options of the robust shipping container, disposable and reusable, are stackable and scalable for different sizes of single-use

bags. Compliant with international standards and qualified based on ISTA/ASTM D4169, RoSS.SHIP guarantees safe transportation of APIs below -60°C (-76°F) for 6 consecutive days. Filled with dry ice or PCM (phase change materials), its modular setup allows for transportation of single-use bags in various sizes of up to 20L.

Its high storage density reduces the air volume required for international shipping. It

therefore reduces transportation costs, carbon emissions, and the environmental impact of cold chain logistics. RoSS.SHIP enables a more ecological shipment by reducing energy, water, footprint and CO_2 .

In addition, increased cold chain protection and intelligent track-and-trace options minimize the risk of product loss. This, in turn, helps manufacturers increase manufacturing productivity and yield.



Aseptic Filling Platform

RoSS.FILL is the automated platform for the aseptic filling of pharmaceutical liquids into single-use bags. Its modular design allows for unlimited scalability and the integration of different process steps such as filtration, PUPSIT and homogenization. Available in different setups, RoSS.FILL offers process flexibility from small aliquots to multiple large 2D and 3D single-use bags.

The single-use assemblies used for the filling process are completely disposable, ensuring a sterile, closed fluid path.



Automation for Aseptic Filling

More than half of all CMOs and biopharmaceutical manufacturers still use manual filling to dispense drug substance into primary packaging, such as single-use bags and bottles⁴.

However, manual handling carries a higher potential risk of "human error" than automated filling. In 8 out of 10 cases of process deviation in pharmaceutical manufacturing environments, human error is the leading cause of operational errors⁵.

In compliance with GMP Annex 1, which aims to maintain the highest product quality to ensure patient safety, Single Use Support has developed RoSS.FILL to pave the way for supporting automated single-use technologies to ensure closed and protected systems that help reduce the need for manual manipulation and the associated risks of contamination and product loss during production⁶.

Efficient Handling of Single-Use Assemblies

Efficient fluid management helps to reduce the need for fluid path material, especially when handling larger volumes. Unlike other single-use bag fillers, RoSS.FILL shortens the fluid path based on the total aliquot volume.

The modular design helps to integrate several process steps into one, including homogenization, filtration, PUPSIT, sealing and more. All of this results in a considerable reduction in fluid path material, minimizing the need for and purchase of excess sterile tubing systems.

Freeze-Thaw Platform

Freeze-thaw platforms are used to cool the liquid from ambient to ultra-low or cryogenic temperatures using various freezing methods such as plate-based freezing, liquid nitrogen-based freezing, or blast freezing.

Single Use Support is an expert in the cold chain management of biopharmaceuticals in single-use systems. The more controlled a freezing rate, the better the performance of biologics and advanced therapies.

Depending on a product's requirements, the freezing rate can be best controlled by using plate freezers, such as RoSS.pFTU, or liquid nitrogen, such as RoSS.LN2F. Transferable freezing recipes allow scalability while maintaining Good Manufacturing Practices.



Water & Electricity Consumption

Single Use Support offers a range of freezethaw and ultra cold storage solutions that can meet the diverse needs of our customers. Our products vary in size, cooling units, and freezing medium (air or water-cooled). Process solution providers always strive to achieve the highest efficiency in terms of electricity and water consumption, whilst developing their own units or collaborating with suppliers.

Our team also works closely with our customers to ensure a seamless integration of our solutions with their infrastructure and processes.

Efficiency of Plate Freezing

Plate freezing is more efficient than conventional blast or static freezers. For the biopharmaceutical product, for the manufacturing company and for the environment.

The efficiency gains have sustainability implications:

- Controlled rate plate freezing significantly reduces the effect of cryoconcentration?
 As a result, product viability is improved, leading to higher production yields.
- Plate freezing facilitates an improved heat transfer because the coolant is in direct surface contact with the single-use bag – separated only by a stainless-steel lid. Therefore, plate freezing requires less energy for the freezing process. In contrast, static and blast freezers use air, which is a poor heat conductor.
- Plate freezers require only 50% of the freezing time typical for blast/static freezers, which decreases energy consumption.

Cold Storage

RoSS.FRDG is an upright ultra-cold storage freezer for frozen drug substances in various volumes. The ultra-low temperature (ULT) freezer maintains the desired setpoint temperature down to -75°C/ -103°F.

It is compatible with RoSS® shells to protect bioprocess containers and offers the highest-possible storage density. Best of all, it is offered exclusively with natural gas, which also has a 99% reduction in GWP.



Options with Usage of Natural Gases to Reduce GWP

The growing emphasis on the use of natural gas contributes to green engineering by incorporating life cycle thinking into all engineering endeavors.

This includes minimizing resource depletion and waste generation as well as optimizing energy inputs and outputs for maximum safety and environmental friendliness. As with the freeze-thaw platforms, RoSS.FRDG helps to take the first steps toward green engineering. Like other solution providers, Single Use Support is driving the green path beyond the use of natural gas, working together with customers to find individual solutions. After all, innovation will shape the future of sustainability.

Reduced Footprint with RoSS.FRDG

As a modular and efficient ULT freezer, RoSS.FRDG is the perfect solution for any requirement. Its highly modular interior can be equipped with shelving systems to store all available disposable bags and bottles. It is possible to place pallets in the RoSS.FRDG - without having to change the regulation-intensive infrastructures.

In this way, RoSS.FRDG provides modular and easy-to-install cold storage capacity that intelligently fills a gap for the biopharmaceutical industry between small, low-density laboratory freezers and large but ecologically inefficient walk-in freezers. This has a positive impact on both footprint and energy consumption.

With the new versions of our RoSS.FRDG platforms, which are now exclusively powered by natural gas, at Single Use Support we have paid special attention to efficiency in terms of electricity and water consumption. Detailed consumption of refrigeration units used in Single Use Support's cold storage platforms will always depend on size and customer modifications.



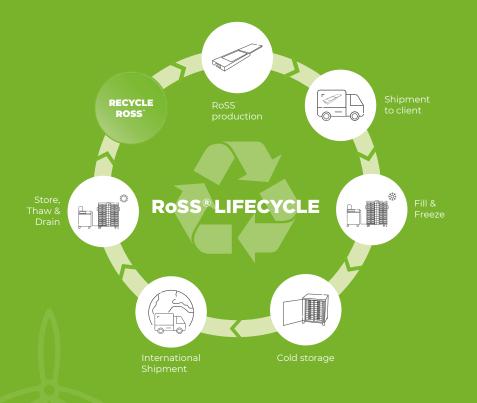
Recycling of RoSS® Shells

The RoSS® shell is 100% recyclable.

Consisting of three elements, it can be disassembled and recycled in just a few steps. When properly recycled and fed to the local waste stream for disposal, RoSS® Shells, and all single-use technologies in general, have a low impact on the overall environment8.

Recycling of Packaging Materials

All standard pallet and cardboard boxes that are used to deliver our products to customers are made from recyclablae materials. The boxes we use are highly suitable for 100% recycling⁹.



How to recycle Ross®

RoSS® Shells are made out of 3 different materials and easy to recycle:

- Stainless-steel lids 1.430
- PE panels PE-HMW 500/100 (PF-HD)
- 3D foam



Reusability

RoSS® Shell Reusability

The RoSS® Shell is a disposable product intended for single-use only. Proper handling of the components and measures to maintain low bioburden status are the responsibility of the customer. It is not recommended that the components of the RoSS® Shell be reused, as the flexibility and conformability of the foam required for proper immobilization cannot be guaranteed after multiple freeze/thaw cycles.

Even if the RoSS® Shell were reused, it would require extensive cleaning with water and chemicals to ensure sterility prior to reuse. The same is true for reusable stainless-steel containers used for refrigerated transport of biopharmaceuticals during freezing: Single-Use Technologies (SUT) are more environmentally friendly than stainless-steel (SSL) equipment. Cleaning multi-use stainless-steel vessels with superheated steam requires energy, cleaning chemicals, and large amounts of water¹0.

Upon request Single Use Support can take full responsibility for all its used products. Our service department will collect used RoSS® Shells to recycle them upon request. However, it should be considered that transporting empty RoSS® Shells is less sustainable than recycling them on site.

Multi-Use RoSS® Shell

A reusable RoSS® Shell option is provided. After successful implementation, each use case can be analyzed individually to determine if reusable shells fitted with exchangeable inlays only are advantageous. In order to reduce CO_2 emissions as a consequence of extensive transportation, this option is only applicable if the sending and receiving manufacturing sites are located in close proximity and on the same campus.

As mentioned above, there are disadvantages to the reusable RoSS® Shell, such as the increased risk of contamination, the need for an internal SOP for the reusable tray process, the need for storage space and increased inventory, and the resource-intensive transportation of

empty trays back and forth.



Supply Chain



SUStainability

Single Use Support

Single-Use Technologies

Heading towards ISO environ-Decreased ecological footprint of SUT vs. stainless steel solutions. ment certification and climate



Responsibility

Recycling and supporting recycling. Reduction of waste.

Products

Minimal product loss through advanced solutions driving efficient manufacturing processes.





When Single Use Support was founded by Johannes Kirchmair and Thomas Wurm back in 2016, their idea was to improve the industry for the better.

The co-founders could not unsee the technology gap in fluid and cold chain management and tackled the problem with innovation. Increased awareness and the company's success right from the start has led to competitors following suit. To date, the efficiency of advanced single-use technologies in the handling of biologics has saved countless liters of drug substance to date.

We are proud to have already reduced the incidence of product loss for many customers worldwide. In doing so, we are paving the way for further development of single-use technologies in the years to come.

Driven by the improved performance of our fluid and cold chain management solutions, Single Use Support as process solution provider is committed to preventing future bottlenecks for single-use systems.

The more economical approach to manufacturing biopharmaceuticals has also had a positive impact on sustainability. Single Use Support's products themselves promote sustainability within the industry.

We see it as an end-to-end responsibility to also create a sustainable framework around the process solutions. Our slogan, "Pioneering Biopharma", is manifested in our corporate DNA, and that sentiment will keep driving us to provide sustainable solutions that help move the pharmaceutical industry forward.

The company aims to reach climate neutrality and has set ambitious targets to achieve the EcoVadis Platinum sustainability rating and ISO 14001 certification by 2025.

This reiterates our emphasis on continuously supporting our suppliers and customers in their actions that contribute to a more sustainable pharmaceutical production, including recycling and refurbishment, while we also keep continuing our efforts to innovate the industry with sustainable process solutions.

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