



Sustainability initiative

Together for a better future



Our sustainability activities

At a glance



Foreword

Sustainability has been a personal concern of mine for many years. I am pleased to actively shape this journey within our group of companies. Together with our teams at Christ and Sigma, we develop ideas, implement projects, and continuously learn along the way.

It is important to me that sustainability is not just a goal, but something we live every day. This brochure shows how diverse our commitment already is – and how much more we aim to achieve.

A handwritten signature in black ink that reads "Mirja Christ".

Mirja Christ

Sustainability Manager Christ & Sigma

Sustainability – A true collective effort

Taking responsibility is part of our DNA. As a third-generation family business, we always think beyond the present moment. For us, sustainability does not only mean conserving resources, but actively shaping the future – for our employees, our region, and the industry in which we operate.

We pursue this path together as a group of companies: Christ and Sigma combine their strengths to develop and implement initiatives. Not individually, but in close cooperation – because we are convinced that real change can only be achieved through collective action.

Product-specific measures complement this approach, but the focus is always on collaboration.

As an innovative mechanical engineering company, we know that technological progress and ecological responsibility are inseparable. That is why we continuously work to make our products, processes, and partnerships more sustainable. Our customers and business partners are important companions on this journey – together, we create solutions for a responsible industry.

**Strong as
a group of
companies**



Our values

Integrity – Responsibility from tradition



Integrity – Responsibility from tradition

Our values are the foundation of our daily actions. They guide our decisions and shape how we work together – as a team, with our partners, and with our customers.

Our responsibility is firmly embedded in our principles, goals, and especially in our corporate values. It is reflected in our sustainability mission statement and our code of conduct, which serve as guidance for our employees and business partners.

Our sustainability mission statement

www.martinchrist.de/en/sustainability/mission-statement



Our code of conduct

www.martinchrist.de/en/sustainability



Responsibility

We take responsibility – for our employees, customers, partners, and the environment. This responsibility forms the basis of our actions and shapes our decisions to ensure a sustainable future.

Long-term thinking

As a family business, we think long-term. We focus on strategies that ensure sustainable economic success while considering ecological and social aspects. Our goal is to create a solid foundation for future generations.

Innovation

We continuously invest in modern technologies and infrastructure to balance ecological compatibility and economic growth. Innovation is key to developing future-proof solutions and strengthening our competitiveness.

Appreciation

Our employees are our greatest asset. We create a working environment based on trust, respect, and appreciation. Good working conditions and fair compensation are a given and promote commitment and satisfaction.

Integrity

We act transparently, honestly, and reliably. Integrity is the basis of our business and strengthens trust among customers, partners, and society. Our actions are always aligned with ethical standards and social responsibility.

Structured and professionally managed

To effectively integrate sustainability into our company, dedicated contacts have been appointed in all relevant departments. Together with our sustainability department and supported by external consultants, we completed our first double materiality analysis in early 2025.

This multi-stage process included interactive workshops and an online survey, aiming to identify the most relevant sustainability topics for our company and our internal and external stakeholders.



Sustainable product features

Natural refrigerants



All laboratory and pilot systems equipped with natural refrigerants

We enable our customers to operate sustainably and environmentally responsibly – without compromising the proven quality and performance of our freeze dryers.

Learn more about our use of natural refrigerants:

www.martinchrist.de/en/freeze-drying/refrigerants



Sustainable refrigeration concepts for every application

As a leading manufacturer of freeze drying systems, we consistently rely on natural refrigerants making a clear contribution to environmental compatibility and future readiness. As early as 2009, we were among the first manufacturers worldwide to begin transitioning to flammable refrigerants. By 2024, all laboratory and pilot systems have been fully converted to flammable, natural refrigerants.

Our customers benefit from maximum performance with a minimal carbon footprint: Thanks to exceptionally low Global Warming Potential (GWP) values, our systems achieve impressive ice condenser temperatures of up to $-105\text{ }^{\circ}\text{C}$, ensuring outstanding efficiency even under demanding conditions.

We also offer sustainable solutions for production systems: Here, we rely on flexible refrigeration concepts that can be operated with either natural or conventional refrigerants depending on the application, regulatory requirements, and energy efficiency targets. This ensures that our customers always receive the optimal balance of safety, performance, and long-term viability.

By using natural refrigerants across all product lines – from laboratory to pilot to production – we are making our technology more sustainable overall. A feature that delivers real value and underscores our commitment to a climate-conscious industry.



**Air-CO₂-
refrigeration
system**

Optional for
production
systems

Our production systems can be equipped with a variety of natural refrigerants. Particularly efficient is the combination of air and CO₂ refrigeration systems: While the CO₂ system precisely controls shelf temperatures, the air-based system ensures reliable cooling of the ice condenser.

Sustainable products

Longevity | Energy Efficiency | Retrofits | Take-Back



Longevity – Quality that lasts

Our systems are designed for long service life. High-quality materials, robust construction, and a well-thought-out spare parts strategy ensure reliable operation over many years. This is complemented by our comprehensive service offering: regular maintenance, professional repairs, and expert customer support ensure that our systems continue to operate reliably even after decades.

Quality
designed for
durability





Energy efficiency – Intelligence saves resources

Our freeze drying systems are engineered for maximum energy efficiency. With state-of-the-art refrigeration technology, intelligent controls, and optimized processes, we minimize energy consumption without compromising performance or reliability. This allows our customers to reduce operating costs while actively contributing to climate protection.

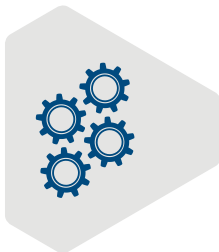
Example: LyoCoN – Controlled Nucleation

Freeze drying is an energy-intensive process, as it involves multiple stages: freezing, primary drying, and secondary drying. With our Process Analytical Technologies (PAT), these steps can be precisely monitored and optimized.

One example is our PAT tool LyoCoN: It ensures that all vials freeze simultaneously at the start of the process. This not only improves product quality but also enhances drying efficiency. Integrating LyoCoN can therefore lead to significant energy savings.

Learn more about our efficient PAT tools:

www.martinchrist.de/pat-tools



Retrofits – Future-proof technology

Instead of replacing proven pilot and production systems, we focus on intelligent retrofits. By selectively upgrading mechanical components, electronics, and software, we bring existing systems up to the latest state of the art – tailored to current process requirements and regulatory standards.

This not only significantly extends system lifespan but also improves efficiency, process reliability, and product quality. Retrofit solutions represent a resource-efficient investment in the future: economically sound, technologically advanced, and consistently sustainable.



Take-Back – Responsibility beyond the lifecycle

For us, sustainability does not end with the sale. With our take-back concept, we assume responsibility throughout the entire lifecycle of our products. Together with our customers, we ensure the proper return of legacy systems and components with the goal of recovering valuable resources and minimizing environmental impact.

Learn more about disposal and recycling:

www.martinchrist.de/en/service/disposal



Awards & international standards

EcoVadis | UN Global Compact



EcoVadis – External validation

For us, sustainability means not only defining responsibility ourselves but also having it independently assessed. That is why we regularly undergo evaluation by EcoVadis, one of the world's leading sustainability rating platforms. Companies are comprehensively assessed in the areas of environment, labor and human rights, ethics, and sustainable procurement. With the Bronze Medal, we have received visible recognition of our commitment. It confirms that we act responsibly throughout the entire value chain – from the selection of our suppliers to our own actions as an employer and manufacturer. At the same time, this award motivates us to continuously expand our sustainability strategy step by step.

More about EcoVadis

Please scan the QR code:



UN Global Compact – Our global commitment

Sustainability does not end at company boundaries. By participating in the UN Global Compact, we have consciously committed ourselves to an international network that brings together companies worldwide for responsible business practices. We are thereby committed to adhering to the ten principles in the areas of human rights, labor standards, environmental protection, and anti-corruption. This voluntary commitment means embedding global standards into our daily operations and leading by example. Through an annual progress report, we transparently disclose our measures and achievements – a sign of transparency and credibility. For us, the UN Global Compact is not just a framework, but a commitment to fair, safe, and sustainable conditions – today and in the future.

Sustainability in everyday practice – Put into action

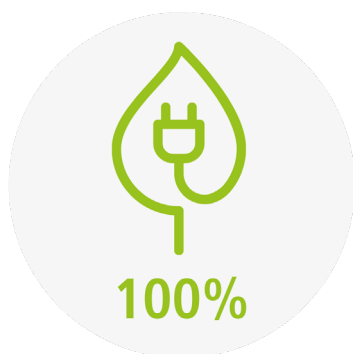
Energy-efficient buildings | Green electricity | Reuse



Energy-efficient buildings and smart technology

Our buildings are consistently designed for energy-efficient operation. In Building VII, modern heat pump systems are used, providing reliable heating even at low outdoor temperatures and cooling office spaces in summer. In addition, the cooling systems used there are equipped with heat recovery, allowing generated waste heat to be reused efficiently. Through this intelligent building technology, we significantly reduce energy demand while creating a comfortable working environment.

A key component of our energy supply is the use of solar energy. With two photovoltaic systems, we generate a significant portion of our electricity ourselves and feed renewable energy into the grid. This increases the share of self-generated, climate-friendly energy and strengthens our site's independence from conventional energy sources.



100% Green electricity – Renewable energy for our Osterode site

Energy is the foundation of our production – and one of the biggest levers for greater climate protection. Since 2025, our Osterode site has sourced 100% certified green electricity. This significantly reduces our direct emissions and demonstrates that energy efficiency and climate protection are not mutually exclusive.

This step reflects our commitment to acting not only efficiently at a local level but also in a climate-conscious manner globally. By consistently relying on renewable energy, we actively contribute to conserving fossil resources and supporting the energy transition. At the same time, we send a strong signal to our employees, customers, and partners: sustainability begins in daily operations – and every contribution counts.



Reuse of packaging materials – Resource-conserving logistics

For us, sustainability also means keeping existing resources in circulation for as long as possible. That is why we consistently focus on reusing packaging materials in our logistics and avoid plastic wherever possible. Through these measures, we reduce waste and help conserve valuable raw materials.

In addition, we have optimized our shipping processes to reduce volume, avoiding unnecessary material usage and transport effort. In this way, we combine sustainability with efficiency – for the benefit of our customers and the environment. Every unit of packaging saved and every plastic item avoided is another step toward resource-efficient, future-oriented logistics.



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