HAMILTON

RETHINKING PLASTICS

ISCC PLUS JOURNEY

Certificate Holder ISCC International Sustainability & Carbon Certification

Simple.

Renewable Sources.

Innovative Approach.

Rethinking plastics:

Hamilton's commitment to sustainable practices in the Life Sciences industry.

November 7th 2024

As environmental concerns surrounding plastic use intensify, Hamilton AG is committed to leading the way in sustainable practices within the Life Sciences industry. Acknowledging the indispensable role plastics play in our consumables, we are committed to the sourcing of renewable raw materials through initiatives such as the ISCC PLUS mass balance approach. This strategy allows us to integrate renewable feedstock (details in Figure 4) into our production processes. By prioritizing sustainability, we aim to contribute meaningfully to a healthier future for both our customers and the entire planet as a whole.

Hamilton's sustainability program

Our sustainability program defines four focal areas for sustainable action. At its core, the program covers the three traditional areas of sustainability: people, environment, and value creation. The fourth area covers innovation, as we aim to contribute to solving the problems of the future through innovation. In line with our purpose of "Innovation for a better world", we make important contributions toward the development of cutting-edge medications, testing methods, and individualized treatments. Compliance with ethical principles, the integrity of both our employees and the company, and responsible conduct across all our sites, and right through to the supply chain, are at the core of our business activities. We aim to sustainably improve the lives of our customers.

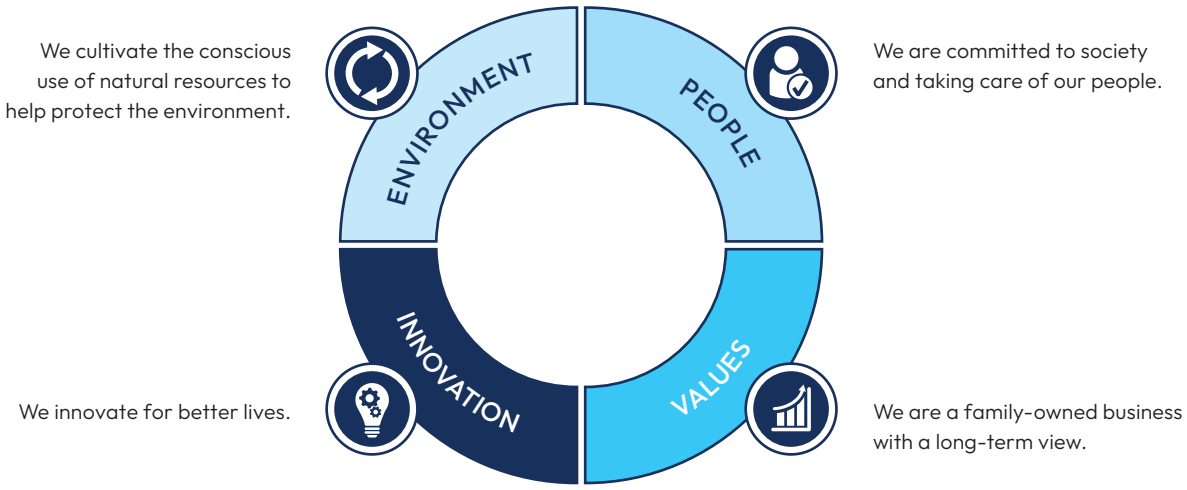

Figure 1: Four pillars of Hamilton's sustainability program (source: Hamilton)

As a globally active company, we are committed to the United Nations' 2030 Agenda and support the Sustainable Development Goals (SDGs) with our sustainability program. We actively support a selection of SDGs in line with our focus, specifically all those where we can make a significant contribution to their success through our work. A special goal for us is SDG3, which aims to ensure healthy lives and promote the well-being of all people and all ages - going directly to the heart of our business.

Figure 2: United Nations Sustainable Development Goals (source: Communications materials - United Nations Sustainable Development)

Our goal is to emphasize and further develop the sustainability of our products and services. In doing so, it is essential to address the materials we rely on, particularly plastics, which serve as a key material, especially for our consumables.

Plastic as a distinctive material for our consumables

Plastic is everywhere in our daily lives – both at home and in the laboratory – due to its unmatched versatility, durability, and cost-effectiveness. In the Life Sciences industry, plastics are indispensable, offering lightweight, sterile, and flexible solutions for a wide range of applications. From pipetting tips to tubes, plates to packaging, plastics are especially critical for single-use consumables, where maintaining sterility and safety is paramount.

While these disposable items play an essential role in upholding the highest standards in healthcare and laboratory environments, they also underscore the growing need for more sustainable alternatives. It has been estimated that in 2014, 5.5 million tons of plastic waste were generated in research laboratories worldwide (source: Urbina, M., Watts, A. & Reardon, E. Labs should cut plastic waste too. Nature 528, 479 (2015). https://doi.org/10.1038/528479c. The reliance on plastic, although necessary, poses significant environmental challenges, pushing us to rethink our approach.

In recent years, sustainability efforts within the Life Sciences industry field have evolved considerably, particularly in the way plastic materials are utilized. Some key trends driving this change include:

- Reduction in the amount of plastic used in products
- Shift to more sustainable, bio-based or recyclable materials
- Increased focus on reusing plastic products and materials where possible

These developments are part of a broader movement toward sustainability, aiming to balance the critical demands of product reliability with a commitment to minimizing environmental impact. A look at European plastics production in 2022 shows that there is still a lot of potential for bio-based and recycled materials in particular.

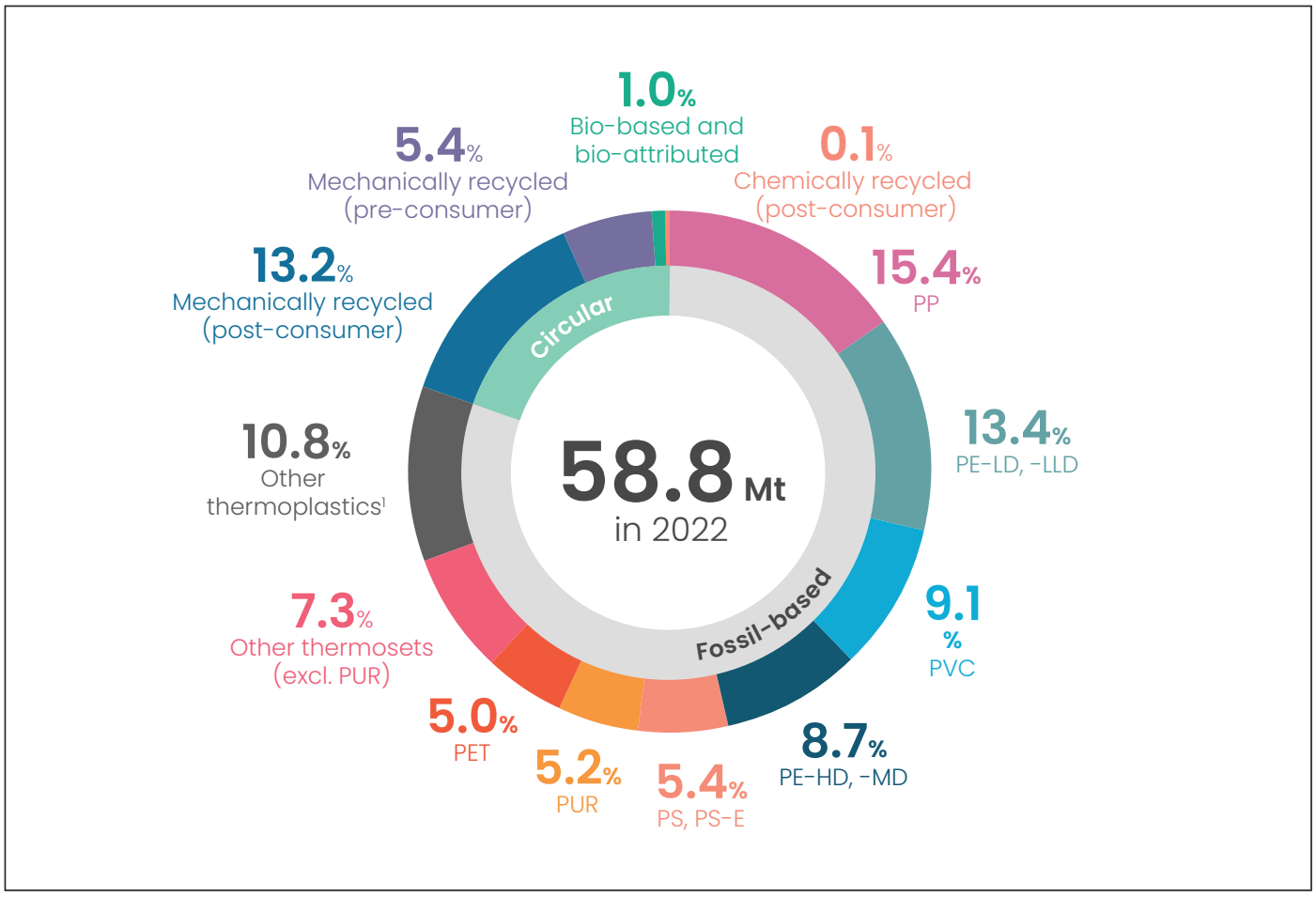

Figure 3: European plastics production by polymer in 2022 (source: Plastics – the fast Facts 2023 • Plastics Europe)

Bio-based and chemically recycled materials offer great opportunities for Life Sciences consumables, for Hamilton as well. In this brochure, we would like to focus on shifting from fossil to certified bio-circular materials.

ISCC PLUS mass balance approach

Among the various approaches possible, the ISCC PLUS (International Sustainability and Carbon Certification) mass balance approach has emerged, from Hamilton's point of view, as the most feasible and scalable solution in the Life Sciences industry.

The ISCC PLUS system allows for the gradual integration of renewable and recycled feedstocks into the production of plastics. The mass balance approach tracks the amount of renewable or recycled material introduced into the production process and allocates it to product(s) within the rules and guidelines set.

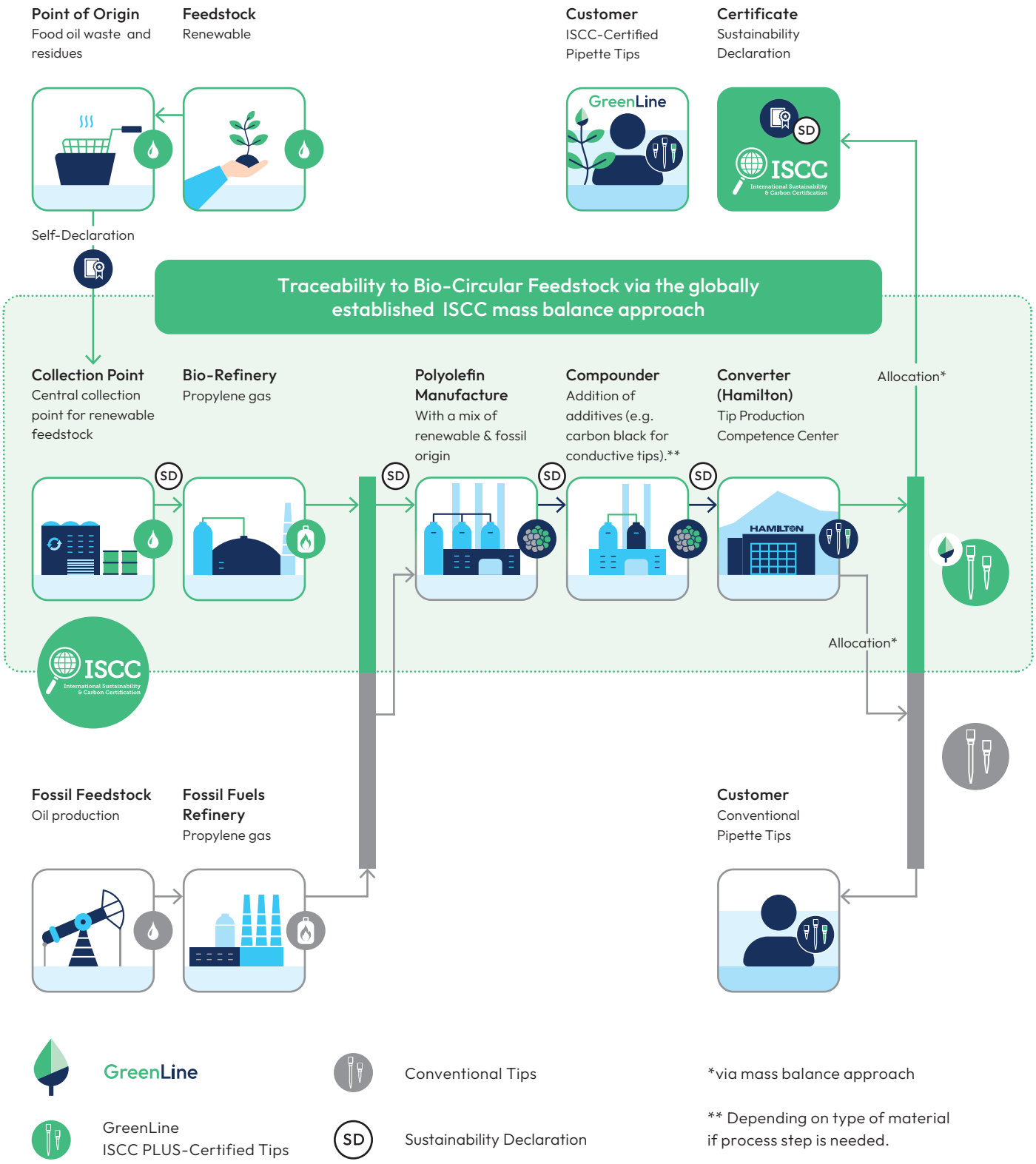

Figure 4: Schematic visualization from feedstock to final product (source: Hamilton)

The food oil waste and residues (**Point of Origin**) from renewable material (**Feedstock**) are collected at a central **Collection Point**. This is the first supply chain element that must be individually ISCC-certified. This ISCC-certified feedstock goes to the **Bio-Refinery** where the end product (propylene gas) will then be sent to the **Polyolefin Manufacturer**. At the polyolefin manufacturer, the fossil and renewable feedstock are mixed.

If the material needs to be modified, it then goes to a compounder (e.g. material for conductive tips where black carbon is added). Hamilton (**Converter**) purchases this black material to produce the conductive pipette tips. With the share of ISCC-certified renewable feedstock, ISCC PLUS CO-RE II Tips (GreenLine) can be sold. The **Customer** receives a **Sustainability Declaration** for each order of ISCC PLUS CO-RE II Tips, stating the exact quantity (in kilograms) of ISCC certified material.

Each step of the supply chain is carefully monitored and certified, ensuring transparency and traceability.

ISCC PLUS covers four raw material categories:

BIO	BIO-CIRCULAR	CIRCULAR	RENEWABLE-ENERGY-DERIVED
Bio materials are derived from virgin biomass	Bio-circular materials are derived from waste and residues of biological origin from agriculture, forestry and related industries	Circular materials are derived from the mechanical and / or chemical processing of recyclable materials of non-biological origin (fossil-based)	Renewable materials are derived from processes using renewable energy sources

The ISCC logos can only be applied by brand owners on finished goods that are sold directly to the final market. The brand owner must be ISCC-certified or licensed. Any logo use must comply with the ISCC 208 document and is subject to approval by ISCC prior to publication.

Figure 5: ISCC raw material categories (source: ISCC)

Bio-circular feedstocks are of particular interest to Hamilton, as they do not compete with food production.

Haystack Oncology GmbH:

"Single-use pipette tips are a major contributor to laboratory waste and a growing sustainability concern. In high-throughput diagnostic environments, it's often difficult to identify greener alternatives that don't compromise on performance or quality. That's why we're excited about Hamilton's GreenLine tips.

ISCC-certified and thoughtfully engineered, they represent a meaningful step toward reducing our carbon footprint—without sacrificing the reliability our workflows demand."

Hamilton's statement on bio-circular materials

Materials which are linked to these kinds of feedstocks are indistinguishable from conventional plastics and allow us to gradually replace fossil-based raw materials with certified renewable alternatives, while maintaining the same high-quality standards essential in Life Science industry applications. This is particularly crucial given the stringent safety and sterility regulations that govern our products. Unlike other approaches, which may not yet be viable due to technical limitations or regulatory barriers, the mass balance approach enables a seamless transition to certified renewable materials without compromising the performance, safety, or compliance of our consumables.*

The introduction of renewable feedstock in existing Hamilton products will not affect product performance, nor will it represent a change in specification. The polymer characteristics, additive package, as well as product properties and the processing behavior of our used material remain unchanged and in accordance with existing product specifications and customer-specific agreements. Therefore, the relevant product technical statements remain the same, and no qualification or validation is necessary.

After the successful completion of the ISCC PLUS certification process, Hamilton AG has started producing the new GreenLine CO-RE II Tips, which are made of 65% - 75% (tips) and 85% - 100% (racks) ISCC PLUS-certified material linked to bio-circular feedstocks, instead of fossil feedstock via mass balance.

We calculated the reduction of CO_2 by using bio-circular feedstock for the GreenLine CO-RE II Tips and tip racks (Cradle-to-Gate). The sourcing of ISCC-certified materials, massively reduces the material impact of our GreenLine CO-RE II Tips in relation to today's used fossil-based alternatives. The materials we are using for the production of tips and tip racks boost an impressive reduction of the Product Carbon Footprint (PCF) of our GreenLine CO-RE II Pipetting Tips to up to 71%. The reductions for different tip sizes are indicated in the graph below.

Note: For detailed calculations tailored to your specific tips used, please contact your local Hamilton representative.

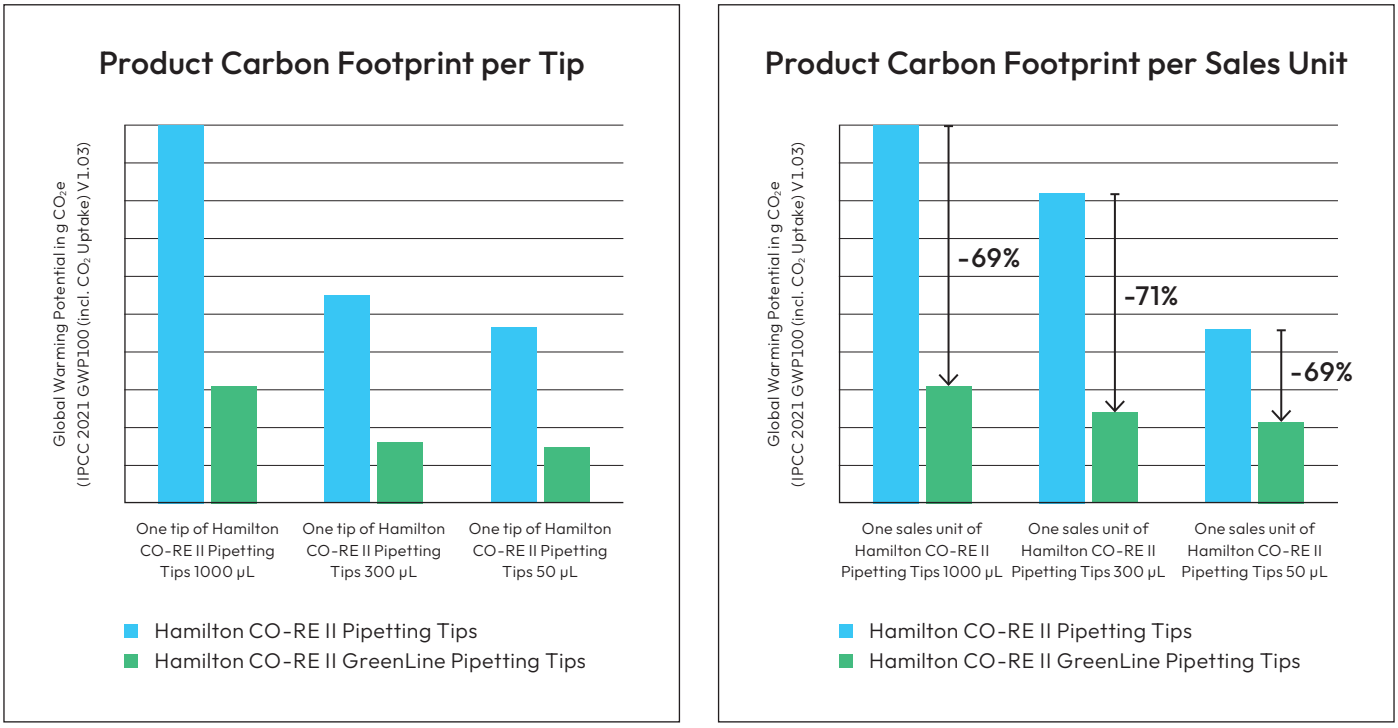

Figure 6: CO_2e reduction per each tip and per sales unit of tips, linked to bio-circular material based on calculations for the year 2024. Up to values shown, the percentage reductions represent maximum values for the respective tip type and may vary depending on tip configuration.

By replacing fossil-based plastics with those derived from renewable sources, we not only reduce emissions but also create a closed carbon loop that aligns with long-term sustainability goals.

GreenLine CO-RE II Tips will have an additional label which indicates the proportion and origin of ISCC-certified renewable material. Example:

The enclosed pipette tips and frame racks are made of at least 75% (tips) and 100% (racks) ISCC-certified plastic. The plastic can be traced back to bio-circular feedstock which is attributed to the production of these tips and racks via the ISCC mass balance approach.
Thank you for your contribution to the shift towards a bioeconomy.

Hamilton's Sustainability Initiatives

GreenLine

Conclusion

Hamilton AG is committed to pioneering sustainable practices within the Life Sciences industry, particularly concerning the use of plastics in our consumables. Through our innovative sustainability program, we are not only aligning with global initiatives such as the United Nations' 2030 Agenda and the Sustainable Development Goals but also actively contributing to the reduction of our environmental impact.

The adoption of the ISCC PLUS mass balance approach marks a significant step forward in integrating renewable feedstock into our production processes. Our investigations demonstrate that based on our calculations, the sourcing of bio-circular materials enables us to achieve substantial reductions in carbon footprint and to maintain the reliability and efficiency of our liquid handling robots, preserving the highest standards of quality and safety.*

As we move forward, our focus remains on continuous improvement and innovation, ensuring that we not only meet the evolving needs of the healthcare sector but also contribute to a more sustainable future. We invite our partners, stakeholders, and industry peers to join us on this journey toward enhanced sustainability and operational excellence. For more information, including current CO_2e data for specific pipetting tip types, please contact your local Hamilton representative or Hamilton directly.

*: The data and associated statements are calculated and verified by Hamilton AG.

HAMILTON

Hamilton Americas & Pacific Rim
Hamilton Company Inc.
4970 Energy Way
Reno, Nevada 89502 USA
Tel: +1-775-858-3000
Fax: +1-775-856-7259

Hamilton Europe, Asia & Africa
Hamilton AG
Via Crusch 8, CH-7402 Bonaduz,
Switzerland
Tel: +41-58-610-10-10

Web: www.hamiltoncompany.com

Connect with our team at: www.hamiltoncompany.com/contact