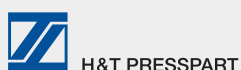


# DRUG DELIVERY & ENVIRONMENTAL SUSTAINABILITY







**YpsoMate®**  
Zero



swissmade+

## Zero carbon emission pre-filled autoinjector

- Zero carbon emission autoinjector offering without compromising on usability and patient safety
- Based on the proven 2-step pre-filled YpsoMate® autoinjector platform
- Use of alternative polymers for selected device components and packaging
- Close the loop for the packaging of device components and device sub-assemblies
- Offsetting the remaining carbon footprint with Ypsomed's own reforestation program



**For more information visit [www.ypsomed.com/zero](http://www.ypsomed.com/zero)**

Ypsomed AG // Brunnmattstrasse 6 // 3401 Burgdorf // Switzerland

T +41 34 424 41 11 // [info@ypsomed.com](mailto:info@ypsomed.com)

**YPSOMED**  
SELF CARE SOLUTIONS



# ROUNDTABLE: ALLIANCE TO ZERO

In this Roundtable discussion, Sebastian Gerner, Robert O'Beirn and Sabrina Gérard talk with ONdrugDelivery about the Alliance to Zero, an association for pharma and biotech supply chain companies that aims to facilitate the transition of the pharma sector to compliance with net-zero emissions.



**SEBASTIAN GERNER**



Sebastian Gerner is President of the Alliance to Zero, and Innovation & Business Development Manager with Ypsomed Delivery Systems. He is driving the transition of Ypsomed from a linear take – make – waste economy towards a circular economy. Mr Gerner is a mechanical engineer with more than 10 years of medical device experience in various medical and pharmaceutical companies.



**ROBERT O'BEIRN**



Robert O'Beirn is Vice-President of the Alliance to Zero, and Head of Sharp's Clinical Services and European Packaging businesses. He originally joined UDG Healthcare in 2011 as senior legal counsel and subsequently moved to corporate development, with particular focus on M&A. As a member of Sharp's senior leadership team, he also acts as Executive Sponsor of Sharp's environmental, social and governance (ESG) and sustainability programmes.



**SABRINA GÉRARD**



Sabrina Gérard is a Committee Member of the Alliance to Zero, and Head of Sustainability & Agility at Datwyler. She is a chemical engineer with more than 25 years of experience in lean & agile, sustainability and quality assurance. She has worked for fast-growing, global organisations in the automotive, medical device and healthcare industries. As Head of Sustainability at Datwyler she co-ordinates sustainability programmes together with employees, customers, and society.

**Q** What is the impact of the pharma industry on global CO<sub>2</sub> emissions?

**SEBASTIAN**

The pharmaceutical industry accounts for as much as 10% of the carbon emissions in America and 5% on a global level. That means pharmaceutical companies emit significantly more carbon emissions than the automotive manufacturing sector.<sup>1</sup>

Although the delivery device *per se* may not be the main driver of carbon emissions, it is the material representation of waste. It is what ends up in the hands of the patient. Drug delivery devices and primary packaging materials also account for a proportion of the CO<sub>2</sub> emissions of combination products based on their packaging design. So improving the design of the individual components, as well as providing environmentally friendlier packaging, will improve the footprint of the overall combination product.

**ROBERT**

A recent *Pharmaceutical Manufacturing* article reported industry surveys conducted in 2020 that indicated 48% of biopharma manufacturers always look for packaging that is recyclable or that can easily enter the waste stream, with 81% being likely to use energy-efficient packaging soon.<sup>2</sup> This reflects a rapid and significant shift in thinking by biopharma companies.

**Q** Please tell us how the Alliance to Zero came into being, which organisations are involved, how is it funded, and what are its overarching goals?

**SEBASTIAN**

The ambition of the Alliance to Zero is to enable the transition of the pharmaceutical industry to compliance with net zero goals, by launching a net-zero carbon emissions product. This jointly developed net-zero product offering will be available by 2030, with interim milestones in 2023 and 2026 (see Figure 1).

"The Alliance to Zero was founded by eight companies along the value chain of injectable products and our main focus is on the primary and secondary packaging of the physical device."

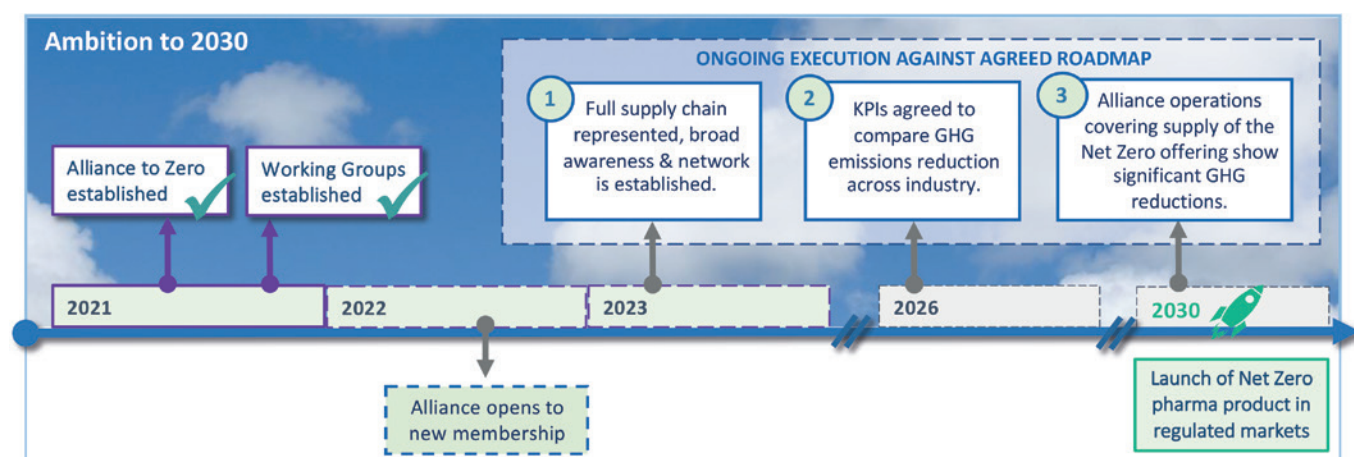


Figure 1: Timeline of the Alliance to Zero's ambition to 2030.

Therefore, at the Alliance to Zero, we are developing guidelines, creating a common language and defining measures which we can apply on footprint-reduction efforts of our collective products and services.

The Alliance to Zero was founded by eight companies (see Table 1) along the value chain of injectable products and our main focus is on the primary and secondary packaging of the physical device. So all

company members are currently active in this field and provide respective product and service offerings to their pharma clients.

Each member company pays an annual membership fee, depending on its size, which is being used to sponsor projects with a common interest in order to deliver our shared vision. In particular, partnerships with academia are being established to support the common goal.

**Q** How is net zero defined by the Alliance? How might a member's net zero status be certified or validated?

**SEBASTIAN**

Net-zero emissions is a very new term and a common understanding of net zero is to be established. The Alliance is closely following the leaders in the field such as the Science Based Targets Initiative (SBTi),<sup>3</sup> which is currently developing the standard for net-zero emissions. The SBTi is a partnership between CDP Worldwide (previously the Carbon Disclosure Project), the UN Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF).

Net zero describes a target of completely negating the amount of greenhouse gases (GHGs) produced by human activity, to

"Each of the member of the Alliance can attest to the increasing number of requests from clients and partners for metrics and reporting on environmental KPIs."

Company	Role Within the Supply Chain
<b>SCHOTT</b> glass made of ideas	Primary containers
<b>DATWYLER</b>	Container closure components
<b>YPSOMED</b> SELF CARE SOLUTIONS	Autoinjectors
<b>Harro Höfliger</b>	Assembly solutions
<b>schreiner</b> MediPharm	Labelling solutions
<b>KÖRBER</b>	Packaging machinery
<b>Sharp</b>	Assembly and packaging Services
<b>HEALTHBEACON</b>	Smart sharps containers

Table 1: Alliance to Zero founding companies.

be achieved by reducing emissions and implementing methods of absorbing carbon dioxide from the atmosphere. From that newly established standard we will then derive specific measures for the Alliance and define KPIs which all our member companies will be expected to commit to.

**Q** Thinking about your company in particular, where does your organisation fit in the overall supply chain, and where are the main areas where CO<sub>2</sub> can be reduced?

#### ROBERT

Sharp offers contract commercial and clinical packaging services that include device assembly, secondary packaging, labelling, serialisation, storage and distribution so we operate at the centre of the pharma supply chain. Our clients would specify the device and packaging formats as well as materials and components. Our area of influence in terms of GHG reductions would be in the procurement of packaging materials and the management of our energy and GHG emissions across our production facility network. Sharp has made significant progress in scope 1 and 2 emission reduction, but we are at the early stages of developing a roadmap to significant reductions in our scope 3 emissions. (See Box 1, Glossary of Definitions (next page) for more information about scope 1, 2 and 3 emissions.)

#### SABRINA

Datwyler's main initiative is to become completely climate neutral for its own operations (scope 1 and 2) by 2030. Beginning with emissions of approximately 80,000 tons of CO<sub>2</sub>eq in 2020, Datwyler is following the reduction path defined by the SBTi, which includes implementing measures to purchase renewable energy and increase energy efficiency. These actions are intended to reduce GHG emissions drastically, while simultaneously achieving forecasted business growth.

In 2021, some 40% of Datwyler's total electricity consumption at all plants worldwide will be from renewable energy sources. In Switzerland, the company already has a plant that has been producing CO<sub>2</sub>-neutral since 2012. Datwyler has also started a project to identify and quantify scope 3 emissions, to develop measures for further reduction.

#### SEBASTIAN

Ypsomed has committed to achieve net-zero emissions in operations (scope 1 and 2) latest by 2030 and net-zero emissions for the entire company (scope 1–3) by 2040. Ypsomed has handed in a letter of commitment to SBTi and is currently developing the reduction pathway to the individual net zero points.

Our corporate carbon footprint, calculated for the first time in 2019, has shown that our own GHG emissions from heat and electricity consumption (scope 1 and 2) amount to just 3% of total emissions. However, 97% of the CO<sub>2</sub> emissions come from the upstream and downstream value chain (scope 3). The largest share is accounted for by purchased materials (in particular plastic granulate and transport containers). Therefore, it is crucial for us to work with our partners to tackle emissions where they occur.

The realisation that the materials we procure create the largest share of our carbon footprint inspired the development of the YpsoMate® Zero, launched in 2020. The YpsoMate autoinjector platform will be switched to biopolymers and the packaging design will be adapted in order to reduce emissions. The remaining emissions will be compensated with carbon removal certificates in order to offer a true first net-zero product offering. Other product platforms will follow and so contribute to the corporate carbon emission reduction pathway Ypsomed has taken.

**Q** What are the ways in which your Alliance to Zero members' clients and partners will benefit from you achieving net zero status?

#### ROBERT

Each of the members of the Alliance can attest to the increasing number of requests from clients and partners for

---

"The interdependent nature of the value chain means that the way we as suppliers manage our own GHG emissions will have an important impact on our client's ability to reach their scope 3 goals."

---

metrics and reporting on environmental key performance indicators (KPIs). As part of the selection criteria for the awarding of new business, for example, Sharp is consistently requested to show evidence of energy rating standards at our facilities, as well as the quantification models we use to calculate our sustainability impact. Clients also want to understand how we integrate sustainability into both our governance and operational practices.

The most challenging aspect of the GHG emissions protocol is scope 3, which includes all indirect (non-energy related) emissions that occur in a company's value chain. The interdependent nature of the value chain means that the way we as suppliers manage our own GHG emissions will have an important impact on our client's ability to reach their scope 3 goals. Each member company of the Alliance has committed to delivering on a roadmap that will significantly reduce their GHG emissions, thereby making it easier for our pharma clients to achieve their scope 3 commitments. Clients will also benefit directly from the work of the Alliance to Zero as we ultimately progress towards making a net-zero product available to the industry.

#### SABRINA

In an evolving pharmaceutical sector, achieving more sustainable outcomes can be difficult, especially for manufacturers who must cater to a more diverse marketplace. More than ever, the industry and patients require that the pharma sector make strides toward sustainability.

Among its own clientele, Datwyler has seen companies increasingly inquire about sustainability initiatives and ways in which they can make their overall supply chain more environmentally responsible. While more packaging suppliers of critical drug delivery components are making efforts to improve the sustainability of their supply chain, not many have made as many strides or as ambitious goals as Datwyler.

Clients can benefit from Datwyler's efforts knowing that the company can support them in their sustainable goals whether it be through resource-friendly production, ecodesign principles or via net-zero status. While some pharma companies have just begun inquiring about making their supply chains more sustainable, Datwyler is prepared to help them as the industry continues to move in this direction.

“Analysing platform by platform, we will have a net-zero product offering on all our products available in the near future. This will then directly reduce our customers’ scope 3 emissions as they can source a product with net-zero emissions.”

### SEBASTIAN

Our customers are requesting carbon footprint data from Ypsomed on a product level and we are prepared to deliver on this. Furthermore not only calculating our product carbon footprints, but with the Zero Program we have a strong reduction program established. Analysing platform by platform, we will have a net-zero product offering on all our products available in the near future. This will then directly reduce our customers’ scope 3 emissions as they can source a product with net-zero emissions.

**Q** The Alliance was only founded a few months ago. Can you talk about how it was initiated?

### SEBASTIAN

Establishing the Alliance to Zero in a virtual setting (due to the covid-19 restrictions) presented a number of challenges, including the legal framework for registering the association in Switzerland, as well as starting our work without being able to meet in-person. However, in October 2021 we held our first in-person workshop, which included external input with speakers from industry. We also formed our individual working groups, to develop the key pillars of our framework including:

- Language & methodology
- Sustainable procurement
- End of life
- Machinery & processes.

These working groups are developing guidelines for each topic area, with the aim of applying them within each member company.

## BOX 1: GLOSSARY OF DEFINITIONS

### Climate Neutral:

Climate neutrality combines an organisation’s need to account for their GHG footprint and establish a clear reduction strategy before offsetting unavoidable emissions. For companies, climate neutrality is a “point in time” statement, where historical carbon emissions are measured and offset. Compared with carbon neutrality, climate neutrality places more of an emphasis on covering all GHGs beyond carbon, and includes climate impacts beyond GHG emissions, such as radiative forcing from aircraft – often used to calculate emissions from business travel.

### Climate Positive:

Climate positive, or “carbon negative”, both describe a state of removing more GHGs than one emits.

### Greenhouse gas (GHG):

In 1896, Swedish scientist Svante Arrhenius was the first person to investigate the greenhouse gas effect, i.e. the ability of CO<sub>2</sub> to trap heat in the atmosphere. Arrhenius won the 1903 Nobel Prize for Chemistry. A GHG is any gas that exhibits the greenhouse gas effect. In addition to CO<sub>2</sub>, examples of other GHGs are methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), chlorofluorocarbons (CFC), and hydrofluorocarbons (HFCs) including hydrofluoroalkanes (HFAs).

### Gold Standard:

Established by WWF, the Gold Standard is endorsed by more than 80 non-government organisations (NGOs). UN agencies use the Gold Standard for the development of their own carbon mitigation and sustainable development projects. The Gold Standard is now also certifying sustainable development goals.

### Net Zero:

The Intergovernmental Panel on Climate Change (IPCC) defines net zero as a state where there are no incremental additions of GHGs into the atmosphere. This means that all avoidable emissions have been reduced and residual emissions have

also been removed from the atmosphere. To achieve this, an organisation must:

- **Reduce:** plan a trajectory to reduce emissions across the entire value chain. Set a net zero target year based on science, with interim milestones on how to get there, all consistent with a 1.5 °C mitigation pathway.
- **Compensate:** become climate neutral by financing projects to avoid and remove emissions further
- **Neutralise:** once emissions have reduced to close to zero levels, eradicate unavoidable residual emissions with carbon removals to achieve net zero.

### Remaining Emissions:

Unavoidable emissions which will remain after reduction efforts.

### Removed Emissions:

Emissions that are removed from the atmosphere by supporting certified carbon removal projects (natural or technical solutions), such as reforestation.

### Scope 1 Emissions:

Emissions from sources directly owned or operated by a specific company. For example, if a company has a fleet of vehicles that burn fossil fuel, or buildings with boilers, their emissions are scope 1.

### Scope 2 Emissions:

Emissions based on energy a company purchases to operate its enterprise directly. The most common across-the-board source of a scope 2 emission is electricity consumption.

### Scope 3 Emissions:

Emissions resulting from activities not directly owned by a business, but are associated with its operation. Examples include business travel, waste management, commuting, and third-party distribution.

### Verified Carbon Standard (VCS):

This standard developed and administered by Verra (Washington, DC, US) is the world’s most widely used voluntary GHG reduction programme.

*Definitions sourced from the web site of sustainability consultant South Pole (Zurich, Switzerland). [www.southpole.com](http://www.southpole.com)*



**Q** What are the benefits to stakeholders of the Alliance to Zero? What is the offering?

#### SABRINA

Ultimately, there are many parties involved in the development of a single drug to ensure that it reaches patients in a sterile, secure condition up to and throughout point-of-use. The industry and stakeholders benefit from an initiative like Alliance to Zero because it will help to create a more circular economy that promotes greater lifecycle awareness on a global scale. With more companies taking responsibility for environmental and social conditions, in addition to meeting the increasing demand for sustainability, initiatives like Alliance to Zero resonate with the future workforce. More importantly, this initiative helps to secure the environment for current and future generations to come.

#### ROBERT

The alliance is intended to benefit our mutual pharma clients. Through this proactive collaboration between supply chain partners we are reducing the logistical burden for those pharma companies who want to reduce their scope 3 emissions.

In the immediate term, the alliance is working to establish and validate the framework within which to achieve our net zero ambition. By mid-2022, we expect to welcome new member organisations to join the association, representing the value chain, in order to broaden our reach and help accelerate our progress to net zero.

"The Alliance is intended to benefit our mutual pharma clients. Through this proactive collaboration between supply chain partners we are reducing the logistical burden for those pharma companies who want to reduce their scope 3 emissions."

#### ABOUT THE ALLIANCE

Alliance to Zero is a non-profit membership association for pharma and biotech supply chain companies that aims to facilitate the transition of the pharma sector to compliance with net-zero emissions. As a working group with commonly shared goals, it engages in collaboration with academia and non-profit organisations as well as sponsoring projects. It involves, connects and co-ordinates suppliers, pharmaceutical companies, manufacturers and service providers along the supply chain of pharma products. After sharpening its vision and launching initial initiatives, Alliance to Zero will welcome new members along the value chain by mid-2022 to expand its reach and drive long-term success.

The Alliance to Zero manifesto can be viewed online here: [alliancetozero.com/manifesto](https://alliancetozero.com/manifesto)

#### REFERENCES

1. Belkhir L, Elmeligi A, "Carbon footprint of the global pharmaceutical industry and relative impact of its major players". *J Cleaner Production*, 2019, Vol 214, pp 185–194.
2. Tyler S, "Pharma's Shift Towards a Circular Economy". *Pharma Manufacturing*, Jul-Aug 2020, pp 26–30.
3. Web Page, Science Based Targets Initiative (SBTi), October 22, 2021.



Enabling Net Zero Pharma Products

#### Sebastian Gerner

President, Alliance to Zero

E: [sebastian.gerner@ypsomed.com](mailto:sebastian.gerner@ypsomed.com)

#### Robert O'Beirn

Vice-President, Alliance to Zero

E: [robert.obeirn@sharpservices.com](mailto:robert.obeirn@sharpservices.com)

#### Sabrina Gerard

Committee member, Alliance to Zero

E: [sabrina.gerard@datwyler.com](mailto:sabrina.gerard@datwyler.com)

[alliancetozero.com](https://alliancetozero.com)

Sign-up for  
**FREE**  
online  
& unlock unlimited  
access to all of our  
digital content

**SUBSCRIBE TODAY!**

**www.ondrugdelivery.com**