
small is **powerful**
small is **green**

small is **green**

Small empowers your sustainability goals

Climate change is not just an environmental crisis, it is a public health emergency.

The healthcare sector accounts for approximately 4-5% of global greenhouse gas emissions, the equivalent of a small country.

The pharmaceutical industry has an obligation to innovate and evolve, placing sustainability at the forefront.

At Nanoform we play a critical role in empowering our customers' journeys to net zero.

"At Nanoform we're not just patient-centric, we're planet-centric.

Our approach avoids or removes waste at every stage. We avoid the use of tens of thousands of litres of organic solvent per year, use only CO_2 of recycled origin, and have deployed advanced AI processes that have replaced the need for hundreds of thousands of experiments. But most importantly, our Nanoparticles are tuned to the needs of the patient to improve adherence and outcomes.

We're carving away at the millions of tonnes of medicine waste the ecosystem generates every year.

Talk to us to learn more about how Nanoform can be your partner of choice for sustainable medicine engineering."

Professor Edward Hæggström
Chief Executive Officer

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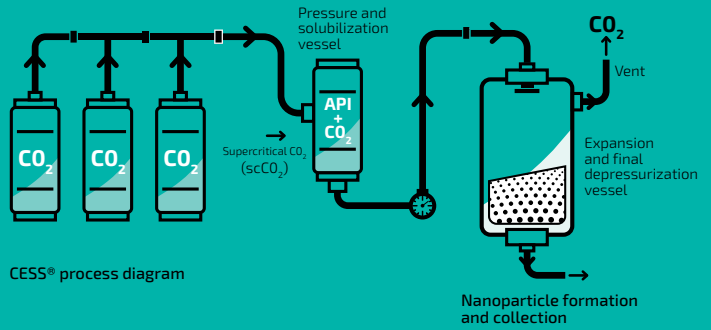
Small is solvent-free and utilises recycled CO_2

Our CESS® technology produces excipient-free, dry powder nanoparticles without the need for organic solvents or complex excipients.

In contrast, other particle engineering technologies such as spray-drying require large volumes of organic solvent, which can be up to 10,000L per cycle for a PSD5 Unit.

The GMP-grade CO_2 we use in CESS® is recycled from local industrial waste processes. To further reduce emissions associated with moving multiple CO_2 cannisters to our Helsinki facility, we took the bold, green step to build one of the largest freestanding CO_2 tanks in Finland.



CESS® process diagram

"Our CESS® process offers customers a solvent-free alternative to API solubility and bioavailability optimization.

Our customers recognise this as an environmentally sustainable alternative to solvent-heavy processes, particularly as our GMP-grade CO_2 is an industrial by-product of industries local to our Helsinki facility."

Professor Niklas Sandler
Chief Technology Officer

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Small removes waste from the medicine journey

Emissions are important, but what must also be considered is the vast amount of waste generated by the healthcare industry throughout the medicine journey.

Waste is generated when formulation and presentation routes do not align with patient preferences; unwanted side effects and regimen adherence challenges all contribute to suboptimal outcomes and the mountain of discarded medicines.

Our nanoforming technology is designed with patients at its heart. With "small as the ingredient", our particles are amenable to multiple administration routes. Furthermore, by optimizing solubility and bioavailability, less API is can be utilised per dose, allowing for more compact dosage forms and potentially fewer side effects.

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6631141/
2. https://discovery.ucl.ac.uk/id/eprint/1350234/1/Evaluation_of_NHS_Medicines_Waste__web_publication_version.pdf

The US produces over **3.5 million** tons of medical waste annually[1]

11% of surveyed households possess residual medicines with **8%** of medicine packs partially or completely unused[2]

"At Nanoform, patient-centricity and planet-centricity go hand in hand.

Nanoform follows a patient- centric approach to discover innovative solutions which will help to improve outcomes, and lower the economic and environmental burden of healthcare.

Nanoparticles are formulation-flexible and potentially dose-sparing meaning we can help reduce the huge amount of waste associated with patient non-adherence."

Christian Jones
Chief Commercial Officer

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Small is lean through digital

The emergence of innovative artificial intelligence (AI) technologies is transforming the pharmaceutical industry. Nanoform's AI engine, STARMAP® has the capability to accelerate drug development with sustainability in mind by optimizing manufacturing processes and enhancing resource efficiency.

STARMAP® is the digital twin of our CESS® process; it leverages cutting-edge AI to predict the likely success of drug candidate molecules in our hands.

STARMAP® therefore ensures we can target only those projects we know will have the greatest chance of success, avoiding the waste of laboratory resources.

starmap
Illuminating the future of Pharma ®

"STARMAP® enables us to screen thousands of APIs simultaneously to see which are likely to be the stars that will shine the brightest. Partners are using the system not only to identify the potential for new chemical entities, but also to open up the possibility of revisiting and repurposing previously disregarded drug candidates where nanoforming will give them a second chance."

Dr Elisabetta Micelotta
Science and Technology Team Lead

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Small is lean through process excellence

Our Lean Six Sigma accreditation is designed to drive operational efficiency and product yield while reducing waste in every area of the organisation.

"At Nanoform we hate waste, which is why we have an enterprise-wide Lean Six Sigma accreditation programme designed to drive operational efficiency and productivity while reducing waste in every area of our organization. An example of this is the Green Belt training programme which has delivered Green Belts and successful projects in reducing waste at R&D, Engineering, QC, QA and Manufacturing. The Green Belts play a pivotal role in applying Lean Six Sigma and continuous improvements, which is the fundamental DNA of how we achieve our sustainability goals, as well as our partners'."

Marco Minerva
Operational Excellence Specialist

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And green is our culture

Our company roots are based in Finland, a country that has committed to one of the earliest net zero targets, and this is reflected in our commitment to sustainability.

We actively encourage all Nanoformers to walk, cycle or ski to work and reward their hard work with our free, onsite sauna.

At the heart of our Helsinki campus stands the bronze statue of a ten year old child reaching out to a Nanoformed medicine. “CESSilia” serves as our daily reminder that everything we do is for our patients, and for their futures.

It’s one of many ways we champion practices and mindsets that create a better world for future generations.


"to learn more about how **Nanoform**
can empower your environmental
sustainability goals contact us at
commercial@nanoform.com
for a discussion"