

TOWER


CtrlFlow 

this changes everything

we are tower.com

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400 million tonnes of hazardous waste is produced globally every year and over 200 million tonnes of toxic waste is poured into the sea.

Welcome to the future

Companies purchase thousands of products to be used to clean and disinfect their working environments. Many are synthetically manufactured chemicals with a high carbon footprint. This is due to manufacturing, transport distribution, and plastic containers.

Our goal is to help our partners reduce the sourcing, storing, and use of chemicals by offering an environmentally friendly and sustainable alternative. That's why we developed CtrlFlow: an innovative, simple, and effective cleaning solution and disinfectant.



Daniel Aris
Chairman & Senior Partner

“We believe CtrlFlow can change the cleaning and disinfecting process in countless working environments.”

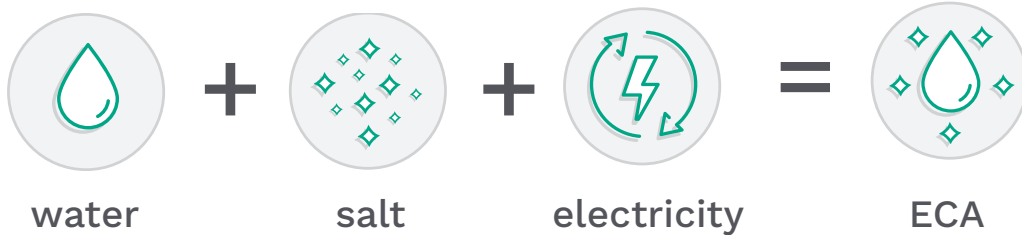


Innovation meets sustainability

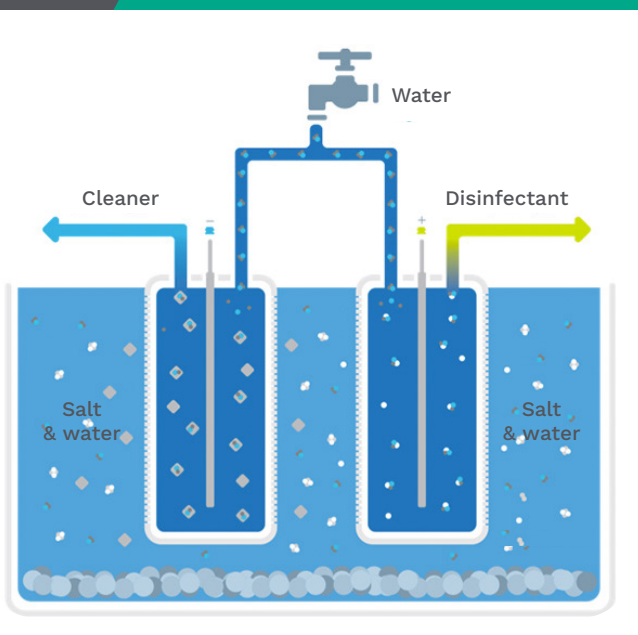
“CtrlFlow reduces plastics, costs, logistics, and transport by replacing up to 90% of cleaning and disinfectant products. All whilst protecting surfaces, fabrics, and textiles onboard.”

The CtrlFlow solution is activated by electrolysis turning salt and water into a deceptively powerful, completely hypoallergenic liquid. Tests have shown CtrlFlow solution to be 100 times more effective than standard bleach, and safe to use on any surface that needs cleaning.

The activation process is a form of electrolysis that uses ordinary water and dissolved salt. The process combines the chlorine in the salt (NaCl) with the hydrogen and oxygen in the water (H₂O) to create hypochlorous acid (HOCl) and sodium hydroxide (NaOH) in a combined solution on demand.



Three different solutions can be generated from just water and salt:



- Hypochlorous acid – a very powerful but safe biocide.
- Mixed oxidant solution – a combination of hypochlorous acid and sodium hypochlorite, providing cleaning and disinfectant performance.
- Sodium hydroxide – a surfactant with powerful cleaning and degreasing properties.

The system can be easily situated on several different floors of a building or ship. Making it easy to provide on-demand generation of a safe, effective, and environmentally friendly cleaning and disinfectant solution.

The CtrlFlow machines eliminate the need for the procurement, delivery and cost of synthetic chemicals used in many marine environments. We believe CtrlFlow to be a game-changing solution that's easy to adopt and make at any time of day.

CtrlFlow
sustainable
facts

1 litre of CtrlFlow's activated solution generates 1.84 grams of CO₂. And 8 litres of CtrlFlow's ECA activated solution has the same carbon footprint as boiling a kettle to make tea.



The emissions and environmental impact of adopting and using the systems to generate cleaning and disinfection solutions are extremely small if compared to synthetic chemicals.



1 litre of CtrlFlow's ready-to-use activated solution with a dilution ratio of 2:1 generates 3.07 grams CO₂ equivalent. The CO₂ emissions to manufacture the CtrlFlow system and get it installed is 263kg CO₂ equivalent.



What goes into the machine is natural, naturally sustainable, and emits very low CO₂ levels (water and salt). Only very small electric power input is used to activate the solutions.



Other than the transport of the system, there is no on-going transport carbon emissions, no packaging disposal, and no ongoing plastic containerisation and plastic disposal.



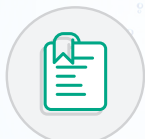
“CtrlFlow is the ultimate plastic-free, carbon-saving, ocean-safe cleaning solution, perfect for industrial cleaning requirements.”

Once installed, the inputs are natural, and the machine CO₂ outputs are minimal. The ECA cleaning solution is hypoallergenic and completely ocean safe. Making it perfect for use onboard cruise ships and in the marine shipping industry. As there is no risk of irritation to the skin, it eliminates the need for chemical handling PPE equipment and training.

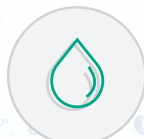
Unlike typical cleaning chemicals which are detrimental to marine life, CtrlFlow solution dissipates into the water and becomes completely ocean safe. Any waste CtrlFlow liquid is neutralised when it comes into contact with organic matter.

At Tower, we are committed to minimising our impact on the planet and reaching our

Net Zero goals. Which is why we understand the need for innovative sustainable solutions. CtrlFlow machines can help you meet your scope 1 requirements, by helping you to take control of the waste generated from the cleaning process and minimise your carbon footprint.



Safe to use



Hypo-allergenic



Ocean safe

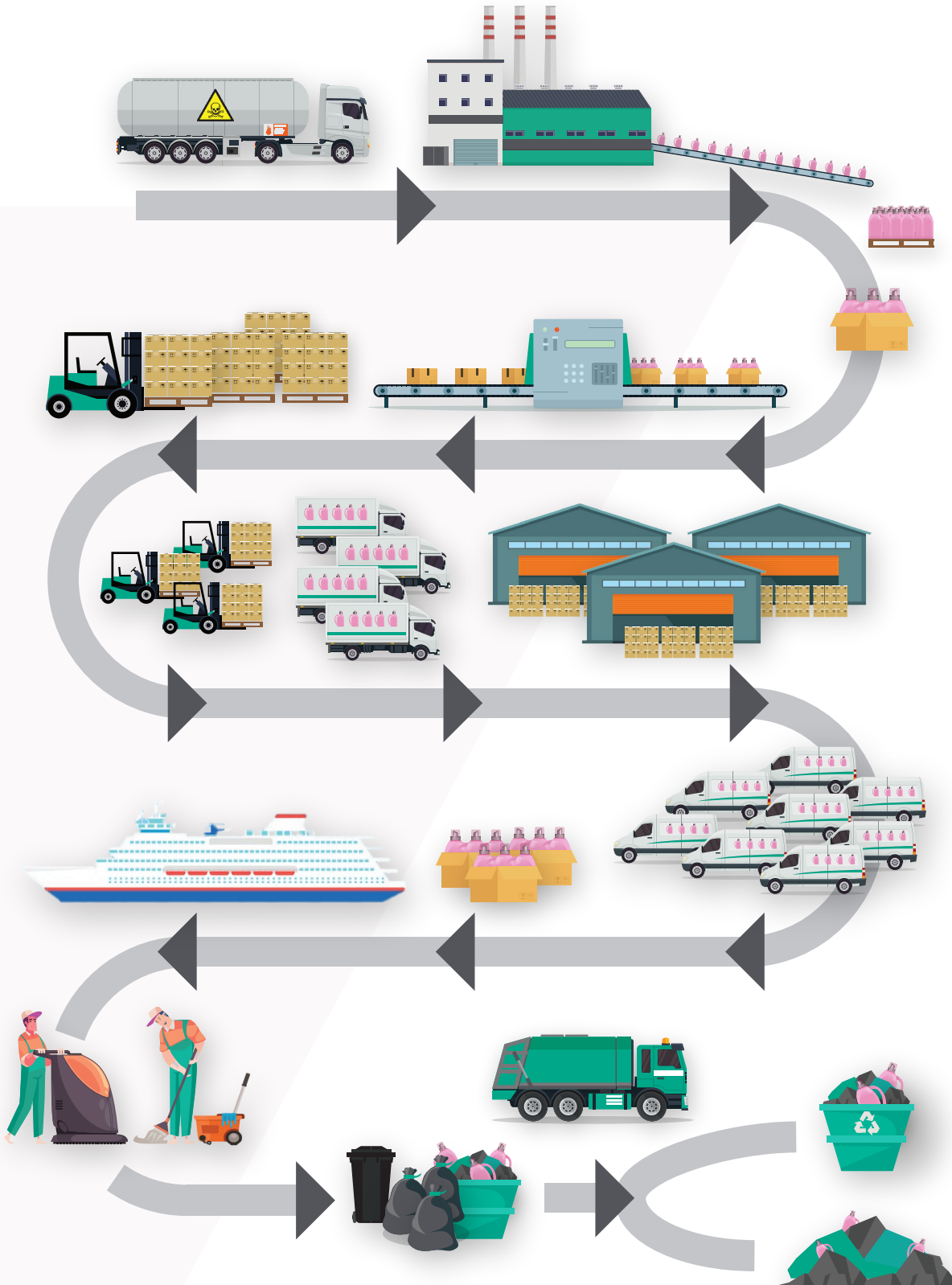


Naturally sustainable

Environmental Impact

Synthetic Chemicals

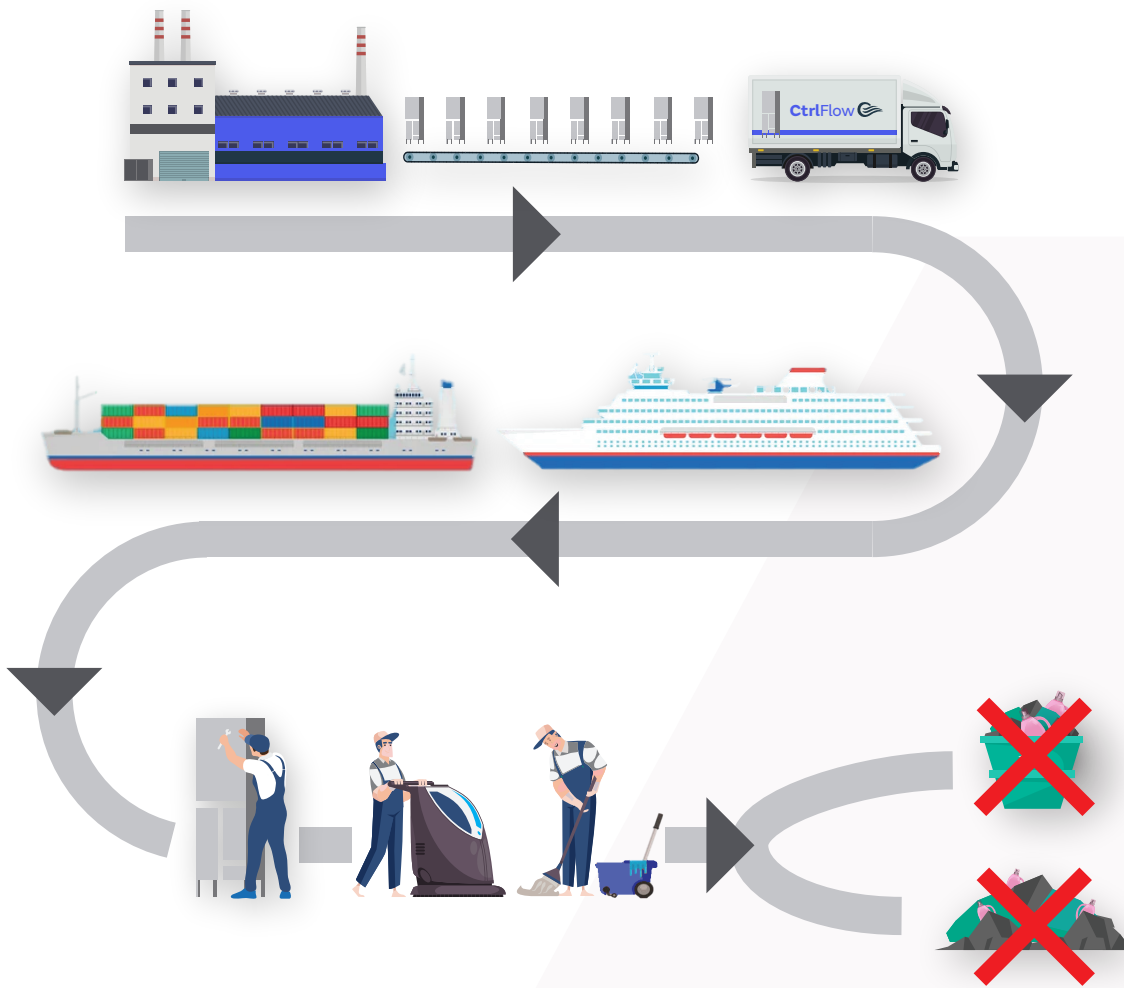
Synthetic Chemical journey every month



vs CtrlFlow

Environmental Impact

CtrlFlow journey every 8 years



Cruise Products

CtrlFlow 40

The CtrlFlow-40 Plus system is used extensively on cruise ships, generating hypochlorous acid and sodium hypochlorite solutions for general cleaning and disinfection tasks.

CtrlFlow can be used in all areas of the ship including cabins, restaurants and cafes, kitchens and bars. As well as all public areas and crew quarters.

Flow 40+ is a fully integrated system with a water softener, holding tanks and dispensers, mounted on 316-grade stainless steel frame. It's easy to install and produce a highly effective cleaner.

Active substances: hypochlorous acid (HOCl) from the anode and sodium hydroxide (NaOH) from the cathode.



CtrlFlow 5K

The 5K systems produce a mixed oxidant solution (hypochlorous and sodium hypochlorite) at around 5000 parts per million (ppm). To treat potable water supplies, this concentrated solution is dosed into the water to achieve around 2ppm, allowing you to treat large volumes of water.

2ppm will kill all the microorganisms in the water and eliminate any biofilm in internal surfaces of the pipes. This ensures that the water coming out of taps, showers etc is clean and disinfected. 5K units will generate all these solutions from just sea water, or water with salt.

Active substances: hypochlorous acid (HOCl) and sodium hypochlorite.

Marine Products



CtrlFlow 2L

The CtrlFlow kettles have a 2L capacity of mixed oxidant solution enabling you to produce a cleaning solution on demand. Suitable for small to medium-sized commercial facilities with 25-30 crew members.

Active substances: hypochlorous acid (HOCl) and sodium hypochlorite (NaOCl).

CtrlFlow Catholyte

The catholyte systems generate enough cleaning solutions to sufficiently clean large cargo ships. These systems can be used to clean and disinfect bulk cargo holds used for transporting black cargoes and agricultural products.

Large systems can either be located on-board black cargo ships, or land-based at port terminals with the solutions pumped on-board docking ships.

Active substances: sodium hydroxide and hypochlorous acid (HOCl).



Customer Success Story

How CtrlFlow ECA water solution completely transformed cleaning and disinfecting for P&O Cruises

When we approached P&O Cruises with an ECA water solution that we said would replace 90% of their cleaning and disinfectant products, they didn't believe it could be true. But once we started demonstrating how simple and powerful the ECA solution was, they were completely onboard.

The perfect cruise solution

One of the most important concerns for P&O Cruises was any physical impact that our ECA solution would have on the ship and its crew. As the CtrlFlow ECA solution was hypoallergenic and non-corrosive, we were able to reassure our client that the solution was completely safe.

Testing had also shown that our solution was just as effective as the products it was replacing, and in many cases more effective. This meant that our client could rely on the ECA solution not impacting the incredible customer experience of being onboard a prestigious and pristine P&O cruise ship.



Countless client benefits

P&O Cruises found the benefits of CtrlFlow ECA could go far beyond just replacing products and reducing costs. As CtrlFlow ECA can be produced easily and endlessly on board the cruise ships, it makes it especially ideal for cruise clients when at sea.

Being able to produce the solution onboard also eliminated the need for ordering and logistics. CtrlFlow is easily accessible and produces an endless supply. And as it replaces cleaning chemicals, there are less COSHH considerations and environmental management of products on board.



Multiple uses onboard

P&O Cruises have been using CtrlFlow ECA as both a disinfectant and cleaning solution onboard all their ships. It has replaced most of their cleaning products, and their plans are to now use CtrlFlow ECA as an alternative for other products, including those found at their onboard laundries.

Our client found the CtrlFlow ECA solution was also instantly suitable to use in electrostatic sprayers as it wasn't corrosive on surfaces and served as a highly effective disinfectant. P&O Cruises now only need one product for the whole cleaning and disinfection process when in port and at sea.



Sustainable innovation

As CtrlFlow ECA is non-toxic there is no need for harsh disinfectants onboard ships, which immediately supports P&O Cruises in their environmental goals. There's also now no need to freight products to the ships, and the solution helps reduce packaging and use of plastic containers.

P&O Cruises immediately found CtrlFlow ECA to be the way forward for cleaning and disinfecting onboard cruise ships. The benefits are endless for P&O Cruises and CtrlFlow ECA replaces most products. It simply solves many client problems in one easy to use and sustainable solution.

We all need to drastically reduce the use of harmful chemicals and greatly lessen our reliance on plastics.

IMPA Save endorses ECA

“I believe that this technology can have a significant impact on improving sustainability in the shipping sector.”

Mikael Karlsson

Chairman of IMPAsave,
and Special Ambassador for Sustainability · IMPA -
The International Marine Purchasing Association ·

IMPA through IMPA Save and IMP+ACT is dedicated to collaborating with industry to promote technical innovations and solutions that improve sustainability in the shipping sector and reduce the environmental impact of shipping. We have led initiatives to reduce plastics at sea and to reduce the chemical burden for cleaning and disinfecting on-board.

ElectroChemical Activation (ECA) technology helps ship operators achieve both these objectives by generating high-grade cleaning and disinfection solutions from inputs of simply water and salt on-board and on-demand, providing a highly sustainable and environmentally responsible alternative to the use of synthetic chemicals. Ship operators who adopt ECA systems can significantly reduce plastic, transport, disposal and carbon emission footprints as well and enhancing the hygiene and safety of crew and passengers on-board.



Multiple uses onboard

Our CtrlFlow ECA systems produce an endless supply of ECA solution. This makes it a practical and sustainable way to clean and disinfect even the largest of cargo ships. We'll find you the best CtrlFlow ECA system to use and where on the ship it should be installed to cover every area onboard.

Our ECA solutions are more effective than bleach and deliver high efficacy with very short contact times when used against bacteria, viruses, spores, fungi, and moulds. They're also supported by independent accredited laboratory tests to EN standards and are proven to be highly effective at controlling and eliminating Norovirus, SARs-CoV-2, and other contagious diseases

impa|save

People, Planet, Profit, Purpose

IMPA work with the industry's best and brightest to bring knowledge of sustainable solutions to the shipping industry. The IMPA Save initiative is dedicated to making lasting changes in practical and real terms, for the good of the industry and the environment.

IMPA Save is continuously facilitating the need for responsible procurement, engaging with companies, organisations and people who can and will support better solutions for life below and above water.

Our mission is to minimise the impact on the environment through practical solutions that don't compromise safety. Following IMPA's lead we are always looking to supply sustainable cleaning solutions such as ECA. That's why we are delighted to see the chairman of IMPA Save endorsing ECA technology.

We must save cost and save the environment, and those working throughout the supply chain have a huge role to play in this.

Machine support and maintenance

If you swap to CtrlFlow you will be supported throughout the entire lifecycle of the machine. From the point of installation, we provide continual aftersales support for the entire lifetime of the system.

For larger devices like CtrlFlow 40 and the CtrlFlow 5K models, we install and commission the systems. As part of the installation process of the larger systems, we provide training sessions to ensure employees are comfortable working with the device and cleaning solution.

Extra support:

Technical user manuals are provided to detail the system, parts, spares, operation, maintenance, and operation of the systems.

- We have a series of instructional videos to help with system operation and maintenance.
- Easy-start guides – we have non-text graphics on systems to guide the users on using the systems and solutions.
- Online and phone support to connect users and technical crew with our engineers.
- We offer annual service visits to larger devices.

The innovation of CtrlFlow

How CtrlFlow ECA solution has been developed and adapted by us to work perfectly in the unique environments onboard cruise ships.



Filter development

We developed the CtrlFlow ECA machine to use a reverse osmosis filter system to purify the water that is used onboard ships. This prevented the mineral content turning into limescale build up and therefore reduced the need for regular maintenance by staff to remove limescale.



Pressure sensor

Water pressure can fluctuate when tasks such as laundry are being done on a large scale, affecting the ECA salt-to-water ratio. We developed a sensor to stop the ECA process automatically when the pressure is high, removing the need to monitor and open the machine when necessary to turn it off.



Holding tank

A public health representative at Carnival UK asked us to increase the solution's potency to 250PPM when it currently produced 166PPM. We therefore developed the CtrlFlow machine with a dispenser to suck water and solution together, which meant the machine could now generate up to 500PPM.



Overflow prevention

One key aspect of a cruise ship is the roll, pitch, and yaw motion. A regular water-level sensor therefore becomes unreliable to monitor whether the machine is overflowing. We developed a float sensor to send sound waves to the solution inside the machine to accurately judge the water level.



Mobile machines

A big development for CtrlFlow was ensuring there was a mobile option that mounted the machine onto a trolley. This ensured that in the event of a localised outbreak or major spillage, staff could easily move the machine to where it was needed and produce necessary quantities of the solution.



Training roadmap

We are developing the housekeeping and technical training given to cruise ship staff, so they better understand how to maintain and use the CtrlFlow ECA machine in the most efficient way possible. This includes easier links, QR codes, videos, and guides.





Scan QR code to find out more.
Contact us at innovation@towersupplies.com
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