

GOgen® Provides Safe, Sustainable and Chemical-input Free H₂S Oxidation for Teva Pharmaceuticals



Application	Odor control H ₂ S oxidation
Unit Type	GOgen® A3000
Water Type	Discharge water

Results

- ✓ Effective control of H₂S
- ✓ Sustainable solution - no chemical residues, no transport of chemicals, no plastic waste
- ✓ Improved safety - no storage of chemicals onsite

THE CUSTOMER

Teva Pharmaceuticals



Teva Pharmaceuticals stands as a global leader in the pharmaceutical industry, celebrated for its extensive array of products that serve more than 200 million people daily. Spanning several decades of history, Teva is renowned as a pioneer in innovation, excellence, and environmental stewardship. The company boasts numerous manufacturing sites across the globe, all committed to rigorous operational and ecological protocols.

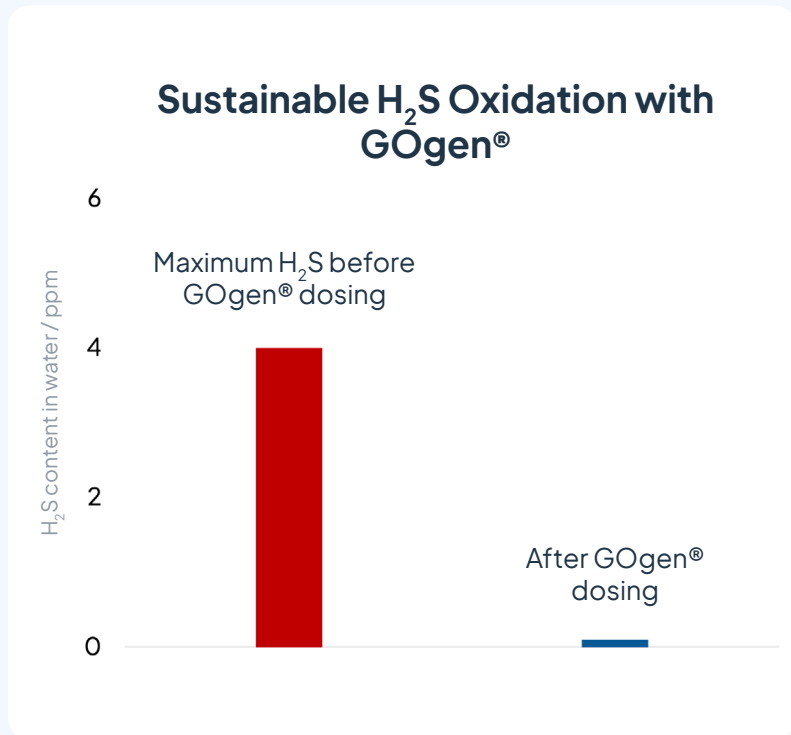
The Kfar Saba site is Teva's main pharmaceutical production plant in Israel. The wet production process emits a stream of discharge water that occasionally contains hydrogen sulfide (H₂S). Teva Kfar Saba sought a solution that could ascertain full compliance with discharge water regulations. The solution had to meet H₂S removal efficacy and reliability, align with Teva's strict Environmental Health and Safety (EHS) guidelines, and at the same time address demanding operational and financial efficiency objectives.

TECHNICAL SUMMARY

Sustainable H₂S Oxidation

Teva pharmaceuticals was seeking a technology solution to secure discharge water regulations without the handling and use of dangerous chemicals, and in doing so improve the sustainability and safety profile of their manufacturing site. A key aspect was implementing a green solution for discharge water treatment. HPNow provided an effective solution for H₂S control, allowing the pharmaceutical company to eliminate chemical inputs and improve site safety profile.

Type of water	Discharge water
H ₂ S concentration in effluents (ppm)	1-6
Target H ₂ S concentration after GOgen® (ppm)	<1
Achieved H ₂ S concentration after GOgen® (ppm)	0 (below detection threshold)



H₂S OXIDATION

Discharge Water Treatment with HPNow



Sustainable, safe & chemical input free discharge water treatment with GOgen®

At Teva's Kfar Saba manufacturing site, Teva faced the challenge of meeting local regulations regarding H₂S discharge in an efficient, cost-effective and sustainable way.

H₂S causes a 'rotten egg' smell and is a highly toxic gas often present in discharge water. Teva's plant is close to a densely populated area, and controlling H₂S in an effective and safe manner was important to achieving Teva's ambitious objectives of:

- ✓ **Environmental Sustainability:** Modifying water treatment techniques to align with the company's commitment to protecting the environment and upholding regulatory requirements.
- ✓ **Improved Safety:** Reducing the need for hazardous chemical handling and storage, thereby lowering the risk to both employees and the environment.
- ✓ **Enhanced Operational Efficiency:** Improving water quality management to decrease the frequency of downtime and the need for maintenance.

With these objectives in mind, HPNow was asked to provide a cost effective, easy to install and operate solution for sustainable oxidation of H₂S in the discharge water.

The solution consists of a GOgen® system generating green oxidant onsite which is then injected in the discharge water. The green oxidant effectively oxidizes H₂S to elemental Sulfur, thereby removing the bad smell and toxicity from the water.

IMPACT

Sustainability and Environment

For Teva, sustainability is a core principle guiding their operations. Adopting HPNow's onsite Green Oxidant generation technology has helped this leading player in pharmaceuticals achieve two important sustainability goals:



Zero Chemical Discharge

By using GOgen®, Teva substantially reduced its environmental footprint, contributing to cleaner water discharge and supporting local biodiversity.



Decreased Emissions and Waste

GOgen® by HPNow does not require any chemical inputs, thereby reducing CO₂ emissions related to chemicals production and their transport to site. In addition, there are no plastic containers used to transport the chemical to be disposed of.

IMPACT

Safety Enhancements

In any industrial setting, safety is paramount. For companies like Teva, prioritizing safety is not just a regulatory requirement, but a fundamental aspect of their corporate culture. Using the GOgen® has enabled them to improve the safety both in the workplace and for the world around them:



Reduced Chemical Exposure

The elimination of traditional chemical treatments significantly lowered the risk of chemical spills and exposure, creating a safer workplace.



Non-toxic Byproducts

Hydrogen peroxide decomposes into water and oxygen, leaving no harmful residues, further ensuring the safety of both employees and the surrounding ecosystem.

Operational Efficiency

As a fully automated solution, GOgen® operates seamlessly without necessitating manual intervention or additional resources from the company. This hands-off system not only streamlines operations but also frees up valuable manpower.

Furthermore, this automated system has significantly reduced the time spent on risk assessments and associated administrative tasks. With fewer manual interventions required, the company can allocate resources more effectively.

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GOgen® by HPNow provides us with a cost-effective, easy to install and operate technology-solution to secure discharge limits. The GOgen® solution aligns very well with Teva’s sustainability goals.

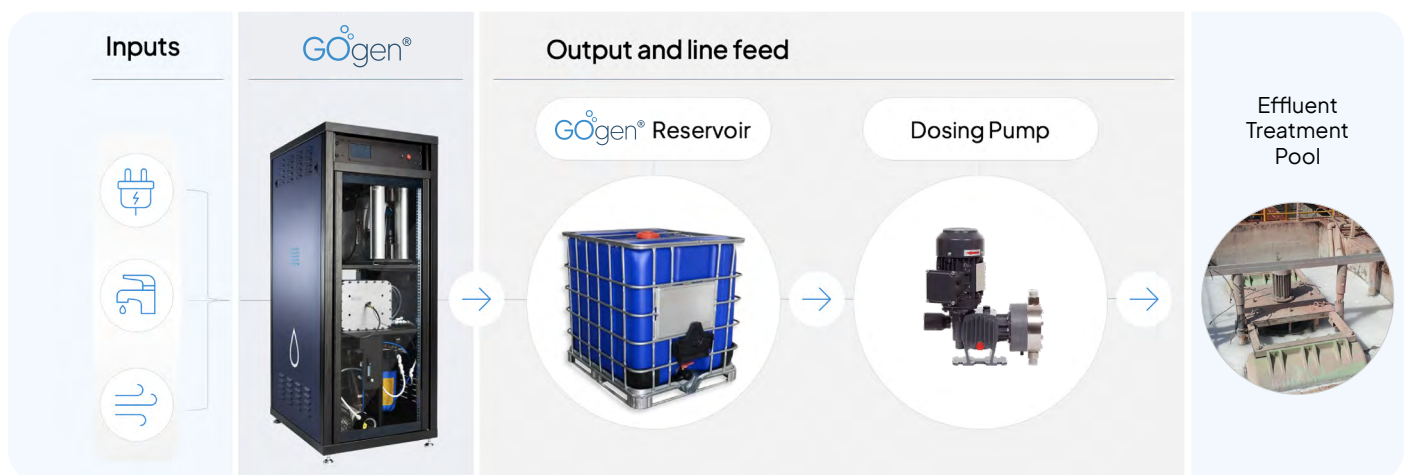
Gaash Bartal, Sr, Director Environmental , Sustainability and green Technologies, Teva Pharmaceuticals



GOgen® Setup

The GOgen® was installed in the equipment room and set to automatically fill a buffer tank with Peroxide UltraPure™. From the tank, a dosing pump injects the Peroxide UltraPure™ in the effluent treatment basin, which is both simple and effective.

The system operates completely autonomously, without need for user intervention. Peroxide UltraPure™ is generated at a concentration of 1%, which is very safe and poses no danger to humans, plants or equipment, but is sufficiently potent to affect the desired operational results.



About HPNow

HPNow is a technology and market leader in onsite green oxidation through its range of safe, sustainable, onsite hydrogen peroxide generation solutions. HPNow's solutions address growing global challenges in clean water and sanitation through autonomous, safe and sustainable green-oxidation solutions. Headquartered in Copenhagen, and with representation across Europe, the Americas and Asia, HPNow addresses their clients' water treatment needs in market segments ranging from agriculture and aquaculture, to industrial and drinking water treatment.

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