

Decontamination & odor removal in remediation



HYDROXYL IL
טיהור אוויר ונטרול ריחות
SUSTAINABLE PROTECTION

Air & surface
purification solutions



Environments requiring remediation are challenged with multiple pathogen risks and odor management — in occupied spaces.

Indoor environments impacted by natural disasters, floods, fires, smoke, raw sewage backups, biological decay and chemical contamination can quickly become areas of hazardous concern for occupants. Bacteria, mold, fungi, and viruses can propagate in the air and on surfaces, creating health concerns, and smoke from building fires, forest fires, or nicotine residue releases chemicals that can permeate surfaces and cause irritation to the eyes and respiratory system. Powered by Hydroxyl Technology readily and effectively breaks down airborne pathogens and pollutants, can be easily set up in any environment, and is safely operated 24/7 in the presence of people, animals, and plants.

Odorox systems takes care of these issues:



Deodorization

- Smoke - fires & nicotine
- Biological sources - fungi (mildew) and bacteria
- Chemical odors
- Garbage & waste areas



Pathogen mitigation

- Microbial growth
- Viral transmission



Chemical reduction

- Volatile organic compounds (VOCs)
- Hydrogen sulfide
- Ammonia
- Off-gassing from cleaning agents



Mold reduction

- Black mold
- Mold spores
- Prevention of future infestations



Replicating nature to deliver safe and effective cleaning.

Hydroxyl products produce the same natural cleansers present outdoors in the same concentrations – ensuring effective purification of air and cleaning of surfaces in occupied spaces.

Hydroxyl products treat:

Odor

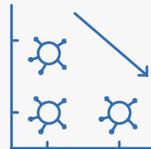
Mold

Fungus

Bacteria

Viruses

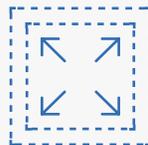
Why Hydroxyl products are better:



Provides superior performance in reducing microbial loads in the air and on surfaces.



Runs continuously 24/7 while treated spaces are occupied.



Treats any size space with the same efficacy.



Delivered through an existing air handling system or installed as a stand alone solution.



Improves the effectiveness of existing cleaning and sanitation protocols.



Proven to reduce microorganisms in the air and on surfaces.

Reduction in air

PATHOGEN	REDUCTION	TIME
MS2 (simulant of RNA viruses ie. Corona)	99.9%	30 mins
	99.999%	90 mins
Phi-X174 (simulant for DNA viruses ie. Smallpox)	99.9%	30 mins
	99.99%	90 mins
Staphylococcus epidermis (Gram-positive bacterium)	99%	30 mins
	Undetectable	90 mins
Erwinia herbicola (Gram-negative bacterium)	99%	30 mins
	99.99%	120 mins
Aspergillus niger (black mold)	99.9%	30 mins
	Undetectable	90 mins
SARS-CoV-2 (COVID-19 virus)	99%	20 mins
	Undetectable	80 mins

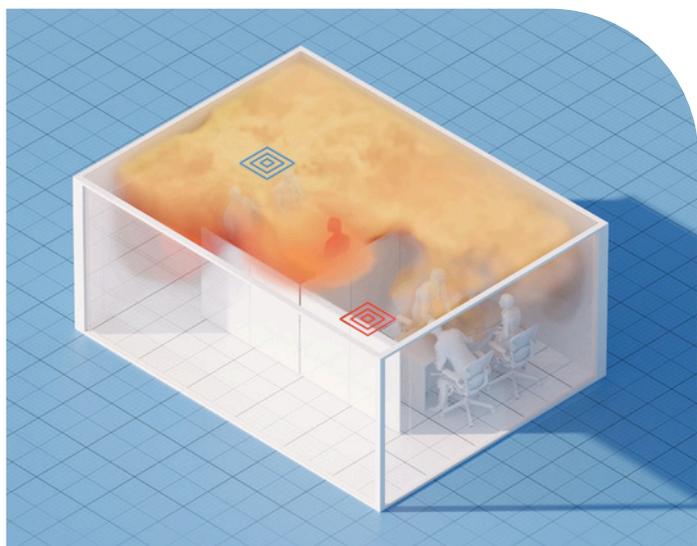
Reduction on surfaces

PATHOGEN	REDUCTION	TIME
Escherichia coli	99.99%	180 mins
Salmonella enterica	99.97%	180mins
Staphylococcus aureus Vancomycin-resistant enterococcus (VRE)	99.98%	360mins
Bacillus Subtilis	99%	360 mins
Candida Albicans	99.99%	48 hrs
Aspergillus Niger	99.99%	48 hrs
H1N1 Influenza virus	99.999%	48 hrs
Murine norovirus	99.99%	360 mins
SARS-CoV-2 virus	99.999%	360 mins
		120 mins

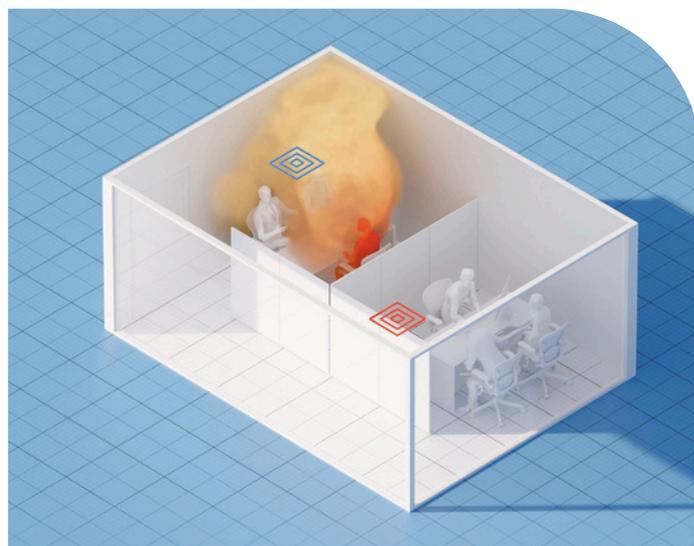


Demonstrated to make shared environments significantly safer.

Computational fluid dynamics (CFD) modeling has shown Hydroxyl can provide a 73% reduction in the size of the cloud of infection versus ventilation alone.



3 Air changes per hour with ventilation only.



3 Air changes per hour with ventilation and Hydroxyl.

↓ 73%

When added to ventilation, Hydroxyl can substantially reduce the risk of transmission. In addition, Hydroxyl enables you to operate at lower air changes per hour and still lower transmission risk, thereby improving energy efficiency.

Proven to reduce airborne pollutants.

Controlled atmospheric studies assessed the impact of Hydroxyl on VOCs and the possible accumulation of chemical intermediates.

TVOC reduction after 15 hours:

↓ 59%

No accumulation of intermediates above background levels, including:

- Formaldehyde
- Acetaldehyde
- Other aldehydes



Hydroxyl has demonstrated significant reductions of other airborne pollutants in real-world settings:

- Chemicals produced by fires
- Nicotine
- Hydrogen Sulfide
- Ammonia
- Ethylene
- Methane
- Non-methane hydrocarbons

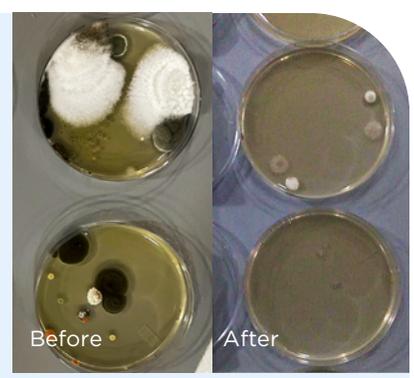


Case studies

Ship with mold in HVAC system

Problem

A 150-foot-long yacht was infected with multiple species of mold, threatening the crew's and passengers' health and safety. Mold was in the air handling system, facilitating the propagation of spores throughout the ship. Mold test kits placed in various locations revealed significant mold contamination.



Hydroxyl impact

A Hydroxyl IDI unit was installed into the air handling system's ductwork to treat the yacht. After seven days of continuous treatment, subsequent testing revealed that the ship's mold was virtually eradicated. The mold-related odors disappeared, and the crew found that the various cabins smelled fresh. They no longer had any difficulties breathing and resumed sleeping on the yacht.

Customer benefit

The ongoing active purification delivered by the Hydroxyl solution significantly reduced the sanitation and cleaning required on the ship lowering operating costs. In addition, the reduced mold contamination provided passengers and crew with a better experience and helped preserve the asset's value.

Military base with mold in buildings

Problem

A military base had a mold issue in barracks and other buildings, creating an unhealthy environment for service people and generating unpleasant odors. The mold was on various surfaces, and it was believed that spores were being distributed through the facility by contaminated ductwork. The contamination in some buildings was so severe that the barracks had to be demolished. In others, the personnel had to be temporarily housed in hotels until a solution could be implemented.



Hydroxyl impact

Hydroxyl IDU units were installed into ductwork to treat the barracks using the air handling system. The base saw a significant reduction in mold and mold-related odors. In addition, personnel saw a considerable improvement in air quality and could resume living in the barracks. Portable Hydroxyl Mini units were also introduced into some areas that had poor air circulation.

Customer benefit

Following the introduction of Hydroxyl, the base was able to return personnel to the barracks and provide living quarters with improved air quality. The mold outbreak was brought under control and did not require any further mitigation. Personnel noted that the air smelled fresher in the treated spaces.



Case studies

Tropical resort with mildew odor

Problem

A luxury resort on a Caribbean island had 170 hotel suites rented at high prices. Despite extensive cleaning protocols and high occupancy rates, the rooms would develop a musty, moldy smell that negatively impacted guest experiences. The resort would have to keep the rooms empty periodically to remediate the odors, and the persistent odors negatively impacted the resort's ability to charge premium rates.



Hydroxyl impact

Small units were placed in each of the suites, and in the weeks that followed, the resort workers noticed that the musty, mildew odors were eliminated, and guests began commenting on the "freshness" of the suites.

Customer benefit

The resort shortened turnaround times between guests and was able to charge higher prices for the suites due to the high level of guest satisfaction. The higher revenues generated a rapid payback on the Hydroxyl devices, and the resort has continued to use the Hydroxyl units since, ordering replacement UV optics each year.

Retail store with fire damage

Problem

A 150,000 square foot retail store had a fire in the adjacent warehouse that generated much smoke, resulting in the merchandise on the retail floor and warehouse having a strong "burning" odor. Initial remediation quotes called for a 30 day closure of the store (\$900,000 in lost sales per day) and the disposal of \$8 million in non-recoverable inventory.



Hydroxyl impact

The store used large Hydroxyl MVP48 units to treat the main space and portable G9 units to treat specific inventory items within an area with greater damage. After 36 hours of continuous treatment, the odor was largely mitigated, and the store could open to the public and resume operations. All of the inventory was recovered.

Customer benefit

The retailer limited the revenue losses to under \$2M, far less than the \$27M in lost revenue that would have resulted from a 30 day closure. The company also saved several million dollars in recovered inventory. With Hydroxyl, the outlet was able to open within 36 hours and continue to operate the Hydroxyl technology in the presence of shoppers, running for a total of 10 days to remove the odors completely and permanently.

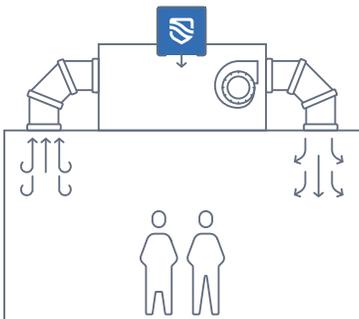


Hassle free installation

Hydroxyl solutions can be installed with or without an air handling system.

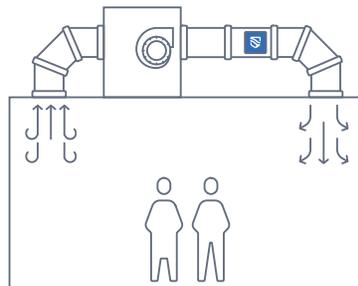
Centralized air handling

- Large rooftop units
- Large indoor units



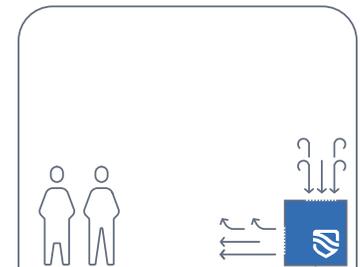
Decentralized air handling

- Smaller units inserted in ducts throughout the building
- Wall mounted units where there is no ductwork



No or limited air handling

- Large stand alone units with blowers
- Portable, stand alone units
- Wall mounted units



Hydroxyl makes maintenance easier.

Little impact on existing handling system

- Minimal increase in airflow resistance
- Virtually no extra wear and tear
- Marginal impact on energy consumption

Low frequency maintenance and a system that helps clean

- Annual replacement of UV optics and sensors
- Periodic cleaning of filters (frequency depends on the dust and oil concentrations in the air)
- Reduces the frequency and intensity of duct decontamination

Hydroxyl restoration & remediation product line.

Hydroxyl products can be added to air ducts, wall mounted or plugged into a standard outlet. Switch them on for instant air purification and surface cleaning in small to medium size environments.



Hydroxyl Mini

The Mini series is designed to fit in with its small proportions, modern design and low noise levels. This makes it ideal for cleaning and deodorizing air in offices, waiting rooms or any other small commercial space.

TREATMENT AREA: up to 500* sq ft



Hydroxyl IDU

The IDU purifier is a duct mounted purifier that is easy to install and requires only an electrical connection for operation.

NOMINAL TREATMENT AREA:
2,000* sq ft (model dependant)



Hydroxyl HRC06

The HRC06 purifier is wall mounted and can modulate its output to purify and deodorize commercial and industrial applications.

TREATMENT AREA: up to 6,600* sq ft

TREATMENT AREA:



Hydroxyl Slimline

A rugged purifier with a durable exterior beneficial for public spaces and commercial or industrial installations that require a portable or wall-mounted unit.

TREATMENT AREA: up to 900* sq ft



Hydroxyl Boss

Designed for tough environments, the Boss purifier is suited to applications like remediation following fire or water damage. It's also ideal for areas with frequent movement and contact.

TREATMENT AREA: up to 2,500* sq ft



Hydroxyl G9

By adding an external fan to provide greater air movement, the Hydroxyl G9 purifier is ideal for spaces that have been affected by smoke, flooding, wastewater, and other air pollutants.

TREATMENT AREA: up to 3,250* sq ft



Controlled solutions.

Designed to treat even the largest of spaces, our controlled solutions work with new and existing air-handling systems. Sensor-driven with customized controls that respond to real-time data.



Hydroxyl IDI

A versatile solution that fits into the ductwork of any air handling system. Connect with more IDI units to increase the treatment area.

TYPE: Indoor, inline with HVAC
NOMINAL TREATMENT AREA: 3,000* sq ft



Hydroxyl MVP14

Integrates into a new or existing air-handling system where space is limited and provides more cleansing power than induct systems.

TYPE: Indoor, inline with HVAC
NOMINAL TREATMENT AREA: up to 75,000* sq ft
BLOWER: optional



Hydroxyl MVP24

A heavy-duty unit built with a reinforced shell suitable for outdoor applications.

TYPE: Rooftop, inline with HVAC
NOMINAL TREATMENT AREA: up to 200,000* sq ft
BLOWER: optional



Hydroxyl MVP48

Our most powerful system, the MVP48™ purifier is ideal for the largest installations.

TYPE: Indoor, inline with HVAC
NOMINAL TREATMENT AREA: up to 450,000* sq ft
BLOWER: optional



MVP controller system

Controllers modulate purifiers based on feedback from the sensor system, creating an efficient method of treating pollutants in the space.



Sensor system

Air sensors placed throughout the environment send readings to the sensor system which provides constant real-time feedback to the control system.

Let's discuss a solution
tailored to your needs
or plan a trial.

At Hydroxyl, we're dedicated to
finding the right solution for solving
your challenges and delivering the
outcomes you need.

Get in touch to find out more
about how we can help.

office@hydroxyl.co.il
+972-74-422-2200



HYDROXYL IL
טיהור אוויר ונטרול ריחות
SUSTAINABLE PROTECTION

hydroxyl.co.il | Copyright 2024, Hydroxyl Israel Ltd.

11 Ha'meyasdim St., Mazor, Israel