Creating the Best Environment for Learning

Synexis® is a premier provider of innovative Dry Hydrogen Peroxide (DHP™) technology that addresses viruses, bacteria, mold, odors, and insects. DHP™ is the true gas form of hydrogen peroxide. Our technology uses ambient oxygen and humidity naturally present in every indoor environment. The Synexis® devices convert these elements into a gas that is within acceptable safety limits[1] for continuous use in occupied environments. Synexis® products are available either as **portable units** that can be placed on a stand or mounted to a wall in any room, including classrooms, cafeterias, hallways, and nurses' stations, or as units that can be placed **in-duct.**

Cleaning Air and Surfaces

DHP™ works continuously, (the 24/7/365 kind of continuously) to reduce the levels of microbes in any type of facility from the air and on surfaces. DHP™ flows wherever air flows, throughout any indoor space—reducing the presence of microbes without anyone having to leave the room, unlike other methods. Synexis® can clean surfaces that are out of reach or are not normally cleaned, such as the tops of tall cabinets in a classroom or the insides of desk drawers.

How Does DHP™ Work?

DHP™ is a form of gas whose molecule, Hydrogen Peroxide, is present in nature and the human body. The DHP™ molecule has a structure similar to a water molecule. Since all microbes (like viruses and bacteria) require water to live, they search for the DHP™ molecule in the air and on surfaces and attach themselves. DHP™ breaks down the microbe's outer cell membrane leading to its destruction.

Continuous Cleaning

DHP™ works continuously, 24/7/365 to reduce the levels of microbes in any type of facility from the air and on surfaces.

Certifiably Zero Ozone

Synexis® devices underwent rigorous testing by UL and were certified for UL2998 for zero ozone emissions.

Commands the Room

DHP™ flows wherever air flows, throughout any indoor space–reducing the presence of microbes without anyone having to leave the room, unlike other methods.

Low Maintenance

DHP™ works behind the scenes with very little upkeep, no operating staff, and no disruption to anyone's routine.

1. "Hydrogen Peroxide," Occupational Safety and Health Administration, 2018, www.osha.gov/chemicaldata/chemResult.html?recNo=630

Frequently Asked Questions

Q: How do I know it is safe?

A: The DHP™ molecule has a structure similar to a water molecule. Since all microbes (like viruses and bacteria) require water to live, they meet the DHP™ molecule in the air and on surfaces and attach themselves. Once attached, DHP™ breaks down the microbe's outer cell membrane leading to its destruction.

The highest concentrations of dry hydrogen peroxide (DHP™) in Synexis® deployments are 50 (or more) times lower than the OSHA safety limit of 1 ppm established in 29 CFR 1910.1000. Safety is often a matter of quantity. Liquid water and aqueous hydrogen peroxide are both dangerous to breathe. However, our lungs contain moisture, and the moisture in our lungs contains hydrogen peroxide, along with enzymes that make it and manage it. We also safely breathe humidity (small amounts of water) all day long. The DHP™ generated by Synexis® devices has a typical concentration below 10 parts per billion, which is 2,408 times lower than the hydrogen peroxide concentration found in our lungs.

Q: In what type of facility has DHP been deployed in?

A: Synexis® has been deployed in many facilities for many years. Such facilities include healthcare facilities, senior care facilities, childcare facilities, educational facilities, industrial facilities, commercial office space, offshore oil platforms, and even the highest levels of the federal government. Learn more by reading additional published studies.

Q: What effect does the Synexis® Sphere have on particle count/size?

A: DHP™ does not impact particulate matter (neither creates or removes particulate matter).

Q: What testing protocol do you recommend we use?

A: The testing protocol depends on your specific situation and needs. Trane offers various monitoring solutions. Please reach out to your local Trane representative to discuss your Indoor Air Quality goals.

Q: Do Synexis® devices create dangerous byproducts?

A: Synexis® devices do not create byproducts (e.g., ozone, formaldehyde) that can be created by other air-cleaning technologies and can be dangerous to humans. The Synexis Sentry and Sphere have received UL 2998 certification (less than 5 parts per billion of ozone). In extensive tests, Synexis devices have not generated any formaldehyde. On the contrary, Synexis devices have been proven capable of reducing formaldehyde, other volatile organic compounds (VOCs), and other contaminants such as mold, over time. DHP™ devices supply DHP to the entire room, so DHP fully and continuously oxidizes VOCs.

Q: Does the CDC or ASHRAE® recommend this product?

A: These organizations group all newer technologies together into a single category (emerging technologies) and recommend that buyers validate the technologies. Trane has conducted extensive testing at independent third-party laboratories that meets the CDC and ASHRAE guidelines for validation of the technologies. Trane has conducted expansive comparative evaluation of multiple technologies, which has provided new insights and advanced knowledge. Trane has shared their investigations into these emerging technologies in the form of White Papers.

Check Out Other Synexis® News and Peer Reviews!

- Newsweek: Best Infection Prevention Products 2021
- AJIC Journal: Treatment with Dry Hydrogen Peroxide Accelerates the Decay of Severe Acute Syndrome Coronavirus-2 on Non-porous Hard Surfaces
- Healthcare Facilities Today: Is Dry Hydrogen Peroxide Effective in Hospitals?
- AJIC Journal: Evaluation of dry hydrogen peroxide in reducing microbial bioburden in a healthcare facility

For more detailed Synexis® product information, please visit Synexis.com

TRANE®

Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit *trane.com* or *tranetechnologies.com*.

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Trane Technologies™ has a non-controlling minority financial interest in Synexis LLC, a provider of DHP technology.

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