



AirRX How it Works

Air RX: Advanced VOC and Pathogen Control for Healthcare Environments **Overview**

Air RX is a patented, proprietary oxygen-activated technology designed for continuous air purification in healthcare settings. Unlike earlier generations of hydroxyl radical systems that required moisture or sunlight activation, Air RX operates using ambient oxygen, enabling 24/7 performance without UV light or humidity dependence.

Step-by-Step Process

Activation

- The titanium phosphate-treated surface generates hydroxyl radicals ($\cdot\text{OH}$) when exposed to oxygen in the environment.
- These radicals are highly reactive due to their unpaired electron.
- Electron Grab
- Hydroxyl radicals stabilize by reacting with the first available molecule—commonly a VOC—by abstracting a hydrogen atom or electron.
- Breakdown of VOC
- This oxidation process breaks VOCs into smaller, harmless molecules such as water (H_2O).

Regeneration

Oxygen continuously recharges the surface, forming new hydroxyl radicals.

During this catalytic cycle, pure oxygen (O_2) is released as a byproduct, improving air quality.

Key Points for Healthcare Applications

- Continuous Action: Operates 24/7 without UV light, moisture, or manual intervention.
- Broad Spectrum: Targets VOCs, bacteria, and allergens for cleaner air and surfaces.
- Self-Sustaining: Uses ambient oxygen for regeneration, ensuring long-term efficacy.
- Byproducts: Produces water and releases pure oxygen, with no harmful residues.
- Patented Technology: Proprietary oxygen-activated process—distinct from older moisture or sunlight-dependent systems.