



The most efficiency machine to remove strong odor.

Fast and Efficiency by "innoScrubber"

innoScrubber

Remove bad odor and chemical bacteria and virus kill



Who need?

When you need to remove heavy strong bad odor e.g. sewage water odor, cigarette odor or decoration material odor etc... in a short period of time. "innoScrubber" may be the best choice for you.

The portable design let you can bring to anywhere by one hand in a short time, you can use it to destroy different odor molecule, innoScrubber also will kill airborne bacteria and virus in air by its technology.

Easy to use

One man / woman can easy to operate the machine. Just plug in the power socket and press the On/Off button, innoScrubber will start to operate or stop.

Rigid and Reliable machine

Constructed by G.I metal with Epoxy paint, it make innoScrubber become more rigid and reliable for long time use.

Super Silent

The silent is the feature of innoScrubber, it let user can apply innoScrubber in where silent is a must. E.g. Office and Hotel etc...

Operation time for odor remove purpose

Depends on different environment and pollutant level, the following can provide you for reference:

Hotel Room	10 – 20 minutes
Smoking Room (100ft.2 >)	5 – 10 minutes
Garbage Room (100ft.2 >)	5 – 20 minutes
Sewage Room (100ft.2 >)	15 – 30 minutes

Note: The above conditions is assume there should be no additional pollutant continuous come out in the area



innoScrubber

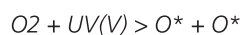
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Technology

innoScrubber - **DECOMPOSE, DESTROY** and **PURIFY** contaminants and will lower the bacteria count in a room more than would be obtained by ventilating the room at the rate of 100 air changes per hour. A normally ventilating house has 1 to 3 air changes per hour.

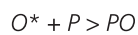
innoScrubber Process

ACTIVATION PHASE



Energetic Ultraviolet Photons (170nm – 200nm) are emitted from a high intensity source that will break some Oxygen Molecules into Activated Mono-atomic Oxygen. The quantum yield or the efficiency of this action is a function of the wavelength and intensity of the source.

REACTION PHASE



Activated Oxygen Atoms are then mixed with air stream to be treated and these atoms react with any carbon-hydrogen & sulphur based chemical compounds, degrading them by successive oxidation to odorless and inoffensive by-products. If the airborne contaminants are outnumbered by the activated oxygen atoms, ozone will be formed as a by-product, a consequence of the further oxidation of regular molecular oxygen.

Conclusion:

Process designation: PHOTO-OXIDATION

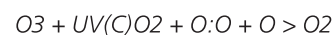
Working media: Vacuum Ultraviolet sources (UVV)

A/. UVV photons (180nm) break-up oxygen molecules into atomic oxygen.

B/. Atomic oxygen reacts with water vapor to form hydroxyl radicals.

C/. Hydroxyl radicals destroy chemical contaminants by oxidation.

NEUTRALIZATION AND GERMICIDAL PHASE



Lower intensity Ultraviolet (220nm – 288nm) is used to neutralize the excess ozone generated in the Reaction Phase, by decomposing the excess ozone into regular oxygen molecules. This Ultraviolet wavelength of 254nm chosen for the Neutralization and Germicidal Phase is well known for its very high germicidal performance.

The germicidal effect of sunlight was first discovered in England in 1877 by Downes & Blunt. Since their pioneer work, the effect of UV radiation on bacteria has been studied in detail and the relation between lethal action and wavelength was well known. The relationship between the germicidal effect and wavelength has a maximum effectiveness at 260nm and falls to practically 0 at 320nm. In a general way, this relationship is similar to the absorption curve for a nucleic acid (DNA), the basis of living organisms. Within the limits of experimental accuracy, the lethal action appears to be independent of the nature of the bacteria.

Since 90% of the energy spectrum emitted by the innoScrubber Germicidal UV Source is concentrated at 253.7nm by the use of low-pressure mercury vapor lamp, the Germicidal Relative Effectiveness is close to 100%.

Conclusion:

Process designation: DNA sterilization

Working media: C-range Ultraviolet source (UVC at 254nm)

A/. The DNA of any living organisms is destroyed by exposure to UVC.

B/. Destruction of DNA prevents reproduction of the organism.

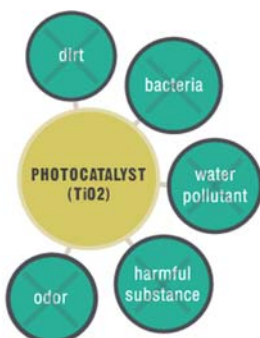
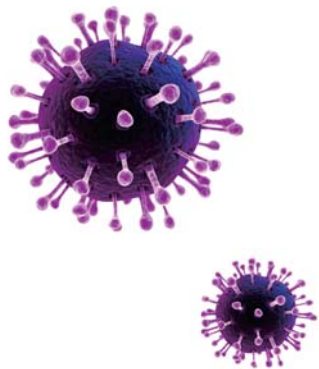
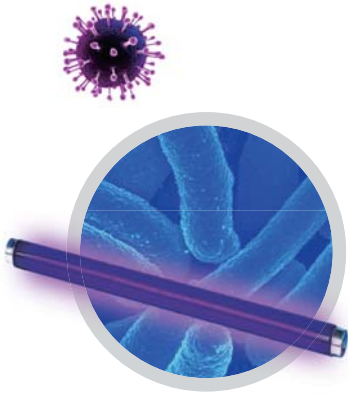


PHOTO CATALYTIC OXIDATION (PCO)

The key to PCO is the photocatalyst. A photocatalyst is a chemical compound e.g. TiO₂ Titanium Oxide that becomes highly reactive when exposed to various wavelengths of UV light. In the presence of organic pollutants, such as hydrocarbons, chlorinated solvents, alcohol, ketones and aromatics compounds, the active photocatalyst attacks the pollutants' chemical bonds, converting the toxic compounds into benign constituents, such as water and carbon dioxide. Photocatalytic systems have the ability to convert toxic carbon monoxide, at room temperature, to non-harmful carbon dioxide. This is a major development because carbon monoxide often is a cause of sick-building syndrome and it cannot be removed from the air with any type of absorption media.

PLASMA ION GENERATION

Ions exist in nature in various sizes. Small ions only last between 30 and 300 seconds, but they are very active. Small ion levels range from 900 to 1,100 negative ions and 1,000 to 1,200 positive ions per cubic centimeter (ions/cm³) in an ideal "fresh air" environment, like at the top of a mountain. At sea level we typically experience 500 negative and 600 positive ions. In cities and inside buildings the ion levels drop by 80% to 95% and are sometimes barely detectable in small spaces. As the ion count decreases, so does the air quality. By increasing the quantity of charged oxygen ions to "fresh air" levels, oxygen molecules can once again become active and air quality improved. The innoScrubber technology reproduces mountain elevation ion levels indoors. This is the basis of the technology.

Much like sunlight does in the atmosphere, innoScrubber technology produces a natural bio-climate rich in active oxygen molecules, otherwise known as ions. The innoScrubber system creates a measurable and controllable quantity of positive and negative oxygen ions. The negative ions contain an extra electron while the positive ions are missing an electron resulting in an unstable condition. These unstable ions provide the following benefits:



Benefit & Functions

Particle reduction

Airborne particles are charged by the ions through ionic bonding. These charged particles stick together, becoming heavier and then falls to the floor. These larger particles are also returned through the air conditioning system or vacuum cleaner where they are captured by the filter. E.g. dust particles, cigarette smoke, mold spore & Allergen

Odor Neutralization

Odorous gases and aerosols oxidize on contact with active oxygen molecules. Odors, especially of an organic origin, are quickly eliminated.

Sterilization

As they divide in the split zone, bacteria, virus and mold spores bond with active oxygen molecules and are oxidized and destroyed. The bacteria and spores can no longer multiply. Additionally, particles are the vehicles that transmit bacteria cells from person to person. As the ions cause particles to fall to the floor, the result is less bacteria in the breathing zone.

VOC Control

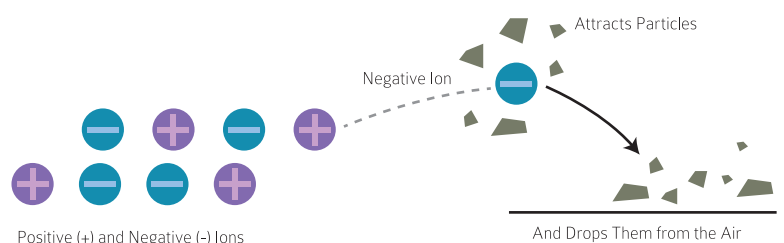
Volatile Organic Compounds (VOCs) are emitted as gases where there is carpeting, building materials, furniture, office equipment, cleaning agents, paints, glues, solvents or pesticides. The ions trade electrons with these VOCs breaking down their molecular structures into less harmful ones e.g. H₂O & CO₂

Health Benefits

Human and animal lungs absorb oxygen more efficiently from clean ionized air, enhancing general health and well-being. Alertness and concentration is improved.

Applications and uses for innoScrubber

innoScrubber will destroy biological and chemical contaminants, odours such as bacteria, viruses, mould, mildew, smoke, formaldehyde, cleaning solvent etc. See table above for a partial list of contaminant treated by innoScrubber are widely used in homes, doctors and dentist's offices, hospitals, veterinary clinics, office buildings, government facilities, railway stations, health clubs, day care centres, laboratories, class rooms, old age homes, hotels, smoking rooms and bars



innoScrubber

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What contaminants can be destroyed by innoScrubber?

Listed below are some of the common odours, chemical pollutants and biological contaminants that are destroyed by innoScrubber. We simply do not have room for a complete list.

Acetone	Decaying Substances	Lactic Acid	Rubber
Alcoholic Beverages	Deodorants	Liquor Odours Masking	Sewer Odours
Animal Dander	Diesel Fumes	Agents	Smoke
Animal Odours	Embalming Odours	Methyl Alcohol	Spoiled Food
Anaesthetics	Ethyl Alcohol Eucalyptol	Mildew Mould	Tar
Asphalt Fumes	Exhaust Fumes	Nail Polish	Tarnishing Gases
Automobile Exhaust	Fabric Finishes	Naphtha (Coal tar)	Tobacco Smoke
Bacteria	Faecal Odours	Naphtha (Petroleum)	Turpentine Vapours
Bathroom Odours	Fertilizer	Nicotine	Varnish Fumes
Body Odours	Film Processing Odours	Noxious Gases Organic	Vinegar
Burned Flesh	Fish	Chemicals Packing House	Viruses
Burned Food	Formaldehyde	Odours	Volatile Materialize
Charred Materials	Fuel Gases	Paint	Waste Products
Cheese Smells	Garlic	Paste & Glue	Xylene
Cigarette Smoke	Hair Spray	Perfumes, Cosmetics	
Coal Smoke	Incomplete Combustion	Perspiration	
Combustion Odours	Industrial Wastes	Pet Odours	
Cooking Odours	Kerosene	Plastics	
Creosote	Kitchen Smells	Poultry Odours	

SPECIFICATION



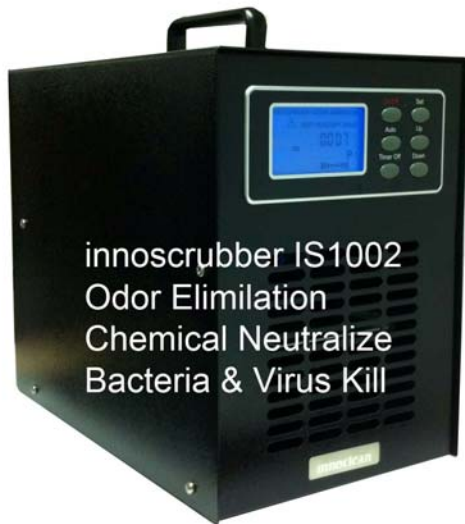
innoScrubber - iS1001

Size:	520 x 180 x 140mm
Indication Lamp	Yes
Weight:	3.8 kg
Material	Metal
UV Lamp	2
Power Cord	3 meters
PCO Filter	Yes
Lamp Life	<25,000 hrs



innoScrubber - iS1002

Size:	320 x 260 x 180mm
Indication Lamp	Yes
Weight:	4.5 kg
Material	Metal
O ³ Plate	1
Power Cord	1.5 meters
Remote	Yes
O ³ Plate Life	<15,000 hrs



innoclean
innoscrubber
IS1002

The powerful odor and chemical removal air scrubber

For new decoration works, sewage plant, garbage room, smoking room.... where need fast and effective air purification.

Our air cleaner reproduce the natural conditions found in the outdoors. It can significantly improve the interior air quality by eliminate fume/smoke/odors, largely remove pollen/dust/large particle, kill mold / mildew/ bacterial. Air cleaner can create healthy and comfortable living environment. It recommended to be use in home, office, closet, car, hotel, hospital, restaurant and entertainment areas.

Features:

- *Compact and Portable Size
- *Low energy consumption, low maintenance
- *Quiet Operation
- *Adjustable speed control
- *With high quality aluminum housing construction.
- * No chemicals and no residual contamination.
- * Remote Controller
- * Timer Setting
- * Ozone Generation Level setting
- * Function up delayer with 10 seconds delay after turn on the machine

Function:

1. Produce Activated Ozone, Anti-animalcule, combine with the floating smog, pollen and dust in the air, improve air quality
2. Kill bacteria and virus
3. Pollen eliminating, Bacteria elimination.
4. Produce hydroxyl radicals to oxidize odor, bacteria, mold, chemicals and other pollutants.

Dimensions:

Product: 320L x 260H x 180W (mm)

Packing: 346L x 290W x 269H (mm)

Net Weight: 4.5kg

Electrical: Input voltage: AC 110 V /230V, Rated power ≤34W

Efficient area: Max. area: 1,000 - 4,000 sq. Ft

Color: Black

Remarks: Actual apply effective area is depends on the pollutants level, purification time request and the environment ventilation / HVAC system design.

Remarks: This products should be operated and used under manufacturer instruction.

innoclean - innoscrubber IS1002



Model: HMA-7000-TC

