

# DEODOR-OXY

## Any waste pollutes the air with toxins

Air pollution is the contamination of air by municipal garbage, smoke which creates toxic and harmful gases. They are 95% oxides of Carbon, nitrogen, and sulfur.

The mismanagement of Landfill waste caused by garbage pollution.



The effect of garbage pollution is the spread of harmful bacteria and viruses in the surroundings, as well as obnoxious **odors** which will also end up as air pollution. The water will also get contaminated which will transmit parasites, bacteria, and many sicknesses to humans and all sorts of animals. Garbage packed in plastic bags causes **plastic pollution**. Hard and soft non-biodegradable plastic that stays on the land for thousands of years or forever. There is no biodegradable plastic only a cheat. Pretty much all plastic is a type of carbon. It will stay forever in the soil, river, lakes, and oceans and harm the environments. Garbage is the major cause of indoor **air pollution**.

## Toxic Air Pollutants

Pollutants produced by backyard burning of garbage are released primarily into the air, and close to ground level where they are easily inhaled- **"With no pollution controls"**

## Deo — Dor — Oxy

**"Destroy all possible odors of any type present and sanitize, clean and reduce contaminants damaging the health of humans, animals and plants"**

Garbage air emissions include Methane (CH<sub>4</sub>), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and sulfur oxides (SO<sub>x</sub>).

## Killing Air Pollutants

Big amounts of more poisonous chemicals are commonly detected in the garbage smoke and trash:

Benzene, styrene, formaldehyde, polychlorinated dibenzodioxins (PCDD), Polychlorinated dibenzofurans (PCDF), Polychlorinated biphenyls (PCBs), and heavy metals such as lead, mercury, and arsenic.

## Dioxins

Among the environmental and health risks posed by residential garbage, **dioxin** is the key concern. **Dioxin** is a potent human carcinogen that is especially harmful to the adults, children and pregnant woman.

**Dioxin** is also an **endocrine disrupter** and can cause reproductive, developmental, and immunological problems in humans and animals.

**Garbage Barrels – No. 1 source of dioxin in the world. Just one barrel can produce as much as dioxin to make a whole family sick.**



# DEODOR-OXY WITH ITS PRODUCTION OF HYDROXYL RADICALS, THE ONLY PRODUCT WHICH BREAKS DOWN AIR POLLUTANTS.

## Atmosphere Deodorant

**Deodor®-Oxy** reacts with organic molecules and transforms into hydroxyl radicals, also creates sufficient energy to breakdown hydrocarbons. **Hydroxyl radicals (OH<sup>•</sup>)** are composed of a hydrogen atom bonded to an oxygen atom. They are highly reactive, readily stealing hydrogen atoms from other molecules to form water (H<sub>2</sub>O). All pollutants and greenhouse gases, such as **Methane** and more complex hydrocarbons are initially broken down by **Deodor®-Oxy** radicals. This is the reason **Deodor®-Oxy** is called **Atmosphere's Deodorant or Detergent**. The earth's atmosphere is capable of cleaning itself and of removing greenhouse gases (CO<sub>2</sub>).

**Hydroxyl radicals** are highly reactive molecules, convert these pollutants into water-soluble compounds that are then removed in the form of rain.

**Evaporation**  $H_2O (aq) = H + OH^{\bullet}$

**Condensation**  $CO_2 + OH = HCO_3$

**Precipitation**  $H + HCO_3 = H_2CO_3$

The radicals are the **"Detergents"** of the atmosphere.

A drastic increase in air pollution is because of **Ozone (O<sub>3</sub>)**. On particularly sunny days, ground-level **Ozone** is formed from nitrogen oxides originating from **garbage** trash or **garbage** barrels and even burning of **garbage**.



Ozone Depletion



Waste Disposal



Air Pollution

This **ozone** decisively contributes to the formation of **summer smog**. But in contribution to the formation of ground level ozone, **Volatile-Organic Compounds (VOCs)** play a key role. These substances, including acetone, methanol, or benzene are either released into the atmosphere by landfill garbage.



Residents in big cities are currently coping with dangerous levels of **air pollution** such as **sulfur dioxide, nitrogen dioxide** and **VOCs** and all these molecules contribute to serious health issues.

**Ozone** is a big issue in cities with **photochemical smog**. Breathing only slightly increased concentration of ozone **60-120** parts per billion (ppm) results in a range of respiratory symptoms. Symptoms include decreased lung function, increased airway hyperactivity and pulmonary inflammation.



**Only Deodor®-Oxy is a final solution and "Self-Cleaning" ability of the Atmosphere.**





## EARTH HAS LOST ITS ABILITY TO CLEAN-AIR-POLLUTION

### Garbage

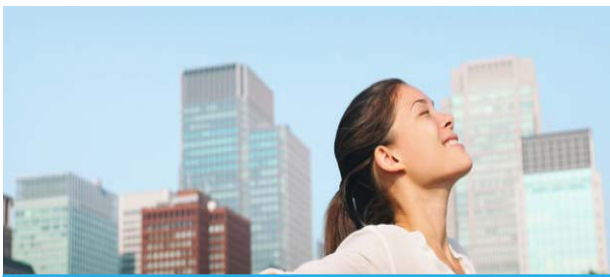
Most of the big cities with major waste problems are because of dumping toxic waste around the city and thereby causing high rates of **cancer, allergies, and birth defects.**

Although not as deadly risky as dumping tons of waste around the city borders, overflowing waste containers and garbage all over is still a great nuisance and risk to our health and environment. The whole city starts to smell with **toxic odors.** presents five outcomes of overflowing garbage bins, garbage around the city, villages, and commercial centers, and suggests how the most advanced **Deodor technology** could ease the problems before getting seriously ill.

*Bacteria, insects, and a huge number of small filthy animals (VERMIN) thrive from the garbage.*

Overflowing waste bins and garbage all over the residential areas are an ideal breeding ground for bacteria, insects, and vermin. The flies that visit the garbage are also the same flies that roam around your lunch buffet and drop their offsprings on your plate. By doing so, they increase your risk of contracting with salmonella, which causes typhoid fever, food poisoning, enteric fever, gastroenteritis, and other major illnesses.

Besides flies, other animals that thrive from the garbage in and around the containers include rats, foxes, and stray dogs.



### Deodor<sup>®</sup>-Oxy Markets

Smart Cities

Private Homes

Disinfection of Any Waste

Waste Collectors

Commercial Applications

24 hour's later, as the world gets hotter and more crowded, our garbage starts to decompose, it pumps out awfully **bad odors.** The health effects of **bad odors** are really serious, one-third of deaths from stroke, cancer, and heart disease are due to **Ozone** as a major factor in causing asthma and keep making it worse, and nitrogen dioxide, sulfur dioxide could cause **bad bronchial symptoms,** lungs inflammation and reduce lung's function.

Since Millions of years, the **Earth** could handle all these problems, but very sadly now the earth has lost its ability to remove air pollutants, bad odors the reason a very fast spreading of smog and acceleration and accumulation of **greenhouse gases.**

And the reason **Three-Decade-Long** worldwide decline of a key molecule that cleanses the air and atmosphere. Without enough of the molecules, emissions that contribute to the greenhouse effect, smog, and the hole in the Ozone layer do not get destroyed as fast as humans made garbage release's them.

*Only-One-Molecule is very, very important Deodor<sup>®</sup>-Oxy*

### Very Important

*It is the most important chemical for the atmosphere Hydroxyl Radical "If this free-radical [Molecule] is decreasing, it could add to extreme global warming"*

# ADVANCING THE SCIENCE OF ACTIVATED HYDROXYL - RADICALS WITH BUILT-IN OXYGEN ACTIVATION, SO EASY-TO-USE

## Deodor<sup>®</sup>-Oxy Catalyzed Oxygen

- Promotes rapid oxidation of a wide range of all organic's contaminants.
- Contains a built-in **Watch Water** catalyst that remains active through the entire lifespan of the **Hydroxyl-Radicals oxidation reaction**.
- The proprietary and protected by a registered trademark the **catalyst** also eliminate the need for any other alternative treatment which is potentially hazardous activation chemistries.
- Single premixed 3 component product results in simplified logistics and application
- No health and safety concerns than with the use of traditional activation methods such as Chlorine, Chlorates, Chelated metals, and Quaternary ammonium
- **Zero residuals**. Nothing is left behind after use. Does not need any rinse of treated garbage or area of garbage storage
- Killing efficiency against **bacteria, viruses and fungi** will be **5-Log 99.999%**. Not toxic to humans and animals.

The invention of **Deodor<sup>®</sup>-Oxy** is to treat emission gases from **residential, commercial, industrial waste**, and garbage wherein these wastes produce bad odors, volatile organic compounds (**VOCs**) contaminants, and numerous hydrocarbon compounds. All the gases from wastes are considered as pollutants and need to be treated and removed from the garbage before the release of the gas and odors to the atmosphere. The removal with **Deodor<sup>®</sup>-Oxy** includes **Hydroxyl-Radical** generation technology.

Odors compounds, which could be organics, and inorganics can fill the air in and around the residential neighborhood. Such odors and VOCs can range from mildly offensive to **intolerable levels**. This is a worldwide problem in cities with more than 10,000 residents. Examples of odorous sources include industries that

Deodor-Oxy Technical Description	
Physical State	Solid mixture
Appearance	White powder granules
Odor	Odorless
Flash point	Not flammable
Bulk density	ca. 1250 - 1350 kg/m <sup>3</sup>
pH	8.5 (in 2% solution)
Solubility	ca. 220 g/l (20 °C)- Soluble

process organic materials such as those that process and produce **food for human consumption** and industries that produce animal feed for the pet, fish, poultry and hog industry and general agricultural applications. Other organic odor sources include composting facilities, MBT plants, sewerage treatment centers, garbage transfer stations, landfill stations, contaminated lakes, ponds, rivers.



**Deo-Dor-Oxy** technology has been used to create the **oxidation** that generates the activated species required for the purposes to destroy toxic gases using **Reactive Oxygen Species (ROS)** including **Hydroxyl Radicals**. For the activated species generated in the oxidation process, these ROS species here the highest reduction potential (between about 3.5 and 6.4 eV) have the shortest availability with half-life concentrations of less than about 100 milliseconds. These react with toxic odors molecules that need a high reduction potential oxidizer for decomposition.

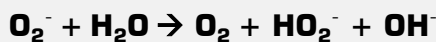
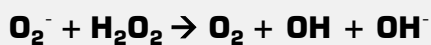
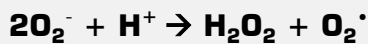
## FOUR OXIDATION STATES OF MOLECULAR OXYGEN

<b>ONE</b>	<b>DEO<sub>2</sub></b>	→ For – Dioxygen
<b>TWO</b>	<b>DO<sub>2</sub>R</b>	→ For – Cation Dioxygen
<b>THREE</b>	<b>O<sub>2</sub>XY</b>	→ For – Anion Superoxide
<b>FOUR</b>	<b>PERO<sub>2</sub>XIDE</b>	→ For – Anion Superoxide

“Common” oxygen in air  $O_2$  is in a ground is a free “Diradical” having two unpaired electrons. Ordinary Oxygen does not react well with most molecules, but it can be “activated” by the addition of energy expressed as  $O_2$   $O_2$   $O_2$  and  $O_2$  with a strong catalyst with photochemical energy and transformed into reaction oxygen species (ROS). Transformation of oxygen into reactive state from the addition of single electron is called reduction. The donor molecule that gave up the electron is oxidized



The result of the monovalent reduction of triplet oxygen is superoxide  $O_2^{\cdot -}$  it is both a radical and an anion (charge of -1). Other reactive oxygen species known to be created with **Deodor<sup>®</sup>-Oxy** are shown below.



Global Warming



Water Pollution



Acid Rains



- **Deodor<sup>®</sup>-Oxy** is a **Watch Water<sup>®</sup>** technology
- Fast and complete reaction with toxic contaminants
- Treat the complete range of waste
- Does not leave toxic or undesired residual by products
- Most cost effective, easy to apply
- So safe, contaminant break down to  $CO_2 + H_2O$
- When mixed with water **Deodor<sup>®</sup>-Oxy** forms a solution that can be mixed with any waste, sludge, landfill, garbage or injected on surface.



# STEP-BY-STEP USAGE INSTRUCTIONS

## Step 1: Preparation of Solution, Safety Precautions & Testing sites

### Tools required:

- Water Pump
- Chemical Mixing vessel (approx.: 50 -100 Liters)
- The set of water pipes with a jet nozzle of about 20m long and 10m length of water pipe.
- Boom forklifts trucks (if required to spray evenly over the large landfill sites)
- Connect the outlet of the water pump to the hose assembly with a jet nozzle.
- Connect the inlet of the water pump to a 10m hose section. Drop the other end of the tube into the solution container.

### Safety precautions and test sites:

- Protecting Equipment such as Gloves, Masks, Safety goggles, Protective suit needed to be used while using the product
- Make sure the use of protective clothing while mixing and spraying the solutions
- Test sites always recommended to be kept away from residential places (minimum distance: 50 m)
- Garbage should be gathered in a way that solution can be easily sprayed and applied for safe handling.

## Step 2: Preparation of Deodor<sup>®</sup>-Oxy Solution

- Use clean water mixed with **Deodor<sup>®</sup>-Oxy** at a rate of 1-2% (e.g. mix 1-2 kg of **Deodor<sup>®</sup>-Oxy** with 100 liters of water)
- Make sure that product is totally dissolved.

- It is recommended to prepare instant solution, so that required amount can be used instantly.
- Ideally, **Deodor<sup>®</sup>-Oxy** solution need to be mixed and used on the same day and not to be prepared as a reserve.

## Step 3: Spraying of Deodor<sup>®</sup>-Oxy Solution

- Make sure all the pipes and connections are tightened before spraying.
- Sprayers should make sure all the safety precaution before the start and avoid standing opposite to wind direction while spraying.
- Using the water pump, spray for 5 to 10 seconds to check the operation of the injection system.
- Spraying should be carried evenly from the top to the bottom of the landfill.
- Try to spray slowly to ensure the solution is absorbed into the garbage.
- If the landfill is excessive and wide, it is necessary to use a boom lift to spread and conduct spraying evenly on the landfill.
- Repeat the spraying process after 7-14 days or if odor persists.

## Product Shelf Life

Store in cool, humidity-controlled conditions, shelf life is three years from the date of manufacture. Container must be tightly resealed to preserve stainless integrity of powder.

**Attention:** Not for human consumption. Keep away from children's reach.

 Beware of fake products 

**Disclaimer:** The information and recommendation in this publication are true and based on data we believe to be reliable. They are offered in good faith but do not imply any warranty, liability or performance guarantee. Specifications are subject to change without notice. Watch Water<sup>®</sup> will not be liable under any circumstance for consequential or incidental damages, including but not limited to, lost profits resulting from the use of our products.