



## What is Ozone: A Natural Alternative?

Ozone is a colorless unstable gas with a pungent odor and powerful oxidizing properties, formed from oxygen by electrical discharges or ultraviolet light. It differs from normal oxygen (O<sub>2</sub>) in having three atoms in its molecule (O<sub>3</sub>). Ozone is a triatomic very reactive form of oxygen, that is a beneficial component of the upper atmosphere, and that is used for oxidizing, bleaching, disinfecting, and deodorizing.

Ozone is a preferred alternative to bleach because **Ozone is 150% stronger than chlorine and reacts over 3,000 times faster**, leaving no harmful byproducts. Adding ozone to a regular cleaning routine will destroy viruses, bacteria, and virtually all other forms of microbes, remove odors, sterilize beds, airborne chemicals **without leaving a chemical residue behind**. **After the process is complete, ozone reverts back to oxygen**, meaning no residual chemicals are left behind. This is a preferred method to bleach or other chemical alternatives because it leaves the treated area smelling fresh, not like chemicals.

## Benefits to Ozone

Everyone loves their vehicle, especially while it still has that new-vehicle smell. Once that wears off, all sorts of other odors develop. Tobacco smoke spilled food, gasoline smells, smog and mildew from the air conditioning system, non-fresh used area air. These odors all contribute to a “not-pleasant” and “not-so-healthy” automotive environment. You get into the vehicle day after day and are so used to the odors that you don’t even notice them anymore. You get used to the odors – but other people still smell the stink!

You want your vehicle to look and smell its best at all times so you really only have three options:

1. Never eat, drink, or smoke in your vehicle.
2. To have your vehicle detailed by a professional over and over.
3. Remove the odors by ozone!

Vehicles owned by smokers and pet owners are impossible to resell until those odors are gone. You might want to consider this when it is time to trade in. A good ozone treatment could significantly increase your trade in value you get for your vehicle.

Basically, ozone removes odor by destroying the molecules, bacteria, and spores that cause unpleasant smells. Ozone (O<sub>3</sub>) is a highly reactive molecule and is very quick to chemically react with particles that it comes into contact with in the air and on surfaces. The extra oxygen atom in the ozone attaches itself to other molecules, chemically changing their structure to create non-offensive molecules – eliminating the smell.

When considering bacteria and spores the same process applies, with ozone attacking the outer shell of the cell causing it to break down. When the outer shell degrades, the cell itself breaks apart and dies.

With this in mind, it makes sense that a situation with stronger odor (and more odor-causing molecules or particles) requires more ozone to remove the smell – there needs to be enough ozone to react with all of the offensive molecules it encounters. This requires either (a) longer ozone treatment, or (b) higher concentrations of ozone (a larger ozone generator).

## STEP 1: CLEAN THE VEHICLE

Before we start pumping ozone in the vehicle, we recommend the interior be properly cleaned. The seats and the carpets have to be properly vacuumed. For the average vehicle a simple vacuum and wipe down. If the car has a cabin air filters, remember to change it often. Use activated charcoal filters if they are available. Ozone can't kill bacteria and other odor-causing agents if it cannot reach it.

Should the vehicle be heavily smoke infested we recommend a professional to wipe down and possibly wash the vehicle's carpets, headliner and all soft surfaces. The entire vehicle has to be cleaned properly so as to remove every piece of debris. *"You must remove the old ham sandwich from under the seat!"*

## STEP 2: USING OZONE GENERATOR

The ozone generator is a device which pumps ozone gas into the vehicle. We have different generators for different sizes of vehicle cabin. The amount of ozone that is pumped into the cabin should be perfect for the ozone treatment to work. The ozone generator is typically connected to an output pipe which we put inside the vehicle through the driver side window while keeping all the other windows closed.

## STEP 3: TIMING

The amount of time required for ozone to do its work varies from vehicle to vehicle. However, on an average, 30 minutes of gassing is sufficient to take care of most of the odor issues. We always recommend our clients to stay clear when ozone is in the vehicle as it is toxic for humans and pets. Typically, the vehicle is turned on idle and the fans are kept running on recirculation mode at full speed. After the treatment is done, all the doors and windows of the vehicle are kept open so that any extra ozone can escape.

## STEP 4: CHECKING THE VEHICLE

As a rule of thumb, one session of ozone treatment is enough to remove the odor from the vehicle. However, by our experience, we can safely say that in certain cases, up to three sessions might be required to get the desired effect within a two month period. After that, we would recommend semi-annual ozone treatment for the vehicle.