

What is Ozone?

Ozone is a naturally occurring oxidizing and disinfecting agent which is composed of three oxygen atoms combine to form O₃. It is a bluish or colorless gas with a very characteristic odour. Ozone is highly reactive and its' unstable nature causes it to rapidly decompose to oxygen, leaving no residues.

Ozone is present in the atmosphere in small concentrations, which are increased considerably in urban areas or after storms. The energy released from lightning produces ozone naturally, resulting in the fresh smell after a thunder storm. Ozone can also be generated mechanically by exposure of oxygen to a high energy electrical discharge (corona discharge), which is the process on which St-Groups ozone product is based.

| Property | Ozone | Vs Oxygen |
|----------------------------------|--|----------------|
| Molecular Formula: | O ₃ | O ₂ |
| Molecular Mass: | 48 | 32 |
| Color: | light blue | Colourless |
| Smell: | clothes after being outside on clothesline photocopy machines smell after lightning storms | Odourless |
| Solubility in Water (@ 0-deg C): | 0.64 | odorless |
| Density (g/l) at 0C: | 2.144 | 1.429 |
| Electrochemical Potential, V: | 2.07 | 1.23 |

St. Groups L.T.D. Company

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For more than a century, ozone has been used throughout Europe and the United States for purifying drinking water supplies, bottled water, decontaminating cooling towers, and in a variety of applications for food processing plants.

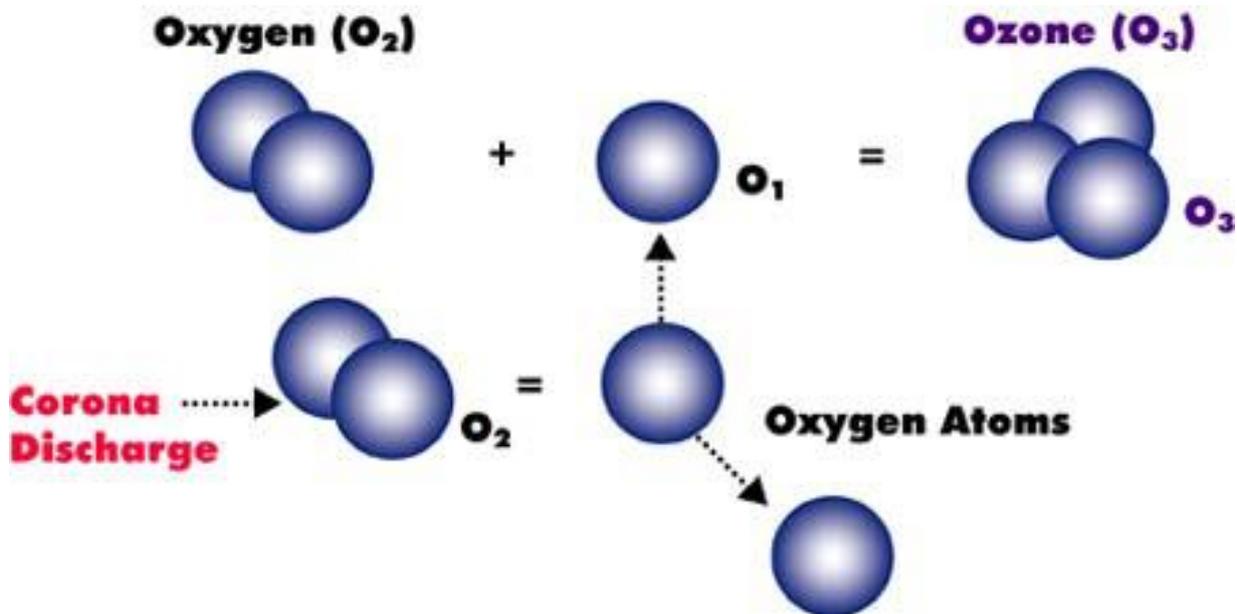
Due to the natural molecular instability of ozone, the third oxygen atom breaks away to leave pure oxygen (O₂) and a single, negatively charged, oxygen molecule. This single oxygen atom is a powerful oxidising agent that reacts with bacteria, fungi, spores and associated molecules that cause bad odours.

Antecedents

Ozone is well established as a safe alternative for disinfecting water, aerial environments, and solid surfaces. Unlike many other disinfectants ozone is produced on site, so it avoids the safety and insurance risks related to transportation and storage of chemical treatments.

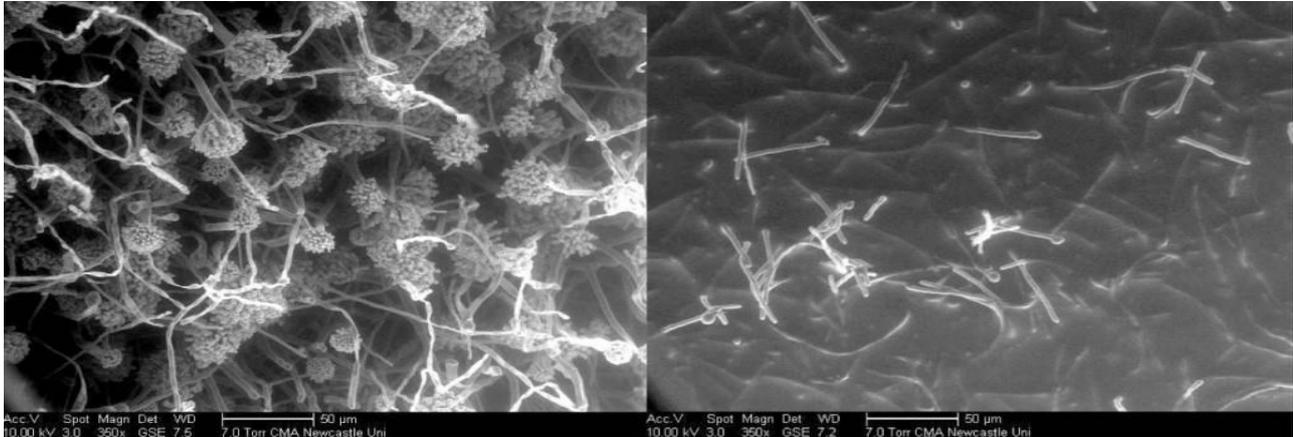
Ozone Generation

Ozone gas is formed when oxygen molecules (O₂) are exposed to either ultraviolet radiation or an electrical discharge, becoming oxygen radicals (O) that will bond with oxygen molecules (O₂) to create ozone (O₃).



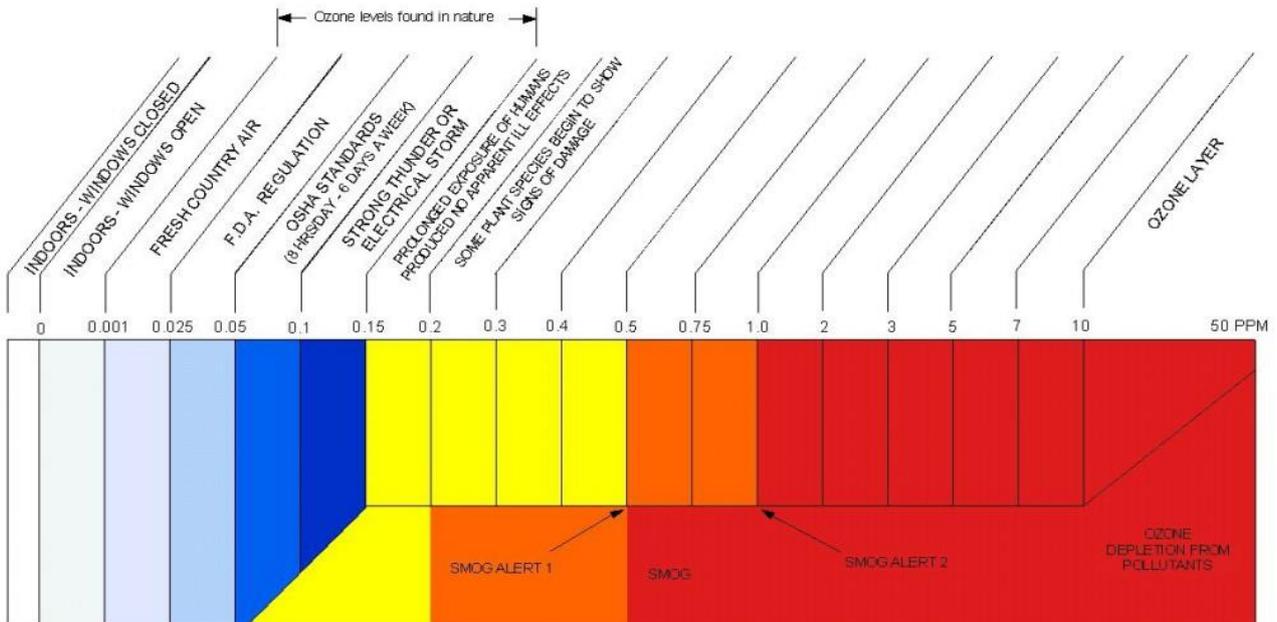
Mechanism of Ozone:

Ozone will oxidize any susceptible substance such as bacteria, fungi, viruses, and any organic matter within its' reach. During oxidation, the weak bond will split leaving oxygen as a by-product of the reaction.



Safety:

St-Groups systems work with trace levels of ozone, which fall well within European Health & Safety guidelines. Contact St-Groups for further details.



Ozone Concentration

As shown in the diagram above, ozone occurs in nature at levels of up to 350 ppb (parts per billion). St-Groups ozone systems work typically at levels of less than 200ppm and are well within health and safety limits.

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Ozone For Clinics & Hospitals



OZONE FOR CLINICS

The hospital rooms, as well as those of custody, rest, private clinics, etc.. be thoroughly cleaned and sanitized, these are people who daily attend these environments: visitors, patients, in addition to hospital staff and service personnel. St-Groups with its ST-O3, with its system of sanitizing environments, daily cleaning of all hospital environments such as rooms, corridors, waiting room, canteen, etc.

This system does not require the use of chemical agents or detergents, because ST-O3 exploits all the natural power of ozone. Ozone is an odorless gas present in nature, consisting of 3 oxygen atoms (O₃). It is essential for life on Earth as it absorbs ultraviolet rays from the sun.

Ozone is also the second most powerful sterilant in the world together with chlorine and is used to disinfect, sanitize, whiten and reclaim objects and environments.

Ozone sanitation is a completely ecological cleaning method, and has been defined as a "GRAS" safe agent by the F.D.A, the US Food and Drug Administration. The Italian Ministry of Health, moreover, with the protocol of July 31, 1996 n. 24482, has recognized the use of ozone in the treatment of air and water, as a "natural GARRISON for the sterilization of environments".

St-Groups takes care of selling or supplying ozone equipment, products and equipment, guaranteed and certified by European institutions that certify its effectiveness in the field of use.

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