

What is Ozone?

Ozone, a three-atom form of oxygen, is a normal trace element in the earth's atmosphere. Ozone is the strongest commercially available oxidizing agent. Because gaseous ozone is highly reactive, it readily oxidizes organic matter and has a variety of uses such as a bactericide and an algacide. There are three stages in the life cycle of ozone: generation, oxidation, and decay. Its presence can be detected by its sweet odor even at low concentrations.



How is Ozone Produced?

1. Nature produces ozone by solar radiation ionizing oxygen in the atmosphere at high altitudes, in the arctic and over snow covered terrain. The outside air we breathe contains a small amount of ozone

2. Ozone may also be produced by electrical discharges. Nature creates ozone, which purifies the air, by electrical discharges or simply by air to air lightning and air to surface lightning.

3. Ozone is also formed when hydrocarbons and nitrogen oxides react with each other in the presence of sunlight. Contributing to this method of ozone production are the following: automobiles, industrial emissions from smokestacks, oil wells, refineries, etc... When these chemicals form ozone by photosynthesis, the result is often a major component of smog. Thus ozone can be both an oxidant and an irritant depending upon its chemical makeup or its quantity and quality.

Ozone can also be produced by vacuum cleaners, copying machines, electric trains, some shop tools, electrostatic precipitation, other appliances and ozone generating devices.

Why Use Ozone?

Ozone is a form of oxygen that has been electrically energized. The energy makes ozone more chemically active than oxygen. Most pungent substances are described by chemists as being unsaturated. Unsaturated simply means their molecular structure is not closed; therefore, it will readily combine with oxygen. *Ozone actually breaks down polluted molecules such as hydrocarbons into water vapor and carbon dioxide.* An ozone generator doesn't hide or mask unpleasant aromas with perfume or chemicals; *ozone will attack and destroy, by oxidation, the offending molecules.*

Why Use Ozone for Air Cleaning?

Low level ozone (oxidation) is an excellent air purification method. Ozone or activated oxygen is an unstable three-part molecule of oxygen (O³). When ozone meets a pollutant in the air it attaches itself to the pollutant and changes it into harmless compound. Eventually, it will oxidize or neutralize (destroy) it. therefore, low level ozone is an excellent method of eliminating unpleasant odors in the air, destroying pollen and dust particles, and even killing bacteria that may be floating in the air. Activated oxygen also revitalizes and refreshes stale air often found in refrigerators, homes and offices.