

Ozonation

Ozone (O_3) is a gas that constitutes three oxygen atoms combined together. In the atmosphere, Ozone is present in the upper layer of the stratosphere as a protective shield against harmful UV radiation from the sun.

Ozone is a strong oxidizer, meaning that it can add an oxygen atom to a reactant. In water treatment, oxidation is an important step because it kills microorganisms, decomposes organic contaminants and removes odour. Chlorine has been historically used as a universal oxidizer for water treatment. However, ozone is more powerful than chlorine. Additionally, after oxidation, ozone is converted into oxygen (O_2) and does not form harmful by-products that chlorine may form.

Ozone is used industrially for bottled water, food processing and vegetable spray wash applications. It is effective against bacteria, algae, mold and viruses and removes heavy metals and taste from water.

Two of the dangerous disease-causing microbes are Giardia and Cryptosporidium. Both bugs are extremely resistant to chlorine disinfection, yet ozone – combined with electric charging – inactivates them.

