



Important Qualitative Ozone Relationships

- Ozone half-life in air is typically about 15 minutes in open areas (can be hours in enclosed areas) and increases with lower temperature and lower humidity.
- Ozone is about 50% heavier than air and has a low vapor pressure, so it tends to sink to the floor and does not disperse if there is no air circulation.
- Virtually all ozone instruments have cross-sensitivities with other gases. Chlorine compounds such as ClO_2 and nitrogen compounds such as NO_2 look very much like ozone to many instruments. Strong VOCs such as vapors of alcohols affect most VOC instruments.
- Maximum ozone concentration in water varies directly by concentration of the gas in air and inversely by temperature: for example 1.5% feed gas (by weight) will have a maximum concentration of about 11 ppm (mg/L) in water at 5 degrees C and 6.4 ppm at 20 degrees C. Doubling the concentrations of ozone in the feed gas will double the concentration in water.
- Dissolved ozone monitors also have cross-sensitivity and other operational problems. For example, the popular and low-cost ORP meters (oxidation-reduction potential meters) are sensitive to pH and various ionic conditions of the water.
- Ozone reactions in air are fairly well understood in terms of starting compounds and ending compounds, but the intermediate reactions and compounds are not always well understood.
- Ozone reactions in water are generally well-understood and documented, but areas of uncertainty still exist.