

Ozone (O₃)

Ozone is a highly reactive, colourless gas that is normally present in the troposphere as a result of naturally occurring photochemical and meteorological processes. It has a sharp odour that can often be detected around running electric motors, after lightning storms, and freshly mown hay. The effects of ozone are dependent on where it exists. Stratospheric ozone protects the earth from UV light, but ozone can be toxic in the troposphere. Ground level ozone is formed through complex chemical reactions between precursor pollutants, e.g. volatile organic compounds and nitrogen oxides, in the presence of heat and sunlight. Changing weather patterns also contribute to yearly variations in ozone concentrations. Ozone also can be transported into an area from pollution sources hundreds of miles upwind.

Potential short-term effects for ozone exposure include pulmonary function reductions, increased airway sensitivities, and airway inflammation. The primary short-term injury is to the lungs, which is characterized by lung congestion, fluid build-up, and bleeding. Inhalation may initiate, accelerate, or exacerbate respiratory tract disease of bacterial or viral origin. Discomfort to individuals may involve coughing, dryness of throat, mucous membranes, and of the nose and eyes following exposures of high concentrations for short duration.

The current AAAQO for ozone is:

- 1-hour average AAAQO = 82 ppb.