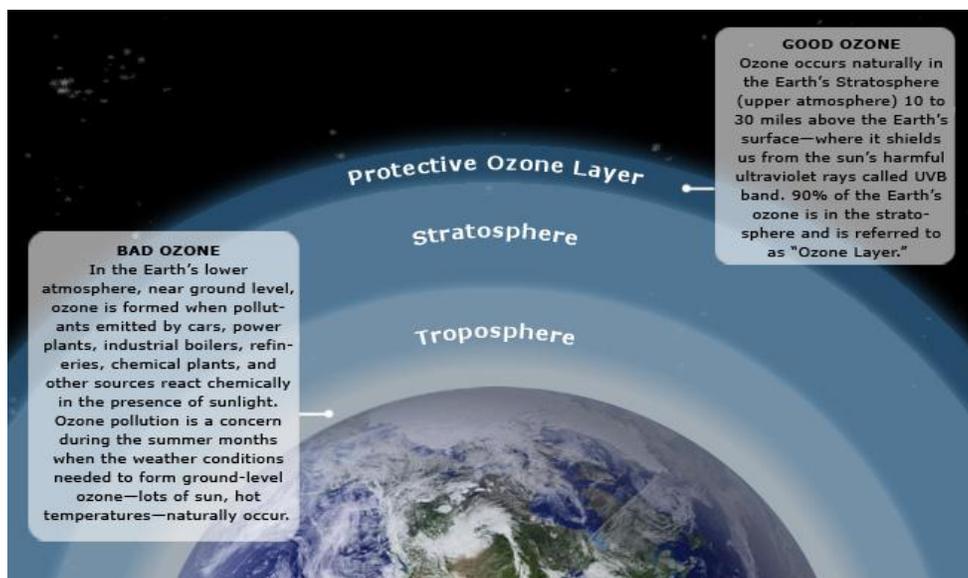


INTRODUCTION TO OZONE

Ozone (O₃) is a triatomic oxygen molecule gas that occurs both in the Earth's upper atmosphere and at ground level. Ozone can be good or bad, depending on where it is found: It is a bluish gas that is harmful to breathe. Therefore, it is bad at the ground level.

Text description of the Introduction to Ozone diagram



Ozone in Earth's Atmosphere.

Protecting the Environment- Ozone Depletion

Your "Power" in Protecting the Environment from Ozone Depletion

- Make sure that technicians working on your car air conditioner, home air conditioner, or refrigerator are certified by an EPA-approved program to recover the refrigerant (this is required by law).
- Have your car and home air conditioner units and refrigerator checked for leaks. When possible, repair leaky air conditioning units before refilling them.
- Contact local authorities to properly dispose of refrigeration or air conditioning equipment.

International Action in Protecting the Environment from Ozone Depletion

In 1987, the Montreal Protocol, an international environmental agreement, established requirements that began the worldwide phase out of ozone-depleting CFCs (chlorofluorocarbons). These requirements were later modified, leading to the phase out in 1996 of CFC production in all developed nations.

Basic Chemistry and Sources

As we have learned, volatile Organic Compounds (Hydrocarbons) combine with nitrogen oxides (NO_x) in the presence of sunlight to form ozone.

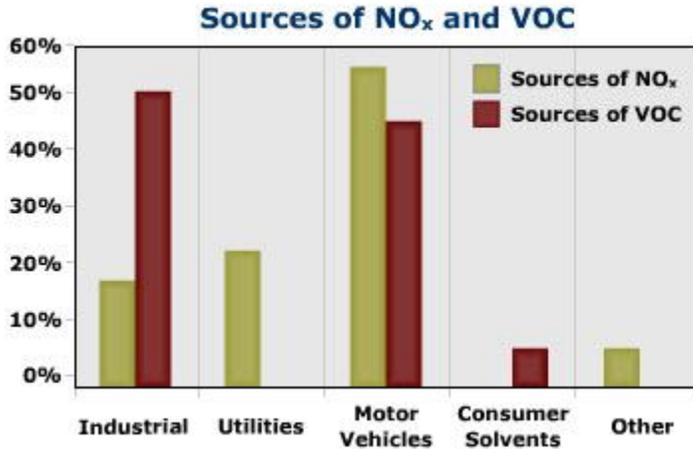


In turn, sunlight and hot weather cause ground-level ozone to form in harmful concentrations in the air. As a result, it is known as a summertime air pollutant.



Many urban areas tend to have high levels of "bad" ozone, but even rural areas are also subject to increased ozone levels because wind carries ozone and pollutants that form it hundreds of miles away from their original sources.

View the graph below to compare the major sources of NO_x and VOC that help to form ozone.



Major sources of NO_x and VOC.

Source: <https://www.e-education.psu.edu/egee102/node/1970>