Ozone

Ozone, a gas composed of three atoms of oxygen (O₃), occurs both in the Earth's upper atmosphere and at ground level.

**Stratospheric Ozone:** forms high in the atmosphere when intense sunlight causes oxygen molecules (O₂) to break up and re-form as ozone molecules. Popularly called “good ozone”, it shields us from the harmful effects of the sun's ultraviolet light.

**Ground-Level Ozone:** commonly referred to as “bad ozone” forms when emission sources including, but not limited to, transportation, industrial and commercial operations, and vegetation emit oxides of nitrogen (NOₓ) and/or volatile organic compounds (VOC) that react in the presence of sunlight.
Health Effects of Ground-Level Ozone

Ozone can:

- Make it more difficult to breathe deeply and vigorously.
- Increase the frequency of asthma attacks.
- Cause shortness of breath and pain.
- Cause coughing and sore or scratchy throat.
- Inflame and damage the airways.
- Aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.
- Cause chronic obstructive pulmonary disease (COPD).
- Make the lungs more susceptible to infection.
- Continue to damage the lungs even when the symptoms have disappeared.
Optimum conditions for the formation of ozone include high temperatures and low winds. Sections are not to scale and are for illustrative purposes only.
Ozone Standards

2015 8-Hour Ozone NAAQS (70 ppb)
EPA signed final rule classifying 9 counties as Marginal Nonattainment (Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Tarrant, and Wise)
No SIP required
Attainment deadline: August 3, 2021

2008 8-Hour Ozone NAAQS (75 ppb)
Did not achieve attainment by July 2018 deadline for EPA moderate designated 10-county region
SIP revision 12 months after classification effective date
Proposal to reclassify DFW Area to serious published in Federal Register
Attainment deadline based on effective date of initial designation (3 more years to attain – July 20, 2021)
Monitor Locations

2008 and 2015 Ozone NAAQS

Legend
- Metropolitan Planning Area
- Counties Designated Nonattainment Under 2008 8-Hour Ozone NAAQS
- Counties Designated Nonattainment Under 2015 8-Hour Ozone NAAQS
- Ozone Monitoring Sites

Map showing monitor locations in various counties with legends indicating levels of nonattainment and monitoring sites.
Historical Ozone Exceedance Days

Based on ≤70 ppb (As of December 2, 2019)

Exceedance Level indicates daily maximum eight-hour average ozone concentration. Exceedance Levels are based on Air Quality Index (AQI) thresholds established by the EPA for the revised ozone standard of 70 ppb.

Source: TCEQ, http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly.pl

ppb = parts per billion
As of December 2, 2019

1997 Standard < 85 ppb (Revoked)

2008 Standard ≤ 75 ppb (Serious by 2021)

2015 Standard ≤ 70 ppb¹ (Marginal by 2021)

¹Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the Design Value (three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration) is equal to or less than 70 parts per billion (ppb).
What Can You Do?

Work from home
Carpool
Bring lunch to work or carpool to lunch
Use mass transit
Bicycle or walk
Reduce idling, including during start up
Avoid unnecessary trips
Maintain consistent driving speed
Conserve water to conserve electricity
Postpone mowing to a day that is not an Ozone Action Day
Limit use of recreational vehicles
Sample of Air Quality Initiatives
Campus Clean Air Action Days to take place at participating universities throughout March and April

Staff presence at regional outreach events throughout the spring

Social media campaign for Air Quality Awareness Week, May 4th – May 8th

Clean Air Action Day (June 26)

Air North Texas advertisements and marketing will appear on radio, online, print, etc. (May-October)

Air North Texas Air Pollution Alert emails

www.airnorthtexas.org
Air Quality Education

Air North Texas

Website:  www.airnorthtexas.org

Sign up for air pollution alerts

Find air quality and ozone information

Commit to clean air actions for individuals, businesses, governments

Become a partner
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https://www.nctcog.org/trans/quality/air/ozone