

Improving Air Quality in Your Community

Outdoor Air - Transportation: Lawn Equipment - Additional Information

This information will help you gain a better understanding of questions homeowners may have about air pollution from lawn equipment. The sections below provide more information on this topic.

- [What is lawn equipment?](#)
- [What are the health effects of pollutants emitted from lawn equipment?](#)
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What is lawn equipment?

- Lawn equipment consists of small equipment that members of the community (excluding commercial landscaping companies) may use to maintain their property.
- Pre-1997 lawn and garden equipment accounts for as much as 5% of the total man-made hydrocarbons that contribute to ozone formation.
- The exchange of 1,000 gasoline-powered lawn mowers for electric mowers has the potential of reducing volatile organic compound (VOC) emissions by 9.8 tons per year, which is equivalent to removing 230 cars from the highways.
- The equipment includes
 - Push lawn mowers
 - Self-propelled lawn mowers
 - Leaf blowers/vacuums
 - Weed eaters
- Lawn equipment comes in two different types of engines: 2-stroke and 4-stroke.
 - A 2-stroke engine is found in lawn mowers as well as smaller equipment such as leaf blowers and weedeaters.
 - A 4-stroke engine is often used when the lawn mower requires a transmission such as self-propelled mowers.
 - The type of engine installed in a lawn mower often depends on the manufacturer that makes the engine used in the mower. For example, Manufacturer A only makes 2-stroke engines for lawn mowers while Manufacturer B only makes 4-stroke engines for lawn mowers.
 - Operating a typical gasoline-powered lawn mower for one hour produces the same amount of smog-forming hydrocarbons as driving an average car almost 200 miles under typical driving conditions.

What are the health effects of pollutants emitted from lawn equipment?

Lawn equipment emits pollutants such as hazardous air pollutants (HAPs), particle pollution (dust), and VOC. These pollutants can contribute to health problems that may affect homeowners, their families, and the community and include:

- Particle Pollution, also known as Particulate Matter
 - Particle pollution is released from yard equipment during the combustion of gasoline.
 - Particle pollution can lodge deep in the lungs and cause respiratory problems, cardiac arrhythmia (heartbeat irregularities), and heart attacks
 - Particle pollution can also impact the young, the elderly, and people with existing conditions such as emphysema, bronchitis, and asthma.
 - Particle pollution can also contain other harmful pollutants such as heavy metals.
 - EPA has developed an extensive Web site related to [particle pollution](#).
 - The Iowa Department of Natural Resources (IDNR) has developed information related to [particle pollution](#). [EXIT Disclaimer](#)
- VOC
 - VOC is released during the combustion of gasoline while using yard equipment.
 - The chemicals in VOC can form ground-level ozone (smog) which can cause breathing difficulties, especially with those who are young, elderly, or have existing respiratory problems such as asthma.
 - EPA has an extensive Web site devoted to [ground-level ozone](#).
 - In 1991, EPA produced a [nonroad engine and vehicle emission study\(PDF\)](#) (141 pp, 1.8 MB) that contains information related to emissions from lawn equipment. The [appendices \(PDF\)](#) (415 pp, 7.5 MB) of this study are also available for download.
 - The California Air Resources Board (CARB) produced a study related to the [health and environmental impacts of leaf blowers \(PDF\)](#) (68 pp, 423 KB). [EXIT Disclaimer](#)

How can I reduce pollution from lawn equipment?

- Maintain your equipment
 - Always follow the manufacturer's guidelines for maintenance.
 - Change the oil and clean or replace air filters regularly.
 - Use the proper fuel/oil mixture in two-stroke equipment.
 - Periodically tune up your equipment.
 - Maintain sharp lawn mower blades.

- Keep the underside of the lawn mower deck clean.
- Winterize your equipment each fall.
- Reduce your mowing time
 - Use low-maintenance turf grasses or grass/flower seed mixtures that grow slowly and require less mowing.
 - Decrease your lawn area by planting additional trees and shrubs. Not only will you reduce your lawn maintenance time, but you will also reduce your heating and cooling bills due to additional shade.
- Consider cleaner options
 - The CARB has required lower-emitting gas-powered lawn equipment in their state. Such certified equipment may also be sold outside of California. Check with local lawn equipment dealer for equipment availability.
 - Consider purchasing electric equipment such as lawn mowers, weed eaters, and leaf blowers/vacuums.
- Use manual tools.
 - Consider purchasing manual equipment such as push reel mowers, rakes, and brooms.
 - Use hand-held equipment for smaller jobs.
- Avoid spilling gasoline.
 - Minimizing gasoline spills while fueling yard equipment is a way to reduce air pollution.
- Recycle old equipment.
 - Take your old lawn equipment to a recycling center where they can be converted into raw materials for use in cleaner equipment and other products.
- EPA has developed an information sheet related to [reducing lawn equipment emissions \(PDF\)](#) (2 pp, 17 KB).

Last updated on Friday, August 19, 2011