

Diesel Exhaust: How It Affects Human Health and the Environment

What is Diesel Exhaust?

- ✓ The critical constituents of diesel exhaust include particulate matter (PM), oxides of nitrogen (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and a laundry list of toxic chemicals, many of which are known or suspected to cause cancer.

What Are the Harmful Health Effects of Diesel Exhaust?

- ✓ The dangerous air pollutants that make up diesel exhaust contribute to a host of public health and environmental hazards, including cancer risk greater than that posed by any other air pollutant; premature death; both chronic and acute respiratory injury; asthma attacks; ground-level ozone formation; acid deposition; and particulate haze and visibility impairment.
- ✓ Diesel engines produce far more harmful particulate pollution than gasoline engines. These fine particles are breathed deep into the lungs where they can cause very serious health effects including hospitalization and death.
- ✓ Organizations including the National Institute for Occupational Safety and Health, International Agency for Research on Cancer, Health Effects Institute, World Health Organization, U.S. Department of Health and Human Services National Toxicology Program, and the U.S. Environmental Protection Agency have determined that diesel exhaust is a probable or likely human carcinogen. The California EPA has classified it as a known human carcinogen.
- ✓ A study conducted by California's South Coast Air Quality Management District in 1998 and 1999, found that 70 percent of the cancer risk from air pollution for those living in the Los Angeles air basin was due to diesel particulate emissions.



Are There Ways to Reduce Diesel Pollution?

- ✓ Removing sulfur from diesel fuel is a critical first step. Sulfur can foul state-of-the-art emissions control technologies designed to reduce sulfur dioxide (SO₂) and other pollutants in diesel exhaust.
- ✓ Combined with cleaner, low sulfur diesel fuel, new engines and emission control technologies can reduce pollution by 90% or more.

What Still Needs to Be Done?

- ✓ Collectively, nonroad engines, including those used in construction and agricultural equipment, are the largest source of PM and SO₂ in the mobile sector. They also emit nearly as much NO_x as the nation's fleet of power plants. EPA needs to apply equally rigorous federal emission standards and low sulfur fuel requirements in place for onroad diesel engines to new diesel engines used in nonroad equipment.
- ✓ Rigorous protections must also be put in place for high-polluting diesel generators that are not currently subject to any federal standards for PM, SO₂ or NO_x.
- ✓ Nonroad diesel engines are long-lived, so federal standards for newly built engines will not realize full clean air gains for decades. State and local governments will need to clean up existing engines, through retrofits and repowers, to spur the transition to cleaner engines and cleaner air to protect public health.

Read the Environmental Defense report, [Closing the Diesel Divide: Protecting Public Health from Diesel Air Pollution \(4/03\)](#)