

The Dangers of Diesel Exhaust

Diesel Exhaust – What is it?

Diesel exhaust is composed of harmful chemicals including toxic particles and hazardous gases. Diesel engines in cars, buses, and trucks create exhaust from the combustion of diesel fuel. Some of these hazardous gases in diesel exhaust (e.g. nitrogen oxides, benzene, sulfur dioxide and formaldehyde) may cause cancer.

The Hazards

The most common method of exposure is inhalation of the diesel exhaust as fine particles and toxic gases from the exhaust enter into the lungs. Exposure for even short periods may cause headaches, nausea, chest tightness, wheezing, coughing, and irritation of the eyes, nose, and throat.

Long term exposure (years) may increase the chances of developing cancer. Workers who already have respiratory illnesses, such as bronchitis, emphysema and/or asthma, may be adversely affected if they are exposed to long-term or chronic exposure to diesel exhaust.

Who is likely to be affected?

The risk of exposure to diesel exhaust can be especially high for workers in the construction industries.

- Workers using earth moving equipment
- Truck and forklift drivers
- Material handling machine operators
- Bridge and tunnel workers
- Loading dock workers

Diesel engines are also commonly found in other kinds of equipment located on construction sites, such as generators and compressors.

Methods of Control – Substitution or Ventilation

The best way to prevent diesel exhaust exposure is to replace diesel engines with propane engines. Propane burns more completely with fewer emissions than diesel fuel. Make sure there is proper ventilation when using any combustion engine (diesel or propane) in an indoor environment such as warehouse or garage. Breathing in harmful levels of combustion gases, such as carbon monoxide, carbon dioxide, and nitrogen oxides can be harmful to your health.

Local exhaust ventilation should be implemented in cases where it may not be feasible to replace diesel engines. Local exhaust ventilation should include both intake and exhaust fans that remove diesel exhaust at the source. Ventilation air via movement by opening doors, windows, roof vents, roof fans and floor fans is helpful, but not as effective as local exhaust ventilation.

Safe Work Practices

Some possible methods to reduce and/or minimize diesel exhaust emissions include:

- When diesel equipment is not in use, the engine should not be allowed to idle.
- Diesel equipment should be turned off and restarted as needed.
- Enforce diesel equipment (bus, truck, etc) idling restrictions.
- Check all ventilation systems to ensure proper functioning.
- Conduct routine maintenance of engines to minimize emissions.
- Diesel equipment that is producing visible, smoky exhaust should be removed from service until the condition has been corrected.
- Vehicles should be fitted with emission controls (e.g. collectors, air cleaners, ceramic particle traps, etc.). Emissions controls should be checked regularly and replaced when necessary.

For additional information, visit the California Department of Public Health's website at <http://www.cdph.ca.gov/programs/hesis/Documents/diesel.pdf>