Diesel Exhaust Dangers and Safeguards Meeting Kit



Diesel Exhaust Composition

Diesel exhaust is a mixture of gases and particulates produced during the combustion of diesel fuel. The very small particles are known as diesel particulate matter (DPM), which consists primarily of solid elemental carbon (EC) cores with organic carbon (OC) compounds adhered to the surfaces.

EXPOSURE TO DE/DPM

Occupations with potential exposure to DE/DPM include miners, construction workers, heavy equipment operators, bridge and tunnel workers, railroad workers, oil and gas workers, loading dock workers, truck drivers, material handling operators, farmworkers, long-shoring workers, and auto, truck and bus maintenance garage workers.

Most heavy-and medium-duty trucks are equipped with diesel engines, as well as equipment used in mines; buses, locomotives and ships; heavy equipment such as bulldozers and tractors; and other types of equipment such as bucket lifts and generators.

HEALTH EFFECTS OF DE/DPM

- Short term exposure to high concentrations of DE/DPM can cause headache, dizziness, and irritation of the eye, nose and throat severe enough to distract or disable miners and other workers.
- Prolonged DE/DPM exposure can increase the risk of cardiovascular, cardiopulmonary and respiratory disease and lung cancer.

HOW TO PROTECT WORKERS

- Limit workers’ time spent in an area with higher levels of diesel exhaust.
- Properly ventilate any areas where there may be high levels of exhaust.
- Perform routine air monitoring to ensure levels are not at a dangerous level.
- Perform routine preventive maintenance of diesel engines to minimize emissions.
- Install engine exhaust filters.

- Install cleaner burning engines.
- Using special fuels or fuel additives (e.g., biodiesel).
- Provide equipment cabs with filtered air.
- Install or upgrade main or auxiliary ventilation systems, such as tailpipe or stack exhaust vents to capture and remove emissions in maintenance shops or other indoor locations.
- Prohibit unnecessary idling or lugging of engines.
- Restrict the amount of diesel-powered equipment in an area.
- Designate areas that are off-limits for diesel engine operation and/or personnel travel.

FINAL WORD

Diesel exhaust has been listed as a known human carcinogen in 2012, so it is very important to recognize the hazards that the exhaust poses. Exposure to the exhaust can be greatly limited through proper engineering controls as well as practices as simple as not allowing equipment to idle unless absolutely necessary.