

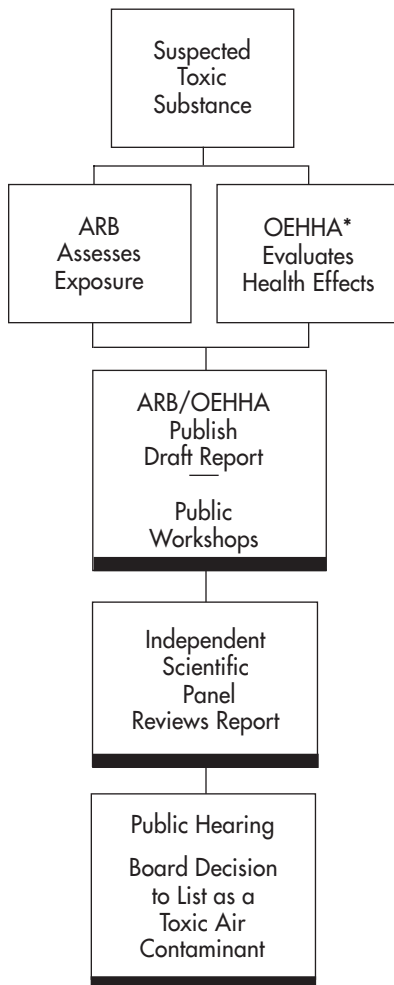
The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines


The Air Resources Board (ARB or Board) is the state agency responsible for protecting the public’s health from exposure to toxic air contaminants. Toxic air contaminants (TACs) are those air pollutants that may cause or contribute to an increase in death or serious illness or may pose a present or future hazard to human health.

The Process

The ARB follows a comprehensive two-phase public process to address TACs. The two phases are known as identification and control. This flyer focuses on identification. Twenty substances have gone through the full AB 1807 identification process including arsenic, benzene, and formaldehyde.

Identification Process



 Opportunities for public comment and review (workshops, report review, hearings)

* Office of Environmental Health Hazard Assessment

During identification, ARB, in consultation with the Office of Environmental Health Hazard Assessment (OEHHA), selects a substance that is suspected to be toxic to humans. The ARB determines public exposure to the substance. The OEHHA determines if the substance poses a potential health risk and assesses the extent of such risk. After a review of the most up-to-date scientific research, the two agencies prepare a joint report on the current science.

This report is released to the public and to the independent Scientific Review Panel (SRP) for review and comment. Workshops and public comment periods provide opportunities for full public participation in the identification process.

At a public hearing, the eleven-member Board reviews any public comments, the staff report, and the findings of the SRP. Then the Board decides whether to classify the compound as a TAC. If the compound is determined to be a TAC, the process proceeds to the next step: risk management.

This step is another in-depth process where the ARB, in consultation with the local air districts, the public, and industry determine the best methods to reduce exposure to the TAC.

Current Status of the Identification of Toxic Air Contaminants from Diesel-fueled Engines

On July 30, 1998, the Board heard the ARB staff proposal to consider the listing of diesel exhaust as a TAC. At the hearing, the Board received testimony that the listing of whole “diesel exhaust” was too general and included many harmless substances, such as water vapor and nitrogen. In response to these comments, staff determined that the listing could be clarified to focus on the pollutants that are the most likely contributors to adverse health impacts. These are the particulate and organic vapor phase emissions. As a result of discussion with interested stakeholders, the staff modified their proposal to list “particulate emissions from diesel-fueled engines” as a TAC rather than whole “diesel exhaust.” The decision was made to focus the listing on particulate emissions because many of the organic vapor phase substances emitted by diesel-fueled engines have already been identified as TACs and other organic gases can be controlled under ARB’s criteria pollutant program. On August 27, 1998, the Board approved staff’s modified proposal to list particulate emissions from diesel-fueled engines as a TAC.

Questions and Answers About Emissions from Diesel-fueled Engines

What are emissions from diesel-fueled engines?

- Emissions from diesel-fueled engines come from internal combustion engines burning diesel fuel and are made up of a complex mixture of thousands of gases, vapors, and fine particles.

Why are emissions from diesel-fueled engines of concern to the public?

- Emissions from diesel-fueled engines are mainly composed of particulate matter and gases, which contain potential cancer-causing substances such as arsenic, benzene, formaldehyde, nickel, and polycyclic aromatic hydrocarbons.
- Emissions from diesel-fueled engines currently include over 40 substances that are listed by the U.S. Environmental Protection Agency (U.S. EPA) as hazardous air pollutants (HAPs) and by the ARB as TACs.
- Particulate matter (PM) from diesel-fueled engine emissions is small enough to be inhaled deep into the lungs.
- Approximately 27,000 tons of PM₁₀ from diesel-fueled engines are emitted into California's air each year.

What are some of the health effects of exposure to emissions from diesel-fueled engines?

- Research studies show that emissions from diesel-fueled engines may cause cancer in animals and humans.
- Studies show that workers exposed to higher levels of emissions from diesel-fueled engines are more likely to develop lung cancer.
- In 1990, the State of California, under Proposition 65, identified diesel exhaust as a chemical known to cause cancer. The Proposition 65 program is operated and enforced separately from the AB 1807 program.
- The International Agency for Research on Cancer has concluded that diesel engine exhaust probably causes cancer in humans.
- The U.S. EPA has proposed classifying diesel exhaust as a probable human carcinogen.
- There is also a link between emissions from diesel-fueled engines and non-cancer damage to the lung.

What happens next?

- The ARB has begun a full, open public process to evaluate the need, feasibility, and cost of control to further reduce the public's exposure to organic gases and particulate matter emissions from diesel-fueled engines (see *California's Process to Reduce Health Risks Posed by Toxic Air Contaminant Emissions from Diesel-fueled Engines* fact sheet).
- The ARB has already adopted control measures which reduce particulate matter emissions from diesel-fueled engines. As a result of these measures, the projected outdoor ambient air concentration in California of PM₁₀ due to particulate matter emissions from diesel-fueled engines is expected to decrease 43 percent by 2010.

For more information on TAC emissions from diesel-fueled engines, call the ARB Public Information Office at (916) 322-2990 or check ARB's web site at <http://www.arb.ca.gov>.