

Reducing Toxic Air Pollutants in California's Communities



In Our Neighborhoods



Where We Play



At Our Workplaces



When We Drive

A Decade of Success in Reducing Air Toxics

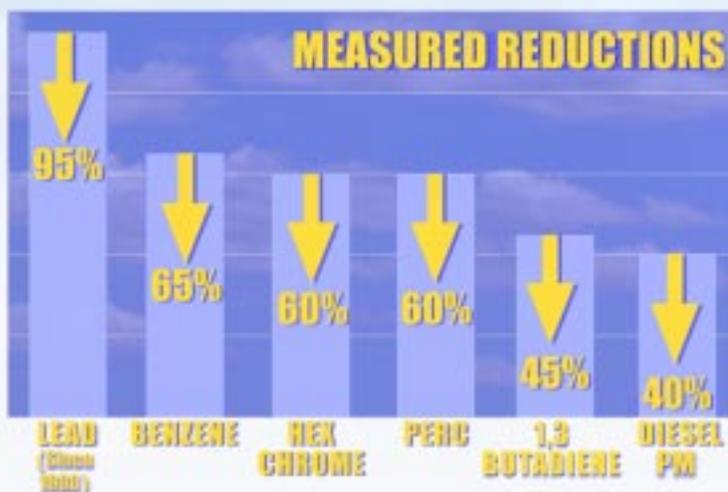
Since 1990, the estimated cancer risk from toxic air pollutants, measured statewide, has been reduced by 45% even though California has had significant growth in the number of motor vehicles and industry.

Focusing on Toxics of Most Concern

The Air Resources Board (ARB) has reduced the public's exposure to toxic air pollutants through the control of motor vehicles, fuels, stationary sources, and consumer products. Over the past ten years, the measured risk from toxic air pollutants has been cut almost in half! Despite this success, the public continues to be exposed to unhealthful levels of toxic air pollutants. The ARB is committed to eliminating the emissions of toxic air pollutants as needed to protect public health.

To decide what toxic air pollutants are the most important, the ARB has a comprehensive process to prioritize the identification of substances and to develop control measures. We conduct research and use the most up-to-date scientific information on the chemicals used in California's industry and commerce. Based upon reviews of exposure and health effects information, we identify the priority toxic air pollutants that pose the greatest health threat. While there are thousands of chemicals emitted into the air, our ongoing review ensures our resources are focused on control actions that most benefit public health.

The levels of toxic air pollutants have gone down significantly with the adoption of airborne toxic control measures, stringent motor vehicle standards, the requirements for low emission vehicles, and cleaner fuels. This chart displays ambient reductions of some specific toxic air pollutants since 1990.



Reducing Toxic Emissions from Industrial Sources

The ARB has adopted control measures resulting in significant reductions of toxic air pollutants. These control measures require stringent controls and in some cases, complete elimination of the use of the toxic air pollutants through pollution prevention.

Perchloroethylene in Automotive Products **100%**

Hex Chrome from Cooling Towers **100%**

Hex Chrome from Automotive Coatings **100%**

Ethylene Oxide from Sterilizers and Aerators **99%**

Dioxins from Medical Waste Incinerators **99%**

Hex Chrome from Plating and Anodizing **97%**

Benzene from Gasoline Stations **95%**

Perchloroethylene from Dry Cleaners **78%**

Cadmium from Metal Melting **70%**



Reducing Emissions from Vehicles and Fuels also Reduces Toxics

Motor vehicles and their fuels are the largest source of toxic air emissions. The good news is that cars today are 95% cleaner than just 30 years ago. As the emissions of smog forming pollutants are reduced, toxic emissions are also reduced. The ARB has led the world in the demand for clean cars and fuels. And, we are not finished...in the future, our vision is for all cars to be zero or near-zero emission vehicles.

In addition, we have taken specific actions to minimize the amount of toxic air pollutants in motor vehicle fuels, such as completely eliminating lead and adopting limits on the benzene content of gasoline.

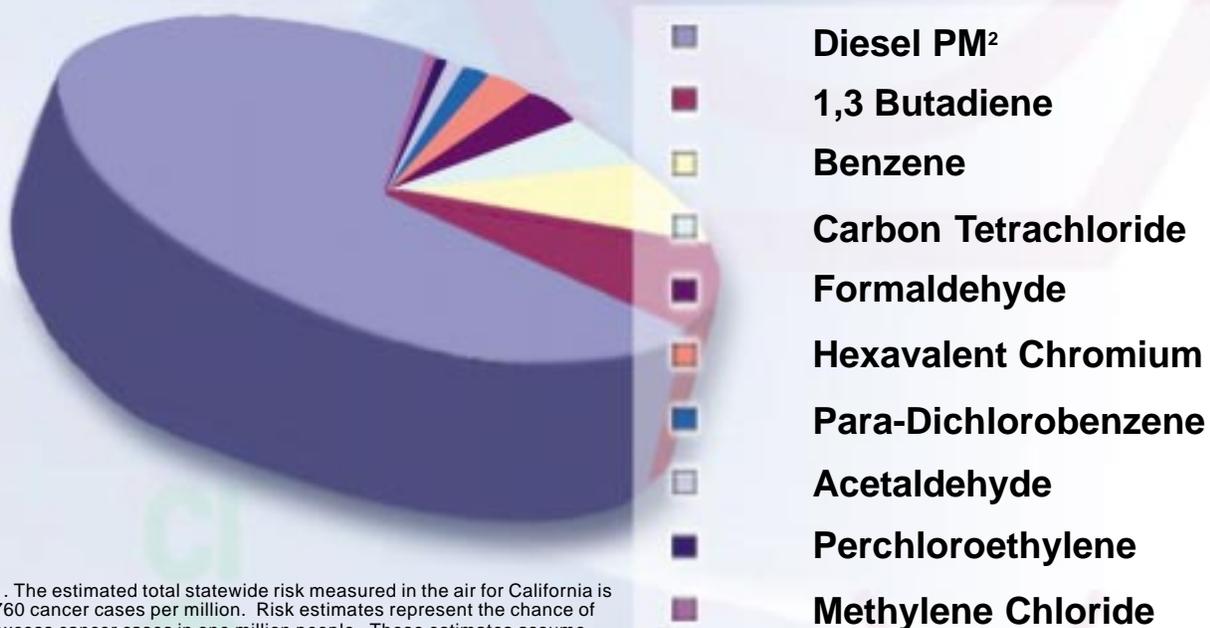
Particulate matter from diesel-fueled engines (diesel PM) contributes over 70% of the known risk from air toxics today. The ARB has made reducing the public's exposure to diesel PM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles.

Our goal...

...is to reduce or eliminate the health risks to all Californians from exposures to toxic air pollutants.

Reducing Potential Cancer Risk Statewide

Shown below are the toxic air pollutants that contribute the most to our overall statewide risk that is measured from the ARB's current monitoring network. Sixty-seven pollutants are routinely monitored in our network and this information is reported to a national database. The figure portrays the relative contributions to the estimated potential cancer risk¹ from outdoor levels of the top ten toxic air pollutants for the year 2000.



1. The estimated total statewide risk measured in the air for California is 760 cancer cases per million. Risk estimates represent the chance of excess cancer cases in one million people. These estimates assume these people breathe the average concentrations of the pollutant measured in ARB's monitoring program for a 70 year lifetime.

2. The potential cancer risk from diesel PM is based on year 2000 emission inventory estimates. All other potential risks are based on air toxics monitoring network data.

The top three contributors of the potential cancer risk come primarily from motor vehicles - diesel PM, 1,3 butadiene, and benzene. Cleaner motor vehicles and fuels are reducing the risks from these priority toxic air pollutants. The remaining toxic air pollutants, such as hexavalent chromium and perchloroethylene, while not appearing to contribute as much to the overall risks, can present high risks to people living close to a source. The ARB has control measures either already on the books, in development, or under evaluation for most of the remaining top ten, where actions are suitable through our motor vehicle, consumer products, or industrial source programs. Of these top ten, carbon tetrachloride is unique in that most of the health risk from this toxic air pollutant is not attributable to specific sources, but rather to background concentrations.



Protecting Children's Health

The ARB is currently implementing a program designed to protect some of California's most sensitive residents, our children. This program is re-evaluating the air quality standards for traditional pollutants, like ozone, and evaluating the air monitoring network to ensure we better assess the impacts on infants and children from air pollution. We are also conducting special research studies focusing on children, such as how air pollution exposures affect asthma. In addition, certain toxic air pollutants have been identified as making children more susceptible to illness (see list at left). The ARB will thoroughly evaluate all sources of these specified toxic air pollutants and adopt appropriate control measures to reduce emissions as expeditiously as possible.

Diesel PM

Dioxins

Polycyclic Organic Matter

Acrolein

Lead

Addressing Community Impacts

New tools are under development to help the ARB better understand how facilities in a neighborhood impact the community. These tools will help identify the pollutants and sources that might cause one neighborhood to have higher overall emissions and risks than others. These pollutants and risks may vary from community to community. By gaining a better understanding of the health risks to every person exposed to toxic air pollutants from the facilities in their communities, the ARB will be able to provide the best information to decision makers so that the emissions of toxic air pollutants can be controlled to levels that prevent harm.



Preventing Pollution...

Preventing pollution before it impacts your community is a high priority. The ARB has adopted several control measures based on source reduction and is evaluating new technologies that can help reduce toxic exposures through pollution prevention techniques.



Some examples of the pollution prevention actions that the ARB is now planning to reduce toxic air pollutants include:



Pollution Prevention Techniques can include a variety of actions such as product reformulations or elimination of certain toxic air pollutants before they can harm your health. Three of ARB's most recently adopted control measures use pollution prevention techniques as the foundation of the regulation. One measure bans the use of perchloroethylene, methylene chloride, and trichloroethylene from automotive consumer products such as brake cleaners. Another control measure restricts the use of asbestos-containing material for surfacing applications; and most recently, toxic metals like hexavalent chromium and cadmium were banned from auto refinishing paints.



Reduced Usage is another pollution prevention technique currently being promoted by the ARB. The United States Environmental Protection Agency (U.S. EPA) awarded the ARB a grant to develop an outreach program to teach auto body refinishers about technology that will decrease the amount of paint used through increased efficiency in spray painting techniques. Less paint used means less pollution.

...Reducing Risk



The ARB continues to take action to eliminate or reduce emissions of toxic air pollutants to protect public health. These actions are important because sources of toxic air pollutants are often located near homes or schools. While the ARB is developing new measures to continue the progress in reducing health risks from toxics in the air, we are also re-evaluating whether some of the control measures adopted in the past can be even more protective.

Some examples of actions that the ARB is now planning to reduce toxic air pollutants include:



Hexavalent Chromium is one of the most toxic substances identified by the ARB. Because communities are concerned about sources of this toxic air pollutant, the ARB is undertaking a chrome plating evaluation and control measure update. This evaluation will help identify where children and other sensitive individuals may be located near plating shops and we will make sure in our control measure update that these facilities are controlled to the maximum level necessary to ensure public health protection.



Perchloroethylene can be emitted from neighborhood shops, like dry cleaners and auto repair facilities. The ARB requires perchlorethylene and other toxic air pollutants to be removed from certain automotive consumer products and is evaluating additional emission reduction opportunities from dry cleaners to determine if newer controls may be necessary to protect the community where we live and play.



Dioxins are a group of toxic substances of concern in many communities. Currently, the ARB is developing a comprehensive air quality monitoring and testing program to collect ambient data for dioxins, furans, and dioxin-like polychlorinated biphenyls (PCBs) in California. Under this program, the ARB will evaluate potential health impacts, assess the need for additional control strategies, and identify areas where additional study may be required.

Local air pollution control districts are the ARB's partners in reducing risk from toxic air pollutants. The local air districts implement and enforce the control measures adopted by the ARB and some have adopted additional regulations reducing toxic emissions from sources in their areas.

Taking Action...



Motor vehicles are the primary source of diesel particulate matter, benzene, and 1,3 butadiene, the top three contributors to the statewide risk from toxic air pollutants we see today. The ARB continues to vigorously pursue emission reductions from motor vehicles and fuels and has several programs in place to ensure that California continues to see improvements in the public's exposure to these toxic air pollutants.

Some examples of actions that the ARB is now taking to reduce toxic air pollutants from motor vehicles and fuels include:



The Diesel-Risk Reduction Plan targets a 75% reduction in diesel particulate matter by 2010. It outlines an aggressive program that will result in significant reductions in the emissions of diesel particulate matter, one of the toxics identified as making children more susceptible to illness. One of the first measures to be adopted under this plan will reduce emissions from garbage waste haulers, like those that operate in your neighborhood.



Cleaner-Burning Gasoline will get even cleaner. The potential cancer risk from gasoline-powered vehicle emissions was reduced by 40% because the benzene emissions were cut in half and 1,3 butadiene was reduced with Cleaner Burning Gasoline. As part of the actions to phase-out MTBE in gasoline, benzene will be even further reduced than is required today. Benzene is one of the priority toxic air pollutants contributing to public health risks.



The Carl Moyer and School Bus Programs provide funds to replace some of the dirtiest diesel engines, including those in school buses. These funds allow communities across California to receive direct air quality benefits.

...Ensuring Results

No law will help the community it was designed to protect unless it is enforced. The ARB works in partnership with the local air districts to enforce the regulations reducing toxic air pollutants in the state. The local air districts have the authority for stationary or industrial type sources. The ARB has authority for motor vehicles, fuels, and consumer products. Together, our actions will make sure that everyone is doing their part in reducing emissions that could affect your health.



The ARB has an active enforcement program to make sure that no one illegally emits harmful toxic air pollutants. Some examples include:



Heavy-Duty Vehicle Smoke Inspections for diesel trucks and buses ensure that these vehicles are not in violation of motor vehicle standards that would allow excessive pollution to be emitted. In the vehicles we have tested, the inspections have been very successful and have resulted in a significant decrease in the number of violations in communities across the State.



Recommendations on Uniform Enforcement Activities are being developed in consultation with local air districts, to ensure that similar sources throughout the state are subject to comparable levels of enforcement. The first of these recommendations for uniform practices will address petroleum refineries and may be expanded to include other industrial sources.



Multi-Media Enforcement Cases address not only toxic air pollutants, but also toxic pollutants of water and soil, and the disposal of toxic wastes. These cases call upon investigative resources from local air districts, other agencies within the California Environmental Protection Agency, and the U.S. EPA.

Focusing on a Healthier Tomorrow

Protecting our children by:

- ✓ Conducting research on health impacts
- ✓ Reviewing ambient air quality standards
- ✓ Expanding and evaluating our monitoring network
- ✓ Reducing emissions

Helping communities attain cleaner, healthier air by:

- ✓ Developing technical tools for assessing risk
- ✓ Making information available
- ✓ Providing guidance to decision makers
- ✓ Reducing emissions from local sources

Protecting the public by:

- ✓ Identifying the toxic air pollutants of most concern
- ✓ Preventing pollution when we can
- ✓ Adopting controls to reduce exposures
- ✓ Enforcing regulations

For more information on California's Air Toxics Program, contact the ARB Public Information Office (916) 322-2990, 1001 I Street, Sacramento, CA 95814, or visit the ARB website on toxics at www.arb.ca.gov/toxics/toxics.htm.

