# CLEANER BURNING GASOLINE

California Environmental Protection Agency
Air Resources Board

**CALIFORNIANS WILL TAKE PART** in one of the most important clean-air measures in the state's history beginning in Spring 1996, when the world's cleanest gasoline arrives at service stations throughout the state.

This "cleaner-burning" gasoline is a milestone in California's continuing effort to reduce air pollution. It evaporates less readily, reduces emissions of smog-forming and toxic compounds, and burns more completely than before.

The reduced pollution will be equivalent to removing 3.5 million vehicles virtually overnight from California's roads and highways.

Cleaner-burning gasoline will reduce emissions of smog-forming compounds from motor vehicles by approximately 15 percent. It also will reduce human cancer risk from exposure to toxics in gasoline by 30 to 40 percent.

By June 1, 1996, all gasoline sold in California must meet the state's cleaner-burning requirements. Motorists can use the gasoline in exactly the same way as before. It will be available at the same octane levels and varieties (regular, premium, etc.).

Cleaner-burning gasoline also is safe for use in all equipment designed for gasoline, such as lawn and garden equipment, snowmobiles, gas-powered boats, etc.

The introduction of cleaner-burning gasoline culminates five years of work by the California Air Resources Board and the state's oil refiners. State scientists worked with oil refiners and automakers in developing its specifications. Individual oil companies can still determine the specific formulation of their products as long as they meet the Air Resources Board's requirements.

Cleaner-burning gasoline replaces the traditional, higher-polluting gasoline currently sold in Northern California and the reformulated gasoline that has been sold in Southern California since January 1995 under a U.S. Environmental Protection Agency program. Cleaner-burning gasoline offers approximately twice the clean-air benefits of the U.S. EPA gasoline.

Cleaner-burning gasoline is a major step toward the goal of eliminating unhealthy air pollution in California. Here are answers to commonly asked questions about this cleaner gasoline:

## WHY DO WE NEED CLEANER-BURNING GASOLINE?

California still has a serious air pollution problem, despite the dramatic improvement in air quality during the past 20 years. Human exposure to unhealthy levels of ozone (an invisible gas that is a key ingredient in smog) has been cut in half in California since 1980, but 90 percent of Californians still breathe polluted air.

High pollution levels can cause immediate health problems, and chronic exposure to air pollutants may be the basis for life-long, permanent health damage. Research has established that air pollution aggravates cardiovascular and respiratory illnesses; damages the lungs; and contributes to the development of diseases including bronchitis, emphysema and possibly cancer.

Unfortunately, California's mountainous topography and sunny climate are ideal for smog formation. For that reason, California must do more than other states to attain healthy air quality.

Motor vehicles and other gas-powered equipment are responsible for about half of smog-forming pollutants. In order to clean the air, California must reduce emissions from motor vehicles. The Smog Check program and tough motor vehicle emission standards play an essential role in this effort. Cleaner-burning gasoline also has a vital role.

## WHAT IS CLEANER-BURNING GASOLINE AND HOW CLEAN IS IT?

Cleaner-burning gasoline simply is any gasoline that meets the specifications set by the Air Resources Board. There is no mandated formula. Individual oil companies can produce the specific formulations of gasoline that they wish to sell. As always, consumers

will be able to choose among the competing brands of gasoline.

Cleaner-burning gasoline has a reduced evaporative potential, reduced aromatic hydrocarbon content (resulting in reduced emission of smog-forming and toxic compounds), and lower distillation temperatures (which also reduces smog-forming emissions). It also has added oxygenates, which enable the fuel to burn more completely.

Smog-forming emissions from the use of cleaner-burning gasoline are about 15 percent lower than from traditional, higher-polluting fuels. It offers twice the emission reductions of the U.S. EPA gasoline sold since January 1995 in Southern California. Cleaner-burning gasoline has 50 percent less benzene, a known human carcinogen, than conventional fuel, resulting in reduced cancer risk from exposure to gasoline and motor vehicle emissions.

Statewide use of cleaner-burning gasoline will reduce smog-forming emissions by 300 tons per day, carbon monoxide by 1300 tons per day, and sulfur dioxide by 30 tons per day.

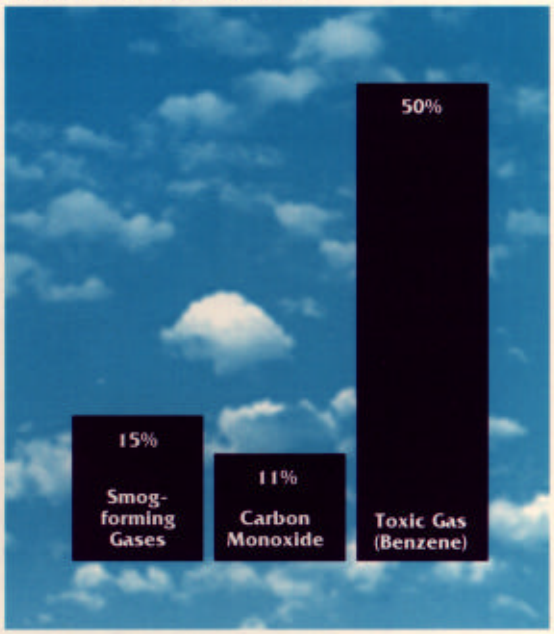
One important benefit of cleaner-burning gasoline is that it brings about full emission reductions immediately upon its introduction. In comparison, most other clean-air measures for motor vehicles require a period of years before realizing their benefits.

## WHEN WILL CLEANER-BURNING GASOLINE BE AVAILABLE?

There is a three-month phase-in period for cleaner-burning gasoline in Spring 1996. Oil refineries must begin producing it by March 1. Service stations can continue to sell their prior inventory of fuels until June 1, when all gasoline sold in California must meet the specifications for cleaner-burning gasoline. Some manufacturers are expected to produce and distribute cleaner-burning gasoline before March 1.

## REDUCED MOTOR VEHICLE EMISSIONS

**(Compared to California 1994 Gasoline)**




## HOW MUCH WILL CLEANER-BURNING GASOLINE COST?

Cleaner-burning gasoline costs from 5 to 15 cents more per gallon to produce than traditional, higher-polluting gasoline. The actual production cost varies among refiners.

It is impossible to predict how this higher production cost will affect the retail price of gasoline. Many other factors, including weather, crude oil prices, and product supply and demand affect gasoline prices. The increased production cost will be one additional factor among many that determines the price of gasoline. The State of California has no authority to regulate gasoline prices.

Economic analyses have shown that cleaner-burning gasoline is as cost-effective as other pollution-cutting controls placed on motor vehicles and industry.

## WILL CLEANER-BURNING GASOLINE AFFECT MY GAS MILEAGE?

Cleaner-burning gasoline is expected to result in a 1 to 3 percent reduction in gas mileage. For the average vehicle, this reduction will be less than one-half mile per gallon.

Other factors within the motorist's control have a greater effect on gas mileage. These include avoiding sudden starts and stops, avoiding high-speed driving, keeping the engine properly tuned and maintaining proper tire pressure.

## WILL CLEANER-BURNING GASOLINE WORK IN MY VEHICLE?

Yes. Cleaner-burning gasoline has been thoroughly tested and is expected to perform the same as current fuels. Major automakers endorse its use in their vehicles. Use of the fuel will not affect vehicle warranties.

In 1995, representatives of the Air Resources Board, oil refiners and automakers oversaw an extensive six-month test of the fuel and concluded that vehicles performed as well on cleaner-burning gasoline as on traditional, higher-polluting gasoline. More than 800 vehicles from industry and government fleets (including police vehicles) were driven over 5 million miles exclusively on cleaner-burning gasoline. The test vehicles did not develop any problems that could be attributed to the gasoline.

The Air Resources Board has established a toll-free 800 number to answer questions about cleaner-burning gasoline, including questions that may relate to vehicle performance.

If you have a question, please call 1-800-922-7349. Board representatives will be available to answer questions during normal business hours.

## WILL CLEANER-BURNING GASOLINE WORK IN OTHER MOTORIZED EQUIPMENT?

Yes. The Air Resources Board's 1995 test program also involved equipment such as lawnmowers, construction equipment, marine engines and snowmobiles. The program did not find any equipment problems related to cleaner-burning gasoline. Several equipment manufacturers also conducted their own research and found no problems related to the fuel.

## IS CLEANER-BURNING GASOLINE DIFFERENT FROM WINTERTIME OXYGENATED GASOLINE?

Yes. For several years, California and other states have required the addition of oxygenates to gasoline in winter months to reduce carbon monoxide emissions. Cleaner-burning gasoline contains the same level of oxygenates as wintertime fuel, as well as other improvements to reduce smog-forming and toxic emissions. The year-round use of cleaner-burning gasoline eliminates the need for a different wintertime fuel.

## IS THERE ANYTHING ELSE I SHOULD KNOW ABOUT CLEANER-BURNING GASOLINE?

Some people may notice that cleaner-burning gasoline has a different odor than previous fuels. The difference is due to the oxygenated additives that make the gasoline burn more completely.

The oxygenates in cleaner-burning gasoline, primarily MTBE and ethanol, are used in gasoline throughout the United States. They have been used for several years in California wintertime fuel (and in the 1995 U.S. EPA gasoline in Southern California) at the same levels as in cleaner-burning gasoline. Research to date indicates that oxygenates do not pose a health threat at the levels used in gasoline.

Cleaner-burning gasoline has reduced levels of toxic substances, such as benzene and butadiene, and will reduce human cancer risk associated with exposure to gasoline and motor vehicle emissions. However, because toxic substances are present in cleaner-burning gasoline, as in all gasoline, consumers should continue to take standard precautions when pumping and handling the fuel. This includes avoiding unnecessary exposure to gasoline fumes, and taking care not to spill the fuel.

## WHAT IF I HAVE OTHER QUESTIONS ABOUT CLEANER-BURNING GASOLINE?

If you have any questions about cleaner-burning gasoline, please call the Air Resources Board toll-free at 1-800-922-7349. Board representatives will be present during normal business hours to answer your questions about cleaner-burning gasoline.

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