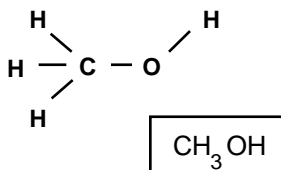




# Methanol Basics

## What is Methanol?



Methanol is the simplest alcohol, containing one carbon atom. It is a colorless, tasteless liquid with a very faint odor and is commonly known as "wood alcohol."

Methanol is one of a number of fuels that could substitute for gasoline or diesel fuel in passenger cars, light trucks, and heavy-duty trucks and buses.

## Why Consider Methanol?

Methanol's physical and chemical characteristics result in several inherent advantages as an automotive fuel:

- **LOW POLLUTION**

Emissions from methanol cars are low in reactive hydrocarbons (which form smog) and in toxic compounds. Methanol-fueled trucks and buses emit almost no particulate matter (which cause smoke and odor, and can also be carcinogenic), and much less nitrogen oxides than their diesel-fueled counterparts.

- **FUEL SUPPLY OPTIONS**

Methanol can be manufactured from a variety of carbon-based feedstocks such as natural gas, coal, and biomass (e.g., wood). Use of methanol would diversify the country's fuel supply and reduce its dependence on imported petroleum.

- **FIRE SAFETY**

Methanol is much less flammable than gasoline and results in less severe fires when it does ignite.

- **HIGH PERFORMANCE**

Methanol is a high-octane fuel that offers excellent acceleration and vehicle power.

- **ECONOMICALLY ATTRACTIVE**

With economies of scale, methanol could be produced, distributed, and sold to consumers at prices competitive with gasoline.

## Current Methanol Uses

Because of its outstanding performance and fire safety characteristics, methanol is the only fuel used in Indianapolis-type race cars. Following a series of methanol vehicle development and demonstration programs throughout the 1980's, a limited number of methanol passenger cars and buses are now commercially available. There are approximately 14,000 methanol passenger cars in use, mostly in

Federal and private fleets, and about 400 methanol buses in daily operation, mostly in California.

Methanol is used in a number of consumer products, including paint strippers, duplicator fluid, model airplane fuel, and dry gas. Most windshield washer fluids are 50 percent methanol.

### **Is Methanol Poisonous?**

Yes. As with many other fuels, methanol can be highly toxic and should never be taken orally. A few teaspoons of methanol can cause blindness and a few tablespoons can be fatal, if the exposure is not treated.

It should be noted that the human body can metabolize and eliminate low concentrations of methanol with no ill effects. (Methanol is present in many cooked vegetables, and the artificial sweetener in diet soft drinks breaks down into methanol during digestion.) Methanol becomes poisonous only when it overwhelms the body's capacity to remove it. Toxic effects do not occur until several hours after exposure. Effective antidotes to methanol poisoning are readily available and can be administered during this interim period.

### **For Further Information:**

*The EPA National Vehicle and Fuel Emissions Laboratory is the national center for research and policy related to air pollution from mobile sources. For additional information about methanol and other alternative fuels, write the lab's Regulatory Programs and Technology Staff at 2565 Plymouth Road, Ann Arbor, MI, 48105, or call 313-668-4454. Further alternative fuels information is available through the Department of Energy's toll-free 'National Alternative Fuels Hotline' at 1-800-423-1363.*