



NEWS RELEASE

CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING

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MTBE Found to Reduce Carbon Monoxide Levels

CASE Study Reports No Quantifiable Effect on Ozone Levels, Public Health

HARTFORD, CT — A recently released study by the Connecticut Academy of Science and Engineering (CASE) on the impact of the gasoline additive MTBE (methyl tertiary butyl ether) on concentrations of carbon monoxide and ozone in Connecticut shows that the additive has contributed to a reduction in wintertime carbon monoxide levels, but has had no quantifiable effect on reducing ozone levels. In addition, the study finds that MTBE, in normal exposure concentrations, poses no health hazards to individuals, aside from potential skin and eye irritation; chronic exposure has not yet been shown to have any negative health consequences for humans, although rats and mice can develop tumors.

The study, entitled "Efficacy of MTBE Use in Connecticut," was prepared by a panel convened by CASE at the request of the Program Review and Investigations Committee of the Connecticut General Assembly. Chaired by Gale Hoffnagle, Senior Vice President and Technical Director at TRC Environmental Corporation, the panel included Dr. D. Kent Morest, director of the Center for Neurological Sciences at the University of Connecticut (UConn) Health Center, and Dr. George E. Hoag, director of UConn's Environmental Research Institute, as well as several representatives from private industry.

MTBE, when added to gasoline, provides a chemical form of the element oxygen, resulting in an "oxygenated" fuel, which is designed to combat air pollution by reducing carbon monoxide during winter months and ozone during summer months. The CASE report concludes that MTBE "has likely had a positive effect on the reduction of carbon monoxide concentrations in the winter months and has contributed to a 40 percent reduction in concentrations and to attainment of carbon monoxide air standards in Hartford and Fairfield counties," where MTBE was introduced in 1992. These reductions led the EPA to declare the two counties in compliance with the standards for carbon monoxide concentrations set forth in the National Ambient Air Quality Standards (NAAQS). MTBE was introduced statewide in 1995.

The CASE panel found that while the use of MTBE "may or may not have contributed to a slight reduction in maximum ozone concentrations," the effect was too slight to be quantifiable.

The CASE report also notes that adding MTBE to gasoline reduces the percentage of air toxics (benzene, ethyl benzene, toluene, xylenes and hexane), known to be human carcinogens; although this reduction is accompanied by an increase in the level of MTBE in the air, the benefits of reducing air toxics are believed to outweigh the addition of MTBE. The study cites a report by the New England States for Coordinated Air Use Management (NESCAUM) which notes a 20-30 percent reduction in air toxic emissions with the use of MTBE.

MTBE is the most water soluble compound in gasoline, and thus spreads faster and farther in groundwater than other components when gasoline spills or is leaked from underground tanks, according to the study. Because MTBE is relatively new to the environment, the bacteria which help degrade other gasoline components in groundwater have not yet developed. MTBE has

been detected in the Connecticut, Housatonic, and Thames River Basins, although not at levels considered harmful to public health.

The report also notes that adding MTBE to gasoline reduces “miles per dollar of gasoline” by adding a cost of 2 to 4 cents a gallon through a combination of reduced fuel efficiency and increased gasoline cost.

Adding MTBE to gasoline is just one of many ways to reduce air pollution. Other options cited in the study include use of ethanol or a Clean Burning Gasoline (CBG) equivalent, non-MTBE gasoline; increased transportation control measures; and reduced industrial emissions. None of these, the report concludes, would provide the same air quality benefits without significantly increasing gasoline costs as well as toxic air pollutant levels.

CASE is a private, nonprofit corporation patterned after the National Academy of Sciences. It was chartered by the Connecticut General Assembly in 1976 and is limited by statute to 200 members, who must live or work in Connecticut. One of the principal functions of the Academy is to provide science and technology information and advice on public policy issues, upon request of a government agency or private organization.

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