

TBA has a characteristic which complicates its handling—it freezes at about room temperature and would probably have to be preblended with methanol for fuel use.

## **6. Methyl Tertiary Butyl Ether (MTBE)**

MTBE is manufactured from methanol and isobutylene, and has been used as a gasoline blending component in the United States since 1979. Several oil companies now run MTBE plants in the United States but this is mostly captive capacity (used by the companies for their own gasoline blending) and only limited amounts of MTBE are available for commerce. There is no Canadian MTBE production at present.

The delivered cost of MTBE in Ontario, including Canadian import duty, is about 40 cents per litre. This cost would be substantially lower for a large-scale domestic plant using isobutane and methanol as feedstocks.

An advantage of blending MTBE with gasoline is that the resulting fuel is not susceptible to phase separation in the presence of water. Some refiners therefore maintain that MTBE-gasoline fuels are the technically preferred means of introducing oxygenates into gasolines.

In the United States, current regulations allow up to 11 % MTBE to be added to unleaded gasolines. It is the only oxygenate allowed without identification into American fungible product pipelines. (In a fungible product pipeline, all shippers' products are comingled and must meet common specifications.)

## **7. Observations**

No cosolvent for methanol is currently available in Canada in sufficient quantities to allow extensive use in domestic gasoline stocks. Until adequate domestic supplies of cosolvent are established, ethanol could be imported from Brazil and TBA from the United States.

The price spread between ethanol and the other cosolvents is now roughly 10 cents per litre. This is down from a price spread of 15 to 20 cents which prevailed over the last few years. Uncertainty in the short-term price of crude oil complicates this price relationship but the trend has been for ethanol to approach a more competitive position with the other cosolvents. However, the cosolvents now available only as imports (IBA and TBA) could be manufactured within Canada at lower cost from domestic feedstocks, as could MTBE for use as an octane enhancer.

## **B. GASOLINE BLENDING**

All of the oxygenates exhibit different characteristics when blended into gasoline than they do as pure substances. Although a variety of factors must be considered in gasoline blending, two are of particular concern: octane rating and volatility. Other important variables are the water tolerance and oxygen content of the additive.