

## **Technical Methanol Memo**

1

Gasification for production of methanol is a proven technology. Large quantities of motor fuel methanol were already being produced from coal in Germany during World War II. The South African company SASOL used the same technology to produce methanol when the country was subject to a trade boycott during the apartheid period.

2

In the 1980s methanol was introduced in California in the form of M15 (a blend of 15 per cent methanol and 85 per cent petrol) and M85 (a blend of 85 per cent methanol and 15 per cent petrol) to reduce emissions. From the mid-1980s to the late 1990s some 16,000 methanol FFVs were sold in California. Hertz Rental Cars had a fleet of 2,000 methanol FFVs in Los Angeles and Sacramento. Methanol pumps were available all over the state. Methanol pumps were also installed in 15 other US states.

The petroleum industry responded with a cleaner-burning petrol, so-called reformed petrol. The environmental argument in favour of using methanol as a transportation fuel was thereby weakened and methanol faded away.

However, the methanol project demonstrated that there were no technical barriers to making methanol-fuelled cars or installing storage tanks and pumps. It also showed that methanol could be stored and distributed safely and economically.

At the height of the US methanol programme there were four methanol FFVs on the market: Ford Taurus, Chrysler Dodge Spirit, Chrysler Concorde and GMs Lumina. Today's ethanol FFVs are actually based on the FFV technology developed for methanol.

3

In the 1980s the Swedish Nynäs Petroleum corporation was successfully marketing M15, a blend of 15 per cent methanol and 85 per cent petrol. The methanol was produced from natural gas, but Nynäs planned to build a big methanol plant using coal. After some years, however, the projects were halted by the already ongoing debate about greenhouse gas emissions.

4

Gasification plants that will produce methanol from coal are now being built all over China. In late November Beijing therefore issued two national standards for methanol as an automotive fuel – M15 and M85.

5

There is a widespread and mistaken supposition that methanol causes damage to the general vehicle fleet. It is true that both methanol and ethanol are corrosive and, compared to petrol, will attack certain metals and elastomers such as rubber and polyurethane. However, modern cars (up to ten years old) are equipped with fuel systems and engines that will not suffer any damage when exposed to a blend of 20 per cent ethanol/methanol and 80 per cent petrol. Modern petrol stations are also so equipped for trouble-free handling of both ethanol and methanol.

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