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Methanex: Methanol FAQ

Q. What is methanol?

- Methanol is comprised of four parts hydrogen, one part oxygen and one part carbon. Today, methanol is most commonly produced on an industrial scale using natural gas as the principal feedstock. Methanol is usually made by reforming natural gas with steam and then putting the resulting synthesized gas mixture through conversion and distillation processes to create pure methanol.
- Methanol is a clear, colourless liquid that looks like water. It is water soluble and has no discernable odour in low concentrations. Methanol is flammable and toxic.

Q. What is methanol used for?

- Methanex sells its product to many of the world's leading chemical manufacturers who turn methanol into other industrial chemicals that are used to make a countless array of consumer and industrial products such as building materials and plastics.
- There are also growing markets for the use of methanol in the energy sector, including direct gasoline blending, dimethyl ether (DME) and biodiesel. Today, approximately 40 per cent of global methanol demand is in the energy sector.
- Methanol blending into gasoline offers an alternative to the import of petroleum products and additional fuel choices to consumers. Methanol blending enables the extension of the fuels pool through the use of feedstocks such as coal, gas and biomass to produce methanol, which can be used as a substitute for imported gasoline.
- Methanol-to-olefins (MTO) has emerged as a new application for methanol as a result of the relative competitiveness of methanol as a feedstock versus naptha-based olefins that are linked to the price of crude oil.

Q. What are the chemical derivatives produced from methanol?

Formaldehyde

- Formaldehyde is a primary derivative of methanol and the largest single end-use for methanol.
- Formaldehyde derivatives, such as urethane (for urethane foam products) and plastics are used in products for the office, car and home.
- Engineered woods, such as plywood, used in home construction and furniture are bonded with resins based on formaldehyde.

Acetic acid

- Acetic acid, a derivative of methanol, is used to produce terephthalic acid (PTA). PTA is used to make polyester fibre for carpeting and textiles.
- PTA is also a basic component of polyethylene terephthalate (PET) plastic, which is used to package beverages and household products. In addition to its clarity and impact resistance, PET plastic has the advantage of being 100 per cent recyclable.

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- Acetic acid is a major component of vinyl acetate monomer, which is used to manufacture water-based paints and adhesives and is a welcome replacement for solvent-based products.

MTBE

- Methyl tertiary-butyl ether (MTBE) is a clean-burning gasoline component manufactured from methanol. Its use is credited with reducing smog and tailpipe emissions.
- While MTBE use in gasoline has traditionally been as an octane enhancer, many regions that suffer air quality problems require the use of MTBE as an oxygenate to reduce vehicle emissions.
- MTBE is used in Europe to meet the continent's stricter gasoline regulations and in Asia to help reduce lead and aromatic content in gasolines.

DME

- Dimethyl ether (DME) is a clean-burning fuel used primarily for household cooking and heating in China as a substitute for LPG.
- There is even larger demand growth potential using DME as a clean-burning substitute for diesel.

Q. What happens to methanol in the environment?

- Methanol is a volatile liquid that evaporates readily when exposed to air. When released into the air, it is readily biodegradable and will break down into other relatively non-hazardous chemicals.
- Methanol dissolves completely when mixed with water. When released into water, it is diluted and quickly dispersed or broken down by naturally occurring micro-organisms. Decomposition of methanol does, however, remove available dissolved oxygen from water.
- Methanol does not bind well to soil and will evaporate from soil when exposed to air. When it is released into soil, methanol can move through it and enter groundwater. In low concentrations, methanol can quickly biodegrade in moist soils and groundwaters. In some circumstances, high concentrations of spilled methanol can "pool" in impermeable depressions in the soil and resist biodegradation for much longer periods of time.
- Methanol is a naturally occurring substance that does not accumulate in the cells of plants and animals.

Who We Are

Methanex is a Vancouver-based, publicly traded company and is the world's largest producer and supplier of methanol to major international markets. Methanex shares are listed for trading on the Toronto Stock Exchange in Canada under the trading symbol "MX" and on the NASDAQ Global Market in the United States under the trading symbol "MEOH". Methanex can be visited online at www.methanex.com.

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