Atabeykral

Petrochemical Products

NAME: Methanol

Product Description:

Methanol, also known as methyl alcohol, wood alcohol, wood naphtha or wood spirits, is a chemical with the formula CH_3OH (often abbreviated MeOH). Methanol acquired the name "wood alcohol" because it was once produced chiefly as a byproduct of the destructive distillation of wood. Modern methanol is produced in a catalytic industrial process directly from carbon monoxide, carbon dioxide, and hydrogen.

Methanol is the simplest alcohol, and is a light, volatile, colorless, flammable liquid with a distinctive odor very similar to that of ethanol (drinking alcohol). However, unlike ethanol, methanol is highly toxic and unfit for consumption. At room temperature, it is a polar liquid, and is used as an antifreeze, solvent, fuel, and as a denaturant for ethanol. It is also used for producing biodiesel via transesterification reaction.

Methanol is produced naturally in the anaerobic metabolism of many varieties of bacteria, and is commonly present in small amounts in the environment. As a result, there is a small fraction of methanol vapor in the atmosphere. Over the course of several days, atmospheric methanol is oxidized with the help of sunlight to carbon dioxide and water.

Methanol also forms in abundant quantities in star forming regions of space, and is used in astronomy as a marker for such regions. It is detected through its spectral emission lines.

Methanol burns in oxygen, including open air, forming carbon dioxide and water:

$2\ CH_3OH + 3\ O_2 \rightarrow 2\ CO_2 + 4\ H_2O$

Methanol ingested in large quantities is metabolized to formic acid or format salts, which is poisonous to the central nervous system, and may cause blindness, coma, and death. Because of these toxic properties, methanol is frequently used as a denaturant additive for ethanol manufactured for industrial uses. This addition of methanol exempts industrial ethanol (commonly known as "denatured alcohol" or "methylated spirit") from liquor excise taxation in the US and some other countries.

For (1) & (2) IMPCA recommends to use the following methods: TMA TMA test ASTM E 346

Typical data: (Table)

ITEMS	**TEST METHOD**	**LIMITED**
Purity (wt. %)	ASTM E-346	Min. 99.85
Water (%wt.)	ASTM E-1064	Max. 0.10
Specific gravity @ 20°/20°c	ASTM-D-4052	Max. 0.7928
Ethanol (wt. %)	ASTM E-346	Max 0.005
Acetone (wt. %)	ASTM E-346	Max. 0.003
Permanganate time	ASTM-D-1363	Greater than 50 Min.
Nonvolatile matter	ASTM-D-1353	Less than 8mg/1000 ml
Distillation Range @ 760 mmHg	ASTM-D-1078	Not more than 1°C and shall include 64.6 C ± 0.1C
Color, PT-Cobalt Scale	ASTM-D-1209	Max. 5
Carbonizable, PT-Cobalt Scale	ASTM-E-346	Max. 30
Appearance	IMPCA- 003	Clear and free from suspend matter
Odor	ASTM D-1296	Non- Residual
Acidity as CH3COOH (wt. %)	ASTM-D-1613	Max. 0.003
Alkalinity as NH3 (wt. %)	ASTM D-1614	Max. 0.003
Miscibility	ASTM D-1722	Passes test
Iron (ppm)	ASTM E-202	Max. 0.1
Chloride (ppm)	ASTM D-512	Max. 0.5
Sulphur(mg/kg)	ASTM D-3961	Max. 0.5
TMA(1)	Optional	—
Aromatics(2)	Optional	—

Aromatics UV test IMPCA 004