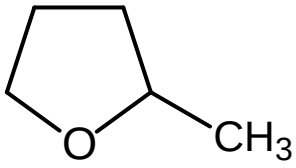
PENN
Specialty Chemicals, Inc.

METHYLTETRAHYDROFURAN

Chemicals from Renewable Resources

Grignard Solvent
Polar Reaction Solvent
Organometallic Chemistry Solvent
Lithium Batteries
Chemical Reagent



MeTHF

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METHYLTETRAHYDROFURAN

Technical Data Sheet

Applications

Methyltetrahydrofuran (MeTHF) is a specialty solvent derived from renewable resources (corn cobs, sugar cane bagasse, oat hulls). It can be used in a wide variety of applications ranging from organometallic reactions to non-electrolytic lithium batteries to serving as a chemical intermediate.

- Derived from renewable resources
- Excellent solvent properties
- Chemically stable
- Moderate boiling temperature
- Easily recoverable
- Limited miscibility with water
- Inverse solubility (lower solubility in water with increasing temperature)
- Easy to dry
- Low viscosity

When MeTHF is used as a Grignard solvent, reaction initiation is straightforward, rate and yields are often higher and fewer side reactions and difficult to remove impurities are produced. Because of its 80 deg C b.p., reactions can be run at atmospheric pressure and chilled coolant is not required to condense the refluxing solvent.

Property	Value
CAS Number	96-47-9
EINECS Number	202-507-4
Purity (minimum)	99.0%
Water (max)	0.03%
Boiling point (deg C)	80
Freezing point (deg C)	-136
Density (20 C)	0.855
Refractive Index (20 C)	1.406
Flash Point, TCC (deg C)	-11.1
Solubility in water at 20 C (wt %)	14
Solubility in water at 60 C (wt %)	6.6
Water Azeotrope b.p. (deg C)	71
wt % MeTHF	89.4
wt % water	10.6

Recovery

A significant advantage of using MeTHF as a solvent is that it can be recovered in high yields as a dry solvent from water mixtures using a simple atmospheric distillation process. See our MeTHF Tech Bulletin for details.

Handling and Storage

Methyltetrahydrofuran requires only normal precautions recommended for volatile organic compounds. MeTHF should be used only in suitable equipment and with provision for adequate ventilation. Chemical goggles and face shield should be worn when handling MeTHF. It can be stored and handled in ordinary steel tanks and piping. Because MeTHF is an excellent solvent, welded piping is preferred to screwed fittings. Pump and valve packing must be tight and of a non-soluble type.

MeTHF is a flammable liquid and as such introduces a potential fire hazard where it is stored, handled or used.

Material Compatibility

MeTHF is similar in behavior to THF and is compatible with a wide range of materials. If needed, technical assistance can be obtained from Penn Specialty Chemicals, Inc.

Environmental, Health and Safety

MeTHF is a flammable liquid with a mildly irritating odor. MeTHF vapors, when mixed with air, are flammable when exposed to ignition sources. It should be handled only after consulting the material safety data sheet.

If spilled, MeTHF has a CERCLA reportable quantity of 100 pounds because of its low flash point. MeTHF could carry an EPA waste code of D001 for ignitability.

Availability

MeTHF is available in bulk tank trucks, in 55 gallon steel drums (375 lbs; 170 kg) and 5 gallon steel pails (35 lbs, 16 kg) net weights.

Shipping

The DOT HM 181 shipping name for MeTHF is methyltetrahydrofuran. It is a hazard class three (3) flammable liquid, Packing Group II material that requires a red flammable liquid label. The ID Number is UN 2536. Consult the MSDS for additional shipping information.