Acetonitrile

Product Number  A 3396
Store at Room Temperature

Product Description
Molecular Formula:  C₂H₃N
Molecular Weight:  41.05
CAS Number:  75-05-8
Boiling Point:  81.6 °C
Density:  0.787 g/ml (15 °C)
Surface tension:  29.04 dynes/cm (20 °C)
Synonyms:  methyl cyanide, cyanomethane, ethanenitrile

Acetonitrile is a widely used, polar aprotic organic solvent. Acetonitrile is utilized as a starting material for the production of such compounds as acetophenone, α-naphthaleneacetic acid, thiamine, and acetamide. It can be used in the recrystallization of steroids and as a solvent for non-aqueous titrations, as well as a non-aqueous solvent for inorganic salts. In analytical chemistry, acetonitrile is utilized in such areas as biopartitioning studies, in the HPLC analysis of small organic compounds, and enantiomer resolution by LC on polysaccharide type chiral stationary phases.

A method for the pre-fractionation of lysates of cells and tissue for proteomics analysis that incorporates a five-step gradient of increasing acetonitrile concentrations has been published. A protocol has been reported for the enrichment of low-abundance peptides for proteomic analysis that uses acetonitrile as part of the elution-modified displacement chromatography method. A method that incorporates acetonitrile in the mobile phase for the LC/ESI-MS analysis of flavonoid glycosides has been described. The use of acetonitrile and other organic solvents in mixed organic/aqueous solvents in the digestion of proteins on immobilized trypsin columns has been reported.

Acetonitrile has been used in the synthesis of such organic compounds as functionalized pyrrolo[3,2-d]pyrimidines, methanesulfonyl carbonates, and arylzinc compounds.

Inorganic compounds which have been synthesized in acetonitrile include dimorphic copper(I) coordination polymers, osmium phosphiniminato complexes, and vanadium iron sulfur clusters as structural analogs to the PN cluster of nitrogenase.

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This product is miscible in water, methanol, ethyl acetate, acetone, ether, chloroform, and many unsaturated hydrocarbons.

References
1. The Merck Index, 12th ed., Entry# 68.


