Acetic acid

Product Number  A6283
Store at Room Temperature

Product Description
Molecular Formula:  C₂H₄O₂
Molecular Weight:  60.05
CAS Number:  64-19-7
pKₐ:     4.74¹
Density:  1.049 g/ml (25 °C)¹
Boiling Point:  118 °C¹
Molarity:  approximately 17.4 M
(calculated from density)
Synonym:  ethanoic acid

Acetic acid is a compound that is widely used in research and industrial processes. It is utilized in commercial organic synthesis, the production of various acetates and acetyl compounds, and the manufacture of cellulose acetate and acetate rayon.¹ In biochemistry and molecular biology, acetic acid is used in conjunction with sodium acetate as a buffer, in the buffering range of pH 3.6 - 5.6.

Protocols have been described for the use of acetic acid in polyacrylamide gel fixation for sequencing gels and in autoradiography.² The use of acetic acid as background electrolyte in the capillary electrophoresis/electrospray ionization MS (CE/ESI-MS) analysis of carbonic anhydrase from red blood cells has been reported.³ A discussion of fluorescent staining methods for proteomic analysis of 2-D gels that includes the use of acetic acid has been published.⁴

A study of changes in oxidoreduction potential in conjunction with acetic acid and other factors on the growth, acidification, and membrane properties of Lactobacillus plantarum has been reported.⁵ The inhibition of Escherichia coli growth with acetic acid as related to methionine biosynthesis has been investigated.⁶ The heat resistance of Paenibacillus polymyxa with respect to pH and various acids, including acetic acid, has been studied.⁷

The use of acetic acid and bleach to effect the chlorinative ring expansion of [2.2.1]- and [2.2.2]-bicyclic compounds has been described.⁸ Acetic acid has been utilized in the total synthesis of demethyllasterterrinone B1.⁹ The preparation of disaccharidic 2,3-enopyranyosyl cyanides and 2-C-2-deoxy pyranosyl cyanides that includes acetic acid in the synthesis has been reported.¹⁰

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

Preparation Instructions
This product is miscible in water, alcohol, glycerol, and ether.¹ The pH of aqueous solutions of this product at various concentrations are as follows: 1.0 M, pH 2.4; 0.1 M, pH 2.9, and 0.01 M, pH 3.4.¹

References
1. The Merck Index, 12th ed., Entry# 52.


