Acetic anhydride

Product Number A6404
Store at Room Temperature

Product Description
Molecular Formula: $C_4H_6O_3$
Molecular Weight: 102.1
CAS Number: 108-24-7
Boiling Point: 139 °C
Density: 1.082 g/ml
Molarity: 10.6 M (calculated from density and molecular weight)
Synonyms: acetic oxide, acetyl oxide

Acetic anhydride is a reagent that is used in the manufacturing of acetyl compounds and cellulose acetates. It is also utilized as a solvent in the examination of wool fat, glycerol, fatty and volatile oils, and resins. In the synthesis of organic compounds, acetic anhydride is used in various reactions, including the cleavage of dialkyl ethers, the formation of anhydrides from carboxylic acids, the addition of methylthiomethyl groups to phenol rings, and the addition of acyl and acyloxy groups across double bonds. Acetic anhydride will also react with such acetals, alcohols, and sulfoxides.

A wide variety of substrates and materials has been synthesized using acetic anhydride. Small molecule syntheses include the preparation of substituted 2-pyridones, acylated silyl ketene acetics, and estrogen receptor ligands derived from 2,3-diarylpiperazines. Larger materials which have been prepared with acetic anhydride include cellulose and poly(ethylene oxide)-block-poly(N-hexyl-L-aspartamide)-acyl conjugates.

Acetic anhydride has been used to hyperacetylate histones to investigate transcriptional effects of the NAD-dependent histone deacetylase Sir2 in Drosophila on a complex of the hyperacetylated histones with DNA. An affinity chromatography/mass spectrometry method for the analysis of neuroendocrine peptides from carboxypeptidase E deficient mice has been reported.

A microarray of oligonucleotide probes linked to a solid support that uses acetic anhydride in the preparation has been described. Acetic anhydride is utilized in an assay of a fluorescently labeled peptide catalyst library for application to the resolution of secondary alcohols.

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

Preparation Instructions
This product is miscible in chloroform and ether. In alcohol, this product will form ethyl acetate. In water (0.1 ml/ml, v/v), this product will slowly form acetic acid.

References
1. The Merck Index, 12th ed., Entry# 53.


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