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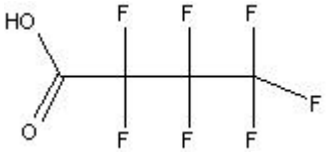
TECHNICAL INFORMATION

Catalog Number: 151237
Heptafluorobutyric Acid

Structure:



Molecular Formula: $C_4HF_7O_2$
Molecular Weight: 214
CAS # 375-22-4
Synonyms: HFBA; Perfluorobutyric acid
Physical Description: Clear liquid
Density: Approximately 1.65 g/ml
Molarity: 7.69 M (based on pure liquid and density)
pKa: Approximately 0.4
Solubility: Miscible in ethanol (0.1 ml/ml, v/v - clear, colorless solution)
Description: Used in the determination of amino acid sequences in proteins. HFBA is a strong acid and an ion-pairing agent that is used in analytical chemistry such as in HPLC and in GC/MS in a similar manner to trifluoroacetic acid. The strong acidity of HFBA ensures that other acidic groups such as carboxylic acid moieties on biomolecules remain protonated, and thus the samples are able to interact with organic solvents in such processes as reverse phase chromatography. The longer alkyl chain of HFBA makes it more hydrophobic than TFA, and thus HFBA can be utilized with more hydrophobic samples.[9]
Other Reported Uses:

– Allows for the reverse-phase HPLC separation of proteins and peptides.
– Can be used at a concentration of 0.1% in the mobile phase of an HPLC/LC-MS protocol for the detection of marine bacterioplankton siderophores.[8]
– A study of the effects of various acids, including HFBA, on the resolution of intact proteins by reversed-phase LC-ESI-MS has been published.[3]
– A modified version of the peptide ladder sequencing technique that incorporates allyl isothiocyanate and HFBA has been reported.[4]
– Used in the chiral LC analysis of (+)- and (-)-epibatidine.[10]
– The analysis of selenium containing compounds using HFBA in the MS matrix has been described.[7]

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