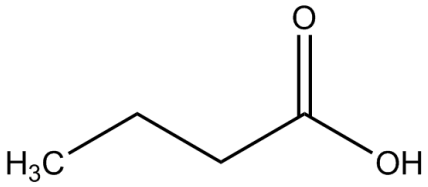
Chemical profile – Butyric Acid

Basic information

IUPAC name: Butanoic acid
Other names: Butyric acid
Molecular formula: $C_4H_8O_2$
Molecular weight: 88.11 g mol^{-1}



Physical properties

Appearance: colourless liquid
Relative density: 0.958 g cm^{-3}
Melting point: -7 to -5 °C
Boiling point: 164 °C
Flash point: 72 °C – closed cup

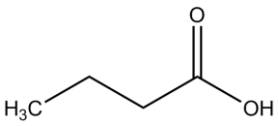
Occurrence and uses

Butyric acid is found in a number of dairy products including milk, butter and parmesan cheese. In butter butyric acid exists as a triglyceride and is released by hydrolysis when the butter goes rancid; leading to an unpleasant smell. While butyric acid itself has an unpleasant odour, many of its esters have pleasant smells (e.g. methyl butanoate smells like apple or pineapple) so are used as food and perfume additives. Butyric acid is also used as an industrial solvent, as it is less flammable than ethanol, and has potential applications in biofuels and anti-cancer drugs.[1]

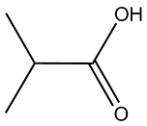
1. See Learn Chemistry Wiki 'Substance: Butryic acid'

Links to curriculum

Constitutional isomers:



Butanoic acid



2-Methyl propanoic acid

Functional groups: Carboxylic acid

Use in practical experiments: Learn Chemistry resources 'Preparation of Esters' and 'The preparation of ethyl benzoate'

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