



Product Information

Pyruvic acid

Product Number **1 07360**
Storage Temperature 2-8 °C

Replacement for Product Number P1656

Product Description

Molecular Formula: C₃H₄O₃
Molecular Weight: 88.06
CAS Number: 127-17-3
Density: 1.27 g/ml¹
Melting Point: 11.8 °C¹
pK_A: 2.49²

Based on the density 1.27 g/ml and a purity of 100%, the molarity would be 14.4. A purity of 98% has a molarity of 14.1.

Synonyms: 2-oxopropanoic acid; α-ketopropionic acid; acetylformic acid; pyroracemic acid

Pyruvic acid is the end product of the glycolysis pathway, whereby glucose is converted to pyruvate with the production of ATP. In the mitochondria of aerobic organisms, pyruvate is converted to acetyl coenzyme A, which in turn is oxidized completely to CO₂. When oxygen is not present in sufficient quantities, pyruvate is metabolized to lactate. In anaerobic organisms such as yeast, pyruvate is converted to ethanol. In gluconeogenesis, pyruvate is converted to glucose.⁴ Other metabolic fates of pyruvic acid include conversion to alanine by transamination and to oxaloacetate by carboxylation.⁵

Pyruvic acid is utilized as a component in culture broths and media.^{6,7} The use of sodium pyruvate in Wallen fermentation medium to enhance the conversion of oleic acid to 10-ketostearic acid by *Bacillus sphaericus* has been described.⁸ A protocol that uses sodium pyruvate to establish stable transfection of human B cell lines has been published.⁹

Pyruvic acid polymerizes and decomposes on standing unless pure and kept in air-tight containers. In aqueous solution, 54-71% of pyruvic acid is in hydrated (gem-diol) form, but the anion is only 3-5% hydrated. There is no enol form present in solution.³

Precautions and Disclaimer

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

References

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9. Brielmeier, M., et al., Improving stable transfection efficiency: antioxidants dramatically improve the outgrowth of clones under dominant marker selection. *Nucleic Acids Res.*, **26(9)**, 2082-2085 (1998).

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