



Sodium Pyruvate Powder

Laboratory reagent-grade sodium salt of pyruvic acid for microbiological media and cell culture applications.

OVERVIEW

Sodium Pyruvate is the sodium salt of pyruvate, a key intermediate in central carbon metabolism. Pyruvate sits at the junction of glycolysis, the tricarboxylic acid (TCA) cycle, and fermentation pathways, and is a widely used carbon/energy source and cell culture supplement. In microbiological media, sodium pyruvate can serve as a supplementary carbon source and, in some formulations, assists in the resuscitation of stressed or injured microorganisms by acting as a peroxide/free-radical scavenger, protecting cells from oxidative damage during recovery.

AuSaMicS supplies sodium pyruvate as a standard laboratory/microbiology-grade reagent, distinct from higher-cost cell-culture or molecular-biology-tested grades, for applications where that additional testing is not required.

KEY IDENTIFIERS

Catalogue Number	ASC-8016
Chemical Name	Sodium Pyruvate
CAS Number	113-24-6
EC Number	204-024-4
MDL Number	MFCD00002586
PubChem CID	23662274
Molecular Formula	$C_3H_3NaO_3$
Molecular Weight	110.04 g/mol
Synonyms	Pyruvic acid, sodium salt; 2-Oxopropanoic acid sodium salt; α -Ketopropionic acid sodium salt

TYPICAL SPECIFICATIONS

Parameter	Specification
Assay	$\geq 99.0\%$
Appearance	White to off-white crystalline powder
Solubility	Soluble in water; clear, colourless solution
Melting Point	$> 300^\circ\text{C}$ (decomposes)
Loss on Drying	$\leq 1.0\%$ (typical)
Heavy Metals (as Pb)	≤ 20 ppm (typical)

Batch-specific results are provided on the product Certificate of Analysis (COA-ASC-8016) issued with each shipment.

PHYSICAL & CHEMICAL PROPERTIES

Property	Value
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Physical State	Solid, crystalline
Colour	White to off-white
Melting Point	> 300°C (decomposes)
Water Solubility	Soluble, clear and colourless
Storage Temperature	0–10°C recommended (refrigerated) for long-term stability

CHEMICAL ROLE

Pyruvate ($\text{CH}_3\text{COCOO}^-$) is the end product of glycolysis and a central metabolic branch point: under aerobic conditions it is oxidatively decarboxylated to acetyl-CoA for entry into the TCA cycle; under anaerobic conditions it is reduced to lactate or converted to ethanol and CO_2 during fermentation. As a reagent, sodium pyruvate provides a readily bioavailable source of this intermediate, bypassing glycolysis and allowing direct energy/carbon supplementation. It has also been reported to have antioxidant properties, scavenging hydrogen peroxide and protecting cells from oxidative stress, which is relevant both in cell culture supplementation and in aiding recovery of stressed microorganisms in selective/enrichment media.

APPLICATIONS

Application Area	Use
Microbiological Media	Supplementary carbon source; aids recovery of stressed/injured microorganisms in resuscitation and enrichment media
Cell Culture (Laboratory Grade)	Energy source supplement for non-critical cell culture applications not requiring certified cell-culture-tested grade
Analytical & Reference Chemistry	Reference compound and reagent for metabolic and biochemical studies
Research & Education	General laboratory reagent for teaching and research in biochemistry and microbiology

This product is supplied as a standard laboratory/microbiology-grade reagent, not a certified cell-culture or molecular-biology-tested grade. For applications requiring certified cell-culture-tested, endotoxin-tested, or GMP-grade material, a higher specification product should be sourced.

STORAGE & HANDLING

Storage Conditions	Store in a tightly closed container, protected from moisture and light, at 0–10°C (refrigerated).
Handling	Handle with appropriate PPE — this substance is classified as an eye irritant (Category 2) and skin sensitiser (Category 1B). See SDS Section 8.

PACK SIZES

Pack Size	Recommended For
25 g	Small-scale reference use, method development
100 g	Routine laboratory use
500 g	Ongoing research or media production programmes
1 kg / Custom	Industrial or bulk supply — contact us for a quote

LITERATURE REFERENCES

- Giandomenico AR, Cerniglia GE, Biaglow JE, Stevens CW, Koch CJ. The importance of sodium pyruvate in assessing damage produced by hydrogen peroxide. *Free Radic Biol Med.* 1997;23(3):426–434.
- National Center for Biotechnology Information. PubChem Compound Summary for CID 23662274, Sodium Pyruvate. PubChem, National Library of Medicine.

3. Berg JM, Tymoczko JL, Stryer L. Biochemistry, 5th ed. W.H. Freeman; 2002. [Pyruvate metabolism, glycolysis, TCA cycle]

References are provided for general chemical and technical context. Verify current data against primary sources before use in regulatory or safety-critical documentation.

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