

## Product Information

## Casein sodium salt from bovine milk

C8654

## Product Description

CAS Registry Number: 9005-46-3

Casein is a phosphoprotein found in milk. Casein has numerous experimental applications, including:

- Use as a blocking agent in immunochemistry
- Recovery of enzyme activity from SDS extracted samples
- As a substrate for protease and kinase assays.

The major casein subunits may be distinguished by electrophoresis and are designated as  $\alpha$ -,  $\beta$ -,  $\gamma$ -, and  $\kappa$ -caseins, in order of decreasing mobility at pH 7.0.<sup>1</sup> The approximate casein composition of milk is as follows, in terms of grams per liter (g/L):

- $\alpha$ -s1 (12-15)
- $\alpha$ -s2 (3-4)
- $\beta$  (9-11)
- $\kappa$  (2-4)

The casein subunits vary primarily in molecular weight, isoelectric point, and level of phosphorylation. The following table lists these differences.<sup>2,3</sup>

Subunit	MW (kDa)	pI	Phosphates /mole	E1% (280 nm)
$\alpha$ -s1	22 – 23.7	4.2 – 4.7	8 – 10	10.0 – 10.1
$\alpha$ -s2	25	---	10 – 13	---
$\beta$	24	4.6 – 5.1	4 – 5	4.5 – 4.7
$\kappa$	19	4.1 – 5.8	1	10.5

The nomenclature for proteins in bovine milk has been published.<sup>2</sup>

Several theses<sup>4,5</sup> and dissertations<sup>6-16</sup> have cited use of product C8654 in their research protocols.

## Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

This product may be stored at room temperature.

## Preparation Instructions

This product can be suspended in water (50 mg/mL), yielding a turbid, faint yellow solution.

## References

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11. Lee, Laura, "Understanding Nanoemulsions". University of Birmingham, Ph.D. dissertation, pp. 71, 163 (2015).
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18. Sanchez, Roxanna Sharon Ramnarine, "Spontaneous 3D Micropatterning of BMP-2 in Self-assembling Nanoclay Gels". University of Southampton, Ph.D. dissertation, p. 233 (2019).

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