

## CHAPS

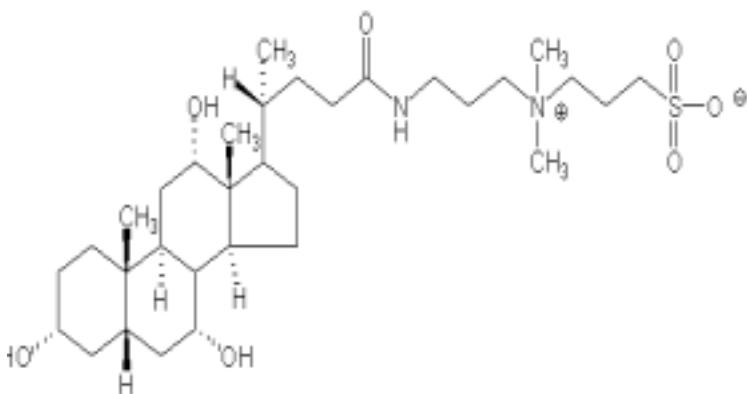
Product Number **C 5849**  
**C 9426 Electrophoresis Reagent**  
**C 5070 SigmaUltra**

Store at Room Temperature

CAS#: 75621-03-3

Synonyms: 3-[(3-Cholamidopropyl)dimethylammonio]-  
1-propanesulfonate

### Product Description



Molecular Formula:  $C_{32}H_{58}N_2O_7S$

Molecular Weight: 614.9

CHAPS is a non-denaturing, zwitterionic sulfobetaine detergent for solubilizing membrane proteins and breaking protein-protein interactions.<sup>1,2</sup> Commonly used for protein solubilization in isoelectric focusing and two-dimensional electrophoresis,<sup>3-5</sup> especially for non-denaturing (without urea) IEF. CHAPS has been shown to give excellent resolution of some subcellular preparations<sup>6,7</sup> and plant proteins.<sup>8</sup> Concentrations between 1-4% (w/v) are typically used in an IEF gel.<sup>4,9</sup> A commonly used IEF sample solution consists of 8 M urea, 4% CHAPS, 50-100 mM dithiothreitol (DTT), and 40 mM Tris.<sup>9</sup> Furthermore, its small micellar molecular weight (6,150) and high critical micellar concentration (6 - 10 mM) allow it to be removed from samples by dialysis.

## Product Information

### Preparation Instructions

Soluble in water (50 mg/ml).

### Storage/Stability

As a solid, the material should be stored at room temperature.

### Product Profile

C 5849 is a standard reagent grade CHAPS. C 9426 has been found suitable for use as a solubilizing agent in isoelectric focusing applications. C 5070 is SigmaUltra grade, having been tested to meet low metal content specifications.

### References

1. Pasquali, C., et al., Preparative two-dimensional gel electrophoresis of membrane proteins. *Electrophoresis*, **18**, 2573-2581 (1997).
2. Banerjee, P., et al., Differential solubilization of lipids along with membrane proteins by different classes of detergents. *Chem. Phys. Lipids*, **77**, 65-78 (1995).
3. Hjelmeland, L.M. and Chrambach, A., Electrophoresis and electrofocusing in detergent containing media: a discussion of basic concepts. *Electrophoresis*, **2**, 1-11 (1981).
4. Garfin, D.E., Isoelectric focusing. *Methods Enzymol.*, **182**, 459-477 (1990).
5. Schupbach, J., et al., A universal method for two-dimensional polyacrylamide gel electrophoresis of membrane proteins using isoelectric focusing on immobilized pH gradients in the first dimension. *Anal. Biochem.*, **196**, 337-343 (1991).

6. Perdew, G.H., et al., The use of a zwitterionic detergent in two-dimensional gel electrophoresis of trout liver microsomes. *Anal. Biochem.*, **135**, 453-455 (1983).
7. Fialka, I., et al., Subcellular fractionation of polarized epithelial cells and identification of organelle-specific proteins by two-dimensional gel electrophoresis. *Electrophoresis*, **18**, 2582-2590 (1997).
8. Holloway, P.J. and Arundel, P.H., High-resolution two-dimensional electrophoresis of plant proteins. *Anal. Biochem.*, **172**, 8-15 (1988).
9. Herbert, B., Advances in protein solubilisation for two-dimensional electrophoresis. *Electrophoresis*, **20**, 660-663 (1999).

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