# Product Information

## CHAPS

## Catalog Numbers: CHA01, CHA02, CHA03

### Description

CHAPS (3-[(3-cholamidopropyl) dimethylammonio]-1-propanesulfonate) is a non-denaturing zwitterionic detergent for membrane biochemistry. It solubilizes membrane proteins and disrupts protein-protein interactions. CHAPS has a low micellar molecular weight (6,150) and a high critical micelle concentration (6–10 mM), so it can be removed from samples by dialysis. It is also suitable for solubilizing proteins in isoelectric focusing (IEF) and two-dimensional electrophoresis. CHAPS is commonly used in non-denaturing (urea-free) isoelectric focusing and has been found to give excellent resolution for certain subcellular preparations and plant proteins; concentrations between 2% and 4% (w/v) are typically used for IEF gels. As an amphoteric surfactant, CHAPS also serves as a component of protein lysis buffers and is widely used in molecular biology, pharmacology, and related research fields.

### Applications

This product meets a variety of membrane protein and protein research needs, including but not limited to:

- Solubilization of membrane proteins under non-denaturing conditions
- Disruption of protein-protein interactions
- Isoelectric focusing (IEF, non-denaturing urea-free system, typically 2%—4% w/v) and two-dimensional electrophoresis
- Protein lysis buffer/sample preparation
- Systems requiring detergent removal by dialysis (low micellar molecular weight and high CMC allow easy removal)

### Transportation and Storage

- Storage: room temperature, protected from light and moisture, tightly sealed, and dry
- Ship at ambient temperature

### Instructions for Use

**Stock Solution Preparation**

1. **Weighing:** Accurately weigh the CHAPS solid according to the experimental needs. The water solubility of this product reaches 100 mg/mL (25 °C); a 10% (w/v) stock can be prepared by adding 1 g CHAPS to 9 g water (or buffer).
2. **Dissolution:** place the solid in a container, add the measured amount of water or buffer, and let it stand until a clear solution is obtained. Vigorous stirring or shaking is preferably avoided during preparation; if dissolution is slow, warm gently at 37 °C with mild sonication.
3. **Sterilization:** for cell culture-related applications, filter the prepared solution through a 0.22 μm filter before adding it to cells.
4. **Storage:** prepare fresh immediately before use whenever possible, as the solution is not very stable; alternatively, aliquot into single-use portions and freeze (stable for 2 years). Avoid repeated freeze-thaw cycles. Working solutions are not recommended for long-term storage, as precipitation may occur.

### Notice

1. To ensure the safety and health of operators, laboratory coats and disposable gloves must be worn throughout the entire experimental procedure.
2. Certain technical information provided with this product is intended for customer reference, academic communication, and scientific research purposes only. Our company does not warrant the absolute accuracy or completeness of the information provided.
3. This product is for research use only. It is strictly prohibited for use in clinical diagnosis, treatment, food, pharmaceuticals, or any other applications involving human use. Do not store this product in ordinary residential premises.
4. This product is supplied in non-sterile packaging. If used for cell culture, pretreat in advance to remove pyrogens and bacteria; otherwise

contamination may occur.

5. Solubility is determined at room temperature; low temperatures may affect solubility.

## Troubleshooting

**Possible Problems and Solutions:**

| Symptoms | Solution |
|---|---|
| **Slow dissolution or incomplete dissolution in water** | The solubility of CHAPS is 100 mg/mL (25°C). Add water to the solid and let it stand to dissolve; avoid vigorous stirring or shaking. If dissolution is slow, warm gently at 37 °Cwith mild sonication. Low temperatures affect solubility; prepare at room temperature whenever possible. |
| **Precipitate in solution** | Usually caused by an overly concentrated solution or low temperature; reduce the concentration or warm in a 37°C water bath. Working solutions are not recommended for long-term storage as precipitation may occur; prepare fresh before use. |
| **Downstream assays interfered by the detergent; how to remove CHAPS** | The small micellar molecular weight (6,150) and high CMC (6-10 mM) of CHAPS allow easy removal by dialysis: load the sample into dialysis tubing and dialyze at 4°C against a large volume of detergent-free buffer with several buffer changes; gel filtration desalting columns can also be used directly, though the recovery and removal efficiency may be slightly affected. Literature data show ~99% removal from a 3% starting concentration with ~90% protein recovery. |
| **Slow dissolution or incomplete dissolution in water** | The solubility of CHAPS is 100 mg/mL (25 °C). Add water to the solid and let it stand to dissolve; avoid vigorous stirring or shaking. If dissolution is slow, warm gently at 37 °C with mild sonication. Low temperatures affect solubility; prepare at room temperature whenever possible. |