

# SDS Solution

Product	Con.	Cat#	Size
SDS Solution	10%	IBS-BS003a	500ml
	20%	IBS-BS003	500ml
	0.5%	IBS-BS097	500ml

**Components :** 10%, 20%, 0.5% (w/v) Sodium dodecyl sulfate (SDS) solution

**Storage Conditions :** Room Temperature

At low temperatures the SDS solution may precipitate; warm at 37°C for complete dis solution.

## Introduction :

Sodium dodecyl sulfate (SDS or NaDS), sodium laurilsulfate or sodium lauryl sulfate (SLS) is an organic compound with the formula  $\text{CH}_3(\text{CH}_2)_{11}\text{OSO}_3\text{Na}$ . It is an anionic surfactant used in many cleaning and hygiene products. The salt is of an organosulfate consisting of a 12-carbon tail attached to a sulfate group, giving the material the amphiphilic properties required of a detergent. Being derived from inexpensive coconut and palm oils, it is a common component of many domestic cleaning products.

## Applications :

SDS is mainly used in detergents for laundry with many cleaning applications. SDS is a highly effective surfactant and is used in any task requiring the removal of oily stains and residues. For example, it is found in higher concentrations with industrial products including engine degreasers, floor cleaners, and car wash soaps. It is found in toothpastes, shampoos, shaving foams, and bubble bath formulations in part for its thickening effect and its ability to create a lather. It can be used to aid in lysing cells during DNA extraction and for unraveling proteins in SDS-PAGE. Sodium lauryl sulfate, in science referred to as sodium dodecyl sulfate (SDS) or Duponol, is commonly used in preparing proteins for electrophoresis in the SDS-PAGE technique. This compound works by disrupting non-covalent bonds in the proteins, denaturing them, and causing the molecules to lose their native shape (conformation).

Also, anions of SDS bind to the main peptide chain at a ratio of one SDS anion for every two amino acid residues. This effectively imparts a negative charge on the protein that is proportional to the mass of that protein.

This new negative charge is significantly greater than the original charge of that protein. The electrostatic repulsion that is created by binding of SDS causes proteins to unfold into a rod-like shape thereby eliminating differences in shape as a factor for separation in the gel. Sodium lauryl sulfate is probably the most researched anionic surfactant compound. Like all detergent surfactants (including soaps), sodium lauryl sulfate removes oils from the skin, and can cause skin and eye irritation.

**WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. FLAMMABLE SOLID.**