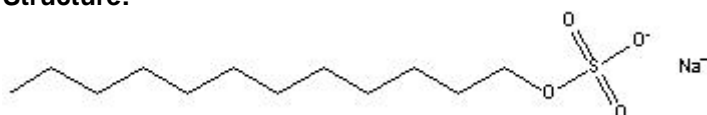


TECHNICAL INFORMATION

Catalog Number: 102918, 190522, 194831, 198957, 811030, 811032, 811033, 811034, 811036

Sodium dodecyl sulfate

Structure:



Molecular Formula: C₁₂H₂₅NaSO₄

Molecular Weight: 288.38

CAS #: 151-21-3

Synonyms: SDS; Lauryl sulfate sodium salt; Dodecyl sulfate sodium salt; Dodecyl sodium sulfate; Sodium lauryl sulfate; Sulfuric acid monododecyl ester sodium salt

Physical Appearance: White granular powder

Critical Micelle Concentration (CMC): 8.27 mM (Detergents with high CMC values are generally easy to remove by dilution; detergents with low CMC values are advantageous for separations on the basis of molecular weight. As a general rule, detergents should be used at their CMC and at a detergent-to-protein weight ratio of approximately ten.^{13,14})

Aggregation Number: 62

Solubility: Soluble in water (200 mg/ml - clear, faint yellow solution), and ethanol (0.1g/10 ml)

Description: An anionic detergent³ typically used to solubilize⁸ and denature proteins for electrophoresis.^{4,5} SDS has also been used in large-scale phenol extraction of RNA to promote the dissociation of protein from nucleic acids when extracting from biological material.¹² Most proteins bind SDS in a ratio of 1.4 grams SDS to 1 gram protein. The charges intrinsic to the protein become insignificant compared to the overall negative charge provided by the bound SDS. The charge to mass ratio is essentially the same for each protein and will migrate in the gel based only on protein size.

Typical Working Concentration: > 10 mg SDS/mg protein

Typical Buffer Compositions:

SDS Electrophoresis Gel Running Buffer

Component	Composition (g/L)	Molarity or %
Tris	3.035	0.025 M
Glycine	14.1	0.192 M
SDS	1	0.1%
pH 8.3		

SDS Electrophoresis Gel Sample Solubilization Buffer

Component	Composition (g/L)	Molarity or %
Tris	15.16	0.125 M
SDS	20.0	2.0%
Sucrose	100	10.0%
Bromophenol Blue	0.2	0.02%

Titrated to pH 8.0 with HCl

Availability:

Catalog Number	Description	Size
102918	Sodium Dodecyl Sulfate, purity approximately 99%	10 g 25 g 100 g 500 g 1 kg

190522	Sodium Dodecyl Sulfate, purity approximately 95%	100 g 500 g 1 kg
194831	Sodium Dodecyl Sulfate, molecular biology reagent, purity approximately 99%	25 g 100 g 250 g 500 g 1 kg
198957	Sodium Dodecyl Sulfate, 20% Solution; purity approximately 99.5% alkyl sulfate, 97% dodecyl sulfate	100 ml 500 ml
811033 811036 811034 811032 811030	Sodium Dodecyl Sulfate, Ultra Pure, purity not less than 99%	25 g 50 g 100 g 500 g 1 kg

References:

- *Merck Index*, **12th Ed.**, No. 8782.
- *CRC Handbook of Electrophoresis*, Lewis, L.A. and Oppelt, J.J. (eds.), v. 1, CRC Press: Boca Raton, Florida (1980).
- *Colloid Polym. Sci.*, **v. 272**, 141 (1994).
- *Electrophoresis* (Weinheim, Fed. Repub. Ger.), **v. 14**, 1038 (1993).
- *Anal. Biochem.*, **v. 214**, 490 (1993).
- Grohs, R.A., et al., *Anal. Chem.*, **v. 63**, 384 (1991).
- Hames, B.D. and Rickwood, D., *Gel Electrophoresis of Proteins: A Practical Approach*, **2nd Ed.**, IRL Press: New York, NY, pp. 8 (1990).
- Harewood, K. and Wolff, J.S., *Anal. Biochem.*, **v. 55**, 573 (1973).
- Jagus, R., *Meths. Enzymol.*, **v. 152**, 296 (1987).
- Laemmli, U.K., "Cleavage of structural proteins during the assembly of the head of bacteriophage T4." *Nature*, **v. 227**, 680-685 (1970).
- Nelsen, T.B. and Reynolds, J.A., *Meths. Enzymol.*, **v. 48**, 3 (1978).
- Wallace, D.M., *Meths. Enzymol.*, **v. 125**, 39 (1987).
- Womack, M.D. et al., *Biochim. Biophys. Acta*, **733**, 210 (1983)
- Matson, R.S. and Goheen, S.C., *LC-GC*, **4(7)**, 624 (1986)