Dextran sulfate sodium DSS

Product Information

Dextran sulfate sodium DSS

CAS No：9011-18-1

Mol. Formula[C6H7Na3O14S3]n

Appearance:White to light Yellow powder

Loss on drying:⩽10%

Storage: RT

Dextran sulfate sodium (DSS) is a polyanionic derivative stemming from dextran. Its formation is attributed to the esterification reaction between dextran and chlorosulfonic acid. This compound exists as a white powder and can dissolve in water or salt solutions, yielding a transparent solution. DSS finds applications in diverse fields, encompassing diagnosis, molecular biology, biochemistry, and even cosmetics.

The key properties of Dextran Sulfate Sodium include:

- Its polyanionic nature, enabling solubility in water.
- The formation of a colorless solution, resembling the structure of natural mucopolysaccharides.
- Exceptional purity and stability.
- Natural biodegradability.
- Serving as a stabilizer for delicate natural ingredients.

Seebio offers a comprehensive range of Dextran sulfate sodium DSS series products. These products span a molecular weight range of 1,500 to 1,400,000 Da and possess a sulfur content of 17-20%.

Applications

1、In the Realm of Biological R&D and Pharmaceuticals

Seebio offers a diverse range of Dextran sulfate sodium(DSS) products with molecular weights including 1500, 2000, 3000, 5000, 8000, 15000, 40000 (or 36000-50000), and 1,400,000 Da.

- DSS serves as an anti-agglomeration agent in cell culture, effectively preventing cell agglomeration.
- As an anticoagulant, DSS has been explored as a potential heparin alternative in anticoagulant therapy. Notably, dextran sulfate exhibits a lower anticoagulant activity (15 units/g) compared to heparin (130 units/g).
- DSS demonstrates antiviral and antienzyme activity, inhibiting the binding of various enveloped viruses, including human immunodeficiency virus (HIV), herpes simplex virus (HSV), and cytomegalovirus (CMV), to cells. Additionally, it exhibits inhibitory effects on enzymes such as hyaluronidase, adenylyl cyclase, and amylase.
- During plasma separation, DSS is utilized to precipitate low-density lipoproteins (LDL) and very low-density lipoproteins (VLDL), aiding in lipid removal.
- As a nanocarrier
- During dialysis, Dextran sulfate functions as an anionic adsorbent within the dextran sulfate adsorption (DSA) system, enabling the efficient removal of low-density lipoproteins (LDL) and thereby facilitating effective blood lipid management.

2、In the Realm of Molecular Biology/Biochemical Diagnostics (MW 6500-10,000, 20,000, 400,000-600,000, 1,400,000Da)

- Release DNA from DNA-histone complexes
- Inhibit RNA binding to ribosomes
- Inhibit nucleases
- Separate ribose

3、In the Realm of Cosmetic Research (MW 6,000-8,000D, 8,000 Da)

- As an AMP (antimicrobial peptide) chelating agent in the treatment of skin redness-rosacea
- Accelerate nitric oxide (NO) synthesis, improve blood flow, and reduce swelling[6]

4、Other Applications

Dextran sulfate sodium is widely utilized in various water treatment applications, including oilfield water treatment, seawater desalination, sewage treatment, and industrial water treatment. In oilfield water treatment, it exhibits excellent anti-crater effects, effectively preventing the aggregation of particle sediments and safeguarding the smooth operation of oilfield equipment. Moreover, it finds application in seawater desalination, demonstrating robust anti-pollution properties that significantly improve water quality to meet domestic water standards. Dextran sulfate sodium salt is effective in sewage treatment, filtering out organic matter and heavy metal ions to enhance water quality and mitigate environmental pollution.

Product List

Product name	Sulfur content	PH Value	Packaging
DSS(MW1500)	17%	5.0~7.5	500g-1kg
DSS(MW3000)	17%	5.0~7.5	500g-1kg
DSS(MW5000)	15~20%	5.0~7.5	500g-1kg
DSS(MW6000-8000)	17%	5.0~7.5	500g-1kg
DSS(MW15,000)	17%	5.0~7.5	500g-1kg
DSS(MW20,000)	17%	5.0~7.5	500g-1kg
DSS(MW40,000)	17.0~20.0%	5.0~7.5	1kg
DSS(MW50,000)	16.0%~20.0%	6.0~8.0	1kg
DSS(MW500,000)	17%	6.0~8.0	1kg

Application	Biological research					Biopharmaceutical		Cosmetic production
Product Name	Anti-agglomeration in cell culture	Enteritis Modeling	Antiviral property	Molecular biology (nucleic acid hybridization)	Biochemical diagnosis (Anticoagulant Isolated lipoprotein)	Nanocarrier	dialysis	Chelating agents
DSS(MW1500)			√					
DSS(MW2000)			√					
DSS(MW3000)			√					
DSS(MW5000)	√		√		√			
DSS (MW6000-8000)								√
DSS (MW6500-10,000)				√	√			
DSS(MW8000)								√
DSS(MW15,000)			√					
DSS(MW20,000)				√				
DSS(MW40,000)		√		√				
DSS(MW50,000)			√	√				
DSS (MW40,000-60,000)				√	√			
DSS(MW500,000)			√	√				
DSS(MW1400,000)				√				

Service Hotline: 400-021-8158
International Market: www.allinno.com
Website: www.seebio.com/ www.seebio.cn
E-mail: foodadd@seebio.cn/ finechem@seebio.cn/sales@seebio.cn/ market@seebio.cn
Address: Building 5, No. 508 Chuanhong Road, Pudong, Shanghai 201202, P.R.China