

Pluronic F-68

Product Information

Product Name: Pluronic F-68

Alternative name: Poloxamer,3-Acetoxy-2,2-bis(acetoxymethyl)propyl acetate,PAG

Technology: Chemical synthesis

CAS No: 9003-11-6

Appearance:White crystalline powder

PH: 5-7

Mol. Formula:(C₅H₁₀O₂)_n

Mol. Weight: 7350-9350

Packaging:1kg

Storage: Store at RT, protect from moisture

Product List

Product Name	Level	Packaging
Pluronic F-68	Industrial/pharmaceutical grade	1kg

Product Introduction

Poloxamer 188, also known as Pluronic F-68, is a triblock copolymer composed of polyoxyethylene-polyoxypropylene-polyoxyethylene (PEO-PPO-PEO). Given its gentle physical properties and chemical stability, Poloxamer 188 finds widespread application in various traditional dosage forms, including suppositories, emulsions, tablets, and gels. Moreover, it has the ability to form micelles, thereby enhancing the concentration of poorly soluble drugs. This copolymer not only boosts the solubility of such drugs but also regulates their release rate. Furthermore, it can restrain the efflux of drugs from efflux pumps, thereby promoting the body's absorption of these drugs. Poloxamer 188 demonstrates a beneficial effect in treating vascular obstruction caused by blood cell aggregation. Research has demonstrated that Poloxamer 188 also plays a pivotal role in facilitating drugs' passage through the blood-cerebrospinal fluid barrier. Through various mechanisms, it enables drugs to be specifically targeted to the brain, enhancing their bioavailability in the brain and offering novel ideas and strategies for brain-targeted drug delivery.

Applications

Defoaming Agent Surfactant

Poloxamer 188, with an HLB value of 29, exhibits robust surface activity. It is ideal for formulating low-foaming, high-detergency synthetic detergents. It serves as a defoaming agent in artificial heart-lung machines, preventing air entry during blood circulation. Its primary functions in cosmetics and skin care products include surfactant and emulsifier roles.

Lyophilizing Protectant

Poloxamer 188 offers a relatively stable protective effect on drug-loaded micelles, outperforming other protective agents in terms of application range. For copolymer adhesives containing a higher proportion of polylactic acid segments, poloxamer 188 provides superior freeze protection.

Applications in Medicine

1.Enhancing Drug Dissolution

2.Serving as Emulsifier and Stabilizer

Due to its non-toxic, non-antigenic, non-irritating, non-allergenic, chemically stable, and non-hemolytic properties, Poloxamer 188 serves as a synthetic emulsifier for intravenous injection. It is an excellent emulsifier for preparing intravenous fat emulsions, capable of forming O-type emulsions.

3.Basis for Creams and Suppositories

4.Absorption Enhancer

Poloxamer 188 slows down intestinal peristalsis, prolonging drug retention time in the gastrointestinal tract, thereby increasing absorption and enhancing the bioavailability of oral preparations. Additionally, it exhibits good compatibility with the skin, enhancing skin permeability and promoting the absorption of topical pharmaceutical preparations.

5.Other Applications

Poloxamer 188 stabilizes cell membranes, making it useful in the treatment of acute respiratory syndrome. It also mitigates axonal damage to neuronal cells in TBI (traumatic brain injury) and DAI (diffuse axonal injury). Furthermore, it can be combined with antigens such as diphtheria toxoid to improve antigen delivery and achieve better therapeutic outcomes.



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International Market: www.allinno.com

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E-mail: [foodadd@seebio.cn/](mailto:foodadd@seebio.cn) [finechem@seebio.cn/](mailto:finechem@seebio.cn) [sales@seebio.cn/](mailto:sales@seebio.cn) market@seebio.cn

Address: Building 5, No. 508 Chuanhong Road, Pudong, Shanghai 201202, P.R.China

