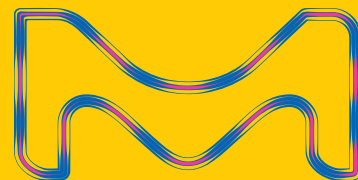


SAFC®

Pharma/Biopharma Raw Materials



POLOXAMER 188 EMPROVE® EXPERT:

A FIRST-RATE STABILIZER AND SURFACTANT



TAKE CONFIDENCE IN CONSISTENT PERFORMANCE AND A STEADY SUPPLY

Poloxamer 188 is an excipient designed for use in liquid and semi-solid formulations and helps to improve solubility and bioavailability. It is widely used in a variety of different applications, such as biomolecule formulations, emulsions and creams. Additionally, our Poloxamer 188 Emprove® Expert performs beyond pharmacopoeia requirements that have strict limitations on the traces of formaldehyde typically present in poloxamers.

Our European manufactured product delivers a surface-active nonionic polymer from a facility that boasts reliably large manufacturing capacities to meet your demands. And as part of our Emprove® program, The Poloxamer 188 Emprove® Expert excipient comes with transparent GMP documentation and comprehensive dossiers.

Ensuring the compliance of your excipients involves the compilation of a vast amount of data, which can be time- and resource-intensive. In order to facilitate and accelerate this process we developed our Emprove® Program. Each product in the portfolio is complemented with three different types of dossiers supporting you throughout the different stages of your operations: qualification, risk assessment, and process optimization, speeding your way through the regulatory maze.

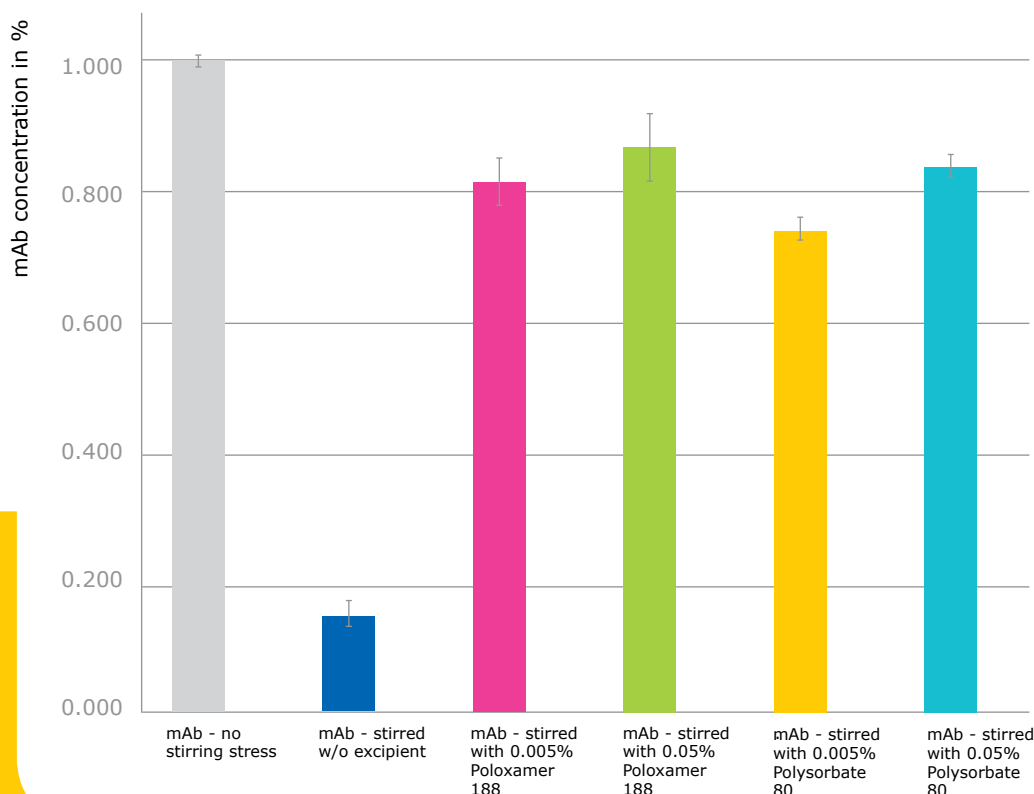
Formulate with our dependable and high-quality polymer for:

- An excipient that's ready for dedicated use in high-risk applications
- In-house developed methods that help to predict and verify lot-to-lot consistency
- Low bioburden and endotoxin levels
- Compliancy with United States Pharmacopeia (USP/NF) and European Pharmacopeia (EP) monograph

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

**MILLIPORE
SIGMA**

Poloxamer 188 Emprove® Expert protects biomolecules against mechanical stress



The above graph shows a 24-hour stirring stress test (600 rpm) for a monoclonal antibody (mAb) performed in 2 mL reaction tubes at RT. The antibody solution (10 mg/mL mAb in 10 mM sodium citrate buffer at pH 5) was either unsupplemented, supplemented with Poloxamer 188, or supplemented with Polysorbate 80 in two different concentrations. In the control sample, the mAb solution was kept unstirred. Y-axis is the mAb concentration in mg/mL measured after 24 hours of treatment. Error bars indicate standard deviation. By adding Poloxamer 188 EMPROVE® Expert or Polysorbate 80 Emprove® Essential in different concentrations we were able to achieve enhanced stabilizing effects of the protein formulation.

Ordering Information

Cat. No.	Product	Pack size
1.37112.0001	Poloxamer 188 EMPROVE® EXPERT* Ph Eur,NF:	3 x 1 Kg Sample Kit
1.37112.1000	Poloxamer 188 EMPROVE® EXPERT* Ph Eur,NF:	1 Kg PE wide-necked bottle
1.37112.9010	Poloxamer 188 EMPROVE® EXPERT* Ph Eur,NF:	10 Kg PE bag in square box
1.37112.9025	Poloxamer 188 EMPROVE® EXPERT* Ph Eur,NF:	25 Kg PE bag in square box

* stabilized with 70 ppm BHT

The typical technical data above serve to generally characterize the excipient. These values are not meant as specifications and they do not have binding character. The product specification is available separately at EMDMillipore.com.

For additional information, please visit EMDMillipore.com.

To place an order or receive technical assistance, please visit EMDMillipore.com/contactPS.

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

