

# SAFC®

Pharma & Biopharma Raw  
Material Solutions

The typical technical data above serve to generally characterize the product. These values are not meant as specifications and they do not have binding character. The product specification is available separately, from the website: [EMDMillipore.com](https://www.emdmillipore.com)

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.

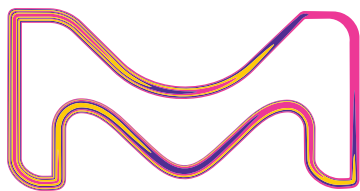
For additional information, please visit [EMDMillipore.com](https://www.emdmillipore.com)  
To place an order or receive technical assistance, please visit [EMDMillipore.com/contactPS](https://www.emdmillipore.com/contactPS)

MilliporeSigma, the Vibrant M, Emprove, SAFC, and Pardeck are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners.  
Detailed information on trademarks is available via publicly accessible resources.  
© 2018 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.

Lit. No. MS\_BR1638EN  
w301904  
03/2018

# Your partner for liquid dose applications.

Benefit from a comprehensive  
product portfolio and exceptional  
service in liquid formulation.



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

**SAFC**<sup>®</sup>

Pharma & Biopharma Raw  
Material Solutions

# An extensive portfolio with regulatory support.

Immediately ready and easy to administer, liquid dosage forms are an essential part of any pharmaceutical portfolio. In order to help you stand out from the competition, we provide you with an extensive portfolio of raw materials, produced according to the IPEC-PQG GMP Guideline, for liquid dosage forms.

Since successful liquid formulation requires a meticulous blend of ingredients and production know-how, we are here to support you in every step of development, scale-up, and production. You can benefit from our broad expertise in the field, backing the development of your final product with our expert regulatory know-how – all around the world. Our high-quality excipients are supported by our Emprove® Program, helping you simplify your material qualification and speed up your processes, thus reducing the total cost of ownership.

## Benefits:

- Broad product portfolio
- First-class services and regulatory support
- Emprove® Expert portfolio for sterile liquid applications

## Sucralose

A readily soluble sweetener that masks both bitterness and medicinal off-notes with equal ease.

- Improves patient compliance through taste masking
- Readily soluble – easy handling
- Batch-to-batch consistency – reliable results

For more information:  
[EMDMillipore.com/sucralose](http://EMDMillipore.com/sucralose)

# The right products for your formulation needs.

We attend to your special formulation needs, no matter if you formulate solutions, emulsions, or suspensions. Our comprehensive portfolio addresses multiple applications, including solvents, preservatives, thickeners, surfactants, stabilizers, flavors, enzymes, and products needed for pH and tonicity adjustment. With our cutting-edge products, customer-oriented solutions, and exceptional service, Merck is your ideal partner for liquid applications.

**We supply an extensive excipient portfolio and know-how for all kinds of liquid dosage forms for different administration routes:**

- Oral – syrups, solutions, suspensions
- Ophthalmic – drops, sprays, washes
- Nasal – drops, sprays, rinsing solutions
- Otic – drops, sprays, rinsing solutions
- Inhalation – liquid preparations

## The Emprove® Program

# Your fast track through regulatory challenges.

Ensuring the compliance of your pharma and bio-pharma products 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. It includes 400 pharma raw and starting materials and a selection of filtration and single-use products. 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 – all designed to help you speed your way through the regulatory maze.

Find out more at:  
[EMDMillipore.com/emprove](https://www.emdmillipore.com/emprove)



Cat. No.	Article	Oral	Topical	Ophthalmic	Otic	Inhalation	Nasal
<b>pH Adjustment and Buffers</b>							
100056	Acetic acid (glacial) 100% EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, E 260	•	•		•		
100058	Acetic acid 96% EMPROVE® ESSENTIAL	•	•		•		
105422	Ammonia solution 25% EMPROVE® ESSENTIAL Ph Eur, BP		•			•	
101142	Ammonium chloride EMPROVE® ESSENTIAL Ph Eur, BP, USP	•					
100924	Ammonium chloride extra pure Ph Eur, BP, USP	•					
100160	Boric acid cryst., EMPROVE® ESSENTIAL Ph Eur, BP, NF		•	•	•		
100162	Boric acid powder, EMPROVE® ESSENTIAL Ph Eur, BP, NF		•	•	•		
102052	Calcium acetate hydrate extra pure DAC, FCC	•	•				
102110	Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur, BP, USP, JP, FCC, E 526	•	•				
102119	Calcium hydroxide precipitated (≤0.0005% Al) EMPROVE® ESSENTIAL USP, FCC, E 526	•	•				
137002	Citric acid EMPROVE® bio Ph Eur, BP, JP, USP, ACS	•	•	•			•
100247	Citric acid anhydrous fine-granular, suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP, E 330, FCC	•	•	•			•
100241	Citric acid anhydrous powder, suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP, E 330, FCC	•	•	•			•
137003	Citric acid monohydrate EMPROVE® bio Ph Eur, BP, JP, USP, ACS	•	•	•			•
100242	Citric acid monohydrate cryst., suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP, E 330, FCC	•	•	•			•
100243	Citric acid monohydrate powder, suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP, E 330, FCC	•	•	•			•
137010	di-Potassium hydrogen phosphate EMPROVE® bio Ph Eur, BP, USP	•					
105101	di-Potassium hydrogen phosphate anhydrous, EMPROVE® ESSENTIAL Ph Eur, BP, E 340	•					
137091	di-Sodium hydrogen phosphate anhydrous EMPROVE® bio Ph Eur, BP, USP	•	•	•	•		•
106585	di-Sodium hydrogen phosphate anhydrous EMPROVE® ESSENTIAL Ph Eur, BP, USP, E 339	•	•	•	•		•
137036	di-Sodium hydrogen phosphate dihydrate EMPROVE® bio Ph Eur, BP, USP	•	•	•	•		•
106576	di-Sodium hydrogen phosphate dihydrate EMPROVE® ESSENTIAL Ph Eur, BP, USP	•	•	•	•		•
106573	di-Sodium hydrogen phosphate dodecahydrate cryst. EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP	•	•	•	•		•
137092	di-Sodium hydrogen phosphate heptahydrate EMPROVE® bio DAC, USP	•	•	•	•		•
106574	di-Sodium hydrogen phosphate heptahydrate EMPROVE® ESSENTIAL DAC, USP	•	•	•	•		•
106303	di-Sodium tetraborate decahydrate EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF		•	•	•		
100383	DL-Malic acid EMPROVE® ESSENTIAL Ph Eur, NF, FCC, E 296	•					
100844	Ethanolamine EMPROVE® ESSENTIAL BP, NF		•	•			

Excipient selection is based on FDA inactive ingredients database.

The medicinal product manufacturer is responsible to assure that the excipient is suitable for the intended application.

Cat. No.	Article	Oral	Topical	Ophthalmic	Otic	Inhalation	Nasal
<b>137044</b>	Ethanolamine suitable for biopharmaceutical production EMPROVE® bio BP, NF		•	•			
<b>817073</b>	Fumaric acid NF	•					
<b>100569</b>	Glycine (special grade) suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP	•				•	
<b>100590</b>	Glycine cryst., suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP	•				•	
<b>100312</b>	Hydrochloric acid 25% EMPROVE® ESSENTIAL Ph Helv	•	•	•	•	•	•
<b>100314</b>	Hydrochloric acid fuming 37% EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF	•	•	•	•	•	•
<b>100802</b>	L(+)-Tartaric acid cryst., EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, E 334	•	•				
<b>100803</b>	L(+)-Tartaric acid powder EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, E 334	•	•				
<b>100366</b>	Lactic acid about 90%, suitable for use as excipient EMPROVE® exp Ph Eur, BP, E 270	•	•		•		
<b>104354</b>	L-Histidine monohydrochloride monohydrate, suitable for use as excipient EMPROVE® exp Ph Eur, BP	•					
<b>104352</b>	L-Histidine, suitable for use as excipient EMPROVE® exp Ph Eur, USP	•					
<b>100563</b>	ortho-Phosphoric acid 85% EMPROVE® ESSENTIAL Ph Eur, BP, JPE, NF, E 338	•	•	•			
<b>100564</b>	Phosphoric acid 89% extra pure Ph Eur, BP	•	•	•			
<b>104820</b>	Potassium acetate extra pure Ph Eur, BP, E 261			•			
<b>137039</b>	Potassium dihydrogen phosphate EMPROVE® bio Ph Eur, BP, JPC, NF	•		•	•		•
<b>104871</b>	Potassium dihydrogen phosphate cryst., EMPROVE® ESSENTIAL Ph Eur, BP, JPC, NF, E 340	•		•	•		•
<b>105032</b>	Potassium hydroxide pellets EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, FCC, E 525	•	•				
<b>480864</b>	Potassium hydroxide solution 46–48% EMPROVE® EXPERT	•	•				
<b>106281</b>	Sodium acetate anhydrous extra pure USP, FCC, E 262	•	•	•	•		•
<b>137046</b>	Sodium acetate anhydrous suitable for the biopharmaceutical production EMPROVE® bio USP	•	•	•	•		•
<b>106265</b>	Sodium acetate trihydrate extra pure Ph Eur, BP, JP, USP, FCC, E 262	•	•	•	•		•
<b>137012</b>	Sodium acetate trihydrate suitable for the biopharmaceutical production EMPROVE® bio Ph Eur, BP, JP, USP	•	•	•	•		•
<b>137018</b>	Sodium dihydrogen phosphate dihydrate EMPROVE® bio Ph Eur, BP, USP, JPE	•	•	•			•
<b>106345</b>	Sodium dihydrogen phosphate dihydrate EMPROVE® ESSENTIAL Ph Eur, BP, USP, JPE, E 339	•	•	•			•
<b>106349</b>	Sodium dihydrogen phosphate monohydrate EMPROVE® ESSENTIAL BP, USP	•	•	•			•
<b>137093</b>	Sodium dihydrogen phosphate monohydrate suitable for the biopharmaceutical production EMPROVE® bio BP, USP	•	•	•			•
<b>106482</b>	Sodium hydroxide pellets EMPROVE® ESSENTIAL Ph Eur, BP, FCC, JP, NF, E 524	•	•	•	•	•	•
<b>106522</b>	Sodium-(S)-lactate-solution about 50%, suitable for use as excipient EMPROVE® exp Ph Eur, BP, USP		•				

Cat. No.	Article	Oral	Topical	Ophthalmic	Otic	Inhalation	Nasal
<b>pH Adjustment and Buffers</b>							
100681	Succinic acid cryst., EMPROVE® ESSENTIAL NF, JPE, ACS	•					
480704	Sulfuric acid 10% EMPROVE® EXPERT	•	•	•	•	•	•
100713	Sulfuric acid 95–98% EMPROVE® ESSENTIAL Ph Eur, BP, JPE, NF	•	•	•	•	•	•
137022	Triethanolamine (Trolamine) suitable for biopharmaceutical production EMPROVE® bio Ph Eur, JPE, NF		•	•			
104956	tri-Potassium citrate monohydrate EMPROVE® ESSENTIAL Ph Eur, BP, USP, FCC, E 332	•		•			
108307	Tris(Hydroxymethyl)aminomethane (TROMETAMOL) high purity EMPROVE® bio Ph Eur, BP, JPC, USP, ACS	•	•	•		•	
108386	Tris(hydroxymethyl)aminomethane (Trometamol), suitable for use as excipient EMPROVE® exp Ph Eur, BP, JPC, USP	•	•	•		•	
106431	tri-Sodium citrate 5, 5-hydrate EMPROVE® ESSENTIAL FU VIII, E 331	•	•	•	•		•
111037	tri-Sodium citrate anhydrous, EMPROVE® ESSENTIAL USP, FCC, E 331	•	•	•	•		•
106432	tri-Sodium citrate dihydrate cryst., EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, E 331	•	•	•	•		•
106447	tri-Sodium citrate dihydrate EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, E 331	•	•	•	•		•
106446	tri-Sodium citrate dihydrate powder, EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, E 331	•	•	•	•		•
<b>Preservatives</b>							
101005	1, 1, 1, -Trichloro-2-methyl-2-propanol hemihydrate Ph Eur, BP, JP, NF		•	•	•	•	•
817046	Benzalkonium chloride (50% aqueous solution) EMPROVE® ESSENTIAL Ph Eur, NF		•	•	•	•	•
817032	Benzalkonium chloride EMPROVE® ESSENTIAL Ph Eur, NF		•	•	•	•	•
100130	Benzoic acid powder, EMPROVE® ESSENTIAL Ph Eur, BP, USP, E 210	•	•				
100987	Benzyl alcohol special grade (benzaldehyde ≤0.05%), suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, NF	•	•		•		•
100981	Benzyl alcohol, suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, NF	•	•		•		•
100160	Boric acid cryst., EMPROVE® ESSENTIAL Ph Eur, BP, NF		•	•	•		
100162	Boric acid powder, EMPROVE® ESSENTIAL Ph Eur, BP, NF		•	•	•		
106757	Methyl 4-hydroxybenzoate EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, FCC	•	•	•	•		•
106756	Methyl 4-hydroxybenzoate sodium salt EMPROVE® ESSENTIAL Ph Eur, BP, NF	•	•	•	•		•
105119	Potassium sorbate granules, EMPROVE® ESSENTIAL Ph Eur, BP, NF, FCC, E 202	•	•	•			•
105118	Potassium sorbate powder, EMPROVE® ESSENTIAL Ph Eur, BP, NF, FCC, E 202	•	•	•			•
107427	Propyl 4-hydroxybenzoate EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, FCC	•	•	•	•		
107428	Propyl 4-hydroxybenzoate sodium EMPROVE® ESSENTIAL Ph Eur, BP, NF	•	•	•	•		
106290	Sodium benzoate EMPROVE® ESSENTIAL Ph Eur, BP, NF, FCC, E 211	•	•				

Excipient selection is based on FDA inactive ingredients database.

The medicinal product manufacturer is responsible to assure that the excipient is suitable for the intended application.

Cat. No.	Article	Oral	Topical	Ophthalmic	Otic	Inhalation	Nasal
<b>Preservatives</b>							
<b>100662</b>	Sorbic acid EMPROVE® ESSENTIAL Ph Eur, BP, NF, FCC, E 200	•	•	•			
<b>817043</b>	Thimerosal Ph Eur, BP, USP	•	•	•	•		
<b>108421</b>	Titriplex® III (ethylene)dinitrilo]tetraacetic acid disodium salt dihydrate) EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP	•	•		•	•	•
<b>Antioxidants</b>							
<b>817023</b>	Butylhydroxyanisole Ph Eur, NF, E 320	•	•				•
<b>817074</b>	Butylhydroxytoluene Ph Eur, JPE, NF, E 321	•	•				•
<b>105056</b>	Potassium disulfite EMPROVE® ESSENTIAL Ph Eur, NF, E 224				•		
<b>106357</b>	Sodium disulfite (sodium metabisulfite) EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, E 223	•	•	•			
<b>106652</b>	Sodium sulfite EMPROVE® ESSENTIAL Ph Eur, BP, NF, E 221	•	•	•	•		
<b>106514</b>	Sodium thiosulfate pentahydrate cryst., EMPROVE® ESSENTIAL Ph Eur, BP, USP	•	•	•			
<b>106513</b>	Sodium thiosulfate pentahydrate pure	•	•	•			
<b>137004</b>	Titriplex® III (ethylenedinitrilotetraacetic acid disodium salt dihydrate) suitable for the biopharmaceutical production EMPROVE® bio Ph Eur, BP, JP, USP, ACS	•	•	•			
<b>108421</b>	Titriplex® III (ethylene)dinitrilo]tetraacetic acid disodium salt dihydrate) EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP	•	•	•			
<b>Taste Modifiers</b>							
<b>105995</b>	(-)-Menthol EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP	•	•			•	
<b>105321</b>	D(-)-Fructose EMPROVE® ESSENTIAL Ph Eur, BP, USP, FCC	•					
<b>104061</b>	D(+)-Galactose EMPROVE® ESSENTIAL Ph Eur, BP	•					
<b>108346</b>	Glucose monohydrate, suitable for use as excipient EMPROVE® exp Ph Eur, BP, USP	•					
<b>100803</b>	L(+)-Tartaric acid powder EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, E 334	•	•				
<b>103583</b>	Parteck® SI 150 (Sorbitol) EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, JSFA, E420	•	•	•			•
<b>115079</b>	Parteck® SI 200 (Sorbitol) EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, E420	•	•	•			•
<b>103140</b>	Parteck® SI 400 (Sorbitol) EMPROVE® ESSENTIAL Ph Eur, BP, JSFA, NF, E420	•	•	•			•
<b>111597</b>	Parteck® SI 400 LEX (Sorbitol), suitable for use as excipient EMPROVE® exp Ph Eur, BP, NF, JP	•	•	•			•
<b>103557</b>	Parteck® SI 450 (Sorbitol) EMPROVE® ESSENTIAL NF, FCC, JSFA	•	•	•			•
<b>817022</b>	Saccharin EMPROVE® ESSENTIAL Ph Eur, NF	•	•			•	
<b>817042</b>	Saccharin sodium dihydrate EMPROVE® ESSENTIAL Ph Eur, USP	•	•			•	
<b>817044</b>	Sodium cyclamate EMPROVE® ESSENTIAL Ph Eur, BP	•					
<b>102975</b>	Sorbitol FP liquid (sorbitol syrup, noncrystallizing) EMPROVE® ESSENTIAL Ph Eur, BP, NF, E 420	•	•	•			•



Cat. No.	Article	Oral	Topical	Ophthalmic	Otic	Inhalation	Nasal
<b>Taste Modifiers</b>							
102994	Sorbitol liquid (sorbitol syrup, crystallizing) EMPROVE® ESSENTIAL Ph Eur, BP, USP, E 420	•	•	•			•
100895	Sucralose granular EMPROVE® ESSENTIAL Ph Eur, NF, JPE	•					•
100894	Sucralose powder EMPROVE® ESSENTIAL Ph Eur, NF, JPE	•					•
107653	Sucrose EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF	•	•				
100892	Sucrose low in endotoxins, suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, NF	•	•				
100773	Tannic acid powder EMPROVE® ESSENTIAL Ph Eur, JP, USP	•	•				
108167	Thymol cryst., suitable for use as excipient EMPROVE® exp Ph, Eur, BP, NF	•				•	
108510	Vanillin EMPROVE® ESSENTIAL Ph Eur, BP, NF	•					
<b>Solvents</b>							
107478	1, 2-Propanediol EMPROVE® ESSENTIAL Ph Eur, BP, USP	•	•	•	•		•
100995	2-Propanol EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP		•				
100013	Acetone EMPROVE® ESSENTIAL Ph Eur, BP, JPE, NF		•				
102431	Chloroform EMPROVE® ESSENTIAL	•					
137117	Dimethyl sulfoxide EMPROVE® EXPERT Ph Eur, USP		•				
100971	Ethanol 96%, suitable for use as excipient EMPROVE® exp Ph Eur, BP	•	•	•			
100967	Ethanol 96%, suitable for use as excipient EMPROVE® exp Ph Eur, JP, USP	•	•	•			
100986	Ethanol absolute, suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP	•	•	•			
100864	Ethyl acetate EMPROVE® ESSENTIAL Ph Eur, BP, NF	•	•				
137028	Glycerol EMPROVE® bio Ph Eur, BP, JP, USP, ACS	•	•	•	•	•	•
104091	Glycerol 85%, suitable for use as excipient EMPROVE® exp Ph Eur, BP	•	•	•	•	•	•
104093	Glycerol anhydrous, suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP, E 422	•	•	•	•	•	•
106008	Methanol EMPROVE® ESSENTIAL Ph Eur, BP, JPE, NF	•					
100471	Oleic acid vegetable, suitable for use as excipient EMPROVE® exp Ph Eur, BP, NF		•			•	•
105008	Propanol, suitable for preparative chromatography EMPROVE® bio Ph Eur, BP, USP		•				
<b>Thickeners</b>							
104072	Gelatin (sheets) EMPROVE® ESSENTIAL Ph Eur, BP, NF	•	•			•	
104078	Gelatin powder, EMPROVE® ESSENTIAL Ph Eur, BP, NF	•	•			•	
817009	Polyethylene glycol 1000 EMPROVE® ESSENTIAL Ph Eur	•	•			•	

Excipient selection is based on FDA inactive ingredients database.

The medicinal product manufacturer is responsible to assure that the excipient is suitable for the intended application.

Cat. No.	Article	Oral	Topical	Ophthalmic	Otic	Inhalation	Nasal
<b>817008</b>	Polyethylene glycol 10000, suitable for use as excipient EMPROVE® exp Ph Eur	•				•	
<b>817005</b>	Polyethylene glycol 1500 (scales) EMPROVE® ESSENTIAL Ph Eur		•				
<b>817001</b>	Polyethylene glycol 200 EMPROVE® ESSENTIAL DAB 8	•	•				
<b>817020</b>	Polyethylene glycol 2000, suitable for use as excipient EMPROVE® exp DAB	•	•				
<b>817018</b>	Polyethylene glycol 20000 EMPROVE® ESSENTIAL Ph Eur						
<b>817002</b>	Polyethylene glycol 300 EMPROVE® ESSENTIAL Ph Eur	•	•	•			
<b>817019</b>	Polyethylene glycol 3000 EMPROVE® ESSENTIAL Ph Eur	•	•				•
<b>817003</b>	Polyethylene glycol 400 EMPROVE® ESSENTIAL Ph Eur, JP	•	•	•			•
<b>817006</b>	Polyethylene glycol 4000 (powder) EMPROVE® ESSENTIAL Ph Eur		•				
<b>817063</b>	Polyethylene glycol 4000 (scales) EMPROVE® ESSENTIAL Ph Eur		•				
<b>817004</b>	Polyethylene glycol 600 EMPROVE® ESSENTIAL Ph Eur		•				
<b>817007</b>	Polyethylene glycol 6000 EMPROVE® ESSENTIAL Ph Eur		•				
<b>141365</b>	Polyvinyl alcohol 18-88, powder EMPROVE® exp Ph Eur, USP		•	•	•		
<b>141355</b>	Polyvinyl alcohol 18-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE		•	•	•		
<b>141362</b>	Polyvinyl alcohol 26-88, powder EMPROVE® exp Ph Eur, USP		•	•	•		
<b>141352</b>	Polyvinyl alcohol 26-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE		•	•	•		
<b>141356</b>	Polyvinyl alcohol 28-99, suitable for use as excipient EMPROVE® exp JPE		•	•	•		
<b>141363</b>	Polyvinyl alcohol 40-88, powder EMPROVE® exp Ph Eur, USP		•	•	•		
<b>141353</b>	Polyvinyl alcohol 40-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE		•	•	•		
<b>141360</b>	Polyvinyl alcohol 4-88, powder, suitable for use as excipient EMPROVE® exp Ph Eur, USP		•	•	•		
<b>141350</b>	Polyvinyl alcohol 4-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE		•	•	•		
<b>141364</b>	Polyvinyl alcohol 5-88, powder EMPROVE® exp Ph Eur, USP		•	•	•		
<b>141354</b>	Polyvinyl alcohol 5-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE		•	•	•		
<b>141361</b>	Polyvinyl alcohol 8-88, powder EMPROVE® exp Ph Eur, USP		•	•	•		
<b>141351</b>	Polyvinyl alcohol 8-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE		•	•	•		
<b>113126</b>	Silicon dioxide colloidal, highly dispersed EMPROVE® ESSENTIAL Ph Eur, NF, JP, E 551	•	•				
<b>101253</b>	Starch soluble extra pure	•	•				

Cat. No.	Article	Oral	Topical	Ophthalmic	Otic	Inhalation	Nasal
<b>Surfactants</b>							
<b>100989</b>	Cetyl alcohol EMPROVE® ESSENTIAL Ph Eur, BP, NF, JP		•	•	•		
<b>137112</b>	Poloxamer 188 EMPROVE® EXPERT (stabilized with 70 ppm BHT) Ph Eur, NF	•	•	•			
<b>817034</b>	Sodium dodecyl sulfate Ph Eur	•	•				
<b>817072</b>	Tween® 20 (Polysorbate) EMPROVE® ESSENTIAL Ph Eur, JPE, NF	•	•	•	•		•
<b>817076</b>	Tween® 60 (Polysorbate) EMPROVE® ESSENTIAL Ph Eur, JPE, NF	•	•	•			
<b>817061</b>	Tween® 80 (Polysorbate) EMPROVE® ESSENTIAL Ph Eur, JP, NF	•	•	•	•		•
<b>Tonicity Agents</b>							
<b>101816</b>	Ammonium sulfate suitable for the biopharmaceutical production EMPROVE® bio ACS, NF		•		•		
<b>142002</b>	Calcium chloride dihydrate EMPROVE® Ph Eur, BP, JP, USP, FCC, E 509	•	•	•			
<b>137101</b>	Calcium chloride dihydrate suitable for the biopharmaceutical production EMPROVE® bio Ph Eur, BP, JP, USP	•	•	•			
<b>105980</b>	D(-)-Mannitol EMPROVE® ESSENTIAL Ph Eur, BP, USP, JP, FCC, E 421		•	•			•
<b>137096</b>	D(-)-Mannitol EMPROVE® EXPERT Ph Eur, BP, USP, JP		•	•			•
<b>105988</b>	D(-)-Mannitol fine powder EMPROVE® ESSENTIAL Ph Eur, BP, USP, JP, FCC, E 421		•	•			•
<b>105303</b>	D(-)-Mannitol low in endotoxins EMPROVE® API Ph Eur, BP, USP		•	•			•
<b>108346</b>	D(+)-Glucose monohydrate, suitable for use as excipient EMPROVE® exp Ph Eur, BP, USP	•					
<b>137008</b>	Magnesium chloride hexahydrate EMPROVE® bio Ph Eur, BP, USP, JPC, ACS	•	•	•	•	•	•
<b>105832</b>	Magnesium chloride hexahydrate cryst. EMPROVE® Ph Eur, BP, USP, JPC, FCC, E 511	•	•	•	•	•	•
<b>137182</b>	Magnesium sulfate heptahydrate EMPROVE® EXPERT Ph Eur, BP, JP, USP	•	•	•	•	•	•
<b>104937</b>	Potassium chloride EMPROVE® ESSENTIAL Ph Eur, BP, E 508	•		•			
<b>104935</b>	Potassium chloride EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, FCC, E 508	•		•			
<b>137009</b>	Potassium chloride suitable for the biopharmaceutical production EMPROVE® bio Ph Eur, BP, USP, JP	•		•			
<b>106400</b>	Sodium chloride EMPROVE® ESSENTIAL Ph Eur, BP, USP	•	•	•	•	•	•
<b>116224</b>	Sodium chloride low in endotoxins, suitable for use as excipient EMPROVE® exp Ph Eur, BP, JP, USP	•	•	•	•	•	•
<b>137017</b>	Sodium chloride suitable for the biopharmaceutical production EMPROVE® bio Ph Eur, BP, JP, USP	•	•	•	•	•	•
<b>137144</b>	Sodium sulfate anhydrous EMPROVE® EXPERT Ph Eur, USP, BP	•		•		•	
<b>137144</b>	Sodium sulfate anhydrous EMPROVE® EXPERT Ph Eur, USP, BP	•		•		•	
<b>106645</b>	Sodium sulfate anhydrous extra pure fine powder Ph Eur, BP, USP	•		•		•	

Excipient selection is based on FDA inactive ingredients database.

The medicinal product manufacturer is responsible to assure that the excipient is suitable for the intended application.

# Formulation Product Finder Application Tool

Find the right product for specific applications.

Quickly sort through our product portfolio by dosage form, application, and many other parameters. Rich with product detail, products can even be selected according to their controlled release or solubility enhancement functionality, their Emprove® qualification and the main pharmacopeias.

## Features at a glance:

- Comprehensive product list of excipients and APIs
- Product links to product detail pages
- Search filters
- Save your favorites
- Email – Quickly share favorites
- Supporting collateral (brochures and posters)

Available as a free app for tablets and web version:  
[EMDMillipore.com/formulationapp](http://EMDMillipore.com/formulationapp)

