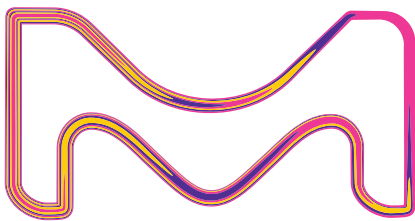


Simplify your semi-solid formulations.

High-quality pharma raw materials backed
with global regulatory support.



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

SAFC®

Pharma & Biopharma Raw
Material Solutions

A broad product portfolio and global support.

Finding the right excipient that matches your needs as well as regulatory demands can be a complicated challenge in semi-solid formulation. Our excipients for semi-solid dose support easy local application and rapid formulation as well as regulatory compliance of ointments, creams, gels, and suppositories. The raw materials' ability to topically deliver a wide variety of drug molecules makes them ideal carriers, helping you make the most out of your semi-solid formulations.

We offer a comprehensive range of products globally. By choosing our high-quality raw materials, you will not only benefit from our Emprove® Program, but also from our regulatory know-how and global support, enabling you to bring your product to market faster and still reduce costs.

Benefits:

- High-quality pharma raw materials
- Emprove® documentation for risk assessment
- Dedicated regulatory support

Penetration Enhancement Agents: Urea and DMSO.

To increase the bioavailability of your transdermal applications, we offer a range of high-quality products, produced in accordance with GMP guidelines.

Urea

- The only API grade urea on the market with CEP and DMF
- Meets regulatory requirements according to ICHQ7 GMP guidelines; complies with Ph Eur, BP, and USP
- Includes microbiological and melamine testing

DMSO

- Complies with Ph Eur and USP and fulfills IPEC GMP guidelines
- Includes microbiological and endotoxin testing
- Emprove® Expert grade to meet your requirements for high-risk applications



Polyvinyl alcohol in topical and transdermal formulations.

Polyvinyl alcohol (PVA) is a synthetic polymer that can be used as a major component of and matrix material for semi-solid formulations. It is applied in topical creams, gels, and also in transdermal patches.

Our portfolio offers a wide range of PVA grades, including different viscosities, molecular weights, and hydrolysis grades, to provide you with high-quality products for your application.

Additional applications of PVA include ophthalmics, solid oral formulations, and cosmetics.

- Broad range of PVA types for multiple application needs
- Multi-compendial material
- Additional specifications surpassing compendial requirements to support patient safety and good tolerability
- Emprove® documentation

For more information: EMDMillipore.com/pva

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:
EMDMillipore.com/emprove



Acidulants and pH Adjusters

100056	Acetic acid (glacial) 100% EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, E 260
100058	Acetic acid 96% EMPROVE® ESSENTIAL
100090	Adipic acid EMPROVE® ESSENTIAL Ph Eur, NF, FCC, E 355
105422	Ammonia solution 25% EMPROVE® ESSENTIAL Ph Eur, BP
100160	Boric acid cryst., EMPROVE® ESSENTIAL Ph Eur, BP, NF
100156	Boric acid cryst., EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF
100164	Boric acid cryst., EMPROVE® API Ph Eur, BP, NF
102052	Calcium acetate hydrate extra pure DAC, FCC
102119	Calcium hydroxide precipitated ($\leq 0.0005\%$ Al) EMPROVE® ESSENTIAL USP, FCC, E 526
102110	Calcium hydroxide EMPROVE® ESSENTIAL Ph Eur, BP, USP, JP, FCC, E 526
102102	Calcium lactate pentahydrate EMPROVE® ESSENTIAL Ph Eur, BP, USP, E 327
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
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
100312	Hydrochloric acid 25% EMPROVE® ESSENTIAL Ph Helv
100314	Hydrochloric acid fuming 37% EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF
100366	(S)-Lactic acid about 90%, suitable for use as excipient EMPROVE® exp Ph Eur, BP, E 270
817058	Maleic acid EMPROVE® ESSENTIAL Ph Eur, NF
100563	ortho-Phosphoric acid 85% EMPROVE® ESSENTIAL Ph Eur, BP, JPE, NF, E 338
104956	tri-Potassium citrate monohydrate EMPROVE® ESSENTIAL Ph Eur, BP, USP, FCC, E 332
105032	Potassium hydroxide pellets EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, FCC, E 525
106281	Sodium acetate anhydrous EMPROVE® ESSENTIAL USP, FCC, E 262
106265	Sodium acetate trihydrate extra pure EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, FCC, E 262
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
106446	tri-Sodium citrate dihydrate powder, EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, E 331
106447	tri-Sodium citrate dihydrate EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, E 331
106345	Sodium dihydrogen phosphate dihydrate EMPROVE® ESSENTIAL Ph Eur, BP, USP, JPE, E 339
106349	Sodium dihydrogen phosphate monohydrate EMPROVE® ESSENTIAL BP, USP
106585	di-Sodium hydrogen phosphate anhydrous EMPROVE® ESSENTIAL Ph Eur, BP, USP, E 339
106576	di-Sodium hydrogen phosphate dihydrate EMPROVE® ESSENTIAL Ph Eur, BP, USP
106574	di-Sodium hydrogen phosphate heptahydrate EMPROVE® ESSENTIAL DAC, USP
106482	Sodium hydroxide pellets EMPROVE® ESSENTIAL Ph Eur, BP, FCC, JP, NF, E 524

Acidulants and pH Adjusters

106303	di-Sodium tetraborate decahydrate EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF
106522	Sodium-(S)-lactate-solution about 50%, suitable for use as excipient EMPROVE® exp Ph Eur, BP, USP
100713	Sulfuric acid 95-98% EMPROVE® ESSENTIAL Ph Eur, BP, JPE, NF
108386	Tris(hydroxymethyl)aminomethane (Trometamol), suitable for use as excipient EMPROVE® exp Ph Eur, BP, JPC, USP
108372	Triethanolamine (Trolamine) EMPROVE® ESSENTIAL Ph Eur

Ingredients

101071	Aluminium hydroxide acetate hydrate (basic aluminium acetate) pure
108597	Hydrogen peroxide 30% stabilized, EMPROVE® ESSENTIAL Ph Eur, BP, USP
105995	(-)-Menthol EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP
106070	Methyl salicylate synthetic, EMPROVE® ESSENTIAL Ph Eur, BP, NF
107590	Resorcinol extra pure Ph Eur, BP, USP
101510	Silver nitrate cryst. extra pure Ph Eur, BP, USP
107983	Sulfur for external use Ph Eur, BP

Thickeners/Ointment Bases

105006	Bole white powder low bacterial content, for internal use, EMPROVE® ESSENTIAL Ph Eur, BP
104072	Gelatin (sheets) EMPROVE® ESSENTIAL Ph Eur, BP, NF
104078	Gelatin powder, EMPROVE® ESSENTIAL Ph Eur, BP, NF
104228	Gum arabic spray-dried, EMPROVE® ESSENTIAL Ph Eur, BP
817009	Polyethylene glycol 1000 EMPROVE® ESSENTIAL Ph Eur
817005	Polyethylene glycol 1500 (scales) EMPROVE® ESSENTIAL Ph Eur
817001	Polyethylene glycol 200 EMPROVE® ESSENTIAL DAB 8
817020	Polyethylene glycol 2000 suitable for use as excipient EMPROVE® exp DAB
817018	Polyethylene glycol 20000 EMPROVE® ESSENTIAL Ph Eur
817002	Polyethylene glycol 300 EMPROVE® ESSENTIAL Ph Eur
817019	Polyethylene glycol 3000 EMPROVE® ESSENTIAL Ph Eur
817003	Polyethylene glycol 400 EMPROVE® ESSENTIAL Ph Eur, JP
817006	Polyethylene glycol 4000 (powder) EMPROVE® ESSENTIAL Ph Eur
817063	Polyethylene glycol 4000 (scales) EMPROVE® ESSENTIAL Ph Eur
817004	Polyethylene glycol 600 EMPROVE® ESSENTIAL Ph Eur
817007	Polyethylene glycol 6000 EMPROVE® ESSENTIAL Ph Eur
141365	Polyvinyl alcohol 18-88, powder EMPROVE® exp Ph Eur, USP
141355	Polyvinyl alcohol 18-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
141362	Polyvinyl alcohol 26-88, powder EMPROVE® exp Ph Eur, USP
141352	Polyvinyl alcohol 26-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
141356	Polyvinyl alcohol 28-99, suitable for use as excipient EMPROVE® exp JPE

Thickeners/Ointment Bases

141363	Polyvinyl alcohol 40-88, powder EMPROVE® exp Ph Eur, USP
141353	Polyvinyl alcohol 40-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
141360	Polyvinyl alcohol 4-88, powder, suitable for use as excipient EMPROVE® exp Ph Eur, USP
141350	Polyvinyl alcohol 4-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
141364	Polyvinyl alcohol 5-88, powder EMPROVE® exp Ph Eur, USP
141354	Polyvinyl alcohol 5-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
141361	Polyvinyl alcohol 8-88, powder EMPROVE® exp Ph Eur, USP
141351	Polyvinyl alcohol 8-88, suitable for use as excipient EMPROVE® exp Ph Eur, USP, JPE
113126	Silicon dioxide colloidal, highly dispersed EMPROVE® ESSENTIAL Ph Eur, NF, JP, E 551
111544	Wax white in pastilles EMPROVE® ESSENTIAL Ph Eur, BP

Preservatives

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 EMPROVE® exp Ph Eur, BP, JP, NF
100887	Ethyl 4-hydroxybenzoate EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF
106757	Methyl 4-hydroxybenzoate EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, FCC
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
106290	Sodium benzoate EMPROVE® ESSENTIAL Ph Eur, BP, NF, FCC, E 211
100662	Sorbic acid EMPROVE® ESSENTIAL Ph Eur, BP, NF, FCC, E 200
101005	1, 1, 1-Trichloro-2-methyl-2-propanol hemihydrate Ph Eur, BP, JP, NF

Antioxidants

500949	all-rac- α -Tocopherol EMPROVE® ESSENTIAL Ph Eur, BP, USP, E 307
500090	L(+)-Ascorbyl palmitate EMPROVE® ESSENTIAL Ph Eur, BP, NF, FCC, E 304
817023	Butylhydroxyanisole Ph Eur, NF, E 320
817074	Butylhydroxytoluene Ph Eur, JPE, NF, E 321
108330	Oxyxex® L liquid antioxidant for fats and oils EMPROVE® ESSENTIAL
106946	Oxyxex® LM antioxidant for fats and oils EMPROVE® ESSENTIAL
105056	Potassium disulfite EMPROVE® ESSENTIAL Ph Eur, NF, E 224
106357	Sodium disulfite (sodium metabisulfite) EMPROVE® ESSENTIAL Ph Eur, BP, JP, NF, E 223
106652	Sodium sulfite EMPROVE® ESSENTIAL Ph Eur, BP, NF, E 221
106513	Sodium thiosulfate pentahydrate pure
106514	Sodium thiosulfate pentahydrate cryst., EMPROVE® ESSENTIAL Ph Eur, BP, USP

Antioxidants

108421 TITRIPLEX® III (ethylenedinitrilotetraacetic acid disodium salt dihydrate) EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP

Surfactants

100989 Cetyl alcohol EMPROVE® ESSENTIAL Ph Eur, BP, NF, JP

115419 Cetyl palmitate 15 (cetylestere wax) EMPROVE® ESSENTIAL Ph Eur, NF

103672 Cholesterol from wool fat extra pure, powdered Ph Eur, BP, NF, JP

137112 Poloxamer 188 EMPROVE® EXPERT Ph Eur, NF (stabilized with 70 ppm BHT)

817034 Sodium dodecyl sulfate Ph Eur

817072 Tween® 20 (Polysorbate) EMPROVE® ESSENTIAL Ph Eur, JPE, NF

817076 Tween® 60 (Polysorbate) EMPROVE® ESSENTIAL Ph Eur, JPE, NF

817061 Tween® 80 (Polysorbate) EMPROVE® ESSENTIAL Ph Eur, JP, NF

Solvents

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

101986 Ethanol absolut suitable for preparative chromatography Ph Eur, BP, 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

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

107174 Paraffin highly liquid Ph Eur, BP, NF, JP

100909 Petroleum benzine boiling range 40–60°C EMPROVE® ESSENTIAL DAB

107478 1, 2-Propanediol EMPROVE® ESSENTIAL Ph Eur, BP, USP

100995 2-Propanol EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP

Mineral Salts

142002 Calcium chloride dihydrate EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP, FCC, E 509

106400 Sodium chloride EMPROVE® ESSENTIAL Ph Eur, BP, USP

100805 Titanium(IV) oxide EMPROVE® ESSENTIAL Ph Eur, BP, USP, JP, E171

108800 Zinc acetate dihydrate EMPROVE® ESSENTIAL Ph Eur, USP

108846 Zinc oxide EMPROVE® ESSENTIAL Ph Eur, BP, JP, USP

Penetration Enhancers

137117 Dimethyl Sulfoxide EMPROVE® EXPERT Ph Eur, USP

108432 Urea cryst. EMPROVE® API Ph Eur, BP, USP

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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, from the website **[EMDMillipore.com](https://www.emd-millipore.com)**

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