

Quality products, quality processes.

Your guide to our chemicals
for biopharmaceutical production



Looking for a way to lighten your workload and streamline processes end to end?

Our high performance chemicals are the answer — and with EMPROVE® grade products, you get comprehensive documentation in the form of a dossier. From manufacturing processes or test methods to stability data, EMPROVE® dossiers contain everything you need for smooth, swift regulatory approval. All the data is regularly updated, ready to use, and tailored to your specific needs. The bottom line? Fewer headaches, more safety — and fast, cost-effective product launches.

The enclosed sheets provide an overview of our biopharmaceutical production product portfolio. If you'd like more details, please visit www.emdmillipore.com or contact your local EMD Millipore sales representative.



Amino Acids

101700	L-Alanine	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
101544	L-Arginine monohydrochloride	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,USP
101587	L-Arginine	Suitable for use as excipient EMPROVE® exp Ph,USP
101565	L-Asparagine monohydrate	Suitable for use as excipient EMPROVE® exp Ph Eur
100129	L-Aspartic acid	Extra pure Ph Eur,BP,USP
102735	L-Cysteine hydrochloride monohydrate	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
102836	L-Cystine	Suitable for biopharmaceutical production FCC
101791	L-Glutamic acid	Suitable for use as excipient EMPROVE® exp Ph Eur
100286	L-Glutamine	Suitable for use as excipient EMPROVE® exp DAB,USP
104354	L-Histidine monohydrochloride monohydrate	Suitable for use as excipient EMPROVE® exp Ph Eur,BP
104352	L-Histidine	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
104506	L-Hydroxyproline	For biochemistry
105357	L-Isoleucine	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
105020	L-Leucine	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
105701	L-Lysine monohydrochloride	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,USP
500986	DL-Methionine	Suitable for use as excipient EMPROVE® exp Ph Eur,BP
107267	L-Phenylalanine	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
107430	L-Proline	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
107647	L-Serine	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
108411	L-Threonine	For biochemistry
108396	L-Tryptophan	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,USP
108495	L-Valine	For biochemistry
108378	L-Tyrosine	Suitable for use as excipient EMPROVE® exp Ph Eur,USP



Cellvento™ CHO-100

Chemically defined cell culture medium

Cellvento™ CHO-100 is EMD Millipore's first proprietary chemically defined, non-animal origin CHO growth media formulation. It was designed specifically for the long-term growth of Chinese Hamster Ovary (CHO) cells in suspension, and for the expression of antibodies or recombinant proteins. Cellvento™ CHO-100 is produced as a top quality dry powder in our cGMP-compliant manufacturing facility, using the finest qualified materials available. It contains no hydrolysates or components of unknown composition.

- Superior CHO cell growth results
- Excellent productivity profile
- High media consistency
- Reliable homogeneity
- Comprehensive documentation package





Minerals • Buffers • Ingredients

137001	Calcium chloride dihydrate	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP
500117	Choline chloride	Suitable for use as excipient EMPROVE® exp DAB 10,FCC
102788	Copper(II) sulfate pentahydrate	Powder suitable for use as excipient EMPROVE® exp Ph Eur,BP,USP
137044	Ethanolamine	Suitable for biopharmaceutical production EMPROVE® bio BP,NF
110110	2-[4-(2-Hydroxyethyl)-1-piperazinyl]-ethanesulfonic acid	Buffer substance HEPES
103963	Iron(II) sulfate heptahydrate cryst.	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,USP,FCC
137064	Isopropyl-β-D-thiogalactopyranoside (IPTG)	Suitable for biopharmaceutical production
137008	Magnesium chloride hexahydrate cryst.	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP,ACS
112488	N-Acetyl-DL-tryptophan	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP
137038	Phenol red (phenolsulfonphthaleine)	Suitable for biopharmaceutical production Ph Eur
137065	Poloxamer 188 (Pluronic F68)	Suitable for biopharmaceutical production Ph Eur,NF
137009	Potassium chloride	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP
137014	Sodium carbonate	Anhydrous suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,NF
137013	Sodium hydrogen carbonate	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP,JP
137036	di-Sodium hydrogen phosphate dihydrate	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP
137017	Sodium chloride	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP
137018	Sodium dihydrogen phosphate dihydrate	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP,JPE
108881	Zinc sulfate heptahydrate	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,JP,USP,FCC



Mobius® CellReady 3L Bioreactor

The Mobius® CellReady 3L Bioreactor is a single-use stirred tank bioreactor for bench-scale cultivation of mammalian cells. It combines the predictability of a stirred tank design with the flexibility of single use, making it the ideal solution for bench scale cell culture process development.

- Achieve turnaround in a few hours and maximize your lab resources
- Compatible with your existing controller eliminating the need to purchase capital equipment
- Comparable functionality and performance to glass stirred-tank bioreactors
- Pre-assembled and gamma irradiated
- Familiar, rigid tank design – no bags needed
- Replaces Cat. # CR0003L100





Carbohydrates

104061	D(+)-Galactose	Suitable for use as excipient EMPROVE® exp Ph Eur,BP
137048	D(+)-Glucose	Anhydrous suitable for biopharmaceutical production Ph Eur,BP,USP,ACS
137028	Glycerol	Anhydrous (vegetable) suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP,ACS
104731	myo-Inositol	Suitable for use as excipient EMPROVE® exp Ph Eur,FCC
137045	Lactose monohydrate powder	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,NF,JP
108216	Trehalose	For biochemistry

Vitamins

500299	Nicotinamide	Ph Eur,BP,USP,FCC
500257	Riboflavin	Ph Eur,BP,JP,USP,E 101 (i)
524950	Vitamin B12 (cyanocobalamin)	Ph Eur,BP,USP



Probumin®

EMD Millipore, with over five decades of protein fractionation expertise, is the most experienced manufacturer and has the broadest range of high-quality albumins for the diagnostic and cell culture market.

From albumins for nutrient-rich cell culture to the highly purified albumins for diagnostic applications, each of the Probumin® BSA products have been designed to meet a specific need. Our fractionation technology, ISO certified facilities, US-sourced materials and proactive regulatory procedures enable us to deliver products with the highest possible quality, performance and safety every time.





Removal of DNA & RNA

101681	Benzonase® ELISA kit II	For immunological detection of Benzonase®
101697	Benzonase® (500,000 or 5,000,000 U/vial)	Suitable for biopharmaceutical production EMPROVE® bio
101695	Benzonase® (100,000 U/vial)	Suitable for biopharmaceutical production EMPROVE® bio

Other Enzymes

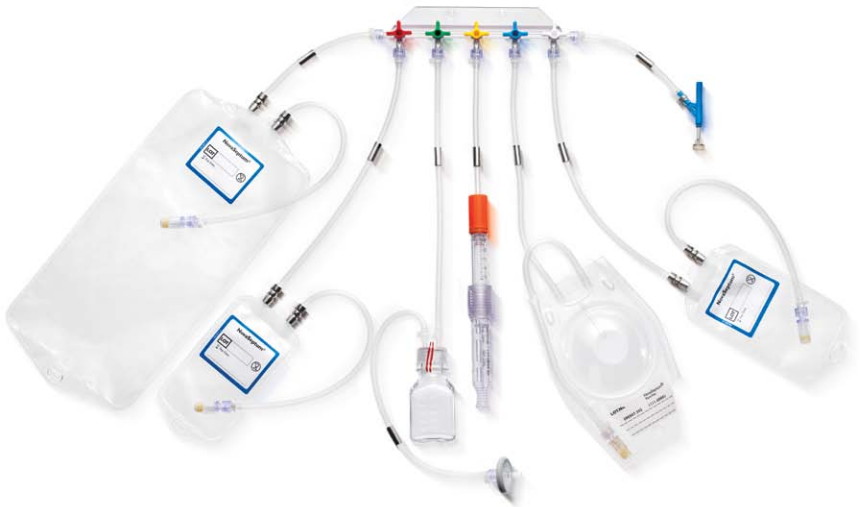
5501	CellPrime™ recombinant human lysozyme	
105281	Lysozyme (from egg white) ≥ 30 000 FIP-U/mg cryst. (hydrochloride)	For biochemistry EC 3.2.1.17
107197	Pepsin (from porcine gastric mucosa) 0.7 Ph Eur U/mg	Suitable for use as excipient EMPROVE® exp
107190	Pepsin (from porcine gastric mucosa) 2000 FIP-U/g EC 3.4.23.1	Suitable for use as excipient EMPROVE® exp



NovaSeptum® Sampling System

The NovaSeptum® system is a sterile, closed, disposable system for sampling fluids from sterile and aseptic processes. With the NovaSeptum® sampling system, contamination is no longer a threat. The innovative, closed design ensures that you will get a representative sample that is isolated from point of sample to analysis, reducing the risk of losing valuable product.

- Disposable and closed unit, ensuring process integrity, operator safety and a representative sample
- Easy to use, handle and validate, improving operational efficiency
- Pre-sterilized, eliminating the need for cleaning and/or sterilization between samples
- Accommodates a wide range of holders and sampling configurations for adaptable, flexible sampling options throughout your process





Surfactants

100193	Caprylic acid (Octanoic acid)	Suitable for biopharmaceutical production Ph Eur
817081	Sodium caprylate	Suitable for use as excipient EMPROVE® exp Ph Eur,NF
100002	Tributyl phosphate	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur
108643	Triton® X-100	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,NF

Density gradient centrifugation

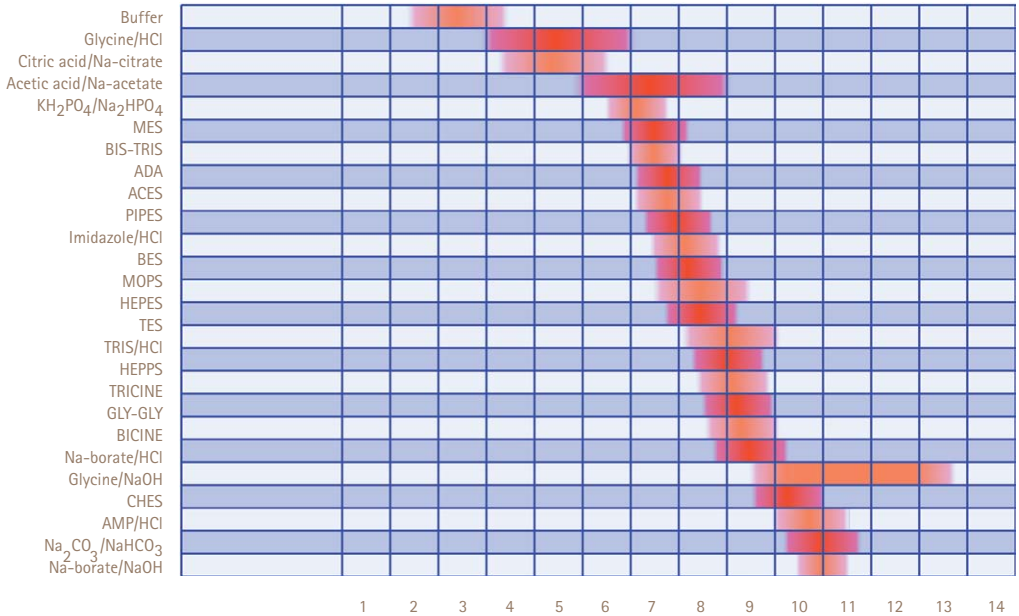
107654	Sucrose (saccharose)	For density gradient ultracentrifugation suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,NF
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Protein dissolution and refolding

101816	Ammonium sulfate	Suitable for biopharmaceutical production EMPROVE® bio ACS,NF
101544	L-Arginine monohydrochloride	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,USP
101587	L-Arginine	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
102735	L-Cysteine hydrochloride monohydrate	Suitable for use as excipient EMPROVE® exp Ph Eur,USP
102836	L-Cystine	Suitable for biopharmaceutical production FCC
104090	Glutathione (reduced)	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur
137037	Guanidinium hydrochloride	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur
137030	Urea cryst.	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP,ACS



Buffering Ranges



Because you want to prevent contamination risks in your downstream processes, we have developed a wide range of specifications adapted to downstream purification applications.

Our buffer solutions offer:

- Low impurity profiles
- GMP compliance
- Controlled low limits for bioburden and endotoxin





Buffer Preparation

137000	Acetic acid (glacial) 100%	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP,ACS
137035	Acetic acid 1 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137047	Acetic acid 30%	Suitable for biopharmaceutical production EMPROVE® bio Ph Helv
137002	Citric acid	Anhydrous powder suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP,ACS
137003	Citric acid monohydrate cryst.	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP,ACS
110165	Hydrochloric acid 1 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
110164	Hydrochloric acid 6 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480592	Hydrochloric acid 10%	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,JP,NF
480680	Hydrochloric acid 3 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137073	2-Morpholinoethanesulfonic acid sodium salt (MES-Na)	Suitable for biopharmaceutical production EMPROVE® bio
100563	ortho-Phosphoric acid 85%	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,JP,E,NF,E 338
100250	Phosphoric acid 75%	Suitable for biopharmaceutical production
137039	Potassium dihydrogen phosphate cryst.	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,NF
137010	di-Potassium hydrogen phosphate	Anhydrous suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP
137046	Sodium acetate	Anhydrous suitable for biopharmaceutical production EMPROVE® bio USP
137012	Sodium acetate trihydrate	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP
137017	Sodium chloride	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP
137042	tri-Sodium citrate dihydrate cryst.	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP,ACS
137018	Sodium dihydrogen phosphate dihydrate	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP,JP
137036	di-Sodium hydrogen phosphate dihydrate	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP



Mobius® Single-use Mixing Solution

Mobius® single-use mixing systems deliver advanced technology for mixing pharmaceutical ingredients from intermediates to final drug products and for the preparation of process solutions. Mobius® MIX100, MIX200 and MIX500 single-use mixing systems offer economic and operational efficiency, saving valuable process and validation time. Mobius® disposable mixing systems require no warm-up time and significantly increase the speed at which you can mix products and prepare cell culture media.

- Decreased risk of contamination
- Reduced downtime for cleaning validation
- Validation, quality and regulatory compliance support
- Single-use technology for increased production capacity in multiproduct facilities
- Easy setup and use
- Convenient and easy to transport
- Closed, sterile sampling system enables representative samples





Buffer Preparation

137020	Sodium hydroxide pellets	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,NF,ACS
100233	Sodium hydroxide solution 0.25 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137031	Sodium hydroxide solution 1 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480512	Sodium hydroxide solution 2 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137041	Sodium hydroxide solution 5 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137032	Sodium hydroxide solution 6 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480763	Sodium hydroxide solution 8 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480648	Sodium hydroxide solution 10 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480005	Sodium hydroxide solution 20% low iron	Suitable for biopharmaceutical production EMPROVE® bio
480778	Sodium hydroxide solution 20%	Suitable for biopharmaceutical production EMPROVE® bio
480659	Sodium hydroxide solution 25% low iron	Suitable for biopharmaceutical production EMPROVE® bio
480904	Sodium hydroxide solution 25%	Suitable for biopharmaceutical production EMPROVE® bio
137023	Sodium hydroxide solution 32%	Suitable for biopharmaceutical production EMPROVE® bio
100238	Sodium hydroxide solution 50%	Suitable for biopharmaceutical production EMPROVE® bio
108421	Titriplex® III (ethylenedinitrilo- tetraacetic acid disodium salt dihydrate)	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,JP,USP
137022	Triethanolamine (Trolamine)	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,USP
108386	Tris(hydroxymethyl) aminomethane(Trometamol)	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,USP
108307	Tris(hydroxymethyl)aminomethane (Trometamol) TRIS high purity	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP,ACS
108219	Tris(hydroxymethyl)aminomethane hydrochloride	Suitable for biopharmaceutical production EMPROVE® bio



PERIODIC TABLE OF THE ELEMENTS

H 1																	He 2
Li 3	Be 4											B 5	C 6	N 7	O 8	F 9	Ne 10
Na 11	Mg 12											Al 13	Si 14	P 15	S 16	Cl 17	Ar 18
K 19	Ca 20	Sc 21	Ti 22	V 23	Cr 24	Mn 25	Fe 26	Co 27	Ni 28	Cu 29	Zn 30	Ga 31	Ge 32	As 33	Se 34	Br 35	Kr 36
Rb 37	Sr 38	Y 39	Zr 40	Nb 41	Mo 42	Tc 43	Ru 44	Rh 45	Pd 46	Ag 47	Cd 48	In 49	Sn 50	Sb 51	Te 52	I 53	Xe 54
Cs 55	Ba 56																
Fr 87	Ra 88	Rf 104	Hf 72	Ta 73	W 74	Re 75	Os 76	Ir 77	Pt 78	Au 79	Hg 80	Tl 81	Pb 82	Bi 83	Po 84	At 85	Rn 86
		Ds 105	Db 106	Sg 107	Bh 108	Hs 109	Mt 110	Ds 110	Rg 111	Cn 112							
		113	114	115	116	117	118										
La 57	Ce 58	Pr 59	Nd 60	Pm 61	Sm 62	Eu 63	Gd 64	Tb 65	Dy 66	Ho 67	Er 68	Tm 69	Yb 70	Lu 71			
Ac 89	Th 90	Pa 91	U 92	Np 93	Pu 93	Am 95	Cm 96	Bk 97	Cf 98	Es 99	Fm 100	Md 101	No 102	Lr 103			

- Nonmetals
- Halogens
- Alkali metals
- Alkaline-earth metals
- Other metals
- Semimetallics
- Transition metals
- Lanthanides
- Actinides
- Inert gases



Cleaning in Place

137035	Acetic acid 1 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137047	Acetic acid 30%	Suitable for biopharmaceutical production EMPROVE® bio Ph Helv
137000	Acetic acid (glacial) 100%	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,USP,ACS
480855	Citric acid 50%	Suitable for biopharmaceutical production EMPROVE® bio
480592	Hydrochloric acid 10%	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,JP,NF
137007	Hydrochloric acid fuming 37%	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,NF,ACS
110165	Hydrochloric acid 1 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480680	Hydrochloric acid 3 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
110164	Hydrochloric acid 6 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
100250	Phosphoric acid 75%	Suitable for biopharmaceutical production
100995	2-Propanol	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,JP,USP
137040	2-Propanol 70% (v/v) 0.1 µm-filtered	Suitable for biopharmaceutical production USP
100563	ortho-Phosphoric acid 85%	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,JPE,NF,E 338
137020	Sodium hydroxide pellets	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,NF,ACS
106482	Sodium hydroxide pellets	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,FCC,JP,NF,E 524
100233	Sodium hydroxide solution 0.25 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137031	Sodium hydroxide solution 1 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480512	Sodium hydroxide solution 2 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137041	Sodium hydroxide solution 5 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137032	Sodium hydroxide solution 6 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480763	Sodium hydroxide solution 8 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480648	Sodium hydroxide solution 10 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
480005	Sodium hydroxide solution 20% low iron	Suitable for biopharmaceutical production EMPROVE® bio
480778	Sodium hydroxide solution 20%	Suitable for biopharmaceutical production EMPROVE® bio
480659	Sodium hydroxide solution 25% low iron	Suitable for biopharmaceutical production EMPROVE® bio
480904	Sodium hydroxide solution 25%	Suitable for biopharmaceutical production EMPROVE® bio
137023	Sodium hydroxide solution 32%	Suitable for biopharmaceutical production EMPROVE® bio
100238	Sodium hydroxide solution 50%	Suitable for biopharmaceutical production EMPROVE® bio



Millistak+® Pod system

The Millistak+® Pod system is ideal for a wide variety of primary and secondary clarification applications, including cell cultures, yeast and E. coli lysates post centrifuge, E. coli refolds, media, vaccines, plasma proteins and serum. The Pod system consists of seven filter sizes and two expandable holders. No matter what size Pod filter you choose, the same flow path and configuration ensures a linearly scalable solution from bench to process scale.

- Low hold-up volume for greater product yield
- Flexible, modular format offers scalability from 5 to 12,000 liters or more
- Patented disposable design eliminates need for housing, CIP or cleaning validation
- Robust construction is easy to use and set up
- Smaller footprint facilitates use in tight spaces





Products for Cleaning and Storage of Chromatography Resins

137035	Acetic acid 1 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137043	Benzyl alcohol	Suitable for biopharmaceutical production EMPROVE® bio Ph Eur,BP,JP,NF,ACS
100986	Ethanol absolute	Suitable for use as excipient EMPROVE® exp Ph Eur,BP,JP,USP
480910	Ethanol 20%	For cleaning of chromatography resins
480940	Ethanol 20% v/v with 150 mMol/L NaCl	For storage of chromatography resins
137058	Sodium hydroxide solution 0.1 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
100233	Sodium hydroxide solution 0.25 mol/L	Suitable for biopharmaceutical production EMPROVE® bio
137060	Sodium hydroxide solution 0.5 mol/L	Suitable for biopharmaceutical production EMPROVE® bio



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.

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