

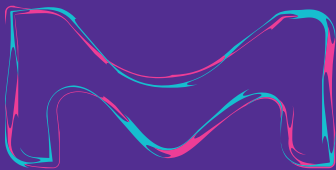
avantor™
delivered by **VWR™**

VWR.COM

**MILLIPORE
SIGMA**

At any stage of your process... we can support you!

Products and chemicals for your pharmaceutical application



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

who we are

Our Life Science business delivers many of the most highly-respected brands in the industry. Our offering covers every step of the production chain, creating a complete end-to-end workflow. Our innovative portfolio and industry leading capabilities, uniquely positions us to anticipate and deliver your needs.

and what drives us

Today, delivering potential new medicines is more challenging and complex than ever. As a partner and supplier to Pharmaceutical customers, we have a strong understanding of market trends and challenges, the needs of our specific customer personas, and the ability to develop and deliver new solutions and products that make a difference. By moving from tactical to strategic planning, focusing on therapeutic areas, customer segments and innovation we are supporting the unique needs of our customers.

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NEW Chromolith® WP300 Columns

Analytical columns for Bio applications, 300A mesopores 4.6 mm i.d.

Biotherapeutics such as bio-engineered drugs, peptide therapeutics, and the complete field of biotechnology represents the promise of new medical treatments for the new millennium.

The development of biological entities is strongly increasing because biotechnological processes now enable a production with reasonable costs. This implies a demand of suitable analytical methods for process monitoring and quality control of biomolecules with therapeutic purposes. Especially the HPLC is the mostly used analysis method. Most important for the HPLC analysis are the properties of the column. For bigger peptides, like proteins or antibodies a new type of columns is needed which provide a good permeability, better mass transfer and a better selectivity. As the rule of thumb it is widely accepted, that in order for the separated molecules not to be influenced by size exclusion process the pore should be at least 10 times bigger than the molecule. Therefore about 100 kDa molecule would require around 300 A pores.

Chromolith® columns have already shown great potential and superiority compared to standard silica particles. Wide pore (300 A) monolithic silica columns are made of a single continuous rod of high purity porous silica that is then bonded with C18, C8, C4 or Protein A. Monolithic columns remove backpressure

Your benefits:

- High biorecovery & Special selectivities for biomolecules
- High-speed separation possible
- Substantially longer column lifetime
- High resistance to column blockage
- Cost savings from higher sample throughput and column durability

as the primary consideration in method development and give back the flexibility of choices in flow rates for much higher throughput, column lengths for superior resolution, and solvent choices for optimum selectivities.

Product	Content	Packaging	VWR Cat. No.
Chromolith® WP 300 RP-18 100-4.6 HPLC column (1 unit)	1 unit	Fibre case	76057-682
Chromolith® WP 300 RP-18 10-4.6 guard cartridges (3 units)	3 units	Fibre case	76057-686
Chromolith® WP 300 RP-18 50-4.6 HPLC column (1 unit)	1 unit	Fibre case	76057-684
Chromolith® WP 300 RP-18 5-4.6 guard cartridges (3 units)	3 units	Fibre case	76057-688
Chromolith® WP 300 RP-8 100-4.6 HPLC column (1 unit)	1 unit	Fibre case	76057-674
Chromolith® WP 300 RP-8 50-4.6 HPLC column (1 unit)	1 unit	Fibre case	76057-676
Chromolith® WP 300 RP-8 10-4.6 guard cartridges (3 units)	3 units	Fibre case	76057-678
Chromolith® WP 300 RP-4 10-4.6 guard cartridge (3 units)	3 units	Fibre case	76196-480

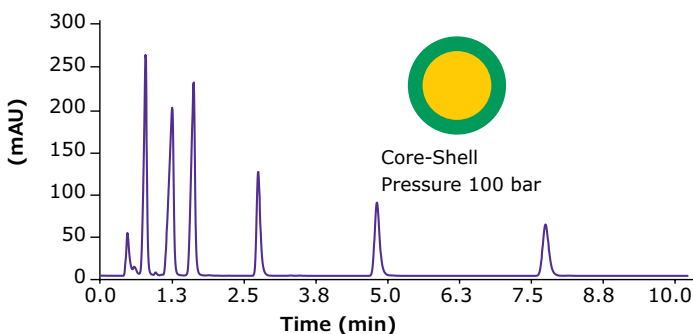
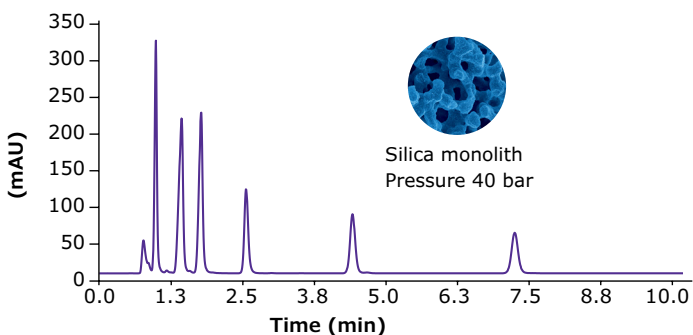
Product	Content	Packaging	VWR Cat. No.
Chromolith® WP 300 Epoxy 100-4.6 HPLC column (1 unit)	1 unit	Fibre case	76057-658V
Chromolith® WP 300 Epoxy 50-4.6 HPLC column (1 unit)	1 unit	Fibre case	76057-660
Chromolith® WP 300 Epoxy 25-4.6 HPLC column (1 unit)	1 unit	Fibre case	76057-662
Chromolith® WP 300 Epoxy 5-4.6 guard cartridges (3 units)	3 units	Fibre case	76057-666
Chromolith® WP 300 Protein A 25-4.6 HPLC column (1 unit)	1 unit	Fibre case	76057-672
Chromolith® guard cartridge holder bioinert 10-4.6 (1 unit)	1 unit	Fibre case	76057-668
Chromolith® guard cartridge holder bioinert 5-4.6 (1 unit)	1 unit	Fibre case	76057-670

R&D & Quality Control

Chromolith® HR HPLC Columns with High Resolution

Monolithic silica columns consist of a single rod of high purity monolithic silica.

A unique bimodal pore structure, gives greatly improved chromatographic performance in terms of separation efficiency and column back-pressure. Macropores with big Diameter dramatically reduce the column back-pressure and allow the use of faster flow rates, thereby considerably reducing the analysis time.



Column	Core-shell RP-18 endcapped 50–4.6 mm, 2.6 µm particles		
Mobile phase	A: Acetonitrile B: 20 mM Phosphate buffer pH 4.5		
Gradient	Time/min	% A	% B
	0.0	20	80
	12	40	60
Flow rate	1.0 mL/min		
Pressure	100 bar		
Detection	UV 230 nm		
Temperature	22°C		
Injection volume	2 µL		
Sample	1. Ascorbic acid 2. 4-Hydroxybenzoic acid 3. Benzoic acid 4. Sorbic acid 5. Methyl 4-hydroxybenzoate 6. Ethyl 4-hydroxybenzoate 7. Propyl 4-hydroxybenzoate		

Your benefits:

- Fast flow rates
- Long column life time
- Excellent Peak symmetry
- High resolution at low back pressure

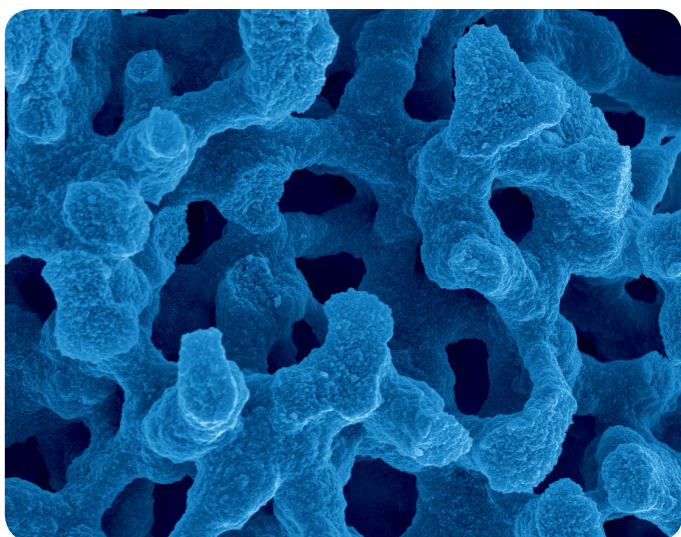


Chromolith® HR Columns	Content	VWR Lit. No.
Chromolith® HPLC column HighResolution RP-18 endcapped 25–4.6	1 pcs	EM1.52020.0001
Chromolith® HPLC column HighResolution RP-18 endcapped 50–4.6	1 pcs	EM1.52021.0001
Chromolith® HPLC column HighResolution RP-18 endcapped 100–4.6	1 pcs	EM1.52022.0001
Chromolith® HPLC column HighResolution RP-18 endcapped 150–4.6	1 pcs	10811-854
Chromolith® HPLC column HighResolution RP-18 endcapped 5–4.6 guard cartridges	3 pcs	EM1.52025.0001

R&D & Quality Control

LiChrosolv® Solvents

The Ideal Match for Chromolith® columns



Your benefits:

- Documented as being suitable for UV, fluorescence and mass detection
- Optimized peak baseline separation
- High resolution and sensitivity
- Interference free baseline for better reproducibility

With their high degree of UV transmittance, low particle count, low acidity and alkalinity and low evaporation residue level, LiChrosolv® solvents are ideal for reproducible separations.

They are produced from specially selected raw materials, and undergo a number of purification steps prior to final packaging. We offer solvents in 'gradient grade' as well as 'isocratic grade'. This enables you to minimize the gradient effect of the solvent involved — for example in enantiomeric separations on chiral phases.

Product	Content	VWR Cat. No.
LiChrosolv® Solvents		
Acetonitrile Gradient Grade for Liquid Chromatography LiChrosolv® Reag. Ph Eur	2.5 L	EM1.00030.2500
Acetonitrile Isocratic Grade for Liquid Chromatography LiChrosolv®	2.5 L	EM1.14291.2500
Ethanol Gradient Grade for Liquid Chromatography LiChrosolv®	2.5 L	EM1.11727.2500
Methanol Gradient Grade for Liquid Chromatography LiChrosolv® Reag. Ph Eur	2.5 L	EM1.06007.2500
N-Hexane for Liquid Chromatography LiChrosolv®	2.5 L	EM1.04391.2500
2-Propanol Gradient Grade for Liquid Chromatography LiChrosolv®	2.5 L	EM1.01040.2500
Tetrahydrofuran for Liquid Chromatography LiChrosolv®	2.5 L	EM1.08101.2500

R&D & Quality Control

Solvents for Critical Applications in Gas Chromatography and LC-MS

Your benefits:

- Reliable, accurate analytical results
- Comprehensive application area
- Minimal signal-to-noise ratio
- Excellent batch to batch consistency



SupraSolv® solvents for headspace gas chromatography

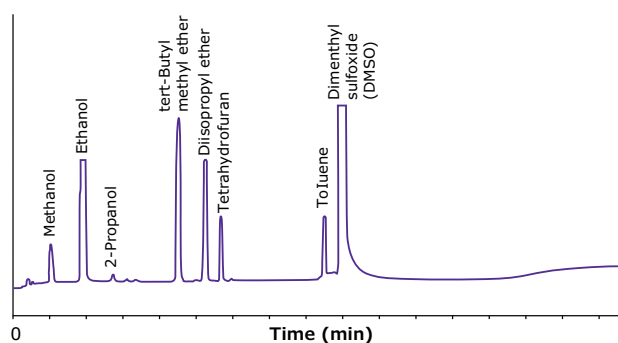
Product	Content	VWR Cat. No.
Suprasolv® Solvents		
Dimethyl sulfoxide for headspace gas chromatography SupraSolv®	1 L	EM1.01900.1000
n,n-dimethylformamide for headspace gas chromatography SupraSolv®	1 L	EM1.00202.1000
N,N-Dimethylacetamide for headspace gas chromatography SupraSolv®	1 L	EM1.00399.1000
Dimethyl sulfoxide for headspace gas chromatography SupraSolv®	500 L	EM1.01900.0500
Water for headspace gas chromatography SupraSolv®	1000 L	EM1.00577.1000

UniSolv® solvents for organic trace analysis and volatile Analytes

Product	Content	VWR Cat. No.
Unisolv® Solvents		
n-Hexane for organic trace analysis UniSolv®	1 L	EM1.04369.1000
Dichloromethane for organic trace analysis UniSolv®	1 L	EM1.06454.1000

The accurate analysis of residual solvents in drug substances with headspace gas chromatography, the organic trace analysis and LC-MS based methods require very pure solvents with extremely low concentrations of the defined residual solvents.

Our solvents are developed specially for this highly sophisticated application areas.



LiChrosolv® hypergrade solvents for LC-MS

Product	Content	VWR Cat. No.
LiChrosolv® Solvents		
Acetonitrile hypergrade for LC-MS LiChrosolv®	2.5 L	EM1.00029.2500
Methanol hypergrade for LC-MS LiChrosolv®	2.5 L	EM1.06035.2500
Water for chromatography (LC-MS Grade) LiChrosolv®	2.5 L	EM1.15333.2500
Ethyl acetate hypergrade for LC-MS LiChrosolv® *	2.5 L	EM1.03649.2500
n-Heptane hypergrade for LC-MS LiChrosolv®*	2.5 L	EM1.03654.2500
n-Hexyne hypergrade for LC-MS LiChrosolv®*	2.5 L	EM1.03701.2500
2-Propanol hypergrade for LC-MS LiChrosolv®*	2.5 L	EM1.02781.2500
Acetonitrile with 0.1% (v/v) Acetic acid hypergrade for LC-MS LiChrosolv®*	2.5 L	EM1.59004.2500
Acetonitrile with 0.1% (v/v) Formic acid hypergrade for LC-MS LiChrosolv®*	2.5 L	EM1.59002.2500
Acetonitrile with 0.1% (v/v) trifluoroacetic acid hypergrade for LC-MS LiChrosolv®*	2.5 L	EM1.59014.2500
Water with 0.1% (v/v) Acetic acid hypergrade for LC-MS LiChrosolv® *S*	2.5 L	EM1.59007.2500
Water with 0.1% (v/v) Formic acid hypergrade for LC-MS LiChrosolv®*	2.5 L	EM1.59013.2500

* New

Quality Control

MAS-100 NT[®] — Air Samplers

Choose the best accuracy for microbial air sampling

The MAS-100 NT[®] portable microbial air samplers are the leading instruments for use in critical environments. These compact yet sophisticated devices are the preferred choice for those demanding the highest quality in microbial air monitoring.

The MAS-100 NT[®] systems feature a 300-hole perforated lid for increased collection efficiency and impaction speed.

The systems utilize standard 90 mm agar plates or can be adapted to fit 55 mm contact plates. Sampling at 100 LPM, these systems have the highest airflow accuracy available at $\pm 2.5\%$, compared to others that can be as high as $\pm 10\%$.

MAS 100 NT Air Sampler	Content	Diameter	VWR Cat. No.
Air-sampler System MAS-100 NT [®]	1 pcs.	90/55 mm	EM1.09191.0001
Air sampler MAS-100 NT EX [®] (explosion proofed)	1 pcs.	90/55 mm	EM1.09194.0001



Your benefits:

- Very easy to handle
- Hardware and software developed according to GAMP 4
- A flow sensor is used to measure and ensures a flow of 100 SLPM $\pm 2.5\%$
- Validated according to the EN ISO 14698 Part 1 annex B
- Fully meets the d50 requirements using the 300 x 0.6 mm sampling head

Quality Control & Sample Preparation

EMSURE® Acids, Salts and Solvents

Your benefits:

Accuracy and reliability — Absolute trust — every time

- Unmatched batch-to-batch consistency
- Reliable and reproducible results
- Lower analytical costs
- No repeat analyses

Convenience and safety — Packed with innovation

- Packaging is always compatible with the product
- Safe and convenient handling, storage and transportation
- Optimal protection of chemicals and reagents from contamination
- Wide choice of packaging materials and sizes

Regulatory compliance — Specified beyond standards

- Compliance with ISO 6353, ACS, Reag. Ph Eur.
- Most products' specifications exceed international standards
- Suitable for pharmacopoeia analysis
- Can be used internationally



Product	Content	Packaging	VWR Cat. No.	Content	Packaging	VWR Cat. No.
EMSURE® Solvents						
Acetone for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	Glass bottle	EM1.00014.1000	1 L	HDPE bottle	EM1.00014.1011
	2.5 L	Glass bottle	EM1.00014.2500	2.5 L	HDPE bottle	EM1.00014.2511
	4 L	Glass bottle	EM1.00014.4000	5 L	HDPE bottle	EM1.00014.5000
Chloroform for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	Glass bottle	EM1.02445.1000	2.5 L	Glass bottle	EM1.02445.2500
Diethyl ether for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	Glass bottle	EM1.00921.1000	2.5 L	Glass bottle	EM1.00921.2500
	4 L	Glass bottle	EM1.00921.4000	5 L	Alu bottle	EM1.00921.5000
Ethanol absolute for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	Glass bottle	EM1.00983.1000	1 L	HDPE bottle	EM1.00983.1011
	2.5 L	Glass bottle	EM1.00983.2500	2.5 L	HDPE bottle	EM1.00983.2511
	4 L	Glass bottle	EM1.00983.4000			
n-Heptane for analysis EMSURE® Reag. Ph Eur	1 L	HDPE bottle	EM1.04379.1000	2.5 L	Glass bottle	EM1.04379.2500
	4 L	Glass bottle	EM1.04379.4000	2.5 L	HDPE bottle	EM1.04379.2511
n-Hexane for analysis EMSURE® ACS	1 L	Glass bottle	EM1.04367.1000	2.5 L	HDPE bottle	EM1.04367.2511
	2.5 L	Glass bottle	EM1.04367.2500			
Isooctane for analysis EMSURE® ACS, Reag. Ph Eur	1 L	Glass bottle	EM1.04727.1000	4 L	Glass bottle	EM1.04727.4000
	2.5 L	Glass bottle	EM1.04727.2500			
Methanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	Glass bottle	EM1.06009.1000	1 L	HDPE bottle	EM1.06009.1011
	2.5 L	Glass bottle	EM1.06009.2500	2.5 L	HDPE bottle	EM1.06009.2511
	4 L	Glass bottle	EM1.06009.4000	5 L	HDPE bottle	EM1.06009.5000
2-Propanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	Glass bottle	EM1.09634.1000	1 L	HDPE bottle	EM1.09634.1011
	2.5 L	Glass bottle	EM1.09634.2500	2.5 L	HDPE bottle	EM1.09634.2511
	4 L	Glass bottle	EM1.09634.4000	5 L	HDPE bottle	EM1.09634.5000

All EMSURE® products are made from high-quality raw materials in our state-of-the-art production facilities, then tested for up to 70 parameters at our stringent quality control labs in Darmstadt, Germany. This results in outstanding chemical purity and extremely low limiting values.

Product	Content	Packaging	VWR Cat. No.	Content	Packaging	VWR Cat. No.
EMSURE® Acids						
Acetic acid (glacial) 100% anhydrous for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	Glass bottle	EM1.00063.1000	1 L	HDPE bottle	EM1.00063.1011
	2.5 L	Glass bottle	EM1.00063.2500	2.5 L	HDPE bottle	EM1.00063.2511
	2.5 L	Safebreak bottle	EM1.00063.2510			
Citric acid monohydrate for analysis EMSURE®	500 g	HDPE bottle	EM1.00244.0500	1 kg	HDPE bottle	EM1.00244.1000
	5 kg	HDPE bottle	EM1.00244.5000			
Hydrochloric acid 25% for analysis EMSURE®	1 L	Glass bottle	EM1.00316.1000	1 L	HDPE bottle	EM1.00316.1011
	2.5 L	Glass bottle	EM1.00316.2500	2.5 L	HDPE bottle	EM1.00316.2511
Hydrochloric acid 32% for analysis EMSURE®	1 L	Glass bottle	EM1.00317.1000	1 L	HDPE bottle	EM1.00317.1011
	2.5 L	Glass bottle	EM1.00317.2500			
Hydrochloric acid fuming 37% for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	Glass bottle	EM1.00317.1000	1 L	HDPE bottle	EM1.00317.1011
	2.5 L	Glass bottle	EM1.00317.2500	2 L	HDPE bottle	EM1.00317.2011
	2.5 L	Safebreak bottle	EM1.00317.2510			
Hydrogen peroxide 30% (Perhydrol®) for analysis EMSURE® ISO	250 mL	HDPE bottle	EM1.07209.0250	500 mL	HDPE bottle	EM1.07209.0500
	1 L	HDPE bottle	EM1.07209.1000	2.5 L	HDPE bottle	EM1.07209.2500
Nitric acid 65% for analysis EMSURE® ISO	1 L	Glass bottle	EM1.00456.1000	2.5 L	Glass bottle	EM1.00456.2500
	2.5 L	Safebreak bottle	EM1.00456.2510			
ortho-Phosphoric acid 85% for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 L	HDPE bottle	EM1.00573.1000	2.5 L	HDPE bottle	EM1.00573.2500
	2.5 L	Safebreak bottle	EM1.00573.2510			
Sulfuric acid 95–97 % for analysis EMSURE® ISO	1 L	Glass bottle	EM1.00731.1000	1 L	HDPE bottle	EM1.00731.1011
	2.5 L	Glass bottle	EM1.00731.2500	2.5 L	HDPE bottle	EM1.00731.2511
	2.5 L	Safebreak bottle	EM1.00731.2510			
EMSURE® Salts						
Potassium carbonate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	500 g	HDPE bottle	EM1.04928.0500	1 kg	HDPE bottle	EM1.04928.1000
Potassium chloride for analysis EMSURE®	500 g	HDPE bottle	EM1.04936.0500	1 kg	HDPE bottle	EM1.04936.1000
	5 kg	HDPE bottle	EM1.04936.5000			
Potassium dihydrogen phosphate for analysis EMSURE® ISO	250 g	HDPE bottle	EM1.04873.0250	1 kg	HDPE bottle	EM1.04873.1000
	5 kg	HDPE bottle	EM1.04873.5000			
Potassium iodide for analysis EMSURE® ISO, Reag. Ph Eur	250 g	HDPE bottle	EM1.05043.0250	500 g	HDPE bottle	EM1.05043.0500
	1 kg	HDPE bottle	EM1.05043.1000			
di-Potassium hydrogen phosphate anhydrous for analysis EMSURE®	1 kg	HDPE bottle	EM1.05104.1000			
Silver nitrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	25 g	HDPE bottle	EM1.01512.0025	100 g	HDPE bottle	EM1.01512.0100
	250 g	HDPE bottle	EM1.01512.0025	1 kg	HDPE bottle	EM1.01512.1000
Sodium chloride for analysis EMSURE® ACS, ISO, Reag. Ph Eur	500 g	HDPE bottle	EM1.06404.0500	1 kg	HDPE bottle	EM1.06404.1000
	5 kg	HDPE bottle	EM1.06404.5000			
tri-Sodium citrate dihydrate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 kg	HDPE bottle	EM1.06448.1000			
Sodium dihydrogen phosphate monohydrate for analysis EMSURE® ACS, Reag. Ph Eur	500 g	HDPE bottle	EM1.06346.0500	1 kg	HDPE bottle	EM1.06346.1000
di-Sodium hydrogen phosphate dihydrate for analysis EMSURE®	500 g	HDPE bottle	EM1.06580.0500	1 kg	HDPE bottle	EM1.06580.1000
	5 kg	HDPE bottle	EM1.06580.5000			
Sodium sulfate anhydrous for analysis EMSURE® ACS, ISO, Reag. Ph Eur	1 kg	HDPE bottle	EM1.06649.1000			

Quality Control

Reliable Water Determination

Aquastar™ Karl Fischer Reagents and Standards The standard for trustable results

If you need a special application or a starter-pack, please contact your local VWR organization

Your benefits:

- Reliability: High accuracy
- Transparency: Following the requirement of the DIN EN ISO/IEC 17025 accreditation
- Easy to use: Convenient packaging
- Documentation: Certificate according to the ISO Guide 31 guideline for reference materials
- Precision: High batch to batch consistency



Product	Pack size	Packaging material	VWR Cat. No.
Aquastar™ One Component reagents			
Aquastar™ CombiTitrant 5, approx. 5 mg H ₂ O/mL	500 mL	Glass bottle	EM1.88005.0500
	1 L	Glass bottle	EM1.88005.1000
	2.5 L	Glass bottle	EM1.88005.2500
Aquastar™ CombiTitrant 2, approx. 2 mg H ₂ O/mL	1 L	Glass bottle	EM1.88002.1000
Aquastar™ CombiTitrant 1, approx. 1 mg H ₂ O/mL	1 L	Glass bottle	EM1.88001.1000
Aquastar™ CombiSolvent, methanol-free solvent	1 L	Glass bottle	EM1.88008.1000
	2.5 L	Glass bottle	EM1.88008.2500
Aquastar™ CombiMethanol, dried methanol for Karl Fischer titration max. 0.01% water	1 L	Glass bottle	EM1.88009.1000
	2.5 L	Glass bottle	EM1.88009.2500
Aquastar™ Two Component reagents			
Aquastar™ Solvent, solvent for the two component titration	1 L	Glass bottle	EM1.88015.1000
	2.5 L	Glass bottle	EM1.88015.2500

Aquastar™ Water standards			
Aquastar™ Water Standard 0.01%, 1 g contains 0.1 mg H ₂ O	10 x 8 mL	Glass ampoule	EM1.88050.0010
Aquastar™ Water Standard 0.1%, 1 g contains 1 mg H ₂ O	10 x 8 mL	Glass ampoule	EM1.88051.0010
Aquastar™ Water Standard 1%, 1 g contains 10 mg H ₂ O	10 x 8 mL	Glass ampoule	EM1.88052.0010
Aquastar™ Water standard oven 1%, solid standard for KF oven method	5 g	Glass bottle	EM1.88054.0005
Aquastar™ Water standard oil, standard for oil samples for coulometric Karl Fischer titration (15–30 ppm)	10 x 8 mL	Glass ampoule	EM1.88055.0010
Aquastar™ Lactose standard 5%, for volumetry and KF oven method	10 g	PE bottle	EM1.12939.0010
Aquastar™ Sodium tartrate dihydrate, volumetric standard for water determination acc. to Karl Fischer, contains 15.66% H ₂ O	100 g	PE bottle	EM1.06664.0100
Aquastar™ Water standard 5 mg/mL, 1 mL contains 5 mg water	500 mL	Glass bottle	EM1.09259.0250

Precise water determination is always a challenge. Using our Aquastar™ water standards and reagents you can always trust your results. The significance of the Karl Fischer Titration is emphasized by the fact that it has been included in the most important Pharmacopeias, American Standard Methods (ASTM), DIN EN ISO Guidelines, Association of Official Analytical Chemist Methods (AOAC) and other requirements. Using Aquastar™ certified water standards qualified in an ISO 17025 accredited laboratory together with Aquastar™ Karl Fischer Reagents you are prepared for all audits and inspections from internal and external authorities. Water determination according to Karl Fischer Titration is one of the most precise and fastest method to determine water contents in a range from 10 ppm to 100%. It could be used for a wide variety of samples.

Quality Control

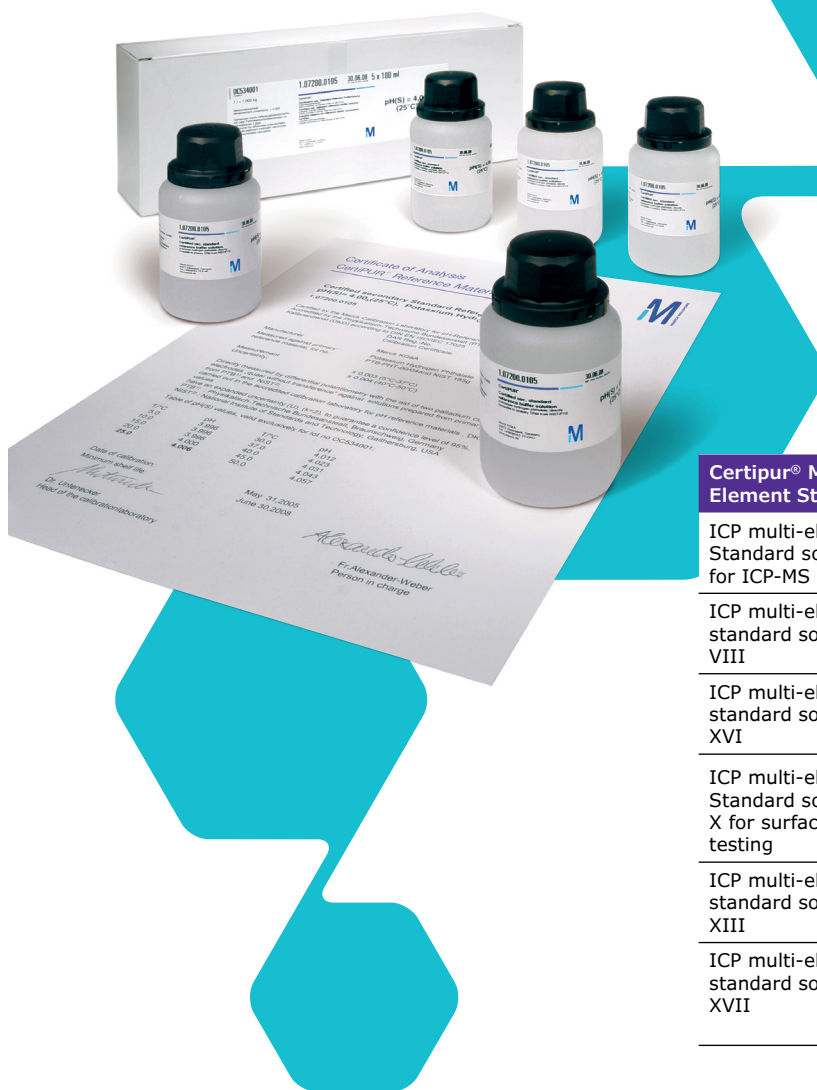
Certipur®

ICP Multi Element Standards

The quality control of our multi-element standards is carried out by the accredited calibration laboratory according to DIN EN ISO / IEC 17025. They are directly traceable to primary reference material from NIST. A Certificate of Analysis is enclosed in each package.

Your advantages

- ICP standards according to ISO 17025 and ISO Guide 34
- Standards are traceable to primary standards
- ICP standards with an extensive Certificate of Analysis



Certipur® Multi Element Standards	Content	Packaging	VWR Cat. No.
ICP multi-element Standard solution VI for ICP-MS	30 ELEMENTS IN DILUTE NITRIC ACID	100 mL	EM1.10580.0100
ICP multi-element standard solution VIII	24 elements in dilute nitric acid, 100 mg/L	100 mL	EM1.09492.0100
ICP multi-element standard solution XVI	21 elements in diluted nitric acid, 100 mg/L	100 mL	EM1.09487.0100
ICP multi-element Standard solution X for surface water testing	23 elements in dilute nitric acid	100 mL	EM1.09493.0100
ICP multi-element standard solution XIII	15 elements in diluted nitric acid	100 mL	EM1.09480.0100
ICP multi-element standard solution XVII	7 elements in hydrochloric acid 15%, 100 mg/L	100 mL	EM1.09495.0100

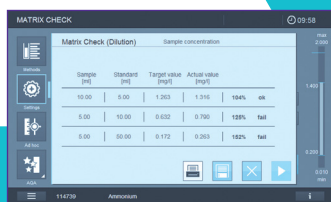
Environmental testing & Process water control

Spectroquant Spectrophotometers and Test Kits

Just Insert, Prove and Proceed

The new spectrophotometers from MilliporeSigma are designed to simplify your workflow and ensure reliable results for your water analysis.

In combination with the Spectroquant® Test Kits you can leverage the full potential of the instruments and get reliable results in your process water or waste water analysis.



Your benefits:

- Reliability: High accuracy
- Transparency: Following the requirement of the DIN EN ISO/IEC 17025 accreditation
- Easy to use: Convenient packaging
- Documentation: Certificate according to the ISO Guide 31 guideline for reference materials
- Precision: High batch to batch consistency

Product	Content	VWR Cat. No.
Spectroquant® Spectrophotometer		
Spectroquant® Prove 600 UV/VIS spectrophotometer	1 pcs	EM1.73018.0001
Spectroquant® Prove 300 UV/VIS spectrophotometer	1 pcs	EM1.73017.0001
Spectroquant® Prove 100 VIS spectrophotometer	1 pcs	EM1.73016.0001
Spectroquant® Testkits		
Ammonium Cell Test, 0.5–16.0 mg/L NH4-N 0.6–20.6 mg/L NH4+ Spectroquant®	25 Tests	EM1.14544.0001
Ammonium Cell Test, 4.0–80.0 mg/L NH4-N 5.2–103.0 mg/L NH4+ Spectroquant®	25 Tests	EM1.14559.0001
Chloride Cell, Test 0.10–5.00 mg/L Cl- Spectroquant®	25 Tests	EM1.01807.0001
Hydrazine Cell Test, 0.005–2.00 mg/L N2H4 Spectroquant®	25 Tests	EM1.09711.0001

Spectroquant® Testkits	Content	VWR Cat. No.
Nitrate Cell Test, DMP 0.5–25.0 mg/L NO3-N 2.2–110.7 mg/L NO3- Spectroquant®	25 Tests	EM1.14563.0001
Nitrite Cell Test, 0.03–2.30 mg/L NO2- 0.010–0.700 mg/L NO2-N Spectroquant®	25 Tests	EM1.14547.0001
Nitrogen (total) Cell Test, 0.5–15.0 mg/L N Spectroquant®	25 Tests	EM1.14537.0001
Silicate (Silicic Acid) Test, 0.25–500.0 MYg/L SiO2 0.12–233.7 MYg/L Si Spectroquant®	25 Tests	EM1.01813.0001
Sulfate Cell Test, 0.50–50.0 mg/L SO42- Spectroquant®	25 Tests	EM1.01812.0001
Surfactants (anionic) Cell Test, 0.05–2.00 mg/L MBAS Spectroquant®	25 Tests	EM1.02552.0001
Surfactants (nonion.) Cell Test, 0.10–7.50 mg/L Triton® X-100 Spectroquant®	25 Tests	EM1.01787.0001

Production

Msynth[®]plus

Products for organic synthesis

The Msynth[®]plus line makes qualification of starting materials as simple as possible. Especially developed for organic synthesis in quality-conscious or regulated environments, Msynth[®]plus products are accompanied by the necessary quality documentation to help you easily fulfill regulatory requirements.

The product range is qualified for use in GMP synthesis and is optimized for research, process development and production. The portfolio comprises both organic and inorganic chemicals, including building blocks, reagents, solvents, process chemicals and additives.

Your benefits:

- Qualification Dossier included with every product
- Traceability secured through change control agreements
- Maximum transparency and safety for your synthesis process.
- Broad range of products available



Msynth [®] plus Product	CAS	Content	VWR Cat. No.
Acetaldehyde	75-07-0	100 mL	EM8.45001.0100
Tetra-n-butylammonium hydrogensulfate	32503-27-8	100 g	EM8.45083.0100
Benzenesulfonic acid	98-11-3	25 g	EM8.45004.0250
Sodium borohydride (fine granular)	16940-66-2	500 g	EM8.45048.0500
Sodium borohydride (fine granular)	16940-66-2	100 g	EM8.45048.0100
Iron(III) chloride (anhydrous)	7705-08-0	500 g	EM8.45124.0500
Iodomethane (stabilised with silver)	74-88-4	1 L	EM8.45045.1000
Tetramethylammonium hydroxide (25% solution in water)		1 L	EM8.45151.1000

Production

High quality TSB

For your aseptic process simulation

Every lot of MilliporeSigma's irradiated media is tested for Sterility, absence of Mycoplasma and comes in the high-performing granulated format. Along with the cleanroom ready triple-wrapped packaging.



Your benefits:

- Triple bagged and ready for cleanroom use
- Every lot is Mycoplasma tested
- Growth promotion tested to meet ISO® standard 11133
- Detailed certificates of origin and suitability
- Excellent filterability and solubility



TSB for Media-Fill	Content	VWR Cat. No.
Tryptic Soy Broth Irradiated USP for Microbiology	5 kg	EM1.00800.0500
Tryptic Soy Broth Non Animal Origin Irradiated for Microbiology	5 kg	EM1.00550.0500

General

Acids in Safebreak bottles

Now also available in 0.5 Liter and 1 Liter pack size



Your advantages:

- Safety: If the glass breaks, the splinters and acid are caught safely by the PE jacket
- Eco-friendly: Glass bottle with PE coating
- Long shelf life: Offers all the benefits of conventional glass bottles
- Tightly closed: MilliporeSigma exclusive S40 closure system
- Convenience: Optimum pouring characteristics thanks to the S40 thread
- Safes money: The bottle is just as recyclable as a conventional glass bottle

All our experience in dealing with the potential hazards of acids in glass bottles has been incorporated in the specifications of the our Safebreak bottle:

- The bottle is able to withstand considerable impact force
- Should breakage occur, the acid and any glass splinters are reliably contained
- Even after frequent opening and closing, the screw cap remains perfectly intact
- The bottle is just as recyclable as a conventional glass bottle
- Now available in various pack sizes: 0.5 L, 1 L and 2.5 L

The PE-coated safety bottle:

- Resistant to considerable impact force
- User cannot be injured by escaping acid neither by glass splinters
- No contamination of the environment
- Can be recycled as glass



Conventional glass bottle:

- Risk of cracks or breakage
- Risk of injury to the user
- Risk of environmental contamination



Product	Pack size	Packaging material	VWR Cat. No.
Acetic acid (glacial) 100% anhydrous for analysis EMSURE® ACS, ISO, Reag. Ph Eur	0.5 L NEW	Safebreak bottle	EM1.00063.0510
	1 L NEW	Safebreak bottle	EM1.00063.1010
	2.5 L	Safebreak bottle	EM1.00063.2510
Hydrochloric acid fuming 37% for analysis EMSURE® ACS, ISO, Reag. Ph Eur	0.5 L NEW	Safebreak bottle	EM1.00317.0510
	1 L NEW	Safebreak bottle	EM1.00317.1010
	2.5 L	Safebreak bottle	EM1.00317.2510
Nitric acid 65% for analysis EMSURE® ISO	2.5 L	Safebreak bottle	EM1.00456.2510
Nitric acid 69% for analysis EMSURE® ACS, Reag. Ph Eur	2.5 L	Safebreak bottle	EM1.01799.2510
ortho-Phosphoric acid 85% for analysis EMSURE® ACS, ISO, Reag. Ph Eur	0.5 L NEW	Safebreak bottle	EM1.00573.0510
	2.5 L	Safebreak bottle	EM1.00573.2510
Perchloric acid 70–72% for analysis EMSURE® ACS, ISO, Reag. Ph Eur	0.5 L NEW	Safebreak bottle	EM1.00519.0510
	1 L NEW	Safebreak bottle	EM1.00519.1010
	2.5 L	Safebreak bottle	EM1.00519.2510
Sulfuric acid 95–97% for analysis (max. 0.005 ppm Hg) EMSURE® ACS, ISO, Reag. Ph Eur	0.5 L NEW	Safebreak bottle	EM1.00732.0510
	2.5 L	Safebreak bottle	EM1.00732.2510
Sulfuric acid 95–97% for analysis EMSURE® ISO	0.5 L NEW	Safebreak bottle	EM1.00731.0510
	1 L NEW	Safebreak bottle	EM1.00731.1010
	2.5 L	Safebreak bottle	EM1.00731.2510
Sulfuric acid 98% for analysis EMSURE®	0.5 L NEW	Safebreak bottle	EM1.12080.0510
	2.5 L	Safebreak bottle	EM1.12080.2510

General

Extran®

For Reliable, Residue-free Cleaning

For over 30 years, Extran® cleaning agents have enabled precise scientific working procedures in labs and production facilities around the world. Thanks to their thorough, residue-free cleaning, Extran® products ensure that everything that comes into contact with chemicals or biological substances is free of impurities — before and after use. Despite their exceptional cleaning strength, Extran® products contain biodegradable ingredients that are free of toxins, so they are gentle on the environment and on the health of laboratory staff.



Your advantages

- Reliable, residue-free all-purpose cleaner
- Free from NTA thus safer for lab staff
- Free from scents and dyestuffs
- Free from chlorine or other toxic ingredients
- All active ingredients are biodegradable
- Validation support to prove the absence of surfactants

Product	Content	Packaging	VWR Cat. No.
Extran® MA 01 alkaline	1 L	HDPE bottle	EM1.07555.1000
	2.5 L	HDPE bottle	EM1.07555.2500
	5 L	HDPE bottle	EM1.07555.5000
	10 L	Plastic container	EM1.07555.9010
	25 L	Plastic container	EM1.07555.9025
Accessories: Dosing feeder made from PP, 20–28 mL for 1 L Extran® bottle			EM9.57571.1020
Extran® MA 02 neutral	2.5 L	HDPE bottle	EM1.07553.2500
	5 L	HDPE bottle	EM1.07553.5000
	10 L	Plastic container	EM1.07553.9010
	25 L	Plastic container	EM1.07553.9025
Extran® MA 05 liquid, alkaline, phosphate-free concentrate	2.5 L	HDPE bottle	EM1.40000.2500
	5 L	HDPE bottle	EM1.40000.5000
	10 L	Plastic container	EM1.40000.9010
	25 L	Plastic container	EM1.40000.9025

General

Chemizorb®

For Safe and Swift Absorption

Accidents happen in every lab. With Chemizorb®, you can remove aggressive or unpleasant spilled liquids quickly and safely. Chemizorb® absorbents consist of porous mineral or synthetic copolymers that are chemically inert, and are capable of taking up 100 to 400 percent of their own weight in liquid material. Absorbents for spilled liquids Chemizorb® for safe and swift absorption.

Your benefits:

- Easy, quick, safe and environment-friendly
- Doesn't matter which spillage, we have the right solution:
 - The "allrounders" Chemizorb® powder and granules
 - The "specialists" Chemizorb® alkalis, acid, HG reagents
 - The "all-in-one" Chemizorb® mercury set
- NOW AVAILABLE: Chemizorb® H+ with NEW composition
 - Easier to use, higher absorption capacity



Product	Content	Packaging	VWR Cat. No.
Chemizorb® powder absorbent for spilled liquids	500 g	HDPE bottle	EM1.02051.0500
	25 kg	Fibre carton	EM1.02051.9025
Chemizorb® granules absorbent for spilled liquids	1 kg	HDPE bottle	EM1.01568.1000
	5 kg	Bucket, plastic	EM1.01568.5000
	20 kg	Paper sack	EM1.01568.9020
	20 kg	PE drum	EM1.01568.9021
	20 kg	PE drum	EM1.01568.9021
Chemizorb® OH- absorbent and neutralizer for spilled alkalis, with indicator	1 kg	HDPE bottle	EM1.01596.1000
Chemizorb® H+ absorbent and neutralizer for spilled acids, with indicator	500 g	HDPE bottle	EM1.02491.0500
	2.5 kg	Bucket, plastic	EM1.02491.2500
Chemizorb® HF absorbent and neutralizer for spilled hydrofluoric acid, with indicator	1 kg	HDPE bottle	EM1.01591.1000
Chemizorb® Hg Reagents and accessories for absorbent for mercury	1 PC	PE case	EM1.12576.0001
1 set consisting of: 500 g of reagent 1, 100 mL of reagent 2, one small tub, one large disposal can, protective gloves, ...			
Chemizorb® Hg reagents refill pack for Ord. No. 1.12576.0001	1 PC	PE can	EM1.01569.0001
1 set consisting of: 500 g reagent 1 and 100 mL reagent 2			

General

NEW Withdrawal systems

For safe handling of acids and bases in canisters and drums

When handling corrosive and harmful acids and bases in pack sizes of 10 L or more, special attention should be paid to personal safety. Our new appropriately tested packaging and suitable and safe withdrawal systems and accessories can help you design an individual safety program for inorganics.

Our new withdrawal systems for acids and bases ensure a safe, easy, and contamination-free supply. Independent of media like inert gas or compressed air, acids and bases can now be withdrawn safely where they are needed. Just put your receptacle under the outlet, squeeze the ball with your hands or feet, and open the valve at the outlet. Handling corrosive inorganics with our products means additional safety for you every day.

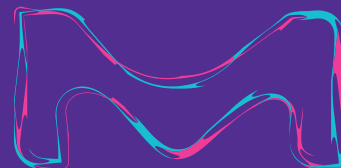
Benefits:

- Safe, easy and contamination free handling hazardous goods
- Maximizes user safety
- Saves money by minimizing safety issues in daily handling of hazardous goods



Product	Content	VWR Cat. No.
Dispense head (PE) for acids and bases, manual pressure build-up	1 PC	EM1.67500.0001
Dispense head (PE) for nitric acid, manual pressure build-up	1 PC	EM1.67501.0001
Dip tube (PE) for acids and bases in 25 L canisters	1 PC	EM1.67525.0001
Dip tube (PE) for acids and bases in 25 L fassetts	1 PC	EM1.67526.0001
Dip tube (PVDF) for nitric acid in 25 L combi containers	1 PC	EM1.67527.0001
Dip tube (PVDF) for nitric acid in 185 L combi containers	1 PC	EM1.67585.0001
Dip tube (PE) for acids and bases in 200 L PE-drums	1 PC	EM1.67520.0001
Dip tube (PVDF) for sulfuric acid in 200 L PE-drums	1 PC	EM1.67521.0001
Dip tube (PVDF) for sulfuric acid in 25 L canisters	1 PC	EM1.67528.0001
Drum key (PE) for opening/closing containers with 2 or 3/4" screw caps made of plastic materials	1 PC	EM1.67503.0001
Foot pump ball for dispense heads 167500 and 167501	1 PC	EM1.67502.0001
Hand pump ball for withdrawal systems	1 PC	EM9.67114.0000

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