

# At any stage of your process... We can support you!

Individual products and tailor-made chemicals for your technical applications



# WHO WE ARE...

With a large catalog of products, 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 HOW CAN WE SUPPORT YOU?

Optimizing the cost of your supply chain cannot be achieved by optimizing raw material cost alone. We can help you to reduce your overall expenses by chemicals closely geared to your process and convenient to use.

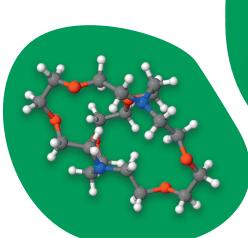
Merck offers individual products and tailor-made chemicals for your technical application.



# PRODUCTION AND R&D

# **Customized Products for Organic Synthesis**

Select from an extensive portfolio of more than 5,000 building blocks. Specify the parameters and their values you require for your application. Order convenient pre-treatment options such as solving or mixing. And receive the exact amount you need in the most suitable packaging.





Product Examples for Organic Synthesis	Ord. No.
Methyl Vinyl Ketone (stabilised) for synthesis	8.05901.9030
Kryprofix 222 for synthesis	8.10647.0500
Tween® 80 (Polysorbate) suitable for use as excipient EMPROVE® exp Ph Eur, JP, NF	8.17061.9010
Tween® 20 for synthesis	8.22184.1000
Phosphoryl Chloride for synthesis	8.22339.1000
Tetrahydrofurfuryl Alcohol Polyethylene Glycol ether for synthesis	8.21092.9010
Diisopropylamine for synthesis	8.03646.1000
N-(3-Dimethylaminopropyl)-N"-ethylcarbodiimide hydrochloride for synthesis	8.00907.9999
Sodium Formaldehydes	8.17068.9025

#### **Reduce costs and waste:**

- Save time and effort
- Minimize health risks
- Simplify scale-up
- Ensure that your exact requirements are met

# **PRODUCTION**

# EMSURE® products in bigger pack sizes

EMSURE® solvents, acids, caustic alkalis and bases mean:

- · Low trace impurities
- High purity
- Low evaporation residue

 $\dots$  and so those products are perfectly suitable for high quality demanding application in technical industry.

# Your benefits with EMSURE® products:

- Extremely good impurity profile
- Worldwide availability
- · Comprehensive documentation
- Convenient and safe packaging
- Corresponding withdrawal systems







**Product** 

Solvents EMSURE®			
Acetone for analysis EMSURE® ACS, ISO, Reag. Ph Eur		Stainless steel drum	1.00014.6010
		Stainless steel drum	1.00014.6025
		Metal drum	1.00014.9180
Chloroform for analysis EMSURE® ACS, ISO, Reag. Ph Eur		Stainless steel drum	1.02445.6010
		Stainless steel drum	1.02445.6025
		Metal drum	1.02445.9180
		Stainless steel drum	1.06050.6010
Dichloromethane for analysis EMSURE® ACS, ISO, Reag. Ph Eur	25 I	Metal drum	1.06050.9025
130, Reag. Fit Eur	190 l	Metal drum	1.06050.9180
Ethanol absolute for analysis EMSURE® ACS, ISO, Reag. Ph Eur		Stainless steel drum	1.00983.6010
		Stainless steel drum	1.00983.6025
130, Reag. Fit Lui	180 I	Metal drum	1.00983.9180
	10 l	Stainless steel drum	1.04379.6010
n-Heptane for analysis EMSURE® Reag. Ph Eur	25 I	Stainless steel drum	1.04379.6025
	190 l	Metal drum	1.04379.9190
M II II I I I I I I I I I I I I I I I I	10 l	Stainless steel drum	1.06009.6010
Methanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur	25 I	Stainless steel drum	1.06009.6025
130, Reag. Fit Lui	180 I	Metal drum	1.06009.9180
D. I. C. L.: EMCUDE®		Stainless steel drum	1.07177.6010
n-Pentane for analysis EMSURE®	190 l	Metal drum	1.07177.9190
2 Proposal for analysis EMCURE® ACC	10 l	Stainless steel drum	1.09634.6010
2-Propanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur		Metal drum	1.09634.9025
150, Reag. TH Ear	180 l	Metal drum	1.09634.9180
Acids EMSURE®			
Hydrochloric acid 25% for analysis EMSURE®	25 I	Plastic container	1.00316.9025
Nitric acid 65% for analysis EMSURE® ISO	25 I	PE/Metal drum	1.00456.9026
NICHE ACID 03 % TOT ATTAINSTS EMSORE 150	180 l	PE/Metal drum	1.00456.9180
ortho-Phosphoric acid 85% for analysis	25 I	Plastic container	1.00573.9025
EMSURE® ACS, ISO, Reag. Ph Eur	200 I	PE drum	1.00573.9200
Sulfuric acid 95–97% for analysis	25 I	Plastic container	1.00731.9025
EMSURE® ISO	200 I	PE drum	1.00731.9201
Caustics and bases EMSURE®			
Potassium hydroxide pellets for analysis	25 kg	Fibre carton	1.05033.9025
EMSURE®		Fibre carton	1.05033.9050
Potassium hydroxide solution 47% for analysis EMSURE®	25 I	Plastic container	1.05545.9025
Sodium hydroxide pellets for analysis	5 kg	Plastic bottle	1.06469.5000
(max. 0.02 % K) EMSURE® ACS, Reag. Ph Eur	50 kg	Fibre carton	1.06469.9050
Sodium hydroxide solution 50% for analysis	25 I	Plastic container	1.58793.9025
EMSURE® '	200 I	PE drum	1.58793.9200

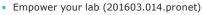
Content

**Packaging** 

Ord. No.







- Accuracy you can count on (W.282105)
- Perfection in every dimension Inorganic Reagents catalog (W.281150)
- Safety connects. Your direct connection to maximum safety in daily solvent handling. (W.282133)











# **QUALITY CONTROL**

# EMSURE® acids, salts and solvents for your Quality Control

#### Your benefits:

#### Accuracy and reliability - Absolute trust - Every time

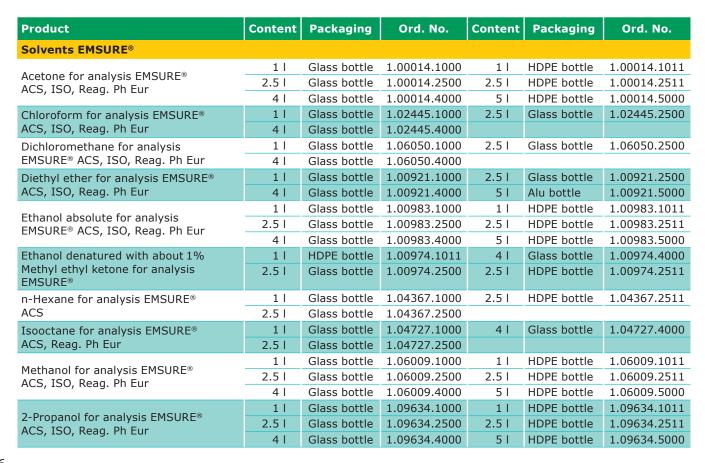
- Unmatched batch-to-batch consistency
- Reliable and reproducible results
- Lower analytical costs
- No repeat analyses

#### 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







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	Ord. No.	Content	Packaging	Ord. No.
Acids EMSURE®		5 5			3 3	
Acetic acid (glacial) 100%	1 l	Glass bottle	1.00063.1000	1 l	HDPE bottle	1.00063.1011
anhydrous for analysis EMSURE®	2.5 I	Glass bottle	1.00063.2500	2.5	HDPE bottle	1.00063.2511
ACS, ISO, Reag. Ph Eur	2.5 l	Safebreak bottle	1.00063.2510			
Hydrochloric acid fuming 37%	1	Glass bottle	1.00317.1000	1	HDPE bottle	1.00317.1011
for analysis EMSURE® ACS, ISO,	2.5	Glass bottle	1.00317.2500	2.5	HDPE bottle	1.00317.2501
Reag. Ph Eur	2.5	Safebreak bottle	1.00317.2510			
Hydrogen peroxide 30% (Perhydrol®) for analysis	250 ml	HDPE bottle	1.07209.0250	500 ml	HDPE bottle	1.07209.0500
EMSURE® ISO	1 l	HDPE bottle	1.07209.1000	2.5	HDPE bottle	1.07209.2500
Nitric acid 65% for analysis	1	Glass bottle	1.00456.1000	2.5	Glass bottle	1.00456.2500
EMSURE® ISO	2.5	Safebreak bottle	1.00456.2510			
Nitric acid fuming 100% for analysis EMSURE® Reag. Ph Eur	1	Glass bottle pl. coat.	1.00455.1000			
ortho-Phosphoric acid 85% for	1	HDPE bottle	1.00573.1000	2.5	HDPE bottle	1.00573.2500
analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5	Safebreak bottle	1.00573.2510			
Sulfuric acid 25% for analysis EMSURE®	1	HDPE bottle	1.00716.1000			
Sulfuric acid 95-97% for analysis	1	Glass bottle	1.00731.1000	1	HDPE bottle	1.00731.1011
EMSURE® ISO	2.5	Glass bottle	1.00731.2500	2.5 l	HDPE bottle	1.00731.2511
223.12	2.5	Safebreak bottle	1.00731.2510			
Salts EMSURE®						
Potassium chloride for analysis	500 g	HDPE bottle	1.04936.0500	1 kg	HDPE bottle	1.04936.1000
EMSURE®	5 kg	HDPE bottle	1.04936.5000			
Potassium dihydrogen phosphate	250 g	HDPE bottle	1.04873.0250	1 kg	HDPE bottle	1.04873.1000
for analysis EMSURE® ISO	5 kg	HDPE bottle	1.04873.5000			
Potassium iodide for analysis	250 g	HDPE bottle	1.05043.0250	500 g	HDPE bottle	1.05043.0500
EMSURE® ISO, Reag. Ph Eur	1 kg	HDPE bottle	1.05043.1000	2.5 kg	HDPE bottle	1.05043.2500
di-Potassium hydrogen phosphate anhydrous for analysis EMSURE®	1 kg	HDPE bottle	1.05104.1000			
Silver nitrate for analysis EMSURE®	25 g	HDPE bottle	1.01512.0025	100 g	HDPE bottle	1.01512.0100
ACS, ISO, Reag. Ph Eur	250 g	HDPE bottle	1.01512.0250	1 kg	HDPE bottle	1.01512.1000
Sodium chloride for analysis	500 g	HDPE bottle	1.06404.0500	1 kg	HDPE bottle	1.06404.1000
EMSURE® ACS, ISO, Reag. Ph Eur	5 kg	HDPE bottle	1.06404.5000			
tri-Sodium citrate dihydrate for analysis EMSURE® ACS, ISO,	500 g	HDPE bottle	1.06448.0500	1 kg	HDPE bottle	1.06448.1000
Reag. Ph Eur	5 kg	HDPE bottle	1.06448.5000			
Sodium dihydrogen phosphate monohydrate for analysis EMSURE® ACS, Reag. Ph Eur	500 g	HDPE bottle	1.06346.0500	1 kg	HDPE bottle	1.06346.1000
di-Sodium hydrogen phosphate	500 g	HDPE bottle	1.06580.0500	1 kg	HDPE bottle	1.06580.1000
dihydrate for analysis EMSURE®	5 kg	HDPE bottle	1.06580.5000			
Sodium sulfate anhydrous for analysis EMSURE® ACS, ISO,	500 g	HDPE bottle	1.06649.0500	1 kg	HDPE bottle	1.06649.1000
Reag. Ph Eur	5 kg	HDPE bottle	1.06649.5000			



Additional pack sizes and products are available depending on your need. Please contact your local VWR organization for more information or have a look at our brochures:

- Empower your lab (201603.014.pronet)
- Accuracy you can count on (W.282105)
- Perfection in every dimension Inorganic Reagents catalog (W.281150)
- Safety connects. Your direct connection to maximum safety in daily solvent handling (W.282133)









# **QUALITY CONTROL**

# SupraSolv®/UniSolv® Solvents for Gas Chromatography

With gas chromatography, only solvents with the highest levels of purity are suitable for sample preparation tasks such as the extraction and concentration of the extracts before injection. Our solvents are developed specially for this highly sophisticated application area.

### Comprehensive application area

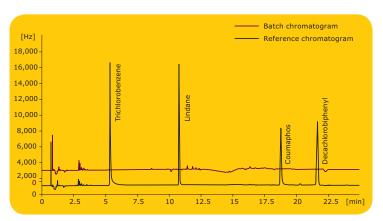
• Due to the largest retention time range

### **Analytical reliability**

 Due to the highest possible purity and a minimal signal-to-noise ratio

#### Time and cost savings

 Due to the best possible batch consistency, thus avoiding analysis repetition



Pesticide analysis in waste water: GC-ECD, batch and reference chromatogram (Lindane = 3 pg/ml), n-Hexane SupraSolv $^{\circ}$  EDC and FID [Cat. No. 104371]



Product	Content	Packaging	Ord. No.			
SupraSolv® solvents for gas chromatography ECD and FID						
Acetone for gas chromatography ECD and FID SupraSolv®	2.5 l	Glass bottle	1.00012.2500			
n-Hexane for gas chromatography ECD and FID SupraSolv®	2.5	Glass bottle	1.04371.2500			
Dimethyl sulfoxide for headspace gas chromatography SupraSolv®	1 l	Glass bottle	1.01900.1000			
Cyclohexane for gas chromatography ECD and FID SupraSolv®	2.5	Glass bottle	1.02817.2500			
Dichloromethane for gas chromatography ECD and FID SupraSolv®	2.5 l	Glass bottle	1.06054.2500			
UniSolv® solvents for organic trace analysis						
n-Pentane for organic trace analysis UniSolv®	2.5 l	Glass bottle	1.07288.2500			
n-Hexane for organic trace analysis UniSolv®	2.5	Glass bottle	1.04369.2500			
Dichloromethane for organic trace analysis UniSolv®	1	Glass bottle	1.06454.1000			



Additional pack sizes and products are available depending on your need. Please contact your local VWR organization for more information or have a look at our brochures:

- Chrombook 2015 The world of chromatography in your hands (W.282120)
- Naturally Pure. SupraSolv® and UniSolv® high perity solvents for gas chromatography (W.282144)





# **QUALITY CONTROL**

# **Certipur® | Atomic Absorption Spectroscopy**

The quality control of our ICP single-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.

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



Product	Content	Packaging	Ord. No.
Certipur® ICP standards			
Yttrium ICP standard traceable to SRM FR	100 ml	1,000 mg/l	1.70368.0100
Calcium Alcium ICP standard traceable to SRM FR	100 ml	10,000 mg/l	1.70373.0100
Rhodium ICP standard traceable to SRM FR	100 ml	1,000 mg/l	1.70345.0100
Potassium ICP standard traceable to SRM	100 ml	10,000 mg/l	1.70377.0100
Sodium ICP standard traceable to SRM FRO	100 ml	10,000 mg/l	1.70381.0100
Phosphorus ICP standard traceable to SRM	100 ml	1,000 mg/l	1.70340.0100
Copper ICP standard traceable to SRM FRO	100 ml	1,000 mg/l	1.70314.0100
Aluminium ICP standard traceable to SRM	100 ml	1,000 mg/l	1.70301.0100
Scandium ICP standard traceable to SRM F	100 ml	1,000 mg/l	1.70349.0100
Platinum standard traceable to SRM F	100 ml	1,000 mg/l	1.70341.0100



Additional pack sizes and products are available depending on your need. Please contact your local VWR organization for more information or have a look at our brochures:

 Perfection in every dimension – Inorganic Reagents catalog (W.281150)



# QUALITY CONTROL AND ENVIRONMENTAL TESTING

## Just insert, prove and proceed

The new Spectrophotometers from Merck 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 concerning your process water or your waste water chemicals contents.

## Your benefits:

- · Easy monitoring of your water quality
- Large variety of ready-to-use kits to fit with your need
- Live ID provides the method and selects the right settings
- Robust & easy to clean instrument







Product	Packaging	Ord. No.
Spectroquant® Spectrophotometer		
Spectroquant® Prove 600 UV/VIS spectrophotometer	1 pcs	1.73018.0001
Spectroquant® Prove 100 VIS spectrophotometer	1 pcs	1.73016.0001
Spectroquant® Cell Tests		
SQ COD CT 25-1,500 mg	25 tests/box	1.14541.0001
COD Cell Test Method: photometric 10 – 150 mg/l Spectroquant®	25 tests/box	1.14540.0001
Silicate (Silicic Acid) Test Method: photometric 0.0005 – 0.5000 mg/l Si <sub>02</sub> Spectroquant®	100 tests/box	1.01813.0001
Sulfate Test Method: photometric 0.50 – 50.0 mg/l SO <sub>42</sub> - Spectroquant®	100 tests/box	1.01812.0001
COD Cell Test Method: photometric 300 – 3,500 mg/l Spectroquant®	25 tests/box	1.14691.0001
COD Cell Test Method: photometric 500 – 10,000 mg/l Spectroquant®	25 tests/box	1.14555.0001
Phosphate Cell Test 0.5 – 25.0 mg/l PO $_4$ -P 1.5 – 76.7 mg/l PO $_{43}^-$ 1.1 – 57.3 mg/l P $_2$ O $_5$ Spectroquant $^{\tiny (8)}$	25 tests/box	1.14729.0001
Phosphate Cell Test $0.05-5.00$ mg/l $PO_4$ -P $0.2-15.3$ mg/l $PO_{43}^ 0.11-11.46$ mg/l $P_2O_5$ Spectroquant®	25 tests/box	1.14543.0001
Surfactants (anionic) Cell Test Method: photometric 0.05 – 2.00 mg/l MBAS Spectroquant®	25 tests/box	1.02552.0001
Surfactants (nonion.) Cell Test Method: photometric 0.10 – 7.50 mg/l Triton® X-100 Spectroquant®	25 tests/box	1.01787.0001
Ammonium Cell Test Method: photometric $4.0-80.0 \text{ mg/l}$ $NH_4-N 5.2-103.0 \text{ mg/l}$ $NH_4^+ \text{ Spectroquant}^{\otimes}$	25 tests/box	1.14559.0001
Ammonium Cell Test Method: photometric $0.5-16.0~\rm mg/l~NH_4^+ Spectroquant^{\it \$}$	25 tests/box	1.14544.0001
Nitrate Cell Test Method: photometric, DMP 0.5–25.0 mg/l NO <sub>3</sub> -N 2.2–110.7 mg/l NO <sub>3</sub> - Spectroquant®	25 tests/box	1.14563.0001
Nitrogen (total) Cell Test Method: photometric $0.5-15.0 \text{ mg/l N}$ Spectroquant®	25 tests/box	1.14537.0001
Nitrite Cell Test Method: photometric $0.03-2.30 \text{ mg/l}$ $NO_2^- 0.010-0.700 \text{ mg/l}$ $NO_2^- N \text{ Spectroquant}^{\oplus}$	25 tests/box	1.14547.0001



Additional instruments and rapid tests are available depending on your need. Please contact your local VWR organization for more information or have a look at our brochures:

- Water and Food Analytics Catalogue (W.285102)
- Just Prove it. Spectroquant® Prove (W.285735)





# SAFETY

# Make your Lab a safer place: Solvents, acids and bases in 2.5 I HDPE bottles

# Your benefits of using an HDPE bottle:

- No risk of breakage when handling hazardous or dangerous goods
- · Integrated carrier handle for optimal handling
- Optimal center of gravity shift for convenient pouring
- Easy and environment-friendly disposal (no polystyrene outer packaging)
- · Base of the bottle redesigned to ensure optimized stability



Product	Content	Packaging	Ord. No.
Solvents			
Acetone for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5 l	HDPE bottle	1.00014.2511
Cyclohexane for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5	HDPE bottle	1.09666.2511
Dimethyl sulfoxide for analysis EMSURE® ACS	2.5 l	HDPE bottle	1.02952.2511
Ethanol absolute for analysis EMPARTA® ACS	2.5 l	HDPE bottle	1.07017.2511
Ethanol absolute for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5	HDPE bottle	1.00983.2511
Ethyl acetate EMPLURA®	2.5 l	HDPE bottle	8.22277.2500
Ethyl acetate for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5	HDPE bottle	1.09623.2511
n-Heptane for analysis EMSURE® Reag. Ph Eur	2.5 l	HDPE bottle	1.04379.2511
n-Hexane for analysis EMPARTA® ACS	2.5 l	HDPE bottle	1.07023.2511
Methanol EMPLURA®	2.5 l	HDPE bottle	8.22283.2500
Methanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5 l	HDPE bottle	1.06009.2511
1-Methyl-2-pyrrolidone EMPLURA®	2.5 l	HDPE bottle	8.06072.2500
2-Propanol for analysis EMPARTA® ACS	2.5 l	HDPE bottle	1.07022.2511
2-Propanol for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5	HDPE bottle	1.09634.2511
Toluene for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5 l	HDPE bottle	1.08325.2511
Acids			
Acetic acid (glacial) 100% anhydrous for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5 l	HDPE bottle	1.00063.2511
Acetic acid (glacial) 100% for analysis EMPARTA® ACS	2.5 l	HDPE bottle	1.01830.2500
Formic acid $98-100\%$ for analysis EMSURE® ACS, Reag. Ph Eur	2.5 l	HDPE bottle	1.00264.2511
Hydrochloric acid 25% for analysis EMSURE®	2.5 l	HDPE bottle	1.00316.2511
Hydrochloric acid 32% for analysis EMSURE®	2.5 l	HDPE bottle	1.00319.2511
Hydrogen peroxide 30% (Perhydrol®) for analysis EMSURE® ISO	2.5	HDPE bottle	1.07209.2500
ortho-Phosphoric acid 85% for analysis EMSURE® ACS, ISO, Reag. Ph Eur	2.5 l	HDPE bottle	1.00573.2500
Sulfuric acid 95-97 % for analysis EMPARTA® ACS	2.5 l	HDPE bottle	1.01833.2500
Sulfuric acid 95-97% for analysis EMSURE® ISO	2.5 l	HDPE bottle	1.00731.2511
Bases			
Sodium hydroxide solution about 32% (for the determination of nitrogen) for analysis EMSURE®	2.5 l	HDPE bottle	1.05590.2500
Sodium hydroxide solution about 32 % EMPLURA®	2.5	HDPE bottle	1.05587.2500
Safety accessories			
Bottle key	5 units/pack		1.08801.0001



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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 further information on Merck and our products contact:

Merck KGaA 64293 Darmstadt, Germany www.MERCKmillipore.com

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