VWR®
We Enable Science

VWR® RETURNABLE CONTAINER ADVANTAGE PROGRAMME (RECAP)

Performance

Convenience

Safety

- **Inert gas pressurises container to smoothly dispense high purity solvent**
- **high quality and safety with 304 stainless steel**
- **Tamper-evident seal for peace of mind**

VWR® RETURNABLE CONTAINER ADVANTAGE PROGRAMME (RECAP)

Built on the foundation of supply chain innovation, VWR's Returnable Container Advantage Programme (ReCAP) reliably delivers performance, convenience, and safety for your high-purity solvents.

The programme starts with your choice of sealed, pressurised 185, 1000 or 1350 l stainless steel container, filled with VWR chemicals high purity Acetonitrile or Methanol (choose your specification). Solvent can be safely dispensed without risking product contamination, spillage, or personal exposure. When the container is almost empty, let us know and we will replace it with a full one so your work remains uninterrupted.

VWR purifies these high purity solvents in its own purification plant with a patented process to meet the needs for production and analytical applications. As a result, these solvents show a

- Very high UV transmittance
- Very low water content
- Very low residue on evaporation
- Very low trace metal content

Specifications meet the requirements for use in biopharmaceutical production and purification.

PERFORMANCE:

- Product purity meets our highly competitive specifications
- Choice product quality to match your requirements
- Sealed system reduces potential for contamination
- High-quality stainless steel container and fittings allow simple, clean solvent control

CONVENIENCE:

- Reusability eliminates waste
- Far less storage space than the same volume in bottles
- No expenses from hazardous packaging disposal
- Inert gas pressurised operation
- Can connect directly into production lines

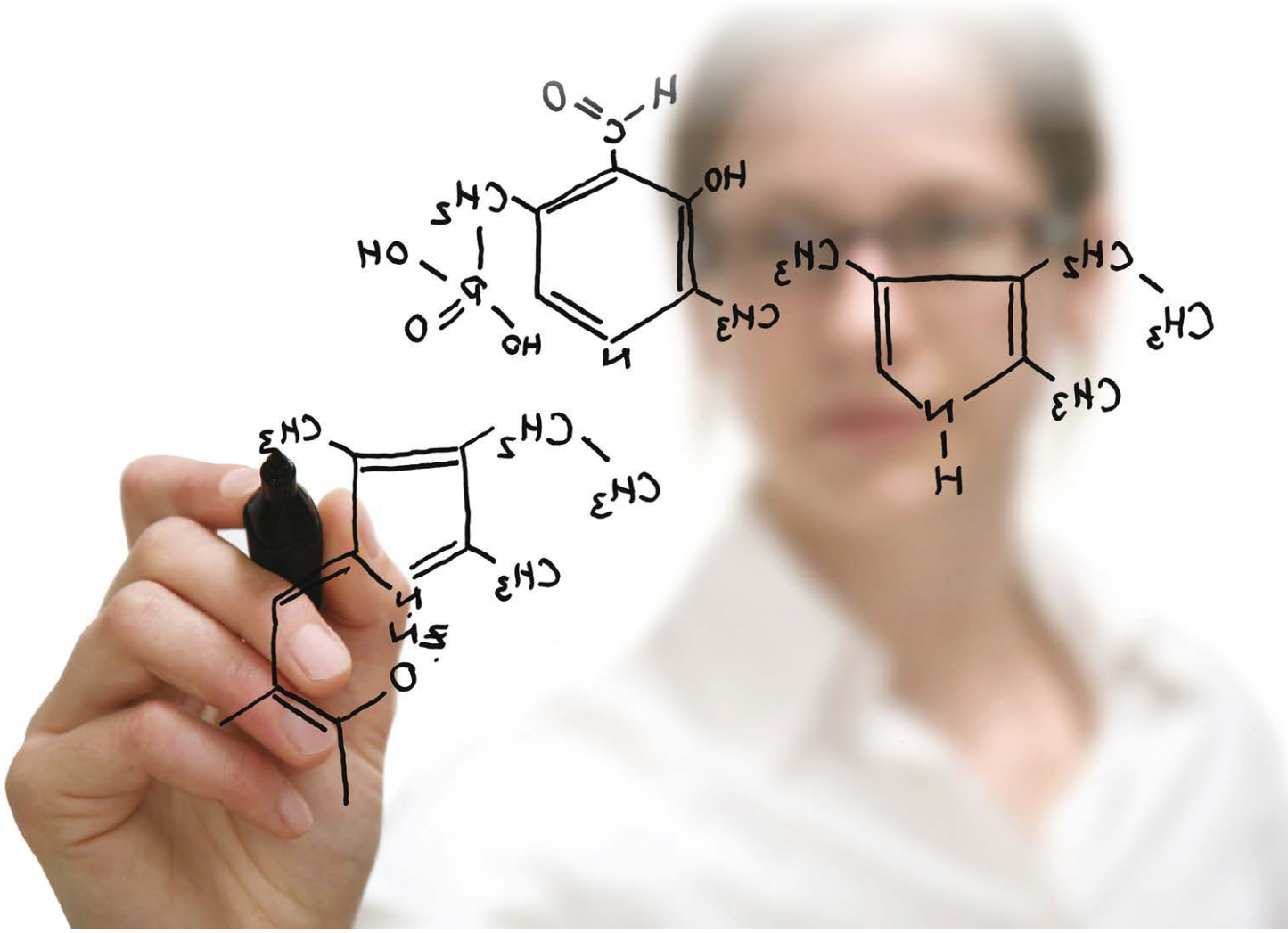
SAFETY:

- Container choice available with additional safety and convenience features
- Reduced personal exposure to flammable or harmful vapours

Specifications for Acetonitrile grades available in the VWR Range of Returnable containers

	Acetonitrile Hipersolv Chromanorm Super Gradient for HPLC	Acetonitrile Hipersolv Chromanorm LC-MS	Acetonitrile Hipersolv Ultra low water for Biopharma	Acetonitrile For DNA Synthesis	Acetonitrile Hipersolv Chromanorm Ultra LC-MS
Cat. No. 185 l	**83639.500**	**83640.500**	**85500.500**	**85501.500**	**83642.500**
Cat. No. 1000 l	**83639.911**	**83640.911**	**85500.911**	**85501.911**	**83642.911**
Cat. No. 1350 l	**83639.914**	**83640.914**	**85500.914**	**85501.914**	**83642.914**
Assay	Min. 99,95%	Min. 99,90%	Min. 99,97%	Min. 99,95%	Min. 99,95%
Identity IR Spectrum	-	-	Conforms	Conforms	-
Residue on evaporation	Max. 2ppm	Max. 2ppm	Max. 1ppm	Max. 1ppm	Max. 1ppm
Water	Max. 30 ppm	<0,02%	Max. 5ppm	Max. 10 ppm	Max. 10 ppm
Colouration	Max. 10 APHA	Max. 10 APHA	Max. 10 APHA	Max. 10 APHA	Max. 5 APHA
Density (d 20 °C/4 °C)	0,781-0,784	0,781-0,784	0,781-0,785	-	0,781-0,784
Density (d 20 °C/20°C)	0,782-0,785	0,782-0,785	0,782-0,786	-	0,782-0,785
Refractive index (in 20/D)	1,343-1,345	1,343-1,345	1,343-1,346	-	1,343-1,345
Boiling point	80-82 OC	80-82 OC	80-82 OC	-	-
Acidity	<=0,0008 meq/g	Max. 0,0001 meq/g	Max. 0,0001 meq/g	Max. 0,0001 meq/g	Max. 0,0001 meq/g
Alkalinity	<=0,0006 meq/g	Max. 0,0002 meq/g	Max. 0,0002 meq/g	Max. 0,0002 meq/g	Max. 0,0002 meq/g
Gradient at 210 nm	Max. 3 mAU	Max. 3 mAU	-	-	Max. 1 mAU
Gradient at 254 nm	Max. 1 mAU	Max. 1 mAU	Max. 1 mAU	-	Max. 1 mAU
Fluorescence as quinine at 254 nm	Max. 1 ppb	-	-	-	-
Fluorescence as quinine at 365 nm	-	-	-	-	Max. 0,5ppb
Fluorescence as quinine at 254 nm	-	Max. 1ppb	-	-	Max. 1ppb
Transmittance at 190 nm	Min. 10%	-	Min. 10%	-	Min. 50%
Transmittance at 191nm	-	Min. 30%	-	-	-
Transmittance at 193nm	-	-	-	-	Min. 60%
Transmittance at 195 nm	Min. 80%	-	-	-	Min. 90%
Transmittance at 200 nm	Min. 95%	Min. 80%	-	-	Min. 98%
Transmittance at 210 nm	Min. 96%	Min. 95%	-	-	Min. 98%
Transmittance at 215nm	-	Min. 98%	-	-	Min. 99%
Transmittance at 220 nm	Min. 97%	Min. 98%	Min. 97%	-	Min. 99%
Transmittance at 230nm	-	Min. 99%	-	-	Min. 99%
Transmittance from 230 nm	Min. 98%	-	-	-	-
Transmittance at 240 nm	Min. 99%	-	-	-	-
Transmittance at 250 nm	Min. 99%	-	-	-	-
Transmittance from 240 to 420 nm	Min. 99%	-	Min. 99%	-	-
Absorbance at 190 nm	Max. 1	-	Max. 1	-	-
Absorbance at 191nm	-	Max. 0,5	-	-	-
Absorbance at 195 nm	Max. 0,1	-	-	-	-
Absorbance at 200 nm	Max.0,02	Max. 0,1	-	-	-
Absorbance at 210 nm	Max.0,02	Max. 0,02	-	-	-
Absorbance at 215nm	-	Max. 0,01	-	-	-
Absorbance at 220 nm	Max.0,01	Max.0,01	Max.0,01	-	-
Absorbance at 230nm	Max.0,01	Max. 0,01	-	-	-
Absorbance from 230 nm	-	Max. 0,005	-	-	-
Absorbance at 240 nm	Max. 0,005	-	-	-	-
Absorbance at 250 nm	Max. 0,005	-	-	-	-
Absorbance from 240 to 420 nm	Max. 0,005	Max. 0,005	Max. 0,005	-	-
Coforms to ACS	Yes	-	Yes	-	-
Coforms to ACS (HPLC/UV)	Yes	-	Yes	-	-
Conforms to Reag, Ph, Eur,	Yes	Yes	Yes	-	-
Conforms to Reag, USP	Yes	-	Yes	-	-
Al	-	Max. 50 ppb	Max. 0,1 ppm	-	Max. 20 ppb
As	-	-	Max. 0,1 ppm	-	-
Ba	-	-	Max. 0,1 ppm	-	Max. 20 ppb
Ca	-	Max. 50 ppb	Max. 0,1 ppm	-	Max. 20 ppb
Cd	-	-	Max. 0,1 ppm	-	Max. 20 ppb
Co	-	-	Max. 0,1 ppm	-	Max. 20 ppb
Cu	-	-	Max. 0,1 ppm	-	Max. 20 ppb
Fe	-	Max. 50 ppb	Max. 0,1 ppm	-	Max. 20 ppb
Hg	-	-	Max. 0,1 ppm	-	-
K	-	Max. 50 ppb	Max. 0,1 ppm	-	Max. 20 ppb
Ni	-	-	Max. 0,1 ppm	-	-
Mg	-	Max. 10 ppb	Max. 0,1 ppm	-	Max. 20 ppb

	Acetonitrile Hipersolv Chromanorm Super Gradient for HPLC	Acetonitrile Hipersolv Chromanorm LC-MS	Acetonitrile Hipersolv Ultra low water for Biopharma	Acetonitrile For DNA Synthesis	Acetonitrile Hipersolv Chromanorm Ultra LC-MS
Mn	-	-	Max. 0,1 ppm	-	Max. 20 ppb
Na	-	Max. 100 ppb	Max. 0,1 ppm	-	Max. 20 ppb
Pb	-	-	Max. 0,1 ppm	-	Max. 20 ppb
V	-	-	Max. 0,1 ppm	-	-
Zn	-	-	Max. 0,1 ppm	-	Max. 20 ppb
MS-ESI+ (as Reserpine)	-	Max. 2 ppb	-	-	Max. 2 ppb
MS-APCI+(as Reserpine)	-	Max. 2 ppb	-	-	Max. 2 ppb
MS-ESI- (as 4- Nitrophenol)	-	Max. 20 ppb	-	-	Max. 20 ppb
MS-APCI- (as 4- Nitrophenol)	-	Max. 20 ppb	-	-	Max. 20 ppb
Acetamide	-	-	Max. 0,1 ppm	-	-
Acetaldehyde	-	-	Max. 0,1 ppm	-	-
Allyl Alcohol	-	-	Max. 5 ppm	-	-
Propionitrile	-	-	Max. 250 ppm	-	-
HCN	-	-	Max. 10 ppm	-	-
Reporting treshold (PhEur #2034)	-	-	Conforms	-	-
Identification treshold (PhEur #2034)	-	-	Conforms	-	-
Quantification treshold (PhEur #2034)	-	-	Conforms	-	-
Acrylonitrile	-	-	Max. 1 ppm	-	-
Methacrylonitrile	-	-	Max. 1 ppm	-	-
Crotononitrile	-	-	Max. 1 ppm	-	-
Gradient Elution Test (a,u,) (as Toluene @ 210nm)	-	-	Max. 0,1 ppm	-	-
Cat. No. 185 l	**83639.500**	**83640.500**	**85500.500**	**85501.500**	**83642.500**
Cat. No. 1000 l	**83639.911**	**83640.911**	**85500.911**	**85501.911**	**83642.911**
Cat. No. 1350 l	**83639.914**	**83640.914**	**85500.914**	**85501.914**	**83642.914**



Specifications for Methanol grades available in the VWR Range of Returnable containers

Parameters	Methanol Hipersolv Chromanorm Ultra LC-MS	Methanol Hipersolv Chromanorm Super Gradient for HPLC	Methanol Hipersolv Chromanorm Gradient for HPLC
Cat. No. 185 l	**85800.500**	**85681.500**	**20864.500**
Cat. No. 1000 l	**85800.911**	**85681.911**	**20864.911**
Cat. No. 1350 l	**85800.914**	**85681.914**	**20864.914**
Assay	Min. 99,9%	Min. 99,9%	Min. 99,8%
Identity	-	Passes test	-
Residue on evaporation	Max. 1 ppm	Max. 1 ppm	Max. 5 ppm
Water	<0,02%	<0,02%	<0,03%
Colouration	Max. 10 APHA	Max. 10 APHA	-
Density (d 20 °C/4°C)	-	-	-
Density (d 20 °C/20°C)	0,791-0,793	0,791-0,793	0,791-0,793
Refractive index (in 20/D)	-	-	-
Boiling range	64-65 OC	64-65 OC	64-65 OC
Acidity	Max. 0,0002 meq/g	Max. 0,0002 meq/g	Max. 0,0003 meq/g
Alkalinity	Max. 0,0002 meq/g	Max. 0,0002 meq/g	Max. 0,0002 meq/g
Spectral characteristics	-	-	-
Gradient at 220 nm	Max. 3 Mau	-	-
Gradient at 235 nm	Max. 2 Mau	Max. 2 Mau	-
Gradient at 254 nm	Max. 1 Mau	Max. 1 Mau	-
Fluorescence as quinine at 254 nm	Max. 1 ppb	Max. 1 ppb	Max. 1 ppb
Fluorescence as quinine at 365 nm	Max. 0,5 ppb	Max. 0,5 ppb	-
Transmittance at 210nm	Min. 45%	Min. 45%	Min. 20%
Transmittance at 220 nm	Min. 65%	Min. 65%	Min. 50%
Transmittance at 225 nm	-	Min. 70%	Min. 68%
Transmittance at 230nm	Min. 85%	Min. 85%	Min. 74%
Transmittance at 235nm	Min. 90%	Min. 83%	Min. 80%
Transmittance at 240 nm	Min. 95%	Min. 90%	-
Transmittance at 250 nm	Min. 95%	Min. 95%	Min. 95%
Transmittance at 260 nm	Min. 98%	Min. 98%	Min. 98%
Transmittance from 280 to 400 nm	Min. 98%	Min. 98%	Min. 98%
Absorbance at 210nm	Max. 0,347	Max. 0,347	Max. 0,7
Absorbance at 220 nm	Max. 0,188	Max. 0,188	Max. 0,3
Absorbance at 225 nm	Max. 0,155	Max. 0,155	-
Absorbance at 230nm	Max. 0,071	Max. 0,081	Max. 0,15
Absorbance at 235nm	-	Max. 0,071	Max. 0,1
Absorbance at 240 nm	Max. 0,023	Max. 0,046	-
Absorbance at 250 nm	Max. 0,023	Max. 0,023	Max. 0,02
Absorbance at 260 nm	Max. 0,009	Max. 0,009	Max. 0,01
Absorbance from 280 to 400 nm	Max. 0,009	Max. 0,009	-
Coforms to ACS	Passes test	Passes test	Passes test
Conforms to Reag PH Eur R1 1053201	Passes test	Passes test	Passes test
Conforms to Reag PH Eur R2 1053202	Passes test	Passes test	Passes test
Trace metals	-	-	-
Al	Max. 20 ppb	-	-
Ag	Max. 100 ppb	-	-
Ba	Max. 100 ppb	-	-
Ca	Max. 200 ppb	-	-
Cd	Max. 20 ppb	-	-
Co	Max. 20 ppb	-	-
Cu	Max. 10 ppb	-	-
Fe	Max. 50 ppb	-	-
K	Max. 50 ppb	-	-
Mg	Max. 50 ppb	-	-
Mn	Max. 100 ppb	-	-
Na	Max. 200 ppb	-	-
Ni	Max. 100 ppb	-	-
Pb	Max. 20 ppb	-	-
Zn	Max. 100 ppb	-	-
MS-ESI+ (as Reserpine)	Max. 2 ppb	-	-

Parameters	Methanol Hipersolv Chromanorm Ultra LC-MS	Methanol Hipersolv Chromanorm Super Gradient for HPLC	Methanol Hipersolv Chromanorm Gradient for HPLC
MS-APCI+(as Reserpine)	Max. 2 ppb	-	-
MS-ESI- (as 4- Nitrophenol)	Max. 20 ppb	-	-
MS-APCI- (as 4- Nitrophenol)	Max. 20 ppb	-	-
Carbonyl compounds	-	Passes test	-
Solubility in water	-	Passes test	-
Substances darkened by Sulphuric acid	-	Passes test	-
Substances reducing permanganate	-	Passes test	-
Cat. No. 185 l	**85800.500**	**85681.500**	**20864.500**
Cat. No. 1000 l	**85800.911**	**85681.911**	**20864.911**
Cat. No. 1350 l	**85800.914**	**85681.914**	**20864.914**

VWR Solvent capabilities

For laboratory use , high quality solvents in bottles ranging from 1 to 28 l in plastic, glass and aluminium.

Recyclable Container Advantage Programme offers standard stainless steel barrels up to 1350 l but 20 000 l ISO containers on request.

For these ISO containers or indeed any other special requirements for the stainless steel barrels , or questions on the quality or specifications of the solvents , a team of experienced engineers is ready to work on your request. Please contact your local VWR sales office.

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