

HIPERSOLV® CHROMANORM®

High purity solvents
for HPLC applications

Filtered at 0,2 µm
bottled under nitrogen

Designed to meet your
analytical and quality
control requirements

Specified to meet
the most demanding
requirements of HPLC,
LC-UV, LC-MS and
ULCMS



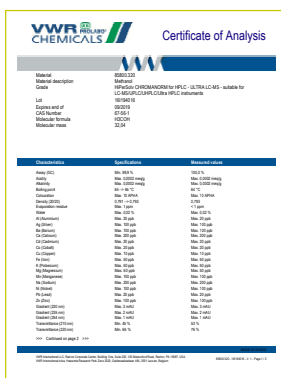
Specifications

- High UV transmission
- Gradient test at 210, 235 or 254 nm
- Low residue on evaporation
- Excellent batch-to-batch reproducibility
- Low absorbance values
- Acetonitrile and methanol super gradient grade suitable for UPLC/UHPLC

Plus for LC-MS grade products

- Low alkaline metal content of max. 100 ppb with many metals at less 20 ppb for Ultra LC-MS grades
- Low level of ionic background
- Ultra grades suitable for ULC-MS/UPLC/UHPLC

VWR chemical specifications quote maximum permitted levels of impurities, not typical analyses.



Full specifications and Certificates of Analysis are readily available from the VWR website vwr.com.

HiPerSolv CHROMANORM® high purity solvents

The VWR Chemicals HPLC range has been significantly extended and now includes over 30 different products.

New products recently added are:

Acetonitrile super gradient grade ACS, Reag. Ph. Eur., USP 83639* in 1, 2,5 or 4 l glass bottles, 5, 10 or 28l aluminium bottles and 200 l stainless steel drums.

- Very high transmittance at 200 nm - min. 95%
- Very low level of water - max. 30 ppm
- Very low residue on evaporation - <2 ppm

Methanol super gradient grade ACS, Reag. Ph. Eur. 85681* in 1, 2,5 or 4 l glass bottles and 5, 10 or 28 l aluminium bottles or 200 l stainless steel drums.

- Very high assay at 99,9%
- Very high transmittances at 210 nm - min. 45%
- Very low residue on evaporation - <1 ppm

Water super gradient grade, Cat. No. 83650.320, in 1 l and 2, 5 l glass bottles.

Specifications on: Colour, max. 10 APHA, specific conductivity max. '1 µs/cm,' gradient test at 200 and 254 nm, fluorescence test at 254 and 365 nm

LC-MS green solvents.

This wide range includes our highest quality grade of solvents with very low water and evaporation residue. Specifically manufactured for LC-MS applications. Additives and mixes for LC-MS have also been added to the range - please go to vwr.com for more details or contact your local VWR sales office.

LC-MS solvents

Description	Acetonitrile	Acetonitrile ULTRA	Ethyl acetate	Methanol	Methanol ULTRA	2-Propanol	THF	Water
Assay (on anhydrous substance)	Min. 99,9%	Min. 99,95%	Min. 99,9%	Min. 99,9%	Min. 99,9%	Min. 99,9%	Min. 99,9%	-
Acidity	Max. 0,0001%	Max. 0,0001%	Max. 0,003%	Max. 0,0005%	Max. 0,0002%	Max. 0,0002%	Max. 0,0002%	-
Alkalinity	Max. 0,0002%	Max. 0,0002%	Max. 0,0005%	-	Max. 0,0002%	Max. 0,0002%	Max. 0,0002%	-
Evaporation residue	Max. 2 mg/l	Max. 1 mg/l	Max. 5 mg/l	Max. 5 mg/l	Max. 1 mg/l	Max. 1 mg/l	Max. 1 mg/l	Max. 1 mg/l
Water	Max. 200 ppm	Max. 10 ppm	Max. 500 ppm	Max. 500 ppm	Max. 200 ppm	Max. 50 ppm	Max. 50 ppm	-
Peroxides	-	-	-	-	-	-	Max. 1 mg/l	-
Total organic carbon (TOC)	-	-	-	-	-	-	-	Max. 30 ppb
Specific conductivity (25 °C) at filling	-	-	-	-	-	-	-	Max. 1 µs/CM
Colony count (Ph. Eur.)	-	-	-	-	-	-	-	Max. 100 CFY/ml
Colouration	Max. 10 APHA	Max. 5 APHA	Max. 10 APHA	-	Max. 10 APHA	-	-	-
Density 20/4'	-	0,781 - 0,784	-	-	-	-	-	-
Density 20/20	-	0,782 - 0,785	-	-	0,791 - 0,793	-	-	-
Refractive index n 20/D	-	1,343 - 1,345	-	-	-	-	-	-
Gradient (210 nm)	Max. 3 mAU	Max. 1 mAU	-	-	Max. 3 mAU	-	-	Max. 5 mAU
Gradient grade at 230 nm	-	-	-	-	Max. 2 mAU	-	-	Max. 2 mAU
Gradient (254 nm)	Max. 1 mAU	Max. 1 mAU	-	-	Max. 1 mAU	-	-	Max. 1 mAU
Fluorescence as quinine at 254/450 nm	Max. 1 ppb	Max. 1 ppb	-	-	Max. 1 ppb	-	-	Max. 1 ppb
Fluorescence as quinine at 365 nm	-	Max. 0,5 ppb	-	-	Max. 0,5 ppb	-	-	Max. 0,5 ppb
Transmission at 190 nm	Min. 30%	-	-	-	-	-	-	-
Transmission at 193 nm	-	Min. 60%	-	-	-	-	-	-
Transmission at 195 nm	Min. 80%	Min. 90%	-	-	-	-	-	-
Transmission at 200 nm	Min. 95%	Min. 98%	-	-	-	-	-	-
Transmission at 205 nm	-	-	-	-	-	Min. 10%	-	-
Transmission at 210 nm	Min. 96%	Min. 98%	-	Min. 65%	Min. 45%	Min. 50%	-	-
Transmission at 215 nm	-	Min. 99%	-	-	-	-	Min. 10%	-
Transmission at 220 nm	Min. 98%	Min. 99%	-	Min. 75%	Min. 65%	-	-	-
Transmission at 225 nm	-	-	-	-	-	Min. 80%	-	-
Transmission at 230 nm	Min. 99%	Min. 99%	-	Min. 90%	Min. 85%	-	-	-
Transmission at 235 nm	-	-	-	-	Min. 90%	-	Min. 50%	-
Transmission at 240 nm	-	-	-	Min. 98%	Min. 95%	Min. 95%	-	-
Transmission at 250 nm	-	-	-	Min. 99%	Min. 95%	-	-	-
Transmission at 255 nm	-	-	-	-	-	Min. 99%	-	-
Transmission from 260 nm	-	-	Min. 75%	-	Min. 98%	-	-	-
Transmission from 275 nm	-	-	Min. 98%	-	-	-	Min. 95%	-
Transmission from 280 - 400 nm	-	-	-	-	Min. 98%	-	Min. 99%	-
Cat. No. 1 l	83640.290	83642.290	-	83638.290	85800.290	84881.290	84882.290	83645.290
Cat. No. 2,5 l	83640.320	83642.320	85481.320	83638.320	85800.320	84881.320	84882.320	83645.320
Cat. No. 4 l	83640.400	83642.400	-	-	85800.400	-	-	83645.400

For full details of the extensive low metals specifications go to vwr.com or check out our VWR Chemicals catalogue

HPLC solvents

Description	Pk (l)	Assay min. %	Residue max. %	Water max. %	Min. % UV transmittance/wavelength (nm) (1 cm quartz cell, distilled water)								Cat. No.	
Acetone	1	99,8	0,0005	0,20	50/345	80/350	98/360							20067.290
	2,5	99,8	0,0005	0,20	50/345	80/350	98/360							20067.320
Acetonitrile super gradient grade*	1	99,95%	0,0002	0,003	80/195	95/200	96/210	97/220	98/230	99/240	99/250			83639.290
	2,5	99,95%	0,0002	0,003	80/195	95/200	96/210	97/220	98/230	99/240	99/250			83639.320
	5 (ALU)	99,95%	0,0002	0,003	80/195	95/200	96/210	97/220	98/230	99/240	99/250			83639.360
Acetonitrile gradient grade*	1	99,95%	0,0005	0,02		80/195	90/200	94/210	96/220	99/240				20060.290
	2,5	99,9	0,0005	0,02		80/195	90/200	94/210	96/220	99/240				20060.320
	2,5 (PCG)	99,9	0,0005	0,02		80/195	90/200	94/210	96/220	99/240				20060.420
Acetonitrile isocratic grade	1	99,9	0,0005	0,03	80/200	85/210	90/220	98/230	99/250					20048.290
	2,5	99,9	0,0005	0,03	80/200	85/210	90/220	98/230	99/250					20048.320
	5 (ALU)	99,9	0,0005	0,03	80/200	85/210	90/220	98/230	99/250					20048.360
Butan-1-ol	1	99,8	0,0010	0,10	50/230	80/240	98/310							83633.290
1-Chlorobutane	2,5	99,7	0,0005	0,01	50/227	80/232	98/250							83631.320
Chloroform (stab. EtOH***)	1	99,8	0,0010	0,05	50/250	84/260	95/280	98/300						83627.290
	2,5	99,8	0,0010	0,05	50/250	84/260	95/280	98/300						83627.320
Chloroform (stab. MB**)	2,5	99,8	0,0010	0,05	50/250	84/260	95/280	98/300						83626.320
Cyclohexane	1	99,5	0,0005	0,01	75/230	80/240	98/250							83629.290
	2,5	99,5	0,0005	0,01	75/230	80/240	98/250							83629.320
Dichloromethane (stab. EtOH***)	1	99,8	0,0010	0,05	50/240	80/245	98/260							83623.290
	2,5	99,8	0,0010	0,05	50/240	80/245	98/260							83623.320
Dichloromethane (stab. MB**)	1	99,8	0,0010	0,05	50/240	80/245	98/260							23373.290
	2,5	99,8	0,0010	0,05	50/240	80/245	98/260							23373.320
Diethyl ether (stab. EtOH***)	2,5	99,5	0,0005	0,05	30/220	50/230	80/250	90/270	98/300					83624.320
Dimethylformamide	2,5	99,9	0,0005	0,02	10/270	50/275	80/290	90/300	98/330					83634.320
NN-Dimethylacetamide	4	99,5	0,0005	0,05	10/270	71/290	89/310	94/320	98/400					83636.350
1,4-Dioxan	2,5	99,8	0,0005	0,05	50/245	80/270	98/300							83628.320
Ethanol 96%	1	99,8	0,0005	-	30/210	96/254	98/280							20825.290
	2,5	99,8	0,0005	-	30/210	96/254	98/280							20825.324
Ethanol 99,7 - 100%	1	99,8	0,0010	0,20	50/220	90/250	98/280							153385E
	2,5	99,8	0,0010	0,20	50/220	90/250	98/280							153386F
Ethyl acetate	1	99,8	0,0005	0,10	70/260	90/270	98/300							83621.290
	2,5	99,8	0,0005	0,10	70/260	90/270	98/300							83621.320
N-Heptane	1	99	0,0010	0,01	50/210	80/220	98/245							24539.290
	2,5	99	0,0010	0,01	50/210	80/220	98/245							24539.320
Iso-Hexane	2,5	97	0,0005	0,01	50/205	80/220	95/230	98/280						83622.320
N-Hexane	1	97	0,0005	0,005	50/210	80/220	98/245							24575.290
	2,5	97	0,0005	0,005	50/210	80/220	98/245							24575.320
Methanol super gradient grade*	1	99,9	0,0001	0,02%	45/210	65/220	70/225	85/235	90/240	95/250	98/260			85681.290
	2,5	99,9	0,0001	0,02%	45/210	65/220	70/225	85/235	90/240	95/250	98/260			85681.320
	4	99,9	0,0001	0,02%	45/210	65/220	70/225	85/235	90/240	95/250	98/260			85681.400
	5	99,9	0,0001	0,02%	45/210	65/220	70/225	85/235	90/240	95/250	98/260			85681.360
Methanol gradient grade	1	99,8	0,0005	0,03	50/220	80/235	98/260							20864.290
	2,5	99,8	0,0005	0,03	50/220	80/235	98/260							20864.320
	2,5 (PCG)	99,8	0,0005	0,03	50/220	80/235	98/260							20864.420
	5 (ALU)	99,8	0,0005	0,03	50/220	80/235	98/260							20864.360
Methanol isocratic grade	2,5	99,8	0,0005	0,05	45/220	75/240	96/260							20837.320
	5 (HDPE)	99,8	0,0005	0,05	45/220	75/240	96/260							20837.360
Methanol isocratic grade	2,5	99,8	0,0005	0,05	60/210	80/220	90/230	92/235	95/240	98/250	98/260			152506X
N-Pentane	2,5	99	0,0005	0,01	10/200	40/210	70/215	90/222	98/240					83632.320
Propan-1-ol	2,5	99,8	0,0010	0,05	50/230	80/240	98/270							83635.320
Propan-2-ol	1	99,8	0,0005	0,10	50/220	80/230	98/250							20880.290
	2,5	99,8	0,0005	0,10	50/220	80/230	98/250							20880.320
Tetrahydrofuran	1	99,7	0,0005	0,10	40/230	60/240	70/250	80/260	96/280	98/300				28559.290
	2,5	99,7	0,0005	0,10	40/230	60/240	70/250	80/260	96/280	98/300				28559.320
Toluene	1	99,8	0,0005	0,02	70/300	80/310	95/330	98/350						83625.290
	2,5	99,8	0,0005	0,02	70/300	80/310	95/330	98/350						83625.320
2,2,4-Trimethylpentane	1	99,5	0,0005	0,01	70/220	80/235	98/255							83630.290
	2,5	99,5	0,0005	0,01	70/220	80/235	98/255							83630.320
Water	1	-	0,0005	-	Gradient at 254 nm, max. 2 mAU								23595.294	
	2,5	-	0,0005	-	Gradient at 254 nm, max. 2 mAU								23595.328	
Water super gradient**** grade	1	-	0,0005	-	Gradient at 220 nm, max. 5 mAU; at 254 nm, max. 2 mAU								83650.290	
	2,5	-	0,0005	-	Gradient at 220 nm, max. 5 mAU; at 254 nm, max. 2 mAU								83650.320	

Acetonitrile and methanol super gradient grade are also available in new large aluminium 10 and 28 l packs and 200 l stainless steel drums

* Gradient at 210 nm, max. 3 mAU

** Stabilised with 2-methyl-2-butene

*** Stabilised with ethanol

**** Specific conductivity 25 °C max. 1 µs/cm

**** Fluorescence test:

(as quinine) (254 nm) max. 1 ppb

(as quinine) (365 nm) max. 1 ppb

**** Colour: Max. 10 APHA

ALU: Aluminium can

HDPE: High density polyethylene bottle

PCG: Plastic coated glass bottle

all other products are supplied in glass bottles

In addition to the HPLC solvents listed above, VWR has a wide range of mobile phase modifiers and ion pair reagents. For more information, visit our website vwr.com.

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