

Acetonitrile

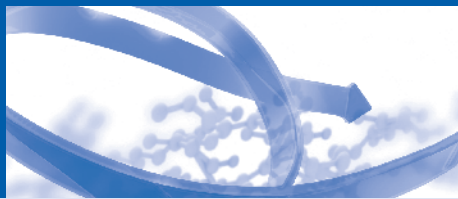
2-Propanol

Methanol

Water

## Optima<sup>®</sup> LC/MS Solvents

## OPTIMA LC/MS ADVANTAGE



FisherLOCK™ cap  
**locks in** quality, safety  
and convenience  
by providing a tight,  
tamper-evident seal.



### Ultra-high purity for more reliable analysis and cost savings

- Very low mass noise level contributed by Optima LC/MS Solvents for both positive and negative modes in total ion chromatography (TIC)
- Low levels of trace metals - including alkaline earth metals, which can interfere with MS ionization and MS interpretation
- Longer column life - due to minimal impurities in the mobile phase
- Low residue - clog-free operation of LC/MS system due to the absence of particles

### Manufactured and tested to the highest standards to ensure trouble-free analysis

- Tested specifically for LC/MS and LC/UV applications
- Stringent metal ion testing
- Assayed for free acid/alkali, nonvolatile matter, and other elements

### Accurate data and reproducible performance

- Minimal metal mass adduct formation for better analyte identification
- Smooth, flat baselines from low solvent backgrounds using diode array detector and mass spectrometry detector (MSD)
- High ionization efficiency of mass spectrometry
- Solvent purity consistent from lot to lot
- Proprietary manufacturing process to ensure the highest quality of the product

## Acetonitrile, Methanol, 2-Propanol (IPA), and Water

The joining of liquid chromatography (LC) with mass spectrometry (MS) has become an indispensable tool for various fields of research. The value of LC/MS derives from its ability to combine separation chemistry with selective mass ion detection. As instrumentation advances lead to ever-lower analyte detection limits, it is crucial for the chromatographer to consider the level of purity when selecting appropriate solvents for use in the LC/MS mobile phase. The Fisher Chemical product line offers superior high-purity solvents designed to meet the required purity level of advanced LC/MS systems.

### SPECIFICATION

#### Optima LC/MS Acetonitrile A955

Assay (by GC), min	99.9%
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Optical Abs, wavelength, nm	au max
280	0.005
254	0.005
230	0.01
225	0.015
220	0.015
215	0.025
210	0.03
205	0.04
200	0.05
195	0.15
190	1.00

LC/MS Gradient Suitability, nm	Single max peak (au)
254	0.0005
210	0.002

LC/MS at Positive Mode Max	50ppb Reserpine
LC/MS at Negative Mode Max	50ppb Aldicarb
Water (KF) %	0.01
Residue after Evaporation, ppm Max	0.8

Trace Ionic Impurities	ppb, Max
Aluminum (Al)	25
Barium (Ba)	5
Cadmium (Cd)	5
Calcium (Ca)	25
Chromium (Cr)	5
Cobalt (Co)	5
Copper (Cu)	5
Iron (Fe)	5
Lead (Pb)	5
Manganese (Mn)	5
Magnesium (Mg)	10
Nickel (Ni)	5
Potassium (K)	10
Silver (Ag)	5
Sodium (Na)	50
Tin (Sn)	5
Zinc (Zn)	10

Titrateable Acid, mEQ/g	0.008
Titrateable Base, mEQ/g	0.0006



### SPECIFICATION

#### Optima LC/MS Methanol A456

Assay (by GC), min	99.9%
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Optical Abs, wavelength, nm	au max
280	0.005
260	0.005
254	0.01
230	0.1
220	0.2
214	0.4
210	0.5

LC/MS Gradient Suitability, nm	Single max peak (au)
254	0.001
220	0.005

LC/MS at Positive Mode Max	50ppb Reserpine
LC/MS at Negative Mode Max	50ppb Aldicarb
Water (KF) %	0.02
Residue after Evaporation, ppm Max	1

Trace Ionic Impurities	ppb, Max
Aluminum (Al)	10
Barium (Ba)	10
Cadmium (Cd)	10
Calcium (Ca)	20
Chromium (Cr)	10
Cobalt (Co)	10
Copper (Cu)	10
Iron (Fe)	10
Lead (Pb)	10
Magnesium (Mg)	10
Manganese (Mn)	10
Nickel (Ni)	10
Potassium (K)	10
Silver (Ag)	10
Sodium (Na)	50
Tin (Sn)	10
Zinc (Zn)	10

Titrateable Acid, mEQ/g	0.0003
Titrateable Base, mEQ/g	0.0002



## SPECIFICATION

**Optima LC/MS 2-Propanol A461**

Assay	99.9%
Color (APHA), Max	5
<b>Optical Abs, wavelength, nm</b>	<b>au max</b>
254	0.005
230	0.05
220	0.1
210	0.4
LCMS Suitability	Pass Test
Water (KF) %	0.05
Residue after Evaporation, ppm, Max	1
Titrateable Acid or Base meq/g	0.0001

Trace Ionic Impurities	ppb, Max
Aluminum (Al)	10
Calcium (Ca)	10
Copper (Cu)	5
Iron (Fe)	5
Lead (Pb)	5
Magnesium (Mg)	5
Manganese (Mn)	5
Nickel (Ni)	5
Potassium (K)	10
Silver (Ag)	5
Sodium (Na)	50
Zinc (Zn)	10

**Specifications and chromatographic data**

Optima LC/MS Solvents have the lowest diode array detector (DAD) background with least drifting baseline; lowest mass spectrometry detector (MSD) noise level for both positive and negative modes in total ion chromatography (TIC); lowest metal ion content for many common elements; and lowest UV absorbances.

## SPECIFICATION

**Optima LC/MS Water W6**

Optical Abs, wavelength, nm	au max
280	0.005
260	0.005
254	0.005
240	0.01
230	0.01
220	0.01
210	0.01

LC/MS Gradient Suitability, nm	Single max peak (au)
254	0.0005
210	0.005

Protease	Not Detected
LC/MS at Positive Mode Max	50ppb Reserpine
LC/MS at Negative Mode Max	50ppb Aldicarb
Residue after Evaporation, ppm, Max	1

Trace Ionic Impurities	ppb, Max
Aluminum (Al)	10
Barium (Ba)	10
Cadmium (Cd)	10
Calcium (Ca)	20
Chromium (Cr)	10
Cobalt (Co)	10
Copper (Cu)	10
Iron (Fe)	10
Lead (Pb)	10
Magnesium (Mg)	10
Manganese (Mn)	10
Nickel (Ni)	10
Potassium (K)	10
Silver (Ag)	10
Sodium (Na)	20
Tin (Sn)	10
Zinc (Zn)	10
Total Halogens (as chloride)	Not Detected



Cross-References to Competitor Products			
<b>Acetonitrile</b>			
	1L	2.5L	4L
Fisher Chemical	A955-1	A955-212	A955-4
EMD	AX0156-6	NA	AX0156-1
Merck	1000291000	1000292500	NA
J.T. Baker	9829-2	NA	9829-3
Sigma-Aldrich	34967-1L	34967-2.5L	34967-4x4L
Biosolve	12041	NA	NA
<b>Methanol</b>			
	1L	2.5L	4L
Fisher Chemical	A456-1	A456-212	A456-4
EMD	MX0486-6	NA	MX0486-6
Merck	1060351000	1060352500	NA
J.T. Baker	9830-2	NA	9830-3
Sigma-Aldrich	34966-1L	34966-2.5L	34966-4x4L
Biosolve	136841	NA	NA
<b>2-propanol</b>			
	1L	2.5L	4L
Fisher Chemical	A461-1	A461-212	A461-4
J.T. Baker	9627-2	NA	9627-3
Sigma-Aldrich	34965-1L	34965-2.5L	NA
Biosolve	162641	NA	162641
<b>Water</b>			
	1L	2.5L	4L
Fisher Chemical	W6-1	W6-212	W6-4
EMD	WX0001-6	NA	WX0001-1
J.T. Baker	9831-2	NA	9831-3
Sigma-Aldrich	39253-1L	NA	39253-4x4L
Biosolve	232141	NA	NA

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