Agilent InfinityLab

Maximize Your Efficiency with Precision Solvents

Agilent InfinityLab solvents for HPLC and LC/MS

Agilent InfinityLab gradient grade HPLC solvents

Precision Solvents for Superior HPLC & UHPLC

Choosing the right solvent is pivotal in achieving optimal sample separation, as contamination can lead to ghost peaks or deposits, resulting in costly downtime and repairs. InfinityLab gradient grade HPLC solvents are specially formulated and co-designed by MilliporeSigma, which operates as the US and Canada Life Science business of Merck KGaA, Darmstadt, Germany to achieve superior performance for analytical UHPLC applications with Agilent Infinity instrumentation and column chemistries.

Experience the benefits

- Optimized and tested for Agilent UHPLC instruments, allowing for seamless integration.
- Improved column and capillary lifetime, promoting cost-effectiveness.
- Excellent lot-to-lot reproducibility, ensuring consistent results.
- Lowest impurity levels, reducing ghost peaks in gradient runs.
- 0.2 µm pre-filtered, safeguarding your system from contaminants and clogging.
- Shipped in high-quality amber borosilicate glass bottles, preserving solvent integrity.
- Available in 2.5 L and 4 L bottles,* providing convenience and ample supply for your lab's needs.

* Subject to regional availability, contact your local sales representative for more information.

InfinityLab Methanol Gradient Grade for LC

InfinityLab Methanol gradient grade for LC offers outstanding performance and is commonly used in reversed-phase UHPLC applications. Its water-miscible, polar protic properties make it an ideal choice, and its excellent lot-to-lot reproducibility ensures consistent and reliable results.

Globally Harmonized System of Classification and Labeling of Chemicals (GHS) hazard statements

GHS02
Flammables

GHS06
Accute Toxicity

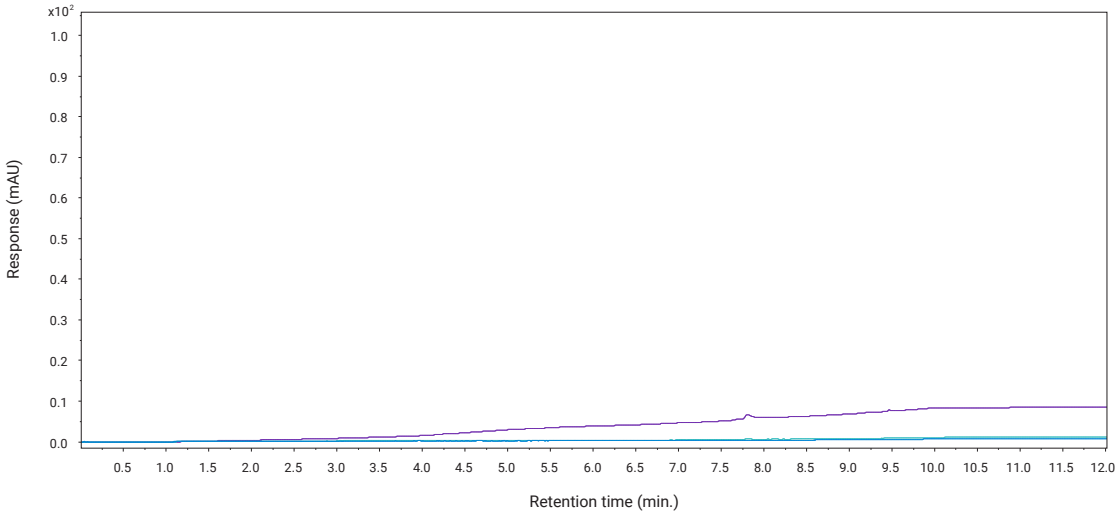
GHS08
Health Hazard

Properties	
Names	Methyl alcohol
Formula	CH_3OH
CAS number	67-56-1
Molecular weight	32.04 g/mol
Beilstein	1098229
EC index number	200-659-6
Hazard statements	H225, H301 + H311 + H33, H370
Precautionary statements	P210, P233, P240, P241, P242, P243, P260, P264, P270, P271, P280, P301+P310+P330, P303+P361+P353, P304+P340+P311, P307+P311, P362, P370+P378, P403+P233, P403+P235, P405, P501
Flash point	49.5 °F or 9.7 °C (closed cup)
Hazard classifications	- Acute toxicity, dermal; Category 3 - Acute toxicity, inhalation; Category 3 - Acute toxicity, oral; Category 3 - Flammable liquid; Category 2 - STOT SE 1
Storage class codes	Class 3: Flammable liquids
Water hazard classes (WGK)	WGK 2

Pack size*	Part number
4 L bottle, 4/pack	5191-5110
4 L bottle, 1/pack	5191-5110-001
2.5 L bottle, 4/pack	5191-5110-425
2.5 L bottle, 1/pack	5191-5110-002

* Contact your local sales representative for regional availability.

Water/methanol gradient overlay at 225 nm, 254 nm, and 280 nm (0-100 mAU)



Conditions
Column: InfinityLab Poroshell 120 EC-C18, 2.1x100 mm, 2.7 µm
Run time: 15 min
Flow rate: 0.5 mL/min
Column temperature: 40°C
DAD: 10 Hz, Spectra, 190-400, 1 nm steps

Gradient
0-0.5 min: 5%B
0.5-9.5 min: 5-95%B
9.5-12 min: 95%B
12-12.5 min: 95-5%B

Figure 1. Gradient from 5-95% methanol. Detection wavelengths: 225 nm (purple), 254 nm (turquoise), 280 nm (blue). Low base absorbance and minimum ghost peaks.

InfinityLab Methanol gradient grade for LC specification

Parameter	Specification
Identity (by Infrared Spectroscopy)	Identity confirmed
Purity (by Gas Chromatography)	≥ 99.9 %
Gradient suitability (at 235 nm)	≤ 2.0 mAU
Gradient suitability (at 254 nm)	≤ 1.0 mAU
Absorbance (at 210 nm)	≤ 0.699 AU
Absorbance (at 225 nm)	≤ 0.170 AU
Absorbance (at 254 nm)	≤ 0.013 AU
Fluorescence (as quinine at 254 nm)	≤ 1.0 ppb
Fluorescence (as quinine at 365 nm)	≤ 0.5 ppb
Residue on evaporation	≤ 2.5 ppm
Water	≤ 0.02 %
Color	Colorless
Acidity	≤ 0.2 µeq/g
Alkalinity	≤ 0.2 µeq/g

Filtered through 0.2 µm filter. Suitable for all Agilent UHPLC and HPLC Instruments.

InfinityLab Acetonitrile Gradient Grade for LC

InfinityLab Acetonitrile gradient grade for LC is a water-miscible, polar aprotic solvent with high UV transmittance properties. Its low viscosity provides a greater reduction in back pressure, and offers high elution strength for reversed phase UHPLC applications with excellent lot-to-lot reproducibility.

Globally Harmonized System of Classification and Labeling of Chemicals (GHS) hazard statements

GHS02
Flammables

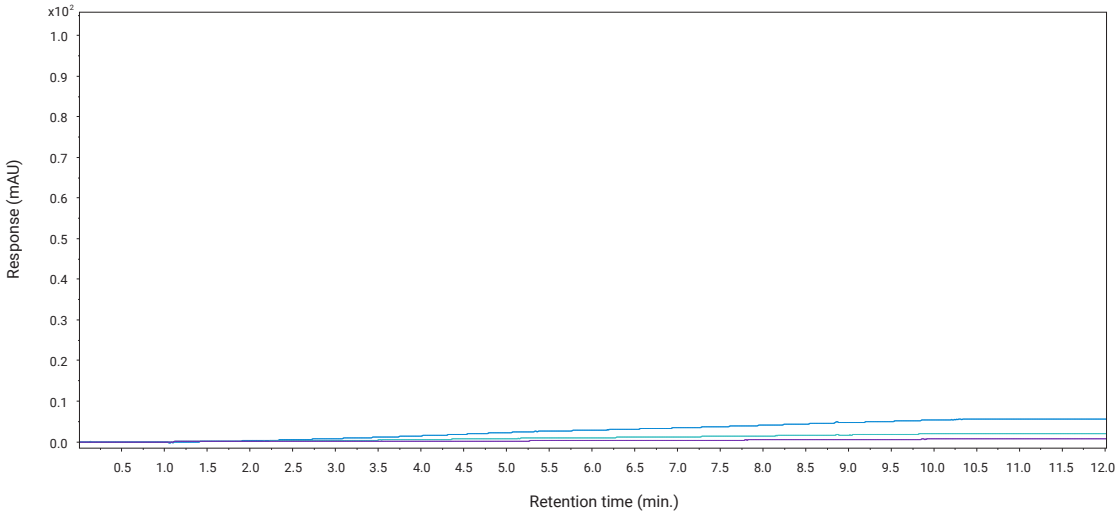
GHS07
Irritant

Properties	
Names	Cyanomethane, methyl cyanide, ACN, ethyl nitrile
Formula	CH_3CN
CAS number	75-05-8
Molecular weight	41.05 g/mol
Beilstein	741857
EC index number	200-835-2
Hazard statements	H225, H302 + H312 + H332, H319
Precautionary statements	P210, P233, P240, P241, P242, P243, P260, P264, P270, P271, P280, P301+P310+P330, P303+P361+P353, P304+P340+P311, P307+P311, P362, P370+P378, P403+P233, P403+P235, P405, P501
Flash point	35.6 °F or 2.0 °C (closed cup)
Hazard classifications	- Acute toxicity, dermal; Category 4 - Acute toxicity, inhalation; Category 4 - Acute toxicity, oral; Category 4 - Eye irritant; Category 2 - Flammable liquid; Category 2
Storage class codes	Class 3: Flammable liquids
Water hazard classes (WGK)	WGK 2

Pack size*	Part number
4 L bottle, 4/pack	5191-5100
4 L bottle, 1/pack	5191-5100-001
2.5 L bottle, 4/pack	5191-5100-425
2.5 L bottle, 1/pack	5191-5100-002

* Contact your local sales representative for regional availability.

Water/acetonitrile gradient overlay at 225 nm, 254 nm, and 280 nm (0-100 mAU)



Conditions
Column: InfinityLab Poroshell 120 EC-C18, 2.1x100 mm, 2.7 µm
Run time: 15 min
Flow rate: 0.5 mL/min
Column temperature: 40°C
DAD: 10 Hz, Spectra, 190-400, 1 nm steps

Gradient
0-0.5 min: 5%B
0.5-9.5 min: 5-95%B
9.5-12 min: 95%B
12-12.5 min: 95-5%B

Figure 2. Gradient from 5-95% acetonitrile. Detection wavelengths: 210 nm (blue), 225 nm (turquoise), 254 nm (purple). Low base absorbance and minimum ghost peaks.

InfinityLab Acetonitrile gradient grade for LC specification

Parameter	Specification
Identity (by Infrared Spectroscopy)	Identity confirmed
Purity (by Gas Chromatography)	≥ 99.9 %
Gradient suitability (at 210 nm)	≤ 1.0 mAU
Gradient suitability (at 254 nm)	≤ 0.5 mAU
Absorbance (at 195 nm)	≤ 0.097 AU
Absorbance (at 210 nm)	≤ 0.040 AU
Absorbance (at 225 nm)	≤ 0.010 AU
Fluorescence (as quinine at 254 nm)	≤ 1.0 ppb
Fluorescence (as quinine at 365 nm)	≤ 0.5 ppb
Residue on evaporation	≤ 2.5 ppm
Water	≤ 0.02 %
Color	Colorless
Acidity	≤ 0.2 µeq/g
Alkalinity	≤ 0.2 µeq/g

Filtered through 0.2 µm filter. Suitable for all Agilent UHPLC and HPLC Instruments.

InfinityLab Water Gradient Grade for LC

Water is an essential composition of reversed-phase mobile phases. Organic impurities, inorganic ions, and particle contamination can compromise UHPLC results by generating ghost peaks and impacting column performance. Using pre-filtered InfinityLab Water gradient grade for LC with controlled ions and total organic carbon content protects against column and capillary clogging.

Properties	
Names	Deionized water
Formula	H_2O
CAS Number	75-05-8
Molecular Weight	18.02 g/mol
Beilstein	2050024

Pack size*	Part number
4 L bottle, 4/pack	5191-5120
4 L bottle, 1/pack	5191-5120-001
2.5 L bottle, 4/pack	5191-5120-425
2.5 L bottle, 1/pack	5191-5120-002

* Contact your local sales representative for regional availability.

InfinityLab Water gradient grade for LC specification

Parameter	Specification
Gradient suitability (at 210 nm)	≤ 5 mAU
Gradient suitability (at 254 nm)	≤ 0.5 mAU
Absorbance (at 210 nm)	≤ 0.020 AU
Fluorescence (as quinine at 254 nm)	≤ 1.0 ppb
Fluorescence (as quinine at 365 nm)	≤ 0.5 ppb
Residue on evaporation	≤ 5 ppm
Total organic carbon (TOC)	≤ 30 ppb
Aluminum (Al)	≤ 10 ppb
Calcium (Ca)	≤ 100 ppb
Iron (Fe)	≤ 5 ppb
Potassium (K)	≤ 10 ppb
Magnesium (Mg)	≤ 20 ppb
Sodium (Na)	≤ 200 ppb
Other metals (ICP-MS)	Suitable for LC analysis (internal specification: any other metal: ≤ 5 ppm)
Chloride (Cl^-)	≤ 10 ppb
Nitrate (NO_3^-)	≤ 10 ppb
Sulfate (SO_4^{2-})	≤ 10 ppb
Phosphate (PO_4^{3-})	≤ 10 ppb

Filtered through 0.2 µm filter. Suitable for all Agilent UHPLC and HPLC Instruments.

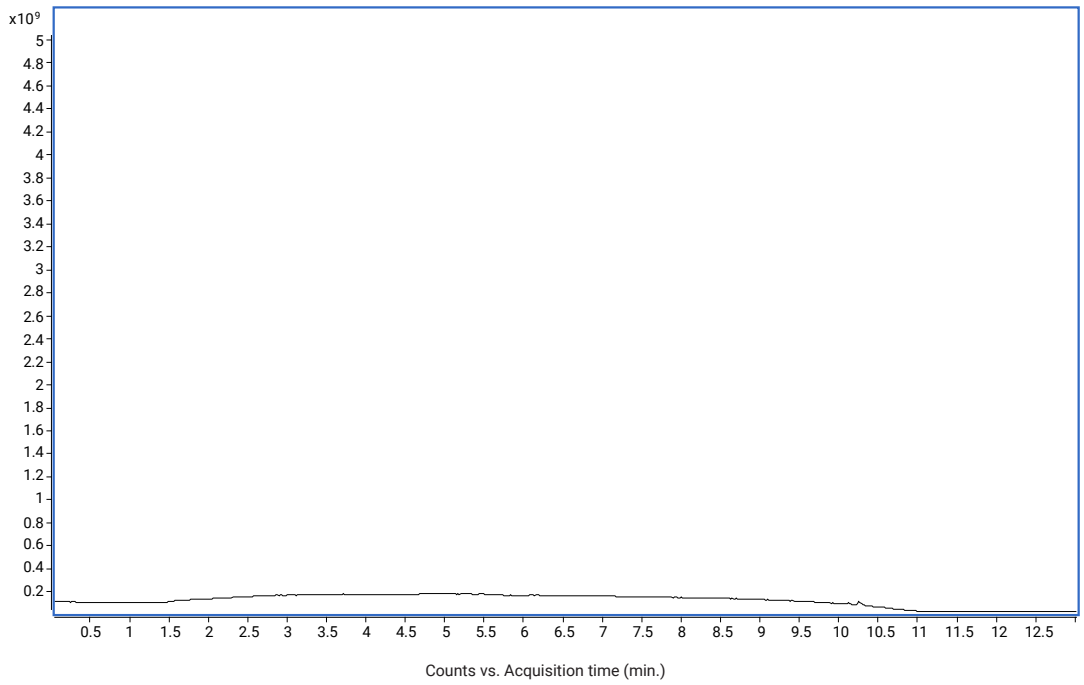
Precision Solvents for Superior LC/MS

Modern LC/MS technology is making remarkable strides, setting unprecedented detection limits and raising the bar for solvent and additive purity requirements. Agilent InfinityLab solvents for LC/MS are co-designed by MilliporeSigma, which operates as the US and Canada Life Science business of Merck KGaA, Darmstadt, Germany, to safeguard against common contaminants such as salt, polymer compounds, surfactants, and plasticizers—helping you achieve unparalleled quality, purity, and lot-to-lot reproducibility.

Experience the benefits

- Optimized and tested for Agilent LC/MS instruments, allowing for seamless integration.
- Improved column and capillary lifetime, promoting cost-effectiveness.
- Minimized background noise and ion suppression.
- Excellent lot-to-lot reproducibility, ensuring consistent results.
- Lowest impurity levels, reducing ghost peaks in gradient runs.
- 0.2 µm pre-filtered, safeguarding your system from contaminants and clogging.
- Shipped in clean, clear borosilicate 1 L glass bottles.

Water/acetonitrile positive ESI mode

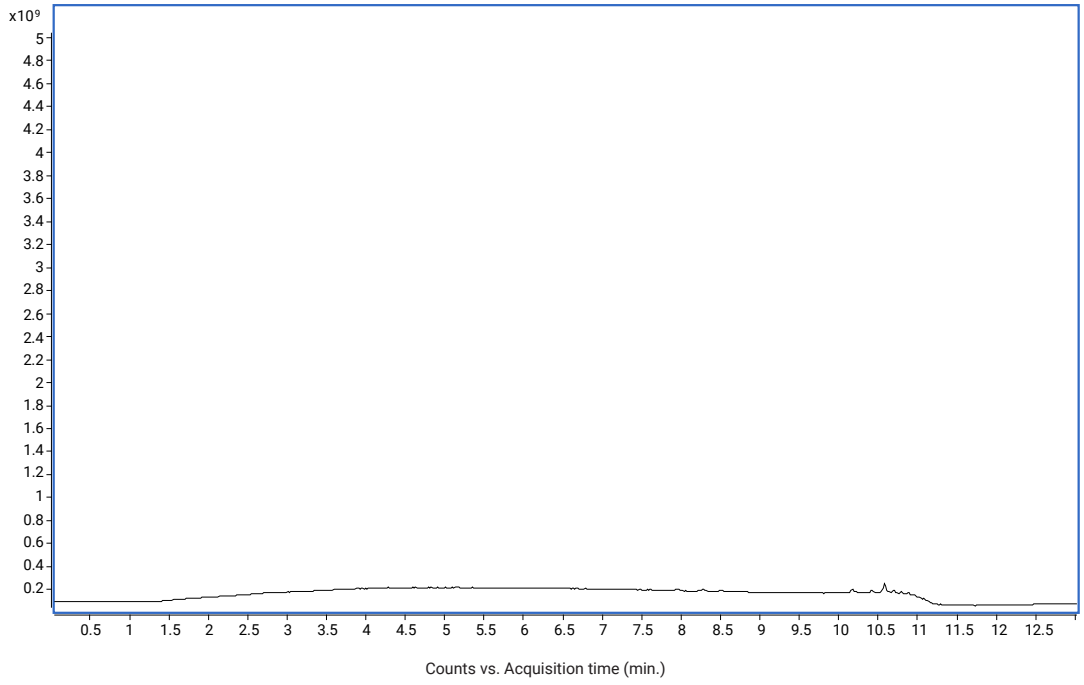


Conditions
Column: InfinityLab Poroshell 120 EC-C18, 2.1x100 mm, 2.7 µm
Run time: 15 min
Flow rate: 0.5 mL/min
Column temperature: 40°C

Gradient
0-0.5 min: 5%B
0.5-9.5 min: 5-95%B
9.5-12 min: 95%B
12-12.5 min: 95-5%B

Figure 3. Gradient from 5-95% acetonitrile. Low total ion count and minimum ghost peaks.

Water/methanol positive ESI mode



Conditions
Column: InfinityLab Poroshell 120 EC-C18, 2.1x100 mm, 2.7 µm
Run time: 15 min
Flow rate: 0.5 mL/min
Column temperature: 40°C

Gradient
0-0.5 min: 5%B
0.5-9.5 min: 5-95%B
9.5-12 min: 95%B
12-12.5 min: 95-5%B

Figure 4. Gradient from 5-95% methanol. Low total ion count and minimum ghost peaks.

InfinityLab Methanol for LC/MS

InfinityLab Methanol for LC/MS is tested and specified for UHPLC/MS applications. It is packed in borosilicate glass bottles to achieve excellent detection limits and ensure the lowest levels of trace metal impurities and contaminants.

Globally Harmonized System of Classification and Labeling of Chemicals (GHS) hazard statements

GHS02
Flammables

GHS06
Accute Toxicity

GHS08
Health Hazard

Properties	
Names	Methyl alcohol
Formula	CH_3OH
CAS number	67-56-1
Molecular weight	32.04 g/mol
Beilstein	1098229
EC index number	200-659-6
Hazard statements	H225, H301 + H311 + H33, H370
Precautionary statements	P210, P233, P240, P241, P242, P243, P260, P264, P270, P271, P280, P301+P310+P330, P303+P361+P353, P304+P340+P311, P307+P311, P362, P370+P378, P403+P233, P403+P235, P405, P501
Flash point	49.5 °F or 9.7 °C (closed cup)
Hazard classifications	- Acute toxicity, dermal; Category 3 - Acute toxicity, inhalation; Category 3 - Acute toxicity, oral; Category 3 - Flammable liquid; Category 2 - STOT SE 1
Storage class codes	Class 3: Flammable liquids
Water hazard classes (WGK)	WGK 2

Pack size*	Part number
1 L bottle, 6/pack	5191-5111
1 L bottle, 1/pack	5191-5111-001

* Contact your local sales representative for regional availability.

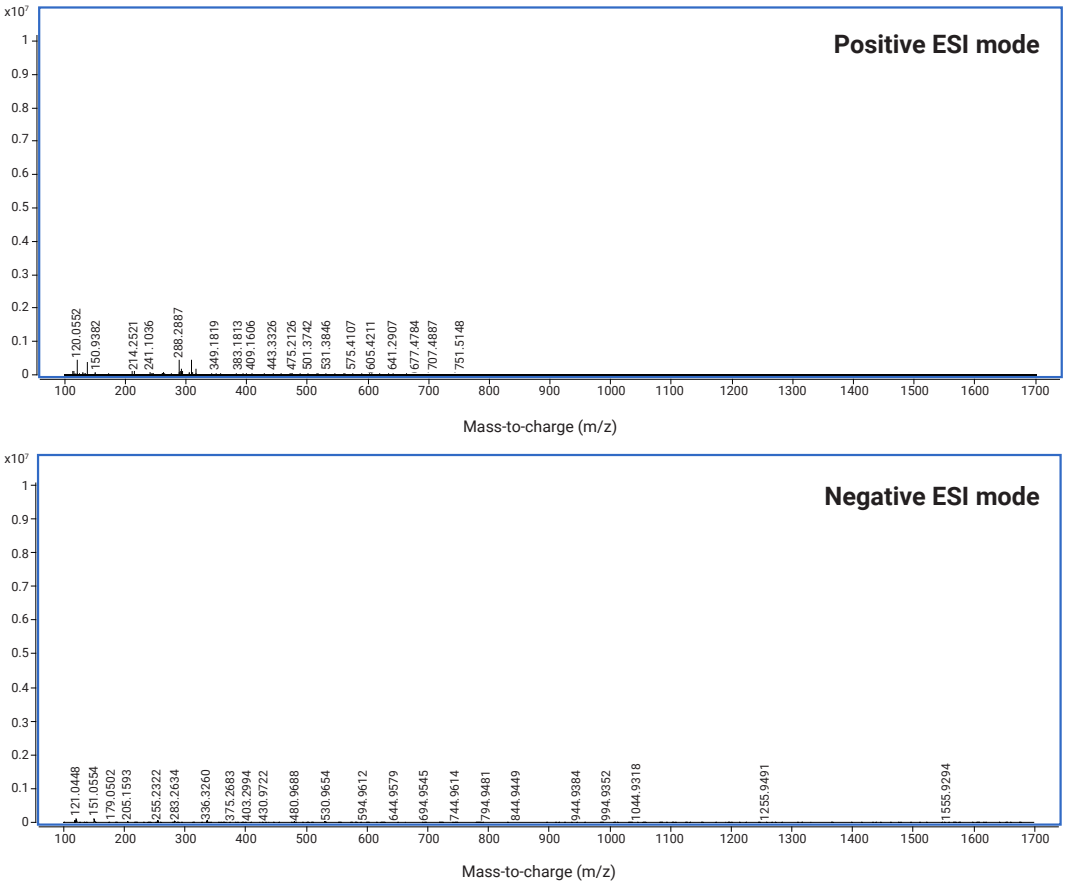


Figure 5. MS spectrum of 100% methanol (no column) at m/z 100-1700 showing very low impurity levels at positive (top) and negative (bottom) ionization mode.

InfinityLab Methanol for LC/MS specification

Parameter	Specification
Identity (by infrared spectroscopy)	Identity confirmed
Purity (by gas chromatography)	≥ 99.9%
LC/MS positive mode (tested with Reserpine)	Suitable for LC/MS analysis
LC/MS negative mode (tested with Reserpine)	Suitable for LC/MS analysis
Gradient suitability (at 230 nm)	≤ 2.0 mAU
Gradient suitability (at 254 nm)	≤ 0.5 mAU
Residue on evaporation	≤ 1 ppm
Water	≤ 0.01%
Fluorescence (as quinine at 254 nm)	≤ 0.5 ppb
Fluorescence (as quinine at 365 nm)	≤ 0.5 ppb
Aluminum (Al)	≤ 5 ppb
Calcium (Ca)	≤ 5 ppb
Iron (Fe)	≤ 5 ppb
Magnesium (Mg)	≤ 5 ppb
Potassium (K)	≤ 5 ppb
Sodium (Na)	≤ 25 ppb
Acidity	≤ 1 µeq/g
Alkalinity	≤ 0.2 µeq/g

Filtered through 0.2 µm filter. Suitable for all Agilent LC/MS instruments.

InfinityLab Acetonitrile for LC/MS

InfinityLab Acetonitrile for LC/MS is tested and specified for UHPLC/MS applications. It is packed in borosilicate glass bottles to achieve excellent detection limits and ensure the lowest levels of trace metal impurities and contaminants.

Globally Harmonized System of Classification and Labeling of Chemicals (GHS) hazard statements

GHS02
Flammables

GHS07
Irritant

Properties	
Names	Cyanomethane, methyl cyanide, ACN, ethyl nitrile
Formula	CH_3CN
CAS number	75-05-8
Molecular weight	41.05 g/mol
Beilstein	741857
EC index number	200-835-2
Hazard statements	H225, H302 + H312 + H332, H319
Precautionary statements	P210, P233, P240, P241, P242, P243, P260, P264, P270, P271, P280, P301+P310+P330, P303+P361+P353, P304+P340+P311, P307+P311, P362, P370+P378, P403+P233, P403+P235, P405, P501
Flash point	35.6 °F or 2.0 °C (closed cup)
Hazard classifications	- Acute toxicity, dermal; Category 4 - Acute toxicity, inhalation; Category 4 - Acute toxicity, oral; Category 4 - Eye irritant; Category 2 - Flammable liquid; Category 2
Storage class codes	Class 3: Flammable liquids
Water hazard classes (WGK)	WGK 2

Pack size*	Part number
1 L bottle, 6/pack	5191-5101
1 L bottle, 1/pack	5191-5101-001

* Contact your local sales representative for regional availability.

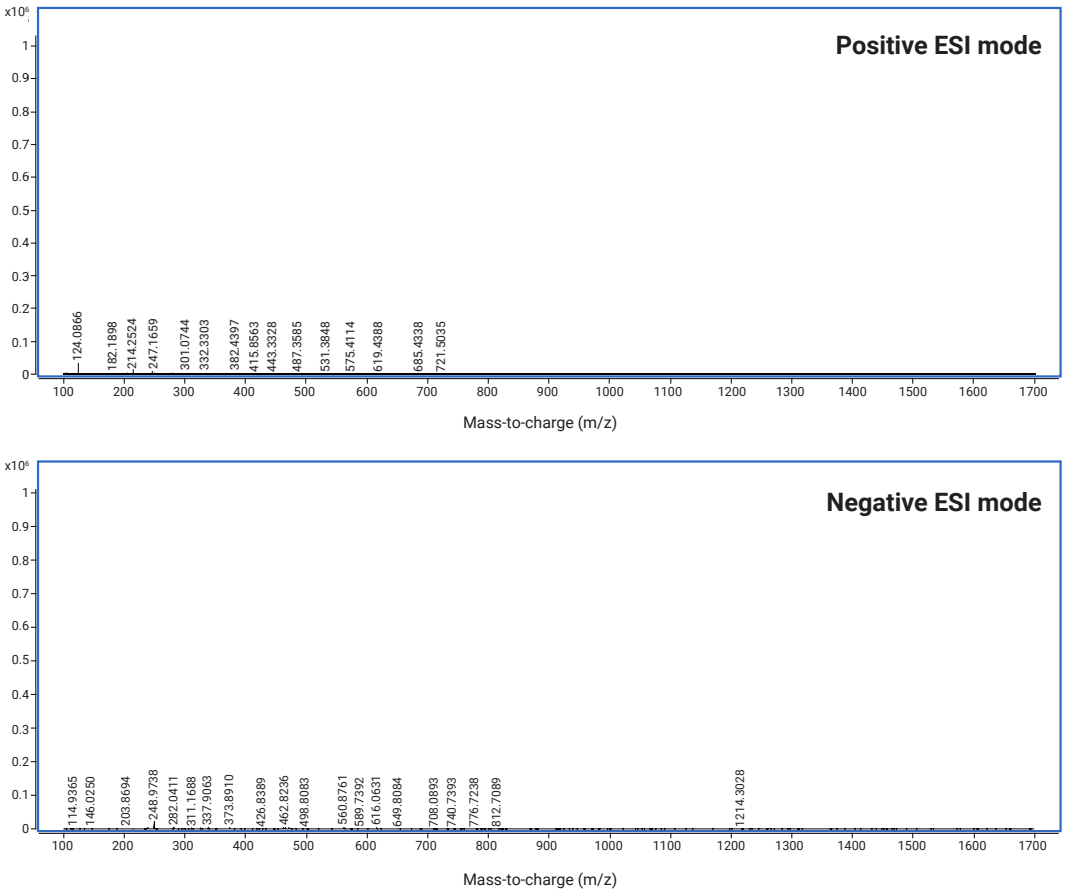


Figure 6. MS spectrum of 100% acetonitrile (no column) at m/z 100-1700 showing very low impurity levels at positive (top) and negative (bottom) ionization mode.

InfinityLab Acetonitrile for LC/MS specification

Parameter	Specification
Identity (by infrared spectroscopy)	Identity confirmed
Purity (by gas chromatography)	≥ 99.9%
LC/MS positive mode (tested with Reserpine)	Suitable for LC/MS analysis
LC/MS negative mode (tested with Reserpine)	Suitable for LC/MS analysis
Gradient suitability (at 230 nm)	≤ 1.0 mAU
Gradient suitability (at 254 nm)	≤ 0.2 mAU
Residue on evaporation	≤ 1 ppm
Water	≤ 0.01%
Fluorescence (as quinine at 254 nm)	≤ 0.3 ppb
Fluorescence (as quinine at 365 nm)	≤ 0.3 ppb
Aluminum (Al)	≤ 5 ppb
Calcium (Ca)	≤ 5 ppb
Iron (Fe)	≤ 5 ppb
Magnesium (Mg)	≤ 5 ppb
Potassium (K)	≤ 5 ppb
Sodium (Na)	≤ 25 ppb
Acidity	≤ 1 µeq/g
Alkalinity	≤ 0.2 µeq/g

Filtered through 0.2 µm filter. Suitable for all Agilent LC/MS instruments.

InfinityLab Water for LC/MS

The utmost water quality is crucial for LC/MS. Inorganic ion contaminants and variations in local water quality can adversely affect LC/MS outcomes. Experience the pinnacle of purity and consistent lot-to-lot performance for RP-LC/MS applications with InfinityLab Water for LC/MS.

Properties	
Names	Deionized water
Formula	H_2O
CAS Number	75-05-8
Molecular Weight	18.02 g/mol
Beilstein	2050024

Pack size*	Part number
1 L bottle, 6/pack	5191-5121
1 L bottle, 1/pack	5191-5121-001

* Contact your ocal sales representative for regional availability.

InfinityLab Water for LC/MS specification

Parameter	Specification
LC/MS positive mode (tested with Reserpine)	Suitable for LC/MS analysis
LC/MS negative mode (tested with Reserpine)	Suitable for LC/MS analysis
Gradient suitability (at 210 nm)	≤ 5 mAU
Gradient suitability (at 254 nm)	≤ 0.5 mAU
Fluorescence (as quinine at 254 nm)	≤ 1.0 ppb
Fluorescence (as quinine at 365 nm)	≤ 0.5 ppb
Residue on evaporation	≤ 5 ppm
Aluminum (Al)	≤ 10 ppb
Calcium (Ca)	≤ 100 ppb
Iron (Fe)	≤ 5 ppb
Potassium (K)	≤ 10 ppb
Magnesium (Mg)	≤ 20 ppb
Sodium (Na)	≤ 200 ppb

Filtered through 0.2 µm filter. Suitable for all Agilent LC/MS instruments.

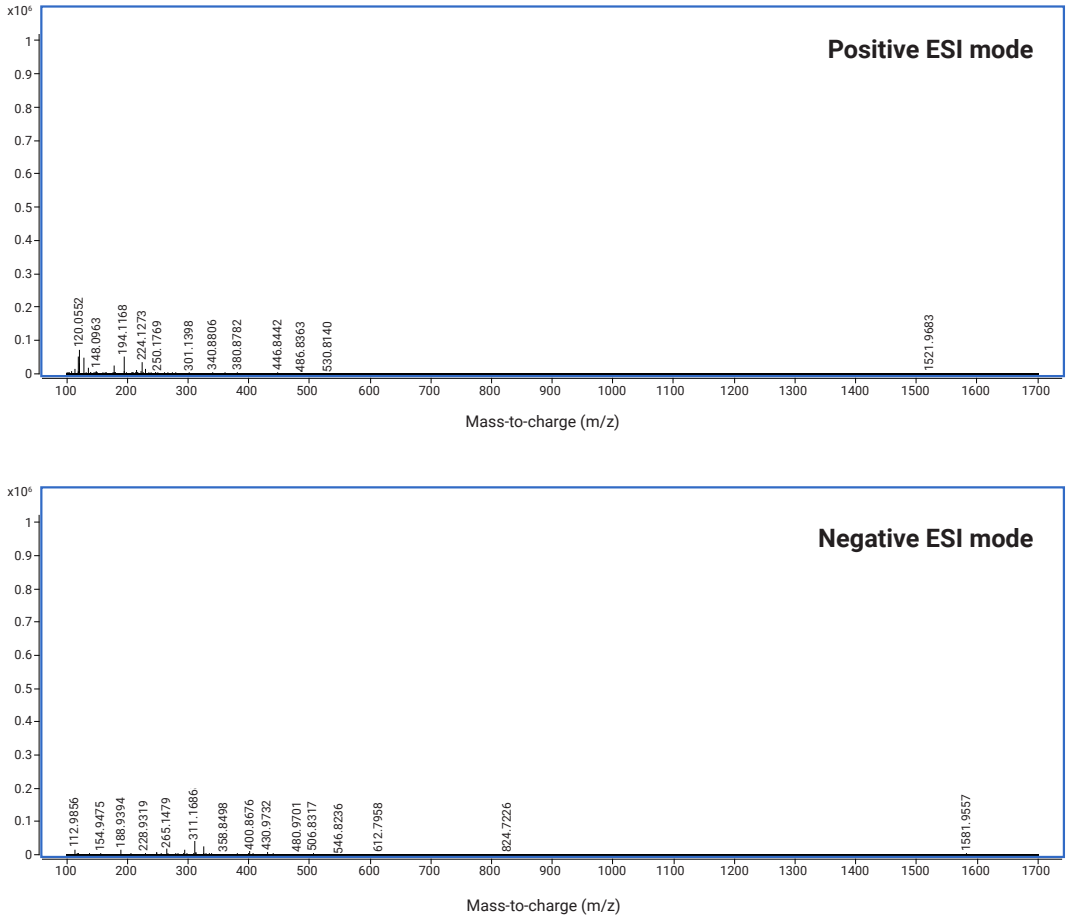


Figure 7. MS spectrum of 100% water (no column) at m/z 100-1700 showing very low impurity levels at positive (top) and negative (bottom) ionization mode.

Technical Considerations

Selecting mobile phases

In HPLC and UHPLC reversed-phase chromatography, mobile phases typically consist of water and an organic modifier, such as acetonitrile or methanol. Work with HPLC gradient grade or LC/MS solvents and modifiers for optimal results. The choice of mobile phase significantly affects selectivity differences, sample retention, and solubility. Maintaining control over the pH and ionic strength of the aqueous portion is crucial for developing rugged methods that are insensitive to minor variations.

With ionic compounds, retention of typical species experiences significant changes with pH. For stable retention and selectivity, it is essential to control the pH within the range of 2 to 4, making this pH range ideal for starting method development with most samples, including basic compounds and weak acids. To ensure reproducibility, the pH used should be within ± one pH unit above or below the pKa or pKb of the solutes being separated.

If the pKas of your analytes are unknown, testing multiple mobile phase pH values may yield the best results. Most reversed-phase columns can tolerate pH ranges of 2-8 or more, allowing ample flexibility to find the optimum mobile phase pH for your separation. When determining the mobile phase pH, measure and adjust it on the aqueous component before mixing it with organic modifiers for accurate and reproducible outcomes.

Working with mobile phases

When starting with a new column, use solvents compatible with the shipping solvent. To prevent buffer precipitation within the column, avoid pumping the buffer through a column shipped or stored in 100% organic for reversed-phase operation. Instead, follow our recommended two-step equilibration process: start by equilibrating the column without the buffer, then proceed to equilibrate with the buffered mobile phase. For CN and NH2 columns, ensure your solvents are miscible with the shipping solvents before equilibration. To convert a normal-phase column to a reversed-phase column, consider flushing it with a mutually miscible solvent like isopropanol, followed by equilibration using your desired mobile phase.

Mixing mobile phases

Mobile phase composition can vary due to something as straightforward as the mixing process in your lab. For example, when creating a 50/50 mixture of methanol and water offline, measuring each volume separately using clean glassware before combining them is critical. This extra measure ensures that the MeOH:H2O mixture equals the sum of its components. Mixing them in the same container may result in a mobile phase with a different total volume, thus leading to variations in composition between the two differently prepared mobile phases.

Degassing mobile phases

Degassing your mobile phase is critical. Dissolved gas in the solvents can come out of solution, forming an air bubble in the flow path that can interfere with the pump or detector's performance. Fortunately, most modern LC systems have built-in degassers; if the degasser is bypassed, absent, or not working correctly, be sure to sparge with helium or use some other means to degas.

Scale from analytical to preparative with ease

Agilent InfinityLab Poroshell 120 LC columns

Agilent InfinityLab Poroshell 120 columns are packed with superficially porous particles (SPP), making them ideal for reversed-phase LC separations. They offer exceptional efficiency and reliability, and come in a broad range of chemistries, including various C18 columns and other unique phases. They are available in three particle sizes: 1.9 µm, 2.7 µm, and 4 µm, providing comprehensive selectivity for scalable LC method development. From traditional HPLC and UHPLC to ultralow dispersion UHPLC/MS, Agilent InfinityLab Poroshell 120 columns can help you meet your purification goals.

For more information visit: **www.agilent.com/chem/poroshell-lc**

A safe, healthy lab is a productive lab

Agilent InfinityLab supplies for chemical safety

Agilent provides a complete portfolio of solvent management solutions, including high-quality solvent bottles, Stay Safe caps, solvent tubing, and solvent filtration products. They are perfectly designed to complement InfinityLab HPLC and UHPLC series instruments, ensuring seamless performance and enhanced lab efficiency.

For more information visit: **www.agilent.com/chem/stay-safe**

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