

## J.T. Baker® Brand

# High-Purity Solvents and Reagents

Lab-Optimized Performance:  
Enhance separation and reproducibility, and maximize the sensitivity and detecting power of your instrumentation



J.T. Baker® high-purity solvents and reagents give you the performance you need - minimizing the risk of contaminants that can limit accuracy while maximizing instrument sensitivity and detection power in key applications:

**UHPLC and LC/MS analysis** — J.T. Baker® ULTRA LC/MS products are ideal for cutting-edge applications, such as proteomics, pharmacokinetics, clinical research and drug discovery, while J.T. Baker® LC/MS products are function-tested and optimized for minimal impurities and interference-free baselines, giving you performance you can trust.

**HPLC analysis** — With J.T. Baker® pure HPLC products, you can improve your processes, obtain high selectivity, reproducibility and accuracy of results.

**GC analysis** — J.T. Baker® solvents and reagents are fully characterized and lot controlled by ECD, FID, or other method-specific detectors to deliver the highest level of purity and lot-to-lot consistency. Low UV absorbance, residue after evaporation and low water levels will create a flat base line and extend column life in demanding gas chromatography analysis.

**Spectrometry** — J.T. Baker® solvents are manufactured for lot-to-lot consistency, and to minimize contaminants that can interfere with UV, and in some cases IR, spectra, including residue after evaporation, and acid and base concentrations.

# J.T.Baker® High-Purity Solvents – Grade Recommendations

Application	J.T.Baker® BAKER ANALYZED™ HPLC Reagents	J.T.Baker® BAKER ANALYZED™ LC/MS Reagents	J.T.Baker® BAKER ANALYZED™ ULTRA LC/MS Reagents	J.T.Baker® ULTRA RESI- ANALYZED™ Reagents
HPLC - Conventional	+++	+		
HPLC - QC/QA	+++	+		
Gas Chromatography (GC)				+++
HPLC - Research	+++	++	+++	
LC/MS - QC/QA	++	+++	+	
LC/MS - Research		+++	++	
LC/MS - Critical Research		++	+++	
UHPLC - QC/QA	+++	+	+	
UHPLC - General Research	+++	+	+++	
UHPLC - Critical Research		+	+++	

+ Suitable

++ Preferred

+++ Ideal

**General** – Traditional applications where quality is important, primarily assay and UV

**Conventional** – Does not require extensive characterization of trace metals. Filtration at 0.2 um is sufficient. Assay, UV and RAE (Residue after evaporation) are important specifications. Common in open-access/high-volume laboratories, initial investigations and compound management.

**Critical** – Requires solvents to have characterization of trace metals, precise function testing and 0.1 um filtration for UHPLC applications. Examples of critical research are work in proteomics, small molecule drug discovery and bioanalysis.

## J.T.Baker® High-Purity Solvents – Testing Parameters

Testing Parameters*	J.T.Baker® BAKER ANALYZED™ HPLC Reagents	J.T.Baker® BAKER ANALYZED™ LC/MS Reagents	J.T.Baker® BAKER ANALYZED™ ULTRA LC/MS Reagents	J.T.Baker® ULTRA RESI- ANALYZED™ Reagents
Color (APHA)		X	X	
ECD and/or FID Sensitive Impurities				X
For Organic Residue Analysis				X
ESI- Positive mode		X	X	
ESI- Negative mode			X	
Filtered through a 0.1 micron filter			X	
Fluorescence Trace Impurities	X	X	X	
Gradient Test	X	X	X	
Residue after Evaporation	X	X	X	X
Substances Reducing Permanganate				X
Trace Metal Impurities (ppb)		X	X	

\* The testing parameters are typical for the grades listed in the table.

For actual testing parameters, please refer to the product specification sheet.



### UHPLC and LC/MS Analysis

High-purity J.T.Baker® solvents and blends are specifically designed to ensure optimal instrument performance for LC/UV, LC/MS and Ultra High-Pressure Liquid Chromatography (UHPLC) applications.

The J.T.Baker® ULTRA LC/MS product line was developed for the most demanding UHPLC and mass spectrometry (MS) applications, such as proteomics, drug discovery, pharmacokinetics, and clinical research. ULTRA LC/MS solvents are designed to extend the useful life of UHPLC columns by significantly reducing particles and minimizing the occurrence of erroneous peaks caused by the formation of metal adducts or the presence of organic impurities, such as phthalates or polyethylene glycol.

ULTRA LC/MS products undergo advanced suitability testing with both electrospray positive and negative modes to optimize detection of extraneous organic impurities. The result is minimal baseline noise, reduced ion suppression, and improved sensitivity to both small- and large-molecule detection.

Solvents are packaged in borosilicate bottles to minimize leaching of trace metal impurities over time. That reduces metal adduct formation, improves analyte identification and ensures reliable, consistent and reproducible results.

For more routine applications, J.T.Baker® LC/MS solvents and blends are function-tested and optimized for minimal impurities and interference-free baselines, giving you performance you can trust in the mobile phase — every time.

J.T.Baker® LC/MS solvents and blends are optimized to provide low particulates, polyethylene glycol, phthalates and amides, and extremely low levels of metal ions and non-volatile residue. Products are function tested for LC/MS suitability, ESI+, UV-Vis absorbance, trace metals, residue after evaporation, and assay. Interference-free baselines ensure you can have the highest confidence in solvent performance in your applications.



## Selection guide: Application and MS Analyzer ULTRA LC/MS and LC/MS Solvents

Industry/Application	LC/MS	ULTRA LC/MS Solvents
<b>Drug discovery</b>		x
<b>Drug identification</b>	x	x
<b>Drug formulation</b>	x	x
<b>Biotechnology</b>	x	
<b>Food</b>	x	
<b>High-end research labs</b>		x
<b>University research</b>	x	x
<b>QC testing labs</b>	x	x
Mass Spectrometry Analyzer	LC/MS	ULTRA LC/MS Solvents
<b>Single Quadrupole</b>	x	
<b>Tandem Quadrupole</b>	x	x
<b>Ion Trap</b>		x
<b>MALDI-TOF</b>		x
<b>MS-MS Hybrids (Quadrupole Time-of-Flight)</b>		x
<b>FT-ICR (Fourier transform ion cyclotron resonance mass spectrometer)</b>		x

## J.T.Baker® ULTRA LC/MS Products

Description	Avantor Product Number	Fisher Scientific Cat. No.
<b>Acetonitrile, Schott® DURAN® Borosilicate glass bottle</b>	9853-02	02002173
<b>Methanol, Schott® DURAN® Borosilicate glass bottle</b>	9863-02	02003340
<b>Water, Schott® DURAN® Borosilicate glass bottle</b>	9823-02	02004557

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DURAN® is a registered trademark of DURAN GROUP GmbH

## J.T.Baker® LC/MS Products

Description	Avantor Product Number	Fisher Scientific Cat. No.
<b>Acetonitrile</b>	9829-03	02002174
<b>Acetonitrile - 0.1% Formic Acid</b>	9832-03	02002075
<b>Acetonitrile - 0.1% Trifluoroacetic Acid</b>	9835-03	02002170
<b>Ethyl Acetate</b>	9828-03	02002840
<b>Methanol</b>	9830-03	02003341
<b>Water - 0.1% Formic Acid</b>	9834-03	02004568
<b>Water - 0.05% Trifluoroacetic Acid</b>	9839-03	02004564
<b>Water - 0.1% Trifluoroacetic Acid</b>	9836-03	02004570

Multiple package sizes are available. Contact your sales representative for details.

## High Performance Liquid Chromatography (HPLC) Analysis

Liquid chromatography (LC) is the most widely used chromatographic technique in most laboratories. For optimum HPLC performance, you need the right solvents and reagents.

J.T.Baker® HPLC products are designed to provide rapid, reproducible performance and separation. For critical HPLC applications, J.T.Baker® solvents and modifiers are the preferred choice for chemists around the world, enabling optimum instrument performance and sensitivity.

### J.T.Baker® HPLC Acids, Salts and Ion-Pair Reagents

Description	Avantor Product Number	Fisher Scientific Cat. No.
<b>Acids</b>		
Trifluoroacetic Acid	9470-00	02004494
Acetic Acid, Glacial	9515-03	02002123
<b>Salts</b>		
Ammonium Acetate	0599-08	02002265
Ammonium Phosphate Monobasic	0777-08	02002318
Sodium Acetate Trihydrate	4009-04	02003966
<b>Ion-Pair Reagents</b>		
1-Heptanesulfonic Acid Sodium Salt	2173-05	02002040
1-Hexanesulfonic Acid Sodium Salt	2175-05	02002042
1-Octanesulfonic Acid Sodium Salt	2818-05	02002045
1-Pentanesulfonic Acid Sodium Salt Monohydrate	2841-06	02002048
Tetrabutylammonium Hydrogen Sulfate (98%)	V360-07	02004408
Tetrabutylammonium Hydroxide, Titrant (0.4M in H <sub>2</sub> O)	V365-07	02004407
Tetrabutylammonium Hydroxide in Water	9580-03	02004409
Tetrabutylammonium Phosphate	V375-03	02004411

Multiple package sizes are available. Contact your sales representative for details.

J.T.Baker® HPLC solvents are manufactured using multi-step purification processes that produce reliable, low backgrounds free of extraneous peaks. Products are function tested for assay, water, residue after evaporation, and UV absorbance and fluorescence in critical ranges.

Selected J.T.Baker® HPLC acids, bases and ion pair reagents enhance the usefulness of HPLC as an analytical technique. Products are controlled for solubility in aqueous and organic solutions, UV transparency for optimum sensitivity, and metallic impurities that can affect biological activity.

### J.T.Baker® BAKER ANALYZED™ HPLC Solvents

Description	Avantor Product Number	Fisher Scientific Cat. No.
Acetone	9002-03	02002149
Acetone, Low Water	9003-03	02002168
Acetonitrile	9012-03	02002180
Acetonitrile, Ultra Gradient Grade	9017-03	14650359
Chloroform (Hydrocarbon Stabilized)	9174-03	02002593
Chloroform (Ethanol Stabilized)	9175-03	14650209
Cyclohexane	9292-03	02002676
o-Dichlorobenzene	9233-03	02003564
Ether, Anhydrous	9237-03	02002818
Ethyl Acetate	9282-03	02002837
n-Heptane	9177-03	02002981
Hexanes (95% n-Hexane)	9304-03	02002995
Methanol	9093-03	02004653
Methyl tert-Butyl Ether	9042-03	02003385
Methylene Chloride	9315-03	02003400
Methyl Ethyl Ketone	9214-03	02003445
Pentane	9331-03	02003536
2-Propanol	9095-03	02002094
Pyridine, Low Water	9393-03	02003865
Tetrahydrofuran	9441-03	02004418
Tetrahydrofuran (Stabilized)	9440-03	02004427
Tetrahydrofuran, Low Water	9439-03	02004426
1,2,4-Trichlorobenzene	9444-05	02002006
2,2,4-Trimethylpentane	9480-03	02002062
Water	4218-03	14650357

Multiple package sizes are available. Contact your sales representative for details.

## Gas Chromatography

The rigorous demands of EPA extraction/concentration protocols inspired the development of J.T.Baker® brand solvents for GC analysis. J.T.Baker® solvents are designed, manufactured and tested to provide the best performance for any GC application. They are tested and controlled for optimum purity and lot-to-lot consistency for reproducible results.

J.T.Baker® ULTRA RESI-ANALYZED™ solvents start with the purest raw materials available. They pass through a combination of chemical and non-chemical purification technologies that remove reactive solvent impurities and produce higher assays and narrow solvent fronts. Then, they are packaged to maintain purity. A unique stabilizer system provides unmatched product stability and interference-free results.

Products are function-tested on high resolution capillary GC instruments and proven suitable to the ppt/ppb level on both ECD and FID detectors. J.T.Baker® ULTRA RESI-ANALYZED™ solvents are tested to meet EPA requirements for extraction/concentration procedures and AOAC requirements for pesticide residue analysis. They are also performance-tested to purity levels below the Lower Level of Quantitation (LLQ) for trace analyte detection by standard EPA methods.

## J.T.BAKER® ULTRA RESI-ANALYZED™ Solvents and Reagents

Description	Avantor Product Number	Fisher Scientific Cat. No.
<b>Solvents</b>		
<b>Acetone</b>	9254-03	02004650
<b>Acetonitrile</b>	9255-03	14650504
<b>Carbon Disulfide</b>	E350-01	02002801
<b>Chloroform (Stabilized)</b>	9257-03	14650215
<b>Cyclohexane</b>	9258-03	02002675
<b>Methylene Chloride (Stabilized)</b>	9264-03	02004651
<b>Ether</b>	9259-03	14650364
<b>Ethyl Acetate</b>	9260-03	02002833
<b>N-Heptane</b>	9338-03	02003444
<b>Hexane (95% n-Hexane)</b>	9262-03	02004654
<b>Hexane (99% n-Hexane)</b>	N168-08	02002993
<b>Methanol (Purge &amp; Trap)</b>	9077-02	02004652
<b>Methanol</b>	9263-03	14650353
<b>Methyl tert-Butyl Ether</b>	9043-03	02003386
<b>Pentane</b>	9333-03	02003538
<b>Petroleum Ether 30°-60°C</b>	9265-03	14650218
<b>2-Propanol</b>	9334-03	14650220
<b>Tetrachloroethylene</b>	9360-03	02004412
<b>Toluene</b>	9336-03	14650507
<b>2,2,4-Trimethylpentane</b>	9335-03	14650368
<b>Water</b>	4219-03	14650358
<b>Salts</b>		
<b>Sodium Sulfate Anhydrous</b>	3375-01	02004233

Multiple package sizes are available. Contact your sales representative for details.

## UV/Visible/IR Spectrometry

The principle of spectrometry is fairly straightforward—the identification and concentration of a species in solution can be determined by measuring the transmittance or absorbance of radiation passed through the solution. It's a simple concept, but to make it work you need a solvent that doesn't interfere with the measurement at the specific wavelength being measured.

J.T.Baker® PHOTREX™ solvents are recommended for use in UV, visible, and IR spectrometry applications. They are manufactured to maximize lot-to-lot consistency and minimize contaminants, including residue after evaporation, and acid and base concentrations. Function testing confirms maximum absorbance in selected wavelengths, and for PHOTREX™ solvents, 50% to 100% transmittance windows in IR wavelengths are reported.

## J.T.Baker® Spectrometry Solvents

Description	Avantor Product Number	Fisher Scientific Cat. No.
<b>Alcohol, Anhydrous</b>	9229-03	02002216
<b>1-Butanol</b>	9189-01	02002039
<b>Chloroform (Stabilized Ethanol)</b>	9183-03	02002588
<b>1,2-Dichloroethane</b>	9302-01	02002007
<b>p-Dioxane</b>	9196-02	02003529
<b>Dimethyl Sulfoxide</b>	9194-03	02002730
<b>Methanol, Absolute</b>	9069-03	02003353
<b>Methylene Chloride</b>	9329-03	02003405
<b>Paraffin Oil</b>	9388-01	02003573
<b>Petroleum Ether, 35–60 °C</b>	9270-03	02003590
<b>2-Propanol</b>	9083-03	02002090
<b>Toluene</b>	9456-01	02004472
<b>2,2,4-Trimethylpentane</b>	9479-03	02002061
<b>Xylenes</b>	9516-01	02004578

Multiple package sizes are available. Contact your sales representative for details.

Also available:  
J.T.Baker® product portfolio

**Solid-phase extraction** – J.T.Baker® silica- and polymer-based BAKERBOND™ SPE columns and high performance BAKERBOND Speedisk™ columns and disks improve and simplify sample clean-up and concentration.

**Dissolution Testing Media** – J.T.Baker® dissolution media concentrates are produced in accordance with USP guidelines and containers are filled to +/- 0.5% of target fill volumes to ensure consistent, reproducible results every time. Reduce average prep time by more than 75%. Just add purified water and begin testing.

**Trace metal analysis reagents** – A full range of products to prepare your samples with the utmost consistency, highest purity and stability, are offered in three grades — ppt, ppb or ppm trace metal acids.

**Biopharmaceutical Solvents** — Sophisticated reagents proven to expand process control, reduce variables, maximize coupling efficiencies and boost yields

**Bioreagents** — High-purity reagents tested for use in biotechnology applications, such as electrophoresis, and liquid chromatography

**General reagents** – J.T.Baker® BAKER ANALYZED™ ACS solvents, acids, salts and solutions provide very high characterization and purity.



**For technical reference contact:**

Avantor Performance Materials, Inc.

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