LOWER
DETECTION LIMITS AND QUANTIFY TRACE-LEVEL ORGANIC VOLATILE IMPURITIES

The Measure of Confidence

Agilent J&W DB-624UI and DB-Select 624UI for <467> GC columns

Uncompromising standards ensure consistent column inertness for peak shape and linearity that others cannot match

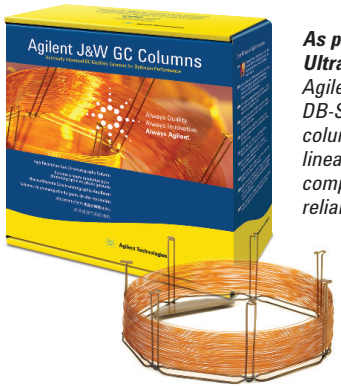
Confidently resolving trace levels of active analytes can be a challenging task. To help you succeed, Agilent's J&W Ultra Inert GC column portfolio has expanded to include our mid-polarity 624 stationary phase.

- **Agilent J&W DB-624UI GC columns** are optimized for fast analysis of volatile compounds, and are ideal for environmental and chemical samples with unknown components. Our unique deactivation process enhances peak shape, improving signal-to-noise levels and increasing sensitivity for qualitative and quantitative analysis.
- **Agilent J&W DB-Select 624UI <467> GC columns are designed specifically for United States Pharmacopoeia Method <467>.** Equivalent to USP stationary phase G43, this phase is engineered to provide the best sensitivity and resolution of the critical pairs specified in USP Method <467> analysis of residual solvents in active pharmaceutical ingredients (API).

Like all Agilent J&W Ultra Inert GC columns, DB-624UI columns are tested with the industry's most demanding test probe mixture, and an individual performance sheet is shipped with each column. So you can have confidence in every column, and every separation.

Confidently analyze active compounds and unknowns

Upgrade your existing 624 column to Agilent J&W DB-624UI GC columns, and get all the analytical benefits of proven inertness performance. What's more, if you already use Agilent J&W DB-624 GC columns, you can upgrade to DB-624UI *without* method re-validation, since the stationary phases are identical.



As part of our industry-leading Ultra Inert GC column family, *Agilent J&W DB-624UI and DB-Select 624UI for <467> GC columns improve peak shape and linearity for acidic and basic compounds. So you can achieve reliable low-level quantitation.*

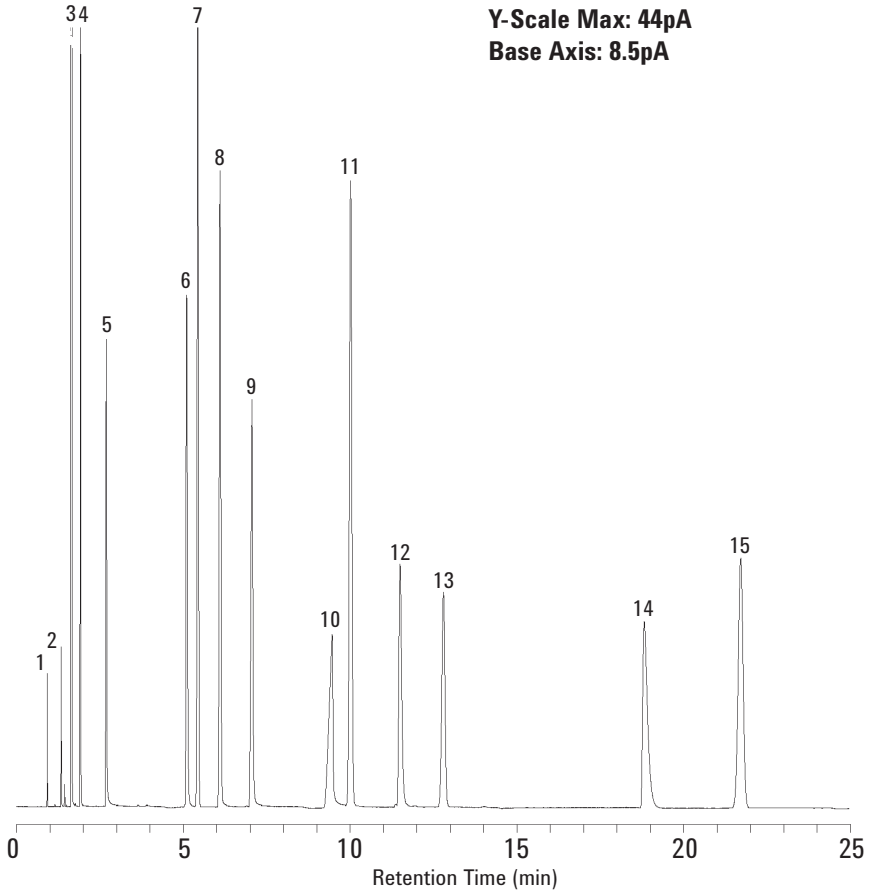
Agilent Technologies

Proof that Agilent J&W DB-624 Ultra Inert GC columns deliver excellent peak shape and linearity for difficult samples

Best-in-class inertness performance through rigorous quality control

This QC test confirms that Agilent J&W DB-624UI GC columns deliver excellent peak shape for a variety of difficult polar functional groups, including acids, bases, -diols and organo-phosphates. Column-to-column stationary phase selectivity is also assured by analyzing retention indices for aromatic, carbonyl, and halogenated compounds. (Retention indices maintained within narrow range.)

Typical Agilent J&W DB-624UI QC test results



All Agilent J&W Ultra Inert GC columns are individually tested with some of the most probative active compounds that can be analyzed by GC.

Peak identification

1. Methane
2. Ethanol
3. Methylene Chloride
4. 1-Propanol
5. Acetic acid
6. Pyridine
7. Octane
8. 1-Pentanol
9. 1,2-Propanediol
10. Butyric acid
11. m-Xylene
12. 4-Methylpyridine
13. Bromoform
14. Dimethyl-methylphosphonate
15. Decane

Conditions

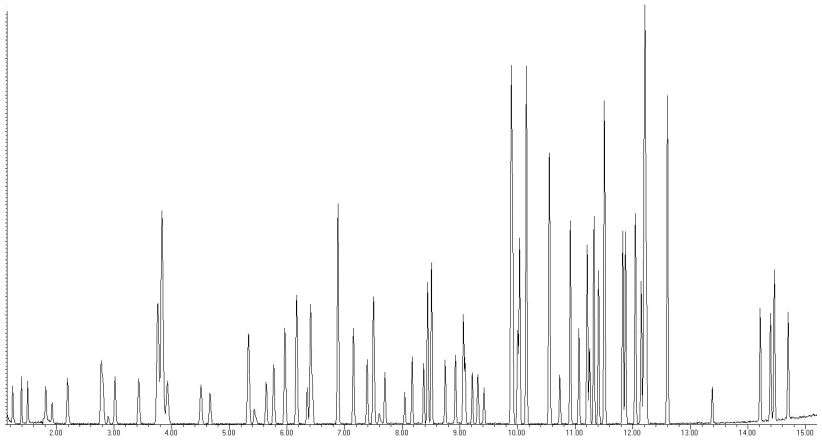
Column:	Agilent J&W DB-624UI 20 m x 0.18 mm x 1.0 µm (p/n 121-1324UI)
Inlet:	Split, 250 °C
Carrier gas:	Hydrogen
Holdup compound:	Methane, 0.923 min
Detector:	FID, 260 °C
Flow:	36.1 cm/sec, 0.6 mL/min
Temperature Program:	Isothermal at 70 °C

Performance results

Theoretical plates/meter:		
	m-Xylene	4296
Retention index:		
	1-Pentanol	818.0
	m-Xylene	891.7
	Bromoform	926.7

Unprecedented speed for analyzing volatile organic compounds

It took less than 15 minutes to separate the 108 VOCs specified by EPA Method 8260B using the Agilent 5975C Mass Selective Detector, Agilent J&W DB-624UI GC column, and Agilent Ultra Inert Inlet liner.

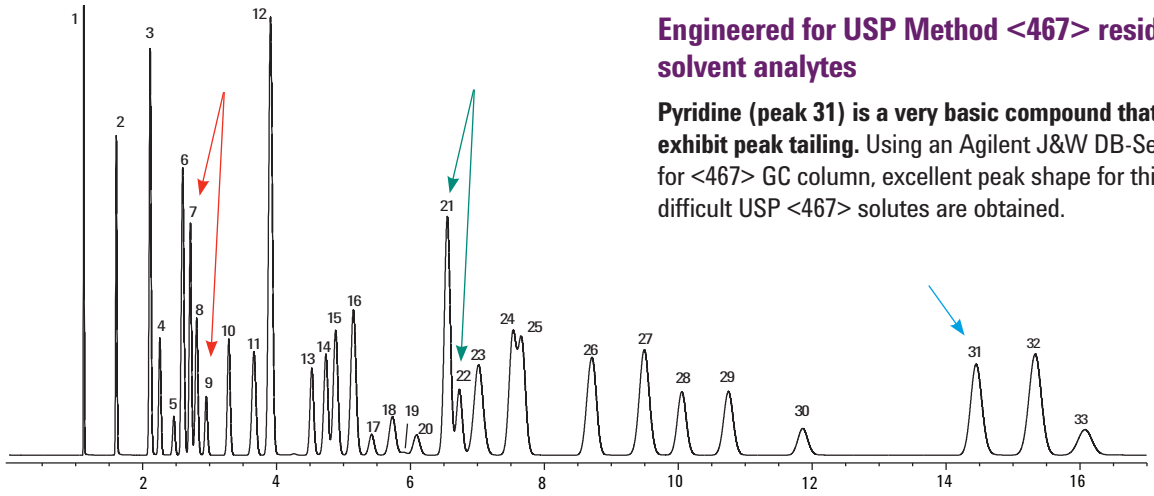


Conditions:
Column: Agilent J&W DB-624UI
20 m x 0.18 mm, 1.0 µm (p/n 121-1324UI)
Oven Program: 35 °C for 4 min,
15 °C/min to 240 °C for 0.33 min
Injection: Purge & Trap
Inlet: Split, He, 200 °C
Liner: Ultra Inert, straight taper, 1 mm, p/n 5190-4047
Constant Flow: 0.7 mL/min
Total Flow: 110.7 mL/min
Septum Purge Flow: 5 mL/min
Gas Saver: Off
Split Ratio: 150:1
Split Flow: 105 mL/min
Detector: MSD, scan *m/z* 35 -300, xfer line 250 °C,
solvent delay 1.05 min

For more details, consult Application Note 5991-0029EN: *Volatile Organic Compound [VOC] Analysis Via Purge and Trap: Success with VOC analysis using the Agilent 5975C Mass Selective Detector [MSD].*

Engineered for USP Method <467> residual solvent analytes

Pyridine (peak 31) is a very basic compound that tends to exhibit peak tailing. Using an Agilent J&W DB-Select 624UI for <467> GC column, excellent peak shape for this and other difficult USP <467> solutes are obtained.



1. Methane
2. Methanol
3. Ethanol
4. Diethyl ether
5. 1,1-Dichloroethylene
6. 2-Propanol
7. **Acetonitrile**
8. Methyl acetate
9. **Dichloromethane**
10. trans-1,2-Dichloroethylene
11. n-Hexane
12. 1-Propanol
13. Nitromethane
14. cis-1,2-Dichloroethylene
15. Ethyl acetate
16. 2-Butanol
17. Chloroform
18. 1,1,1-Trichloroethane
19. Cyclohexane
20. Carbon tetrachloride
21. **Benzene**
22. **1,2-Dichloroethane**
23. Isooctane (2,2,4-Trimethylpentane)
24. 3-Methyl-2-butanone
25. n-Heptane
26. Trichloroethylene
27. Methylcyclohexane
28. 1,4-Dioxane
29. Propy acetate
30. 2-Ethoxyethanol
31. **Pyridine (excellent peak shape)**
32. Toluene
33. 3-Methyl-1-butanol

Conditions:

Column: Agilent J&W DB-Select 624UI for <467> 30 m x 0.53 mm, 3.0 µm (p/n 125-0334UI)

Oven: 40 °C (20 min) then 10 °C/min to 170

Carrier gas: Helium 44 cm/s (approx. 6 mL/min) set at 40 °C, EPC-Constant Flow

Inlet: Split, 5:1 at 250 °C (total flow approx 40 mL/min, and 4.5 psi)

Liner: Ultra Inert liner, 1 mm, straight single taper (p/n 5190-4047)

Detector: FID at 240 °C, H_2 @ 30 mL/min, Air @ 400 mL/min, N_2 makeup @ 35 mL/min (constant column + makeup)

Detector Signal: 20 Hz

For more information, visit **www.agilent.com/chem/624UI**

Trust the most inert GC column for your trace-level analysis of chemically active analytes

Agilent J&W DB-624UI GC columns are the newest addition to our flagship Ultra Inert GC column family, and are tested against the most demanding test probes to ensure consistent column inertness performance.

To complete your Ultra Inert flow path, choose Agilent Ultra Inert Inlet liners for maximum reliability and robustness. They fulfill the promise of low activity for best-in-class delivery of active analytes – even when containing glass wool.

And remember, Agilent CrossLab Ultra Inert liners perform seamlessly with a variety of instruments *regardless of manufacturer*. So you can bring the benefits of Ultra Inert liners to your whole lab.

Part Number	Description
Agilent J&W DB-624UI GC columns	
121-1324UI	DB-624UI 20 m x 0.18 mm, 1.0 µm
122-1334UI	DB-624UI 30 m x 0.25 mm, 1.4 µm
122-1364UI	DB-624UI 60 m x 0.25 mm, 1.4 µm
123-1334UI	DB-624UI 30 m x 0.32 mm, 1.8 µm
123-1364UI	DB-624UI 60 m x 0.32 mm, 1.8 µm
125-1334UI	DB-624UI 30 m x 0.53 mm, 3.0 µm
125-1374UI	DB-624UI 75 m x 0.53 mm, 3.0 µm
Agilent J&W DB-Select 624UI for <467> GC columns	
122-0334UI	DB-Select 624UI <467> 30 m x 0.25 mm, 1.4 µm
122-0364UI	DB-Select 624UI <467> 60 m x 0.25 mm, 1.4 µm
123-0334UI	DB-Select 624UI <467> 30 m x 0.32 mm, 1.8 µm
123-0364UI	DB-Select 624UI <467> 60 m x 0.32 mm, 1.8 µm
125-0334UI	DB-Select 624UI <467> 30 m x 0.53 mm, 3.0 µm

To order now, visit
www.agilent.com/chem/624UI

To learn more about Agilent Ultra Inert GC solutions, visit **www.agilent.com/chem/ultrainert**

Or find your local Agilent Representative or Agilent Authorized Distributor at
www.agilent.com/chem/wheretobuy

Scan this code with your SmartPhone's QR code reader for additional product details.

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