Develop Residual Solvent Methods Quickly By "Outsourcing" to Restek's Technical Support Team

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- **Methods are customized to your specific solvent list.**
- **Restek Technical Support provides the recommended column format and analytical conditions in minutes using our Pro *ez*GC software.**
- **Ensures fast, cost-effective method development with highly accurate results.**

Developing custom residual solvent methods can be extremely time-consuming, as it often requires screening multiple columns over several scouting runs. Rather than conducting time- and labor-intensive testing in-house, simplify and speed up residual solvent method development by "outsourcing" to Restek's Technical Support group. Restek has benchmarked the ICH Class 1, 2, and 3 residual solvents on our most popular columns and, through the use of our Pro *ez*GC software, we can model your specific solvent separation quickly and provide you with an accurate set of analytical conditions within hours. Here we demonstrate the effectiveness of a Pro *ez*GC-modeled solution.

In this example, a customer requested method conditions to separate 29 specific residual solvents. Restek Technical Support used Pro *ez*GC software to produce conditions for optimal separation of these analytes (Table I). Using the recommended Rxi®-624Sil MS column, we first matched up dead times to confirm an accurate flow rate, then, using only the conditions provided by Pro *ez*GC software, we separated the target compounds in just 15 minutes (Figure 1). When comparing the actual and predicted retention times, the average difference was only 0.05 minutes (Table II), confirming that the software accurately predicted conditions that optimally separated the components of a specific, complex solvent mix.

Let Restek help you with your residual solvent method today and see why we are the company that chromatographers trust. Simply contact Restek's Technical Support group at support@restek.com with your specific solvent set and instrument model and we can quickly provide you with the operational parameters needed for complete chromatographic resolution.

For more information on residual solvent testing, visit
www.restek.com/usp467

We can help you develop custom residual solvent methods quickly & easily!

Table I Operating conditions provided by Restek's Technical Support team using Pro *ez*GC chromatography modeling software.

Column:	**Rxi®-624Sil MS, 20 m, 0.18 mm ID, 1.00 µm (cat.# 13865)**
Sample:	Custom residual solvents mix
Injection:	
Inj. Vol.:	0.5 µL split (split ratio 50:1)
Liner:	5mm split (cat.# 22973-200.1)
Inj. Temp.:	250 °C
Oven:	
Oven Temp:	40 °C (hold 5 min.) to 260 °C at 50 °C/min.
Carrier Gas	He, constant flow
Flow Rate:	1.35 mL/min.
Linear Velocity:	45 cm/sec.
Dead Time:	0.74 min. @ 40 °C
Detector	FID @ 250 °C
Data Rate:	50 Hz
Instrument:	Agilent/HP6890 GC

Rxi®-624Sil MS Columns (fused silica)

ID	df (µm)	temp. limits	length	cat. #
0.18mm	1.00	-20 to 300/320°C	20-Meter	13865

Figure 1 Excellent separation of a customer's solvent list was obtained in less than 15 minutes using conditions set by Restek's Pro *ez*GC software.

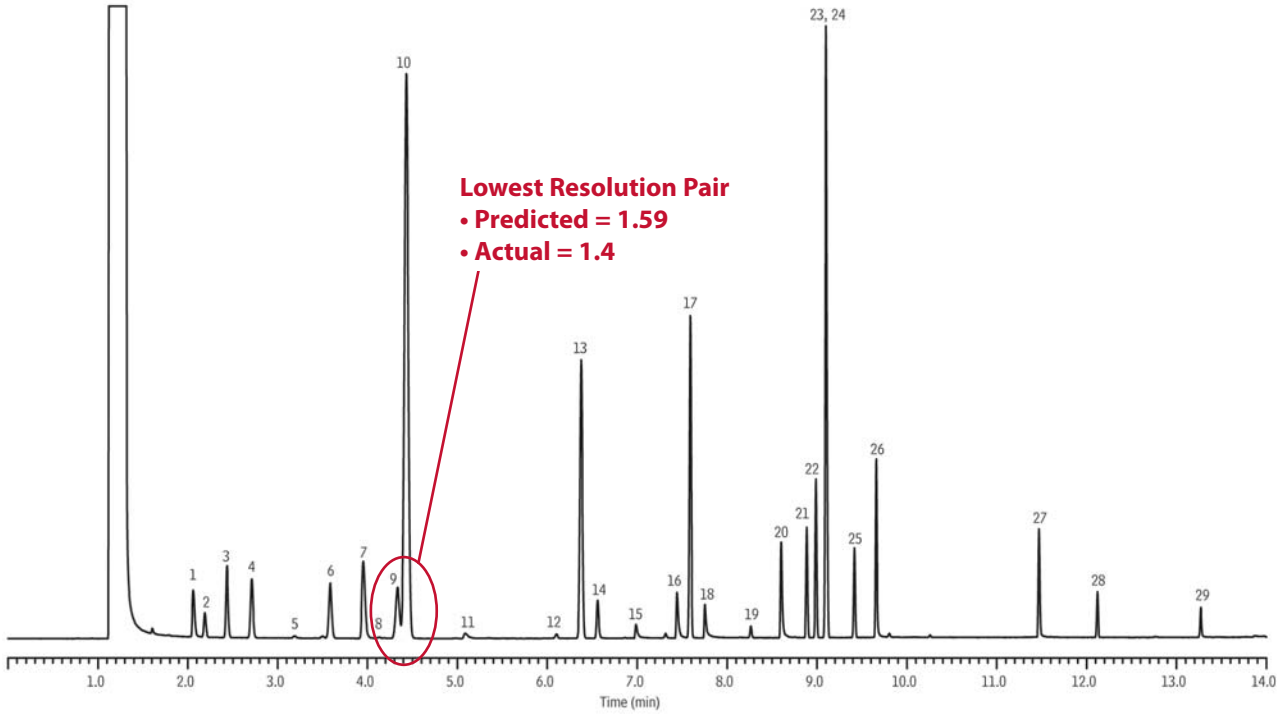

Table II Highly accurate methods for customer-specified lists can be developed quickly and cost-effectively using Restek's Technical Support and Pro *ez*GC software.

	Solvent	Predicted RT (minutes)	Actual RT (minutes)	Difference (minutes)
1.	acetonitrile	2.083	2.056	0.027
2.	dichloromethane	2.218	2.185	0.033
3.	trans-1,2-dichloroethene	2.478	2.431	0.047
4.	hexane	2.788	2.707	0.081
5.	nitromethane	3.551	3.497	0.054
6.	cis-1,2-dichloroethene	3.643	3.581	0.062
7.	tetrahydrofuran	4.017	3.948	0.069
8.	chloroform	4.219	4.125	0.094
9.	1,1,1-trichloroethane	4.413	4.329	0.084
10.	cyclohexane	4.532	4.427	0.105
11.	2-methoxyethanol	4.972	5.079	-0.107
12.	trichloroethene	6.196	6.095	0.101
13.	methyl cyclohexane	6.49	6.373	0.117
14.	1,4-dioxane	6.656	6.554	0.102
15.	2-ethoxyethanol	7.044	6.982	0.062
16.	pyridine	7.500	7.439	0.061
17.	toluene	7.673	7.587	0.086
18.	ethylene glycol	7.786	7.748	0.038
19.	2-hexanone	8.310	8.260	0.050
20.	dimethylformamide	8.645	8.597	0.048
21.	chlorobenzene	8.934	8.882	0.052
22.	ethylbenzene	9.031	8.985	0.046
23.	p-xylene	9.142	9.096	0.046
24.	m-xylene	9.142	9.096	0.046
25.	o-xylene	9.452	9.412	0.040
26.	N,N-dimethylacetamide	9.678	9.654	0.024
27.	1-methyl-2-pyrrolidinone	11.467	11.466	0.001
28.	1,2,3,4-tetrahydronaphthalene	12.12	12.116	0.004
29.	sulfolane	13.234	13.266	-0.032
			Average Difference =	**0.050**

Lit. Cat.# PHTS1262

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