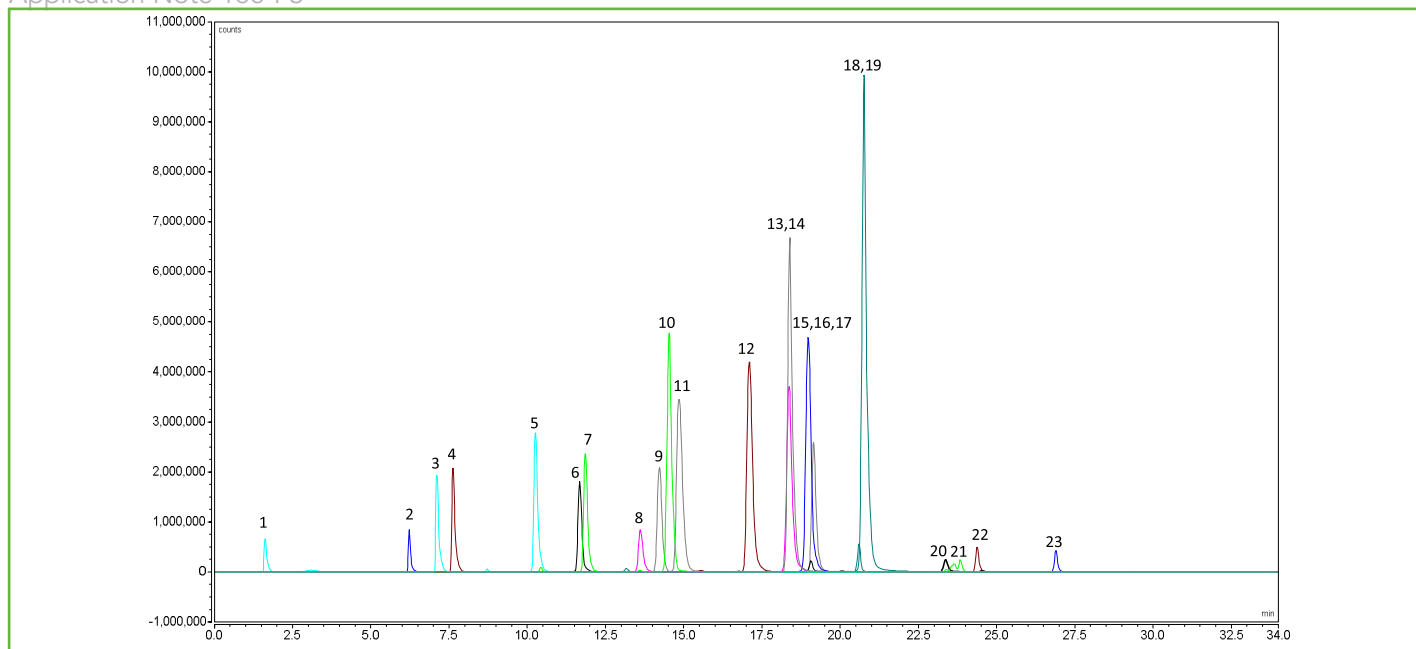




Pesticides Separation on HALO 90 Å Biphenyl

Application Note 168-PS



TEST CONDITIONS:

Column: HALO 90 Å Biphenyl, 2.7 μm ,
2.1 x 100 mm

Part Number: 92812-611

Mobile Phase:

A: Water/0.1% formic acid/4 mM
ammonium formate

B: Acetonitrile/0.1% formic acid/4 mM
ammonium formate

Gradient:	Time (min)	%B
	0.00	0
	1.01	15
	4.00	35
	5.00	62
	30.00	100
	34.00	100

Flow Rate: 0.2 mL/min

Initial Pressure: 89 bar

Temperature: 40 °C

Detection: UV 254 nm

Injection Volume: 1.0 μL

Sample Solvent: Acetonitrile

Data Rate: 10 Hz

LC System: Shimadzu Nexera X2

MS System: Thermo Fisher Orbitrap VelosPro ETD

ESI: +3.8 kV

Scan range: 150-1000 m/z

Scan Rate: 1.33 pps

Capillary: 350 °C

Sheath Gas: 35

Auxiliary Gas: 10

Scan Time: 2 μs cans/50 ms max inject time

Heater Temperature: 150 °C

A mixture of pesticides with a wide range of polarities is separated with high efficiency using a HALO 90 Å Biphenyl column. Closely-eluting and co-eluting compounds are easily identified using mass spectrometry detection, and quantified using extracted-ion chromatograms (see page 2 for peak identities). Pesticides, such as these, are commonly screened for in medical marijuana samples.





PEAK IDENTITIES:

	Compound	m/z	Retention (min)
1	Daminozide	161.096	1.616
2	Flonicamid	230.000	6.224
3	Thiamethoxam	292.000	7.109
4	Imidacloprid	256.050	7.631
5	Paclobutrazol	294.130	10.256
6	Fenhexamid	302.079	11.678
7	Myclobutanil	289.129	11.849
8	Bifenazate	301.150	13.610
9	Dimethomorph Isomer 1	388.130	14.226
10	Spirotetramat	374.190	14.535
11	Dimethomorph Isomer 2	388.130	14.846
12	Spinosad A	732.480	17.089
13	Spinosad D	746.490	18.363
14	Trifloxystrobin	409.100	18.391
15	Spinetoram	748.520	18.970
16	Pyrethrin II	373.200	19.068
17	Piperonyl butoxide	356.240	19.151
18	Pyrethrin I	329.210	20.594
19	Etoxazole	360.180	20.759
20	Abamectin A	895.500	23.370
21	Cypermethrin	433.110	23.610
22	Bifenthrin	440.160	24.370
23	Acequinocyl	407.230	26.890
observed in negative ion mode	Fludioxonil	247.048	9.763

An important advantage of the HALO 90 Å Biphenyl column is that it can be used with 100% aqueous mobile phase without pore dewetting and loss of retention. This is especially useful for very polar pesticides, which are sometimes unretained or poorly retained on other column phases.

