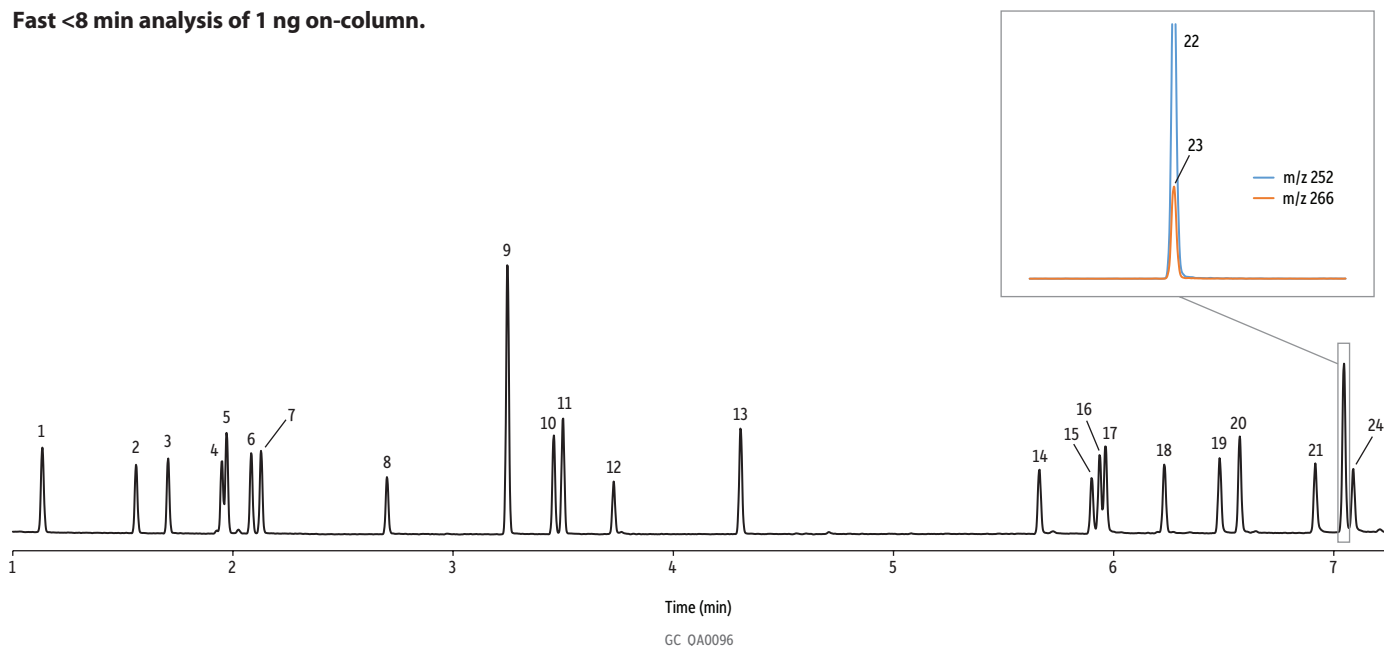


High Speed GC-MS of Carcinogenic Aryl Amines Resulting From Reductive Cleavage of Azo Dyes on Rxi-35Sil MS (Scan Mode)

Fast <8 min analysis of 1 ng on-column.



Peaks	t_R (min)	Conc. ($\mu\text{g/mL}$)	Molecular Ion (m/z)
1. <i>o</i> -Toluidine	1.14	10	107
2. <i>o</i> -Anisidine	1.56	10	123
3. 4-Chloroaniline	1.71	10	127
4. <i>p</i> -Cresidine	1.95	10	137
5. 2,4,5-Trimethylaniline	1.97	10	135
6. 3-Chloro- <i>o</i> -toluidine	2.08	10	141
7. 4-Chloro- <i>o</i> -toluidine	2.13	10	141
8. 2,4-Diaminotoluene	2.70	10	122
9. 2,4,5-Trichloroaniline (IS)	3.25	30	197
10. 2-Naphthylamine	3.46	10	143
11. 2-Aminobiphenyl	3.50	10	169
12. 2-Amino-4-nitrotoluene	3.73	10	152
13. 4-Aminobiphenyl	4.31	10	169
14. <i>p</i> -Aminoazobenzene	5.66	10	197
15. 4,4'-Oxydianiline	5.90	10	200
16. 4,4'-Diaminodiphenylmethane	5.94	10	198
17. Benzidine	5.96	10	184
18. <i>o</i> -Aminoazotoluene	6.23	10	225
19. 3,3'-Dimethyl-4,4'-diaminodiphenylmethane	6.48	10	226
20. 3,3'-Dimethylbenzidine	6.57	10	212
21. 4,4'-Thiodianiline	6.92	10	216
22. 3,3'-Dichlorobenzidine	7.05	10	252
23. 4,4'-Methylenebis(2-chloroaniline)	7.05	10	266
24. 3,3'-Dimethoxybenzidine	7.09	10	244

Elution order of positional isomers was verified with individual standards.

Column Rxi-35Sil MS, 15 m, 0.25 mm ID, 0.25 μm (cat.# 13820)
Sample AccuStandard carcinogenic aryl amine mix (cat.# AE-000-49-R1)
Diluent: Ethyl acetate
Conc.: 10 $\mu\text{g/mL}$
Injection
Inj. Vol.: 1 μL split (split ratio 10:1)
Liner: Premium 4 mm Precision liner w/wool (cat.# 23305)
Inj. Temp.: 275 $^{\circ}\text{C}$
Oven
Oven Temp.: 100 $^{\circ}\text{C}$ to 320 $^{\circ}\text{C}$ at 27 $^{\circ}\text{C}/\text{min}$ (hold 1.75 min)
Carrier Gas He, constant flow
Flow Rate: 2.0 mL/min
Detector
Mode: Scan
Scan Program:

Group	Start Time (min)	Scan Range (amu)	Scan Rate (scans/sec)
1	2.0	30-300	5.5

Transfer Line Temp.: 330 $^{\circ}\text{C}$
Analyzer Type: Quadrupole
Source Type: Inert
Drawout Plate: 3 mm ID
Source Temp.: 250 $^{\circ}\text{C}$
Quad Temp.: 180 $^{\circ}\text{C}$
Electron Energy: 70 eV
Solvent Delay Time: 2.0 min
Tune Type: PFTBA
Ionization Mode: EI
Instrument Agilent 7890A GC & 5975C MSD