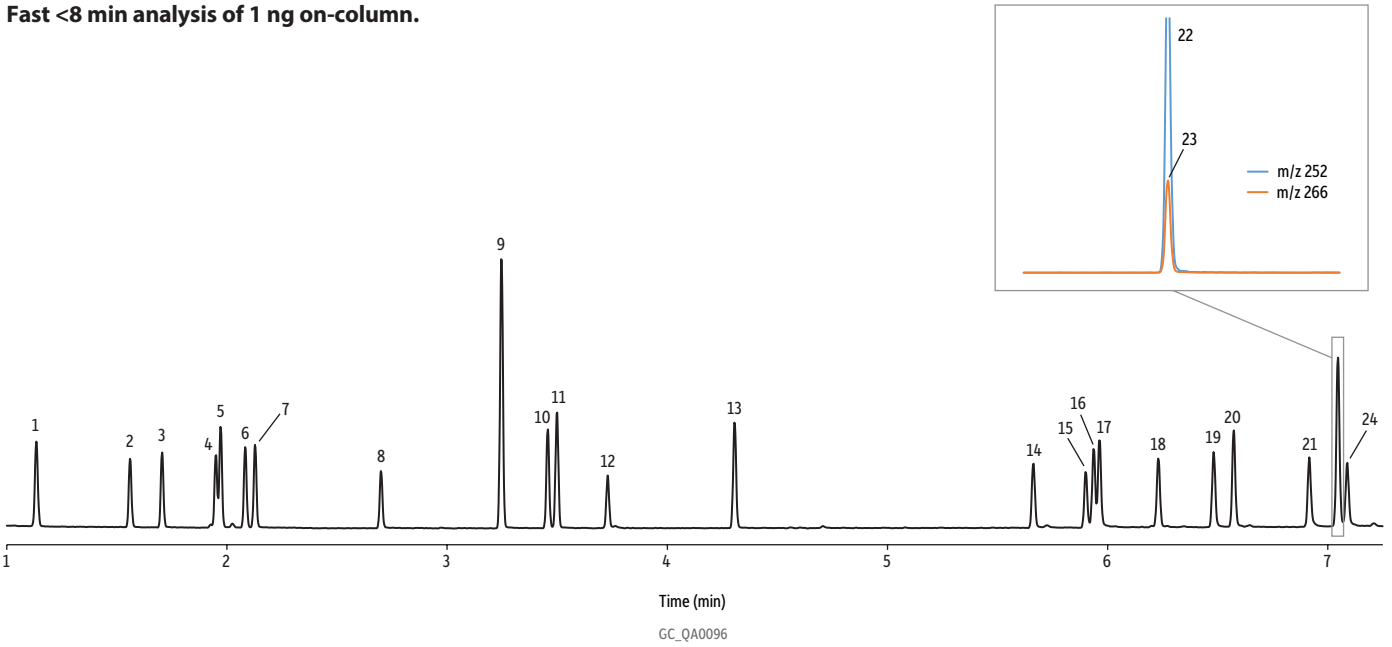
High Speed GC-MS of Carcinogenic Aryl Amines Resulting From Reductive Cleavage of Azo Dyes on Rxi®-35Sil MS (Scan Mode)

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



GC_QA0096

Peaks	t_R (min)	Conc. (µg/mL)	Molecular Ion (m/z)
1. *o*-Toluidine	1.14	10	107
2. *o*-Anisidine	1.56	10	123
3. 4-Chloroaniline	1.71	10	127
4. *p*-Cresidine	1.95	10	137
5. 2,4,5-Trimethylaniline	1.97	10	135
6. 3-Chloro-*o*-toluidine	2.08	10	141
7. 4-Chloro-*o*-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. *p*-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. *o*-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 µg/mL
Injection	
Inj. Vol.:	1 µL split (split ratio 10:1)
Liner:	Premium 4 mm Precision® liner w/wool (cat.# 23305.1)
Inj. Temp.:	275 °C
Oven	
Oven Temp.:	100 °C to 320 °C at 27 °C/min (hold 1.75 min)
Carrier Gas	He, constant flow
Flow Rate:	2.0 mL/min
Detector	MS
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 °C
Analyzer Type:	Quadrupole
Source Type:	Inert
Drawout Plate:	3 mm ID
Source Temp.:	250 °C
Quad Temp.:	180 °C
Electron Energy:	70 eV
Solvent Delay Time:	2.0 min
Tune Type:	PFTBA
Ionization Mode:	EI
Instrument	Agilent 7890A GC & 5975C MSD

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