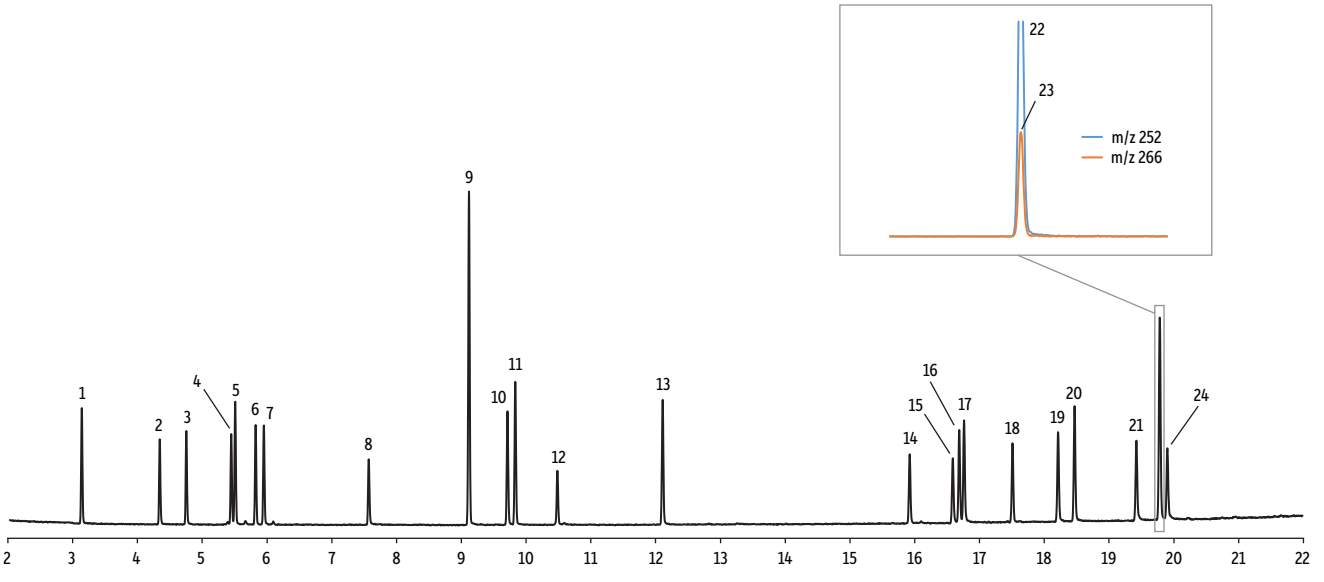
Regulated Carcinogenic Aryl Amines Resulting From Reductive Cleavage of Azo Dyes on Rxi-35Sil MS



GC_QA0095

	Peaks	t_R (min)	Conc. (µg/mL)	Molecular Ion (m/z)
1.	*o*-Toluidine	3.15	10	107
2.	*o*-Anisidine	4.36	10	123
3.	4-Chloroaniline	4.77	10	127
4.	*p*-Cresidine	5.46	10	137
5.	2,4,5-Trimethylaniline	5.52	10	135
6.	3-Chloro-*o*-toluidine	5.84	10	141
7.	4-Chloro-*o*-toluidine	5.96	10	141
8.	2,4-Diaminotoluene	7.58	10	122
9.	2,4,5-Trichloroaniline (IS)	9.13	30	196
10.	2-Naphthylamine	9.72	10	143
11.	2-Aminobiphenyl	9.84	10	169
12.	2-Amino-4-nitrotoluene	10.49	10	152
13.	4-Aminobiphenyl	12.12	10	169
14.	*p*-Aminoazobenzene	15.93	10	197
15.	4,4'-Oxydianiline	16.60	10	200
16.	4,4'-Diaminodiphenylmethane	16.70	10	198
17.	Benzidine	16.77	10	184
18.	*o*-Aminoazotoluene	17.52	10	225
19.	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	18.23	10	226
20.	3,3'-Dimethylbenzidine	18.48	10	212
21.	4,4'-Thiodianiline	19.43	10	216
22.	3,3'-Dichlorobenzidine	19.79	10	252
23.	4,4'-Methylenebis(2-chloroaniline)	19.79	10	266
24.	3,3'-Dimethoxybenzidine	19.91	10	244

Elution order of positional isomers was verified with individual standards.

Column Rxi-35Sil MS, 30 m, 0.25 mm ID, 0.25 µm (cat.# 13823)
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)
Inj. Temp.: 275 °C
Oven
Oven Temp.: 100 °C to 320 °C at 9.5 °C/min (hold 5 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

Restek Corporation 110 Benner Circle Bellefonte, PA 16823
1-814-353-1300 • 1-800-356-1688 • Fax: 1-814-353-1309 • www.restek.com