

表6 Concentrations of aromatic amines in cigarette smoke (ng/cigarette)^a

Aromatic amine	Mainstream smoke		Sidestream smoke
	US 85-mm nonfilter	French 70-mm nonfilter	French 70-mm nonfilter
Aniline	102	364	10 800
<i>ortho</i> -Toluidine	32.2	162	3 030
<i>meta</i> -Toluidine	15.3	30.4	2 080
<i>para</i> -Toluidine	13.5	33.8	1 730
2-Ethylaniline + 2,6-dimethylaniline	14.9	54.2	1 240
2,5-Dimethylaniline	19.1	87.2	2 370
3-Ethylaniline + 2,4-dimethylaniline	14.0	56.7	1 200
4-Ethylaniline + 2,3-dimethylaniline	7.8	27.3	494
1-Naphthylamine	4.3	2.5	103
2-Naphthylamine	1.0	1.7	67
2-Aminobiphenyl	1.8	3.0	110
3-Aminobiphenyl	2.7	5.0	132
4-Aminobiphenyl	2.4	4.6	143
2-Methyl-1-naphthylamine	5.8	3.6	117

^aFrom Patrianakos and Hoffmann (1979)

表7 Concentrations of major pyridines and pyrazines in mainstream cigarette smoke ($\mu\text{g}/\text{cigarette}$)

Compound	US nonfilter ^a	US filter ^a	US filter ^a	Japanese presumably nonfilter ^b
	85 mm	85 mm	85 mm	70 mm
Pyridine	32.4	21.4	28.7	21.7
2-Picoline	12.3	12.1	11.5	11.0
3-Picoline	24.1	9.8	15.7	36.1
4-Picoline				6.7
2,6-Lutidine	1.4	1.0	1.1	12.8
2,5-Lutidine	3.9	2.7	3.0	2.7 ^c
2,4-Lutidine	1.7	1.1	1.1	5.8
3-Vinylpyridine ^d	23.3	7.0	14.9	14.0
2-Methylpyrazine	2.2	1.6	0.9	4.9
2,3-Dimethylpyrazine	0.4	0.4	0.2	-

^aFrom Brunnemann *et al.* (1978)

^bFrom Sakuma *et al.* (1984a,b)

^c2,3-Lutidine

^d+ 3,4-lutidine in US cigarettes

表8 Concentrations of *N*-nitrosamines in cigarette smoke (ng/cigarette)^a

Nitrosamine	Burley tobacco	Flue-cured tobacco	French black tobacco	Commercial cigarettes	
				Nonfilter	Filter
<i>N</i> -Nitrosodimethylamine	11-180	0.5-13.2	29-143	2-20	0.1-17
<i>N</i> -Nitrosomethylethylamine	9.1-13	> 0.1	2.7-12	ND-2.7	ND-2.5
<i>N</i> -Nitrosodiethylamine	4-25	ND-1.8	0.6-6	ND-2.8	ND-7.6
<i>N</i> -Nitrosodi- <i>n</i> -propylamine	ND	ND	ND	ND-1.0 ^b	ND
<i>N</i> -Nitrosodi- <i>n</i> -butylamine	ND	ND	ND	ND-3 ^b	ND
<i>N</i> -Nitrosopyrrolidine	52-76	6.2	25-110	ND-110	1.5-30
<i>N</i> -Nitrosopiperidine	9	ND	ND	ND-9 ^b	ND
<i>N</i> -Nitrosodiethanolamine	2-90	ND	ND	36	24
<i>N</i> -Nitrosoornicotine	3700	620	590	120-950	310
4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone	320	420	220	80-770	150
<i>N</i> -Nitrosoanatabine	4600	410	200	140-990	370
<i>N</i> -Nitrosoanabasine			ND-150		

^aFrom Hoffmann *et al.* (1984a); ND, not detected

^bReported only in isolated instances