

Table S2.a. Incremental lifetime cancer risk values ($ILCR_1^i$) based on CSF Set I for 13 carcinogens from seven brands of cigarettes categorized here as “regular” (“R”) according to the criterion “tar” \geq 15 mg, as based on FTC tar yield (not brand name).

Cigarette Brand:	Marlboro		Camel	Kool King	Basic	Marlboro	Newport
	King F HP	F HP Men	“R” NF SP	F SP Men	King NF SP	King F SP	King F SP Men
Acetaldehyde	5.E-05	7.E-05	5.E-05	5.E-05	5.E-05	5.E-05	6.E-05
Acrylonitrile	2.E-05	2.E-05	4.E-05	3.E-05	4.E-05	2.E-05	3.E-05
4-Aminobiphenyl	5.E-07	5.E-07	6.E-07	4.E-07	7.E-07	5.E-07	4.E-07
Arsenic	8.E-07	9.E-07	9.E-07	7.E-07	2.E-06	8.E-07	1.E-06
Benzene	8.E-06	9.E-06	8.E-06	1.E-05	1.E-05	9.E-06	9.E-06
Benzo[a]pyrene	4.E-07	5.E-07	6.E-07	5.E-07	7.E-07	5.E-07	5.E-07
1,3-Butadiene	4.E-05	4.E-05	4.E-05	5.E-05	5.E-05	3.E-05	4.E-05
Cadmium	4.E-06	5.E-06	5.E-06	4.E-06	6.E-06	4.E-06	4.E-06
Formaldehyde	1.E-05	2.E-05	2.E-05	1.E-05	2.E-05	1.E-05	2.E-05
Lead	1.E-08	1.E-08	1.E-08	1.E-08	2.E-08	1.E-08	1.E-08
NNK ^a (uses CSF_oral ^b)	4.E-05	4.E-05	4.E-05	3.E-05	4.E-05	4.E-05	4.E-05
NNN ^a	2.E-06	1.E-06	2.E-06	1.E-06	2.E-06	2.E-06	1.E-06
Quinoline (uses CSF_oral ^b)	1.E-05	2.E-05	3.E-05	2.E-05	3.E-05	1.E-05	1.E-05
<i>Cancer Risk Sub-Totals</i>							
Human lung carcinogens ^{c,d} $ILCR_1^{sub\Sigma-lung}$	4.E-05	5.E-05	6.E-05	5.E-05	6.E-05	4.E-05	5.E-05
All cancers: $ILCR_1^{sub\Sigma}$	2.E-04	2.E-04	2.E-04	2.E-04	3.E-04	2.E-04	2.E-04

Abbreviations: F = filtered; NF = nonfiltered; HP = hard pack; Men = menthol; SP = soft pack; and “R” = “regular”.

^a NNK = 4-(N-nitrosomethylamino)-1-(3-pyridyl)-1-butanone; NNN = N-nitrososonornicotine.

^b CSF_oral indicates that the cancer slope factor was determined from an oral exposure study.

^c According to Integrated Risk Information System, U.S. Environmental Protection Agency.

^d $ILCR_1^{sub\Sigma-lung} = \text{sum of } ILCR_1^i \text{ for human lung carcinogens considered here: acrylonitrile, arsenic, cadmium, and formaldehyde.}$

Table S2.b. Incremental lifetime cancer risk values ($ILCR_1^i$) based on CSF Set I for 13 carcinogens from nine brands of cigarettes and one reference cigarette categorized here as “light” (“Lt”) according to the criterion $6 \leq \text{“tar”} < 15$ mg, as based on FTC tar yield (not brand name).

Cigarette Brand:	Marlboro	Kool King	Marlboro	Parliament			Benson & Hedges 100 Camel King			
	King F HP	F SP Mild	King F SP	Kent 100 F	Winston	100 F SP	More 120 F	F SP “Lt”	F HP “Lt”	
	“Lt”	Men	“Lt”	SP	King F SP	“Lt”	SP Men	Men	Wides	1R4F
Acetaldehyde	5.E-05	5.E-05	5.E-05	6.E-05	6.E-05	5.E-05	6.E-05	6.E-05	5.E-05	6.E-05
Acrylonitrile	2.E-05	2.E-05	4.E-05	4.E-05	4.E-05	2.E-05	3.E-05	2.E-05	2.E-05	3.E-05
4-Aminobiphenyl	4.E-07	4.E-07	4.E-07	4.E-07	4.E-07	5.E-07	4.E-07	4.E-07	4.E-07	3.E-07
Arsenic	6.E-07	4.E-07	7.E-07	7.E-07	1.E-06	8.E-07	9.E-07	7.E-07	6.E-07	9.E-07
Benzene	9.E-06	8.E-06	9.E-06	9.E-06	9.E-06	8.E-06	1.E-05	1.E-05	1.E-05	1.E-05
Benzo[a]pyrene	3.E-07	4.E-07	3.E-07	4.E-07	4.E-07	4.E-07	5.E-07	4.E-07	4.E-07	3.E-07
1,3-Butadiene	3.E-05	3.E-05	3.E-05	4.E-05	4.E-05	5.E-05	6.E-05	3.E-05	3.E-05	4.E-05
Cadmium	4.E-06	3.E-06	4.E-06	4.E-06	4.E-06	2.E-06	4.E-06	4.E-06	3.E-06	4.E-06
Formaldehyde	9.E-06	1.E-05	8.E-06	1.E-05	2.E-05	8.E-06	1.E-05	1.E-05	1.E-05	1.E-05
Lead	9.E-09	9.E-09	9.E-09	1.E-08	1.E-08	1.E-08	1.E-08	1.E-08	7.E-09	2.E-08
NNK ^a (uses CSF_oral ^b)	3.E-05	3.E-05	3.E-05	4.E-05	4.E-05	4.E-05	3.E-05	3.E-05	3.E-05	3.E-05
NNN ^a	1.E-06	9.E-07	1.E-06	2.E-06	2.E-06	2.E-06	1.E-06	1.E-06	1.E-06	9.E-07
Quinoline (uses CSF_oral ^b)	9.E-06	9.E-06	1.E-05	2.E-05	2.E-05	1.E-05	2.E-05	1.E-05	2.E-05	8.E-06
<i>Cancer Risk Sub-Totals</i>										
Human lung carcinogens ^{c,d} $ILCR_{1}^{sub\Sigma-lung}$	4.E-05	3.E-05	5.E-05	6.E-05	6.E-05	3.E-05	5.E-05	4.E-05	4.E-05	4.E-05
All cancers: $ILCR_{1}^{sub\Sigma}$	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04	2.E-04

Abbreviations: F = filtered; NF = nonfiltered; HP = hard pack; Men = menthol; SP = soft pack; and “Lt” = “light”.

^a NNK = 4-(N-nitrosomethylamino)-1-(3-pyridyl)-1-butanone; NNN = N'-nitrososornicotine.

^b CSF_oral indicates that the cancer slope factor was determined from an oral exposure study

^c According to Integrated Risk Information System, U.S. Environmental Protection Agency

^d $ILCR_{1}^{sub\Sigma-lung} = \text{sum of } ILCR_1^i \text{ for human lung carcinogens considered here: acrylonitrile, arsenic, cadmium, and formaldehyde.}$

Table S2.c. Incremental lifetime cancer risk values ($ILCR_1^i$) based on CSF Set I for 13 carcinogens from ten brands of cigarettes categorized here as “ultralight” (“ULt”) according to the criterion “tar” < 6 mg, as based on FTC tar yields (not brand name).

Cigarette Brand:	Merit King	True King	Virginia	Now King	Virginia	Capri 100 F	Carlton 100	Doral 100 F	Carlton 100	GPC King F
	F SP Ultima	F SP	Slims 100 F HP Sup-Slim	F SP	Slims 100 F HP “ULt” Slim	HP “ULt”	F HP “Lt”	SP “ULt”	F SP “Lt”	SP “ULt”
Acetaldehyde	2.E-05	4.E-05	3.E-05	3.E-05	4.E-05	3.E-05	2.E-05	5.E-05	2.E-05	4.E-05
Acrylonitrile	1.E-05	1.E-05	8.E-06	2.E-05	3.E-05	2.E-05	1.E-05	2.E-05	8.E-06	2.E-05
4-Aminobiphenyl	2.E-07	3.E-07	2.E-07	2.E-07	3.E-07	2.E-07	2.E-07	2.E-07	2.E-07	3.E-07
Arsenic	1.E-07	5.E-07	3.E-07	3.E-07	7.E-07	6.E-07	2.E-07	5.E-07	1.E-07	4.E-07
Benzene	4.E-06	7.E-06	3.E-06	5.E-06	7.E-06	4.E-06	5.E-06	1.E-05	5.E-06	7.E-06
Benzo[a]pyrene	9.E-08	2.E-07	2.E-07	1.E-07	2.E-07	2.E-07	1.E-07	2.E-07	1.E-07	2.E-07
1,3-Butadiene	1.E-05	2.E-05	1.E-05	2.E-05	3.E-05	1.E-05	2.E-05	4.E-05	2.E-05	3.E-05
Cadmium	9.E-07	2.E-06	1.E-06	2.E-06	3.E-06	2.E-06	1.E-06	2.E-06	8.E-07	2.E-06
Formaldehyde	2.E-06	7.E-06	6.E-06	3.E-06	5.E-06	7.E-06	3.E-06	8.E-06	3.E-06	8.E-06
Lead	2.E-09	6.E-09	5.E-09	4.E-09	7.E-09	6.E-09	3.E-09	8.E-09	2.E-09	5.E-09
NNK ^a (uses CSF_oral ^b)	1.E-05	2.E-05	2.E-05	1.E-05	3.E-05	2.E-05	1.E-05	2.E-05	1.E-05	2.E-05
NNN ^a	6.E-07	1.E-06	1.E-06	6.E-07	1.E-06	9.E-07	6.E-07	8.E-07	6.E-07	8.E-07
Quinoline (uses CSF_oral ^b)	4.E-06	8.E-06	8.E-06	5.E-06	9.E-06	1.E-05	4.E-06	1.E-05	4.E-06	7.E-06
<i>Cancer Risk Sub-Totals</i>										
Human lung carcinogens ^{c,d}	1.E-05	2.E-05	2.E-05	2.E-05	4.E-05	3.E-05	1.E-05	3.E-05	1.E-05	3.E-05
$ILCR_1^{sub\Sigma-lung}$										
All cancers: $ILCR_1^{sub\Sigma}$	7.E-05	1.E-04	9.E-05	9.E-05	2.E-04	1.E-04	8.E-05	2.E-04	7.E-05	1.E-04

Abbreviations: F = filtered; NF = nonfiltered; HP, hard pack; Men = menthol; SP = soft pack; “Lt” = “light”; and “ULt” = “ultralight”.

^a NNK = 4-(N'-nitrosomethylamino)-1-(3-pyridyl)-1-butanone; NNN = N'-nitrososnicotine.

^b CSF_oral indicates that the cancer slope factor was determined from an oral exposure study

^c According to Integrated Risk Information System, U.S. Environmental Protection Agency

^d $ILCR_1^{sub\Sigma-lung}$ = sum of $ILCR_1^i$ for human lung carcinogens considered here: acrylonitrile, arsenic, cadmium, and formaldehyde.

Table S2.d. Incremental lifetime cancer risk values ($ILCR_1^i$) based on CSF Set I for 13 carcinogens from eight potentially reduced exposure products (PREPS).

Cigarette Brand:	Advance "Lt" Advance "Lt"							
	Premier	XDU 2-104	XDU 740	TOB-HT	EHC	Eclipse	100's	Kings
Acetaldehyde	5.E-07	8.E-07	1.E-06	2.E-06	6.E-06	2.E-06	8.E-06	9.E-06
Acrylonitrile	NA	NA	NA	1.E-06	8.E-07	1.E-06	7.E-06	8.E-06
4-Aminobiphenyl	NA	NA	NA	NA	NA	7.E-08	2.E-07	2.E-07
Arsenic	NA	NA	NA	NA	2.E-08	NA	NA	NA
Benzene	1.E-07	5.E-07	8.E-07	7.E-07	1.E-07	5.E-07	2.E-06	3.E-06
Benzo[a]pyrene	NA	3.E-09	7.E-09	1.E-08	NA	1.E-08	1.E-07	1.E-07
1,3-Butadiene	NA	NA	NA	7.E-07	1.E-06	9.E-07	1.E-05	1.E-05
Cadmium	NA	NA	NA	NA	2.E-08	NA	3.E-07	4.E-07
Formaldehyde	2.E-06	1.E-06	5.E-07	2.E-07	8.E-06	2.E-07	3.E-06	3.E-06
Lead	NA	NA	NA	NA	NA	NA	3.E-09	2.E-09
NNK ^a (uses CSF_oral ^b)	NA	NA	NA	3.E-06	3.E-06	5.E-06	4.E-06	4.E-06
NNN ^a	NA	NA	NA	6.E-08	1.E-07	1.E-07	2.E-07	2.E-07
Quinoline (uses CSF_oral ^b)	NA	NA	NA	NA	NA	1.E-07	2.E-06	2.E-06
<i>Cancer Risk Sub-Totals</i>								
Human lung carcinogens ^{c,d}								
$ILCR_1^{sub\Sigma-lung}$	2.E-06	1.E-06	5.E-07	1.E-06	8.E-06	1.E-06	1.E-05	1.E-05
All cancers: $ILCR_1^{sub\Sigma}$	2.E-06	2.E-06	3.E-06	8.E-06	2.E-05	1.E-05	4.E-05	4.E-05

Abbreviations: TOB-HT = heated tobacco; EHC = electrically heated cigarette; Lt = "light"; and NA = not available.

^a NNK = 4-(N'-nitrosomethylamino)-1-(3-pyridyl)-1-butanone; NNN = N'-nitrososornicotine.

^b CSF_oral indicates that the cancer slope factor was determined from an oral exposure study

^c According to Integrated Risk Information System, U.S. Environmental Protection Agency

^d $ILCR_1^{sub\Sigma-lung}$ = sum of $ILCR_1^i$ for human lung carcinogens considered here: acrylonitrile, arsenic, cadmium, and formaldehyde.