

# Supplementary data

## E-cigarette type and nicotine concentration of e-liquids volunteers

For the chemical analysis of exhaled breath of e-cigarette users described in chapter 9, the volunteers were provided with an e-cigarette of a refillable or non-refillable design, and containing e-liquid with either 18 mg/ml or 11 mg/ml nicotine. The following table provides this information for the individual volunteers:

subject	refillable	nicotine (mg/ml)
1	yes	18
2	no	18
3	no	18
4	yes	11
5	yes	11
6	yes	11
7	yes	18
8	yes	11
9	no	18
10	yes	18
11	yes	11
12	yes	11
13	yes	18
14	yes	11
15	yes	18
16	no	18
17	yes	18

## Metal analysis of e-liquids volunteers

For the chemical analysis of exhaled breath of e-cigarette users described in chapter 9, three different e-liquids were used. An analysis of metals in these liquids was performed prior to the experiment to confirm that the liquid from the non-refillable e-cigarettes used (liquid C) contained relatively high amounts of specific metals.

	Arsenic (ug/L)	Molybdenum (ug/L)	Tin (ug/L)	Cadmium (ug/L)	Lead (ug/L)	Zinc (ug/L)	Copper (ug/L)	Nickel (ug/L)	Cobalt (ug/L)	Manganese (ug/L)	Chromium (ug/L)	Vanadium (ug/L)	Uranium (ug/L)
E-liquid A	21	0.16	<0.2	<0.04	0.04	9.8	3.4	0.83	0.043	1.7	0.65	0.023	<0.006
E-liquid B	20	0.78	<0.2	2	0.93	290	220	15	9	330	1.4	1.1	0.085
E-liquid C	20	2.4	33	0.13	290	35000	110000	438	2.3	48	17	2.5	0.52



## Limits of quantification

For the chemical analysis of exhaled breath of e-cigarette users described in chapter 9, the limit of quantification for the different analytical methods is shown in the following table. The shown value is the amount in one exhaled breath after taking a puff, considering that for nicotine and humectants 5 breaths were collected, while 25 breaths were collected for the other compounds.

	<u>LOQ</u>	
<b>nicotine</b>		
nicotine	2	ng
<b>humectants</b>		
propylene glycol	6	ug
glycerol	28	ug
<b>aldehydes</b>		
formaldehyde	0.04	ug
acetaldehyde	0.048	ug
acrolein	0.068	ug
<b>metals</b>		
vanadium	0.6	ng
chromium	1.52	ng
manganese	2.12	ng
cobalt	0.92	ng
nickel	1.52	ng
copper	1.8	ng
zinc	2.4	ng
arsenic	0.92	ng
molybdenum	1.52	ng
cadmium	1.2	ng
tin	1.8	ng
lead	6	ng
uranium	0.4	ng