

TEST REPORT

SUMMARY OF MEASUREMENTS ON
SMOKE 'n GO SMOKE CABIN



Tested type: Smoke 'n Go Basic

Report based on measurements done by:
Energy research Centre of the Netherlands (ECN)
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As independent research centre, the ECN carried out filter efficiency measurements on tobacco smoke in the Euromate **Smoke 'n Go** smoke cabin. These measurements were done by order of Euromate B.V.

Measurements on tobacco-specific gases and particles have been carried out with 0, 2, 4 and 6 smokers during 20 minutes of smoking.

Table 1 shows the *markers*, being the tobacco-specific gases.

Table 2 shows the efficiency on particles from 0.1-7.5 μm and particles up to 2.5 μm (PM_{2.5}).

Other gases which were measured in the tobacco smoke, being *acetone*, *2,5-dimethylfurane*, *benzene*, *ethylbenzene: m,p,o-xylene*, *styrene* and *toluene* could not be detected because the values were too low.

Table 1: Purification levels in absolute figures

Element	In $\mu\text{g}/\text{m}^3$	Out $\mu\text{g}/\text{m}^3$	Threshold value (the Netherlands)
Nicotine – 0 smokers	1.2	<1.0*	500 $\mu\text{g}/\text{m}^3$ **
– 2 smokers	97.5	<1.0*	500 $\mu\text{g}/\text{m}^3$ **
– 4 smokers	164	<1.0*	500 $\mu\text{g}/\text{m}^3$ **
– 6 smokers	179	<1.0*	500 $\mu\text{g}/\text{m}^3$ **
3-ethenylpyridine – 0 smokers	<0.5*	<0.5*	No threshold value known
– 2 smokers	4.95	<0.5*	No threshold value known
– 4 smokers	7.44	<0.5*	No threshold value known
– 6 smokers	9.01	<0.5*	No threshold value known

Analyses according to ISO 18145, NVN2934/2937

* Values under detection limit

** In Norway the threshold value is actually 1 $\mu\text{g}/\text{m}^3$, so much more stringent

Table 2: Filtration efficiency on tobacco smoke particles

	Particles 0.1-7.5 μm	PM _{2.5} *
Efficiency 2 smokers	99.998%	99.997%
Efficiency 4 smokers	99.998%	99.997%
Efficiency 6 smokers	99.998%	99.997%

* PM_{2.5} are particles up to 2.5 μm , which are specific for tobacco smoke

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CONCLUSIONS

Gases

After filtration, the concentration of tobacco-specific gases, being *nicotine* and *3-ethenylpyridine*, are that low, that they could not be detected. For the gas *nicotine* this means that the value stays far below the threshold value.

Actually there is no threshold value known for the other important tobacco-specific substance *3-ethenylpyridine*.

Particles

As far as the filtration efficiency on tobacco smoke particles is concerned, we can conclude that during all measurements, even with 6 smokers at the same time, the efficiency is >99.998%.

For the tobacco-specific particles, PM_{2.5}, the filtration efficiency is >99.997%.

Air quality

Due to the use of the **Smoke 'n Go** smoke cabin, the indoor air quality outside the cabin improves as well.