



Testing Performed by:



Electronic Cigarettes/Refill Container Nicotine Dose Consistency Report

Analytical Summary Report in Support of the European Tobacco
Product Directive (2014/40/EU) Article 20

Product Details

Product Form:	Device (E-Cigarette)
Brand:	Vapresso Target Mini Kit
Description:	Target Mini (0.5ohm)+vPure12mg
Strength:	12mg/ml
Bottle Size:	N/A (Device)
SKU:	N/A
Batch Tested:	VSGV16660616
Nerudia Job Ref:	N/A
Client Name:	Nerudia

Approved By: Lynne Hessel
User ID: LHessel
Title: Quality and Business Systems Manager

Approved Date: 20-Sep-2016



Client Name:	Nerudia	Brand:	Vaporesso Target Mini
Description:	Target Mini (0.5ohm)+vPure12mg	SKU:	Kit N/A
Nerudia Job Ref:	N/A	Strength:	12mg/ml
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Introduction

During the vapourisation process, the e-liquid is heated to temperatures often exceeding 300°C. These temperatures are sufficiently high to convert the e-liquid into a vapour, allowing the nicotine in the solution to be inhaled by the consumer.

The determination of nicotine dose and uptake when consumed under normal or reasonably foreseeable conditions is best determined by chemical means; i.e. physical capture of the nicotine in the vapour and detection using an appropriately validated analytical method.

The method is designed to generate a known amount of aerosol under controlled sampling conditions from a specified e-liquid / e-cigarette combination, which is then physically captured on a glass fibre filter. The captured nicotine is then extracted into an acidified buffer solution and analysed using high performance liquid chromatography with ultra violet detection (HPLC-UV).

Nicotine dose consistency is measured as the variability of nicotine dosing during product use and across batches under normal or reasonably foreseeable conditions.

Results Summary

The average nicotine dose, nicotine dose consistency and aerosol mass is presented in Table 1.

Table 1.

Component	Result	Units
Mean Aerosol Mass	119120.0	µg/ten inhalations
Mean Nicotine Dose Start	1318.8	µg/ten inhalations
Mean Nicotine Dose Middle	1602.4	µg/ten inhalations
Mean Nicotine Dose End	1221.7	µg/ten inhalations
Mean Nicotine Dose	1381.0	µg/ten inhalations
Deviation from Mean - Start	-4.5	%
Deviation from Mean - Middle	16.0	%
Deviation from Mean - End	-11.5	%

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Method Details

The materials (e-cigarette devices or e-liquid) under test was operated under controlled environmental conditions using an automated vaping machine as described in Table 2.

Ten inhalations from each sample were generated at the start, middle and end of the device (a complete tank refill or cartridge). The aerosol generated for each set of ten inhalations was captured onto a glass fibre filter pad. The filter pad was then dissolved in an acidic aqueous buffer solution to extract the nicotine for analysis. The solution was filtered to remove particulates and was then analysed by HPLC-UV. The nicotine content was quantified using external linear standards.

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SKU: Kit
N/A

Strength: 12mg/ml

Bottle Size: N/A (Device)

Table 2.

Test Method	Nicotine Dose by HPLC-UV
Inhalation Numbers - Prep 1 Start	11 to 20
Inhalation Numbers - Prep 1 Middle	41 to 50
Inhalation Numbers - Prep 1 End	61 to 70
Inhalation Numbers - Prep 2 Start	11 to 20
Inhalation Numbers - Prep 2 Middle	41 to 50
Inhalation Numbers - Prep 2 End	61 to 70
E-liquid EC-ID (if available)	NA
E-Liquid Manufacturer	Vype
E-Liquid Brand/Flavour/Strength	VPure/Neutral/12mg
E-Liquid available on the European Market	Yes
Device Power Setting	40 Watt
Inhalation Volume (ml)	55
Inhalation Interval (Seconds)	30
Inhalation Time (Seconds)	3
Inhalation Profile	Square Wave
Inhalation Flow Rate (L/min)	1.10

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N/A

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Analytical Data

All the analytical data points generated during the test phase, including calculated mean values are presented in Table 3.

Table 3.

Component	Value	Units
Mean Aerosol Mass	119120.0	µg/ten inhalations
Nicotine Start Replicate 1	1297.4	µg/ten inhalations
Nicotine Middle Replicate 1	1572.0	µg/ten inhalations
Nicotine End Replicate 1	1009.7	µg/ten inhalations
Nicotine Start Replicate 2	1340.2	µg/ten inhalations
Nicotine Middle Replicate 2	1632.9	µg/ten inhalations
Nicotine End Replicate 2	1433.7	µg/ten inhalations
Mean Nicotine Dose Start	1318.8	µg/ten inhalations
Mean Nicotine Dose Middle	1602.4	µg/ten inhalations
Mean Nicotine Dose End	1221.7	µg/ten inhalations
Mean Nicotine Dose	1381.0	µg/ten inhalations
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Methodology References

Method Reference	Reference Title
CORESTA RECOMMENDED METHOD N° 81	Routine Analytical Machine For E-Cigarette Aerosol Generation And Collection – Definitions And Standard Conditions (June 2015)
ISO 7210:2013	Routine Analytical Cigarette-Smoking Machine – Additional Test Methods For Machine Verification
ISO 3308:2012	Routine Analytical Cigarette-Smoking Machine – Definitions And Standard Conditions
ISO 558:1980	Conditioning And Testing – Standard Atmospheres - Definitions
CORESTA Task Force Technical Report	2014 Electronic Cigarette Aerosol Parameters Study
British Pharmacopoeia Monograph	Nicotine Inhalation Cartridges

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