

Supplementary Tables

Supplementary Table 1: Methodological approach for the evaluation of compliance of the e-cigarette refill liquids to EU TPD parameters

Parameter Variable	Sub variables or description	Evaluation Method
Refill volume <10ml in vials (TPD,Art20,3a)		Visual assessment of the mentioned volume of the vial, if not clear, the vial was emptied and the content measured
Nicotine content <20mg/ml (TPD,Art20,3b)		Optical verification that the nicotine content is ≤ 20 mg/ml
The liquid does not contain additives listed in Article 7(6); (TPD,Art20,3b) TPD,Art20,7(6)	Content of: <ul style="list-style-type: none"> • Vitamins or other additives that create the impression that a tobacco product has a health benefit or presents reduced health risks • Caffeine or taurine or other additives and stimulant compounds that are associated with energy and vitality • Additives having colouring properties for emissions • Additives that have CMR properties in an unburnt form 	Visual assessment of noted contents on the vial/leaflet/external package for any additives listed in Article 7(6)
Childproof (TPD,Art20,3g)		The existence of compliance with ISO standards as noted in the CLP evaluation (3.5) assessed through if it has a safety lock system that prevents children from opening the vial; verification of the childproof mechanism function (manually, “press and turn”)
Tamper-proof (TPD,Art20,3g)		Optical verification if the vial had a plastic ring attached to the vial’s cap in order to make sure that there has not been any tampering of the product Verification of the tamper-proof seal after opening a vial and checking that the plastic seal that keeps in place the lid of the vial with the vial is cracked open
Inclusion of a leaflet (TPD,Art20,3a)	<ul style="list-style-type: none"> • Instructions - TPD20,4(a)i • Contraindications - TPD20,4(a)ii • Warnings for specific risk group - TPD20,4(a)iii • Possible adverse effects - TPD20,4(a) iv • Addictiveness and toxicity - TPD20,4(a) v 	Optical verification that the leaflet is either in the package or glued (peel off) to the vial Optical verification of general instructions and pictograms on how to use and store the product Further evaluation was done as shown: *How to use the product. ** Not for young people (similar means it says for under 18 or not for children)

	<ul style="list-style-type: none"> Contact details of the manufacturer or importer and a legal or natural contact person within the union - TPD20,4(a) vi 	<p>*** Not for non-smokers</p> <p>Visual inspection that the leaflet should contain information on the most frequent contradictions, warnings for a specific risk group, possible adverse effects, addictiveness and toxicity</p> <p>Visual inspection that contact details of the manufacturer or importer and a legal or natural contact person within the union is available</p>
List of ingredients (TPD,Art20,3bi)	<ul style="list-style-type: none"> Descending order of the weight Nicotine content Nicotine delivery per dose Batch number Recommendation for child safety 	<p>Visual inspection if the vial has a list of ingredients</p> <p>Visual inspection if ingredients listed were in descending order of weight</p> <p>Visual inspection if the nicotine content mentioned</p> <p>Visual inspection if the nicotine delivery per dose was mentioned</p> <p>Visual inspection if the batch number was written</p> <p>Visual inspection if there was a recommendation for child safety</p>
Health warnings (TPD,Art20,3biii)	<ul style="list-style-type: none"> Two optional warnings 	<p>Visual inspection of the use of health warnings</p> <p>The vial/package/leaflet must mention at least the following:</p> <p><i>“This product contains nicotine which is a highly addictive substance. It is not recommended for use by non- smokers.”</i></p> <p><i>“This product contains nicotine which is a highly addictive substance”.</i></p> <p><i>“This product contains nicotine which is a highly addictive substance. It is not recommended for use by non- smokers.”</i></p>
Cross-border distance sales of electronic cigarettes and refill containers (TPD,Art20,6)		<p>When ordering an e-liquid, verification, if the product can be sent over borders of EU countries, is evaluated</p>

Supplementary Table 2: Methodological approach for the evaluation of compliance of the e-liquid samples with the EU technical requirements (COM2016/586)

Parameter Variable	Sub variables or description	Evaluation Method
Refill mechanism requirements	<ul style="list-style-type: none"> • A securely attached nozzle at least 9 mm long • The nozzle is narrower than and slots comfortably into the opening of the tank 	Visual inspection and measurements of nozzle length using a calliper to evaluate that the nozzle has a minimum of 9mm length measurement of the nozzle diameter and length
Nozzle size/diameter	<ul style="list-style-type: none"> • nozzle outer diameter (mm) • nozzle length (mm) 	Visual inspection and measurement of nozzle length and outer diameter by using a measuring caliper
Refilling instructions	<ul style="list-style-type: none"> • Addition of diagrams 	Visual inspection if the instructions included diagrams and where were they displayed (vial, external package, leaflet).
Leak in transfer		Visual inspection if upon receiving the product there was a leak
A plastic cover	<ul style="list-style-type: none"> • Plastic material enclosing the vial 	Visual inspection that the product was closed additionally by a plastic cover either on the vial or on the external package
Vial requires pressure to flow		Squeezing the vial if there was a need for the e-liquid to start to flow
User guide	<ul style="list-style-type: none"> • Guidelines on how to use the e-liquid refills 	Visual inspection if there was information regarding when any part of the product mentioned the keywords "use" or "instructions" for the e-liquid
Note of the use of gloves	<ul style="list-style-type: none"> • Recommendation to use gloves, on the vial, external package or leaflet 	Visual inspection if the product mentioned the suggestion for the user to wear gloves as a protection method (checking if it is mentioned on the aforementioned or if a use of a picture/diagram is available)
Emergency actions	<ul style="list-style-type: none"> • Instructions to take in the case of accidental exposure 	Visual inspection (checking if keywords are used as "see a doctor" "go straight to the hospital", "seek medical advice")

Supplementary Table 3: Methodological approach for the evaluation of compliance with the Classification, Labelling and Packaging (CLP) regulation

Parameter Variable	Evaluation Method
Name, address and telephone number of the supplier(s) ²	Visual inspection if the product contained the name, address and telephone number of the supplier(s). If one of the above was not present, then the answer would be no. The product had to contain all of the above
The nominal quantity of the substance or mixture in the package ²	Visual inspection if the product contained the nominal quantity of the substance or mixture in the package. For example the amount of liquid (10ml)
Product identifiers ²	Visual inspection if and where there were product identifiers as in if the product is an e-liquid or meant to be used in e-cigarettes
Hazard pictograms ²	Visual inspection if and where there were hazard pictograms. Any products with "DSD" warnings were not taken into account. Only GSH warnings were considered a "yes."
The relevant signal word ²	Visual inspection if and where there was the accompanying text of the hazard pictogram, e.g. Danger
Hazard statements ²	Visual inspection if there was an actual hazard statement based on GHS (Rev.7) (2017). Although the products may state "nicotine is toxic, it is not the correct statement for CLP. Therefore, only if the products noted down an exact CLP statement based on GSH classification that being Hazard or Precaution, we would consider correct. Examples of such statements are: <i>Danger, Warning, Harmful, Very toxic to Aquatic life.</i>
Hazard warnings	Visual inspection if a product contains a hazard warning on the vial, the box or the leaflet
Hazard sign	Visual inspection if a product contained a hazard sign
Hazard info	Visual inspection of the warning type of the hazard sign
Hazard Text	Visual inspection if a relevant warning accompanies the hazard sign as in text form
Tactile	Visual inspection if there was an existence of a tactile that is used so that blind people can understand that the product they are holding contains warnings/dangers/hazards to them via touch

¹ 3.1 General labelling rules² 3.2 Elements of the CLP hazard label