



CASP 2024

Disposable electronic cigarettes

Final activity report

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List of abbreviations

CASP	Coordinated Activities on the Safety of Products
CEN/TS	European Committee for Standardization / Technical Specification
DG JUST	Directorate-General for Justice and Consumers
EC	European Commission
EFTA	European Free Trade Agreement
EN	European Standard
ENDS	Electronic Nicotine Delivery Systems
EU	European Union
EUR	Euro
GPSR	General Product Safety Regulation 2023/988
IM	Intermediate meeting
ISO	International Organisation for Standardisation
KoM	Kick-off meeting
MSA	Market surveillance authority
PSA	Product-specific activity
SAGA	Safety Gate Risk Assessment
TPD	Tobacco Products Directive

Executive summary

Objectives

The overarching goal of the CASP initiatives is to protect the health and safety of European consumers by enabling national authorities from EU/EFTA countries responsible for market surveillance (MSAs) to better coordinate their activities. MSAs jointly sample, test and assess the risks of specific products during PSAs.

Product scope

This activity covers single-use and limited-use disposable cigarettes containing a pre-filled e-liquid reservoir with or without nicotine.

Main testing criteria and results

The activity focused on testing 57 disposable electronic cigarettes against the standards CEN/TS 17287:2019 (mechanical safety), ISO 20714: 2021 (nicotine levels and purity of the e-liquid), EN 17746:2023 (consistency

of nicotine delivery and puff count), as well as testing the activation system for inhalation of the smoke for child resistance purposes.

A total of 18 samples (32 %) did not meet at least one of the requirements of the testing plan. Examination of the labelling – warnings, markings and instructions – performed by the MSAs showed that 36 (63 %) of 57 samples did not meet the requirements. Overall, 38 samples (67 %) did not meet at least one compliance requirement.

Conclusions

Disposable electronic cigarettes have been a growing concern for MSAs over the past years as their popularity has increased. If they fail to meet the requirements, e.g. by containing a prohibited chemical component or undeclared nicotine, the product can be a true danger

for the safety of consumers. For this activity, MSAs issued 3 Safety Gate notifications for those products that pose a serious risk to consumers. They instructed economic operators to withdraw these products from the market and to recall them from end-users¹.

Key recommendations to stakeholders

For consumers

- ▶ Put your health first: check if there is nicotine or a dangerous oily substance in your vape. Keep them away from children as they can be activated inadvertently.
- ▶ If the product doesn't have warnings in your language, don't buy it. Warnings are a legal requirement, and one failure can be accompanied by others.

For standardisation organisations

- ▶ Develop a standard to measure the puff count, a standard to measure the volume of e-liquids in non-refillable e-cigarettes, and a methodology for recycling their batteries.
- ▶ Consider including requirements on child-resistant activation systems for e-cigarettes.

For economic operators

- ▶ Stay informed about the development of national and market-wide legislation, such as the [Batteries Directive](#) and the [Waste Electrical and Electronic Equipment Directive](#).







¹ Until 07.03.2025 (included).



Part I

Overview of the activity

Participating MSAs




		Country	MSA
1		Austria	Federal Ministry of Social Affairs, Health, Care and Consumer Protection
2		Belgium	Federal public service health – Inspection consumption product unit
3		Croatia	State Inspectorate
4		Iceland	Housing and Construction Authority
5		Lithuania	State Consumer Rights Protection Authority
6		Malta	Environmental Health Directorate
7			Malta Competition and Consumer Affairs Authority

Product scope

Disposable electronic cigarettes are pre-filled with e-liquid. These devices do not require the replacement of any accessories. Users can continue vaping until the liquid or battery are depleted, at which point the device is simply discarded. This simple design greatly appeals to consumers in search of vaping convenience and accessibility, contributing to their popularity on the market, especially among young users. In fact, disposable e-cigarettes are often appealing to younger demographics due to their user-friendly and colourful design as well as their appealing flavours.

Disposable electronic cigarettes were also tested under CASP 2021 PSA 4 – E-cigarettes and accessories, covering both devices and liquids. The results showed that 9 out of 20 (45 %) of the single-use devices did not meet the requirements of the testing plan. Given these results, MSAs considered it important to keep these devices under surveillance and perform additional tests. Between 2019 and 2024, 96 Safety Gate notifications were issued for disposable electronic cigarettes.

Table 1: Product scope

	Product sub-category	Photo	Description
In scope	Single-use disposable e-cigarettes		With a single configuration containing a pre-filled e-liquid reservoir.
	Limited-use disposable e-cigarettes		With a battery that is rechargeable (for limited time only, until depletion of the liquid).
Out of scope	Refillable devices		Any refillable devices, such as disposable electronic cigarettes with replaceable pods.

Testing criteria

The regulatory framework for disposable electronic cigarettes is twofold, involving both tobacco control measures under the TPD and product safety provisions in accordance with the GPSR. In addition to identifying and quantifying product hazards, this activity also tackled

some consumer protection issues. These include ensuring accurate labelling of nicotine content in devices and preventing the overstatement of puff counts. The final testing plan of the activity is described in Table 2.

Table 2: Testing plan for disposable electronic cigarettes

Standard	Clause/element
Mechanical safety, including tank size	
CEN/TS 17287:2019 Requirements and test methods for electronic cigarette devices	4.2.1 General
	4.5 E-liquid reservoir
	5.2 Resistance to breakage and protection from leakage
Nicotine levels and purity of the e-liquid	
ISO 20714: 2021 E-liquid – Determination of nicotine, propylene glycol and glycerol in liquids used in electronic nicotine delivery devices – Gas chromatographic method (ISO 20768:2019)	Note: Whole standard provides methodology and reporting, although this may be supplemented by CEN/TS 176322:2022 General principles and requirements for testing of quality and nicotine levels of electronic cigarette liquids, which provides a quality management framework used in manufacturing.
	Nicotine content
	Nicotine purity
	Presence of unauthorised flavouring and additives (caffeine, taurine, vitamin E acetate, etc.) in e-liquids

Consistency of nicotine delivery and puff count

EN 17746:2023 Electronic cigarettes and e-liquids – Determination of nicotine delivery consistency over defined puff sequences within a single e-cigarette

Note: Whole standard provides methodology and reporting

Consistency of nicotine delivery

Puff count

Activation system for inhalation - child resistance for usage

Reporting by the laboratory about the activation system for inhalation (one or two-step action), e.g. activation by inhalation or pushing of a button, is required

Sampling and testing

Sampling distribution

The sampling process was carried out by the MSAs based on the sampling distribution agreed during the Intermediate Meeting. MSAs collected 62 samples,

both from online and physical stores. Out of the 62 samples, five were not tested².

Testing process

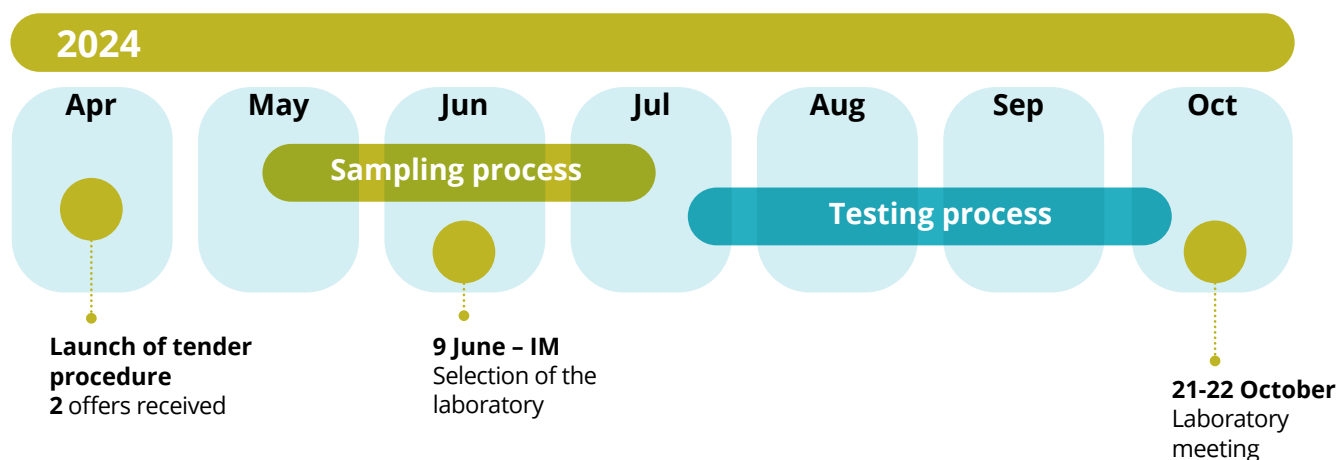
The testing laboratory for this activity was selected through a tender procedure launched in April 2024. The tender specifications were sent to 58 laboratories in the EU/EFTA that had been identified by the project team's laboratory engagement strategy. Each laboratory was asked to submit an offer including the elements mentioned in the tendering document, such as detailed information on pricing and supporting documents supplying evidence of certification, the experience of the experts and test report templates.

Two laboratories submitted an offer within the given timeframe, which was extended by one week to allow for the possibility of receiving more submissions. Both laboratories were invited to an interview to discuss their offer. During the Intermediate Meeting, the MSAs were presented with comparative analyses of the technical quality and financial aspects of the offers received from the laboratories. The MSAs selected the laboratory that was awarded the highest number of points based on technical quality and financial competitiveness.

Following the selection of the laboratory, the MSAs were given two months to collect the samples and send them to the laboratory.

² Due to issues during the shipping process, the laboratory did not receive five samples from one MSA and therefore no tests were conducted on these products.

Figure 1: Timeline of the sampling process



Test results

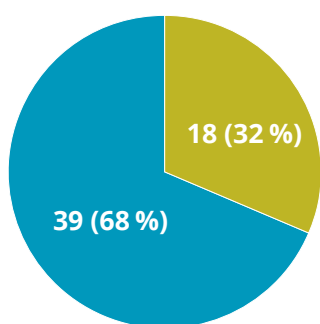
Overview of the test results and main findings

Out of 57 samples tested, 18 products (32 %) did not meet the requirements of the testing plan, as illustrated in the following graph.

Under the CASP 2021 PSA4 – E-cigarettes and accessories, a higher percentage, 45 % (9 out of 20) of the tested single-use devices did not meet the requirements of the testing plan.

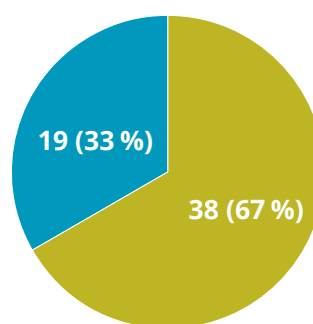
If we include the outcome of the checks on warnings, markings and instructions performed by the MSAs with the tests performed by the laboratory, 38 samples (67 %) did not meet at least one requirement – see Figure 3 below.

Figure 2: Test results excluding checks on warnings, markings and instructions (N=57)



■ Did not meet the requirements ■ Met the requirements

Figure 3: Test results, including checks on warnings, markings and instructions (N=57)



Indeed, when looking exclusively at the warnings, markings and instructions, the checks found that 37 samples (65 %) out of 57 did not meeting the labelling requirements. The main reasons for non-compliance

were problems with the list of ingredients in descending order or weight (15 samples), health warnings (8 samples) and containers exceeding the 2 ml limit for single-use cartridges (8 samples).

Detailed test results

Out of the samples that did not meet the **CEN/TS 17287:2019** requirements, 16 samples did not meet the

requirements of clause 4.2.1 on general testing, 16 for clause 4.5 on e-liquid reservoir, and 14 for tank size.

Figure 4: Test results per CEN/TS 17287:2019 clause

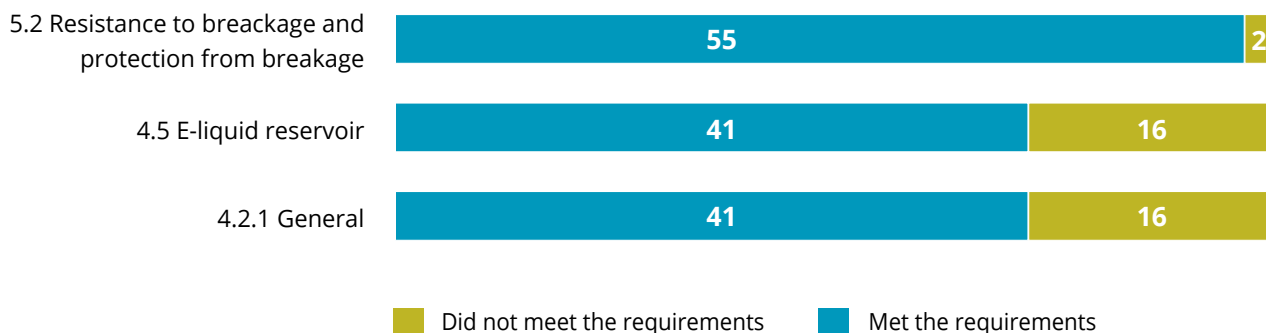
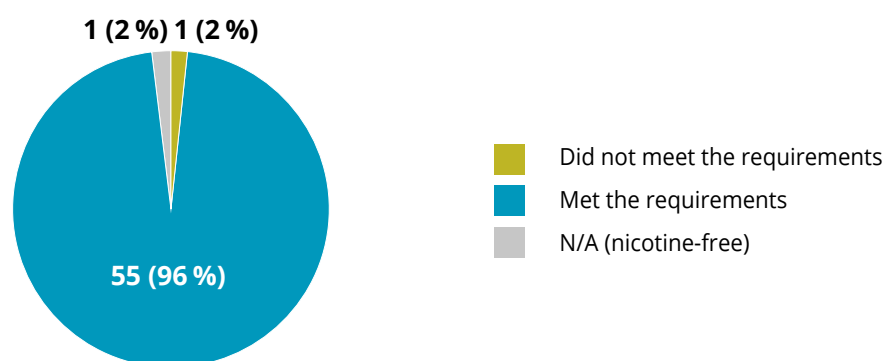


Figure 5: Test results per clause: ISO 20714:2021 (Nicotine purity)



The results of the **ISO 20714:2021** revealed that one product did not meet the nicotine purity requirement due to an unauthorised flavouring additive (vitamin E acetate) found in the e-liquid. One other product also did not comply with the nicotine content requirement.

On the **EN 17746:2023** requirements for consistency of nicotine delivery, the samples delivered 84 microgrammes (µg) on average per puff, with a maximum of 130 µg and a

minimum of 45 µg. The average puff count was 357, ranging from 170 to 1 000 puffs among the samples. However, 12 samples stopped smoking and could not be evaluated for consistency of nicotine delivery and puff count.

Finally, on **child resistance for usage**, two samples (from the same brand name) did not meet the requirements for breakage and leakage.

Conclusions of the test results

Tank size and nicotine content compliance

The main non-compliance issue was the excessive size of tanks. A total of 14 products exceeded the 2 ml limit, which is important for safety to minimise accidental spills, especially for infants. Limiting tank size reduces the risk of nicotine exposure, as this chemical can be absorbed directly into the bloodstream. Most products effectively manage access to the tank, but two failed to meet breakage or leakage standards, increasing safety risks for children and users.

One product had slightly excessive nicotine content, but posed no significant risk of spills, or during normal use, passing safety tests. Another product contained prohibited vitamin E, which can accumulate in the lungs and presents a serious health risk under Delegated Regulation 2024/3173.

Risks associated with undeclared nicotine

One product had undeclared nicotine and was oversized. The TPD's technical requirements do not apply to nicotine-free products, as it is the presence of this substance that is regulated. This may allow non-compliant items to enter the market without adequate surveillance.

While products containing nicotine are generally considered acceptable, assessing the risk of the failure to declare this on the product is complex. Users seeking pleasure from the product may unknowingly become addicted to

the undeclared nicotine. Although it is difficult to assign a quantitative value to addiction according to the injury levels specified for the risk assessment methodology, it is suggested that the risk is substantial.

Overall, most products complied with legal requirements, and non-compliant ones were addressed through national procedures.

Risk assessment and corrective measures

Risk assessment results

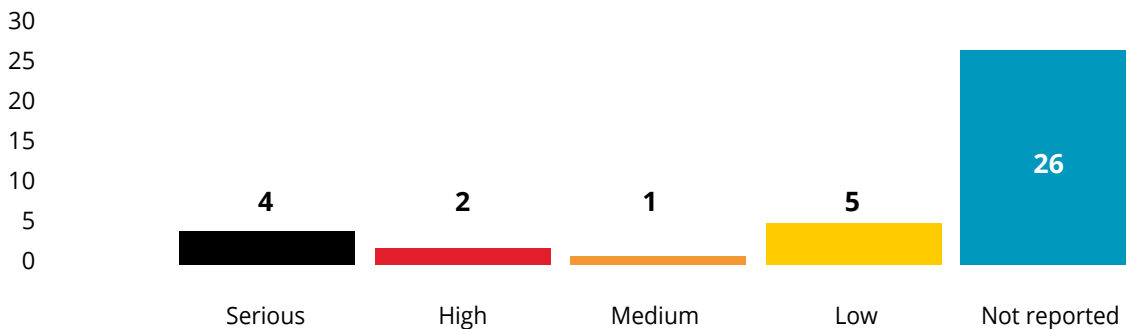
When assessing whether a product poses a risk, Article 26 on the notifications of dangerous products through the Safety Gate Rapid Alert System should be respected³.

Overall, 38 (67 %) samples did not meet the requirements. A total of 18 samples (32 %) did not meet the requirements of the tests performed by the laboratory and 36 (63 %) did not meet the labelling requirements (of warnings, markings and instructions).

► Three samples were assessed as posing a serious risk and two a high risk. One was labelled a medium risk and five a low risk.

Figure 6 shows the risks levels, based on the assessment performed by MSAs, of the samples that did not meet the requirements⁴.

Figure 6: Risk level of samples that did not meet the requirements



³ Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products

⁴ Products that met the testing requirement, but did not meet the labelling requirements are reported under the label 'formal non-compliance'.

Corrective measures

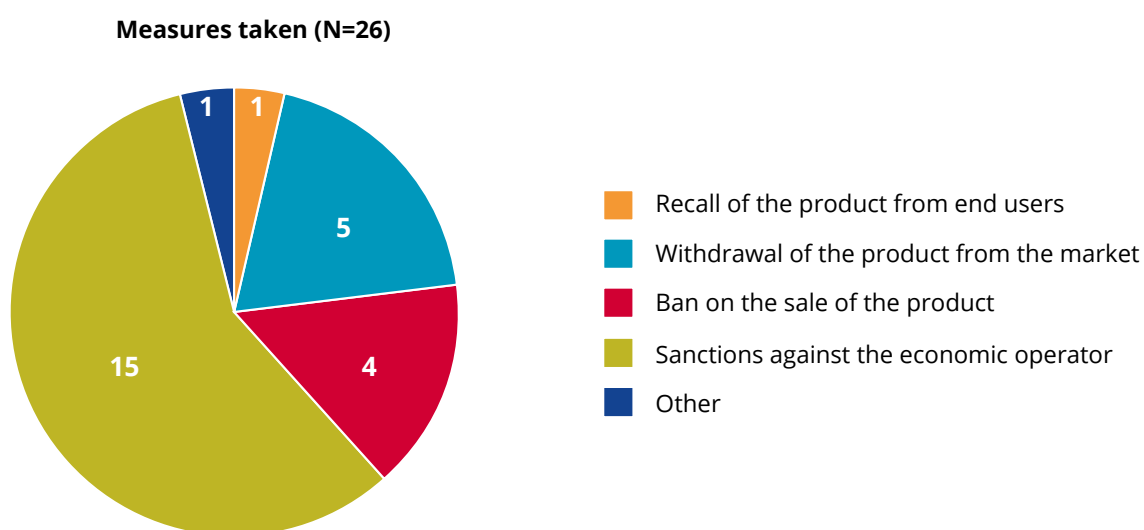
Based on the results and the risk assessments performed, the MSAs decide which corrective measures must be taken regarding the products that do not comply with EU legislation and/or the applicable standards designed to stop dangerous products from being sold on the Single Market.

Figure 7 displays the corrective measures taken for the products that did not meet the testing requirements.

Additionally, when a serious risk is identified, MSAs are legally required to submit a notification on the Safety Gate Rapid Alert System, in accordance with Article 26 of the GPSR⁵. On the basis of the GPSR and Regulation (EU) 2019/1020⁶, it is also recommended to submit notifications for measures taken against products posing a less than serious risk.

Following the actions triggered by this testing campaign, notifications for three products were published on Safety Gate⁷.

Figure 7: Measures taken for products that did not meet the requirements



Conclusions and recommendations

Conclusions

The activity tested the mechanical and chemical safety of disposable electronic cigarettes and their emissions. Overall, 18 (32 %) samples did not meet at least one of the requirements set down in the testing plan.

When adding the checks performed by MSAs on warnings, markings and instructions, the number of samples which did not meet at least one of the requirements increases to 67 %.

⁵ Regulation (EU) 2023/988 of the European Parliament and of the Council of 10 May 2023 on general product safety.

⁶ Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products.

⁷ Until 07.03.2025 included.

Recommendations to stakeholders

The following recommendations are based on the outcome of the testing and discussions by MSAs during the project.

For consumers

- ▶ If the product doesn't have warnings in your language, don't buy it. Warnings are a legal requirement, and one failure can be accompanied by others.
- ▶ Disposable e-cigarettes that claim a puff count higher than 600 for a 2 ml tank may be non-compliant, misleading, or both.
- ▶ Do you know about the Waste Electrical and Electronic Equipment (WEEE) Directive which allows you to return electronic and electrical waste for free?
- ▶ E-cigarettes are made to look attractive and can be tempting to play with. Keep them away from children as they can be activated inadvertently.
- ▶ Manufacturers are infusing disposable electronic cigarettes with flavours to enhance their appeal and addictive potential – particularly targeting non-users and young users.
- ▶ Put your health first: check if there is nicotine or a dangerous oily substance in your vape, such as medium-chain triglyceride (MCT) oil.
- ▶ Check on Safety Gate to see if the product you're buying has been considered as dangerous.
- ▶ Report any safety issues or accidents with your product to your consumer protection authority on Consumer Safety Gateway.

For economic operators

- ▶ Stay informed about the development and the implementation of national and market-wide legislation. Do you know about the Waste Electrical and Electronic Equipment (WEEE) Directive which allows consumers to return electronic and electrical waste for free?
- ▶ The new battery regulation requires separation of batteries from the rest of the electronic product for disposal. Please ensure that your products are designed so that batteries can be easily removed without the risk of inadvertently opening the device, which could lead to leakage or exposure to e-liquid, in compliance with these new requirements.

For standardisation organisations

- ▶ Market surveillance authorities recommend developing a standard to measure the puff count.
- ▶ A standard method to measure the volume of e-liquids in non-refillable electronic cigarettes would help laboratories.
- ▶ For better child safety, consider including requirements on child-resistant activation systems for e-cigarettes.
- ▶ Develop an ad-hoc methodology for recycling the batteries included in disposable electronic cigarettes.

For regulators:

- ▶ Rules on disposable electronic cigarettes are needed to give details on requirements for child safety (especially child-proof activation systems) and labelling, e.g. by commission delegated acts.
- ▶ The TPD does not require the declaration of e-cigarette liquid volume. It is proposed to make the declaration of the volume and the units of the delivery per dose mandatory. Moreover, it is proposed to prohibit stating the puff count of devices on the packaging. This number is often used by manufacturers to promote their products, which is not allowed by the TPD.
- ▶ Consider implementing traceability measures for related tobacco products (e-cigarettes) to facilitate MSAs' management of non-compliant items.
- ▶ Address the legislative gap on nicotine pouches. These products are currently only covered by the GPSR. Two standards are being drafted for these products: ISO/DIS 21109 (test method for pH) and ISO/AWI 21114 (test method for nicotine). However, regulations regarding the safety of this product are missing and maximum amounts of substances (e.g. nicotine) have not been established yet.



Part II

What is CASP?

The Coordinated Activities on the Safety of Products (CASP) project enables close cooperation between market surveillance authorities from European Union/

European Free Trade Agreement countries to ensure the safety of products on the Single Market.

CASP 2024 includes seven product-specific testing activities and two horizontal activities

Participants in the product-specific activities test the jointly selected products sampled on their respective national markets. The products are tested in accredited laboratories in the EU/EFTA according to the commonly agreed testing criteria.

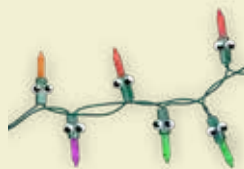
CASP 2024 also includes one re-testing activity. Based on the same testing plan as in the previous testing campaign of the given product category, the re-testing initiative involves repeating large-scale market surveillance activities for those product categories to verify the compliance level after a certain period of time.



PSA 1
Baby soothers



PSA 2
High chairs



PSA 3
Lighting chains



PSA 4
Mini electric heaters



PSA 5
Disposable electronic cigarettes



PSA 6
Bicycles for children



PSA 7
Slime toys (re-testing)

Horizontal activities provide a knowledge-exchange forum for market surveillance authorities. With the guidance of technical experts in the relevant fields, the participants develop common approaches, procedures, and practical tools for market surveillance.

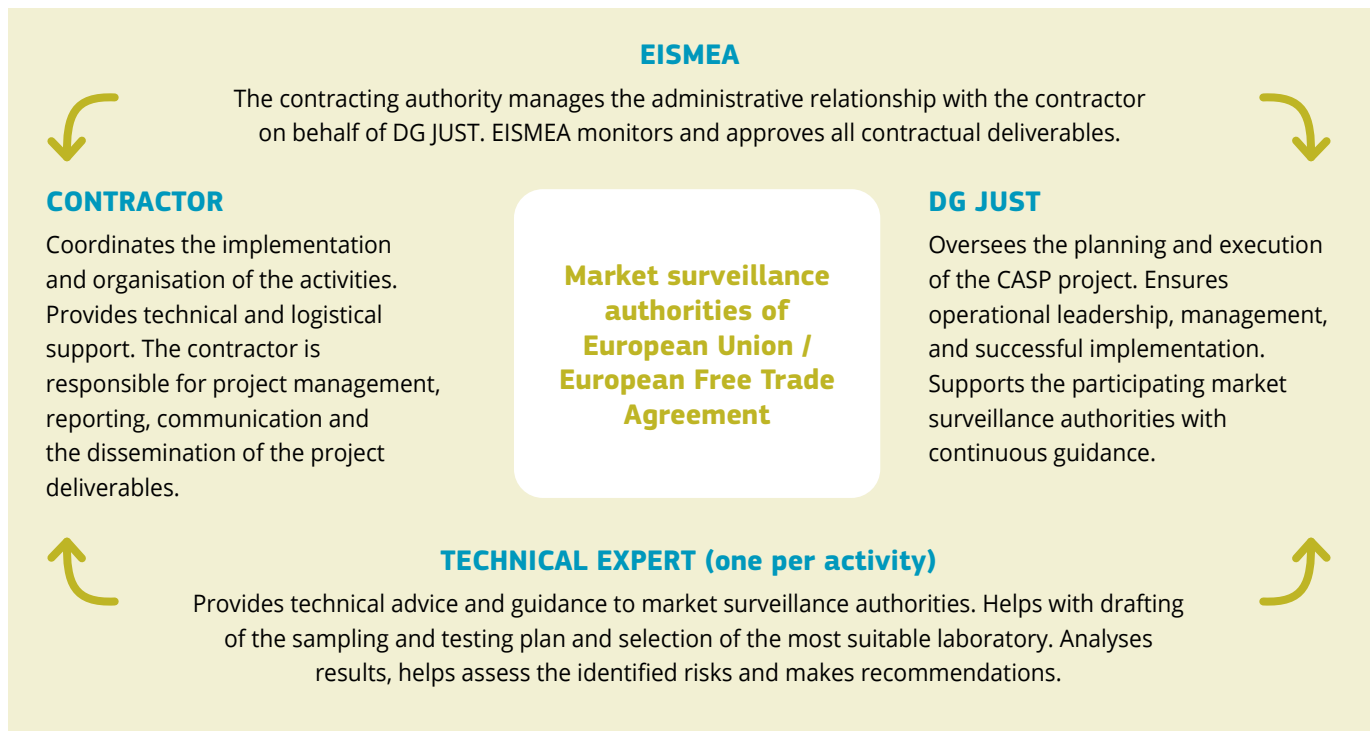


HA 1
Standardisation – use of standards by analogy

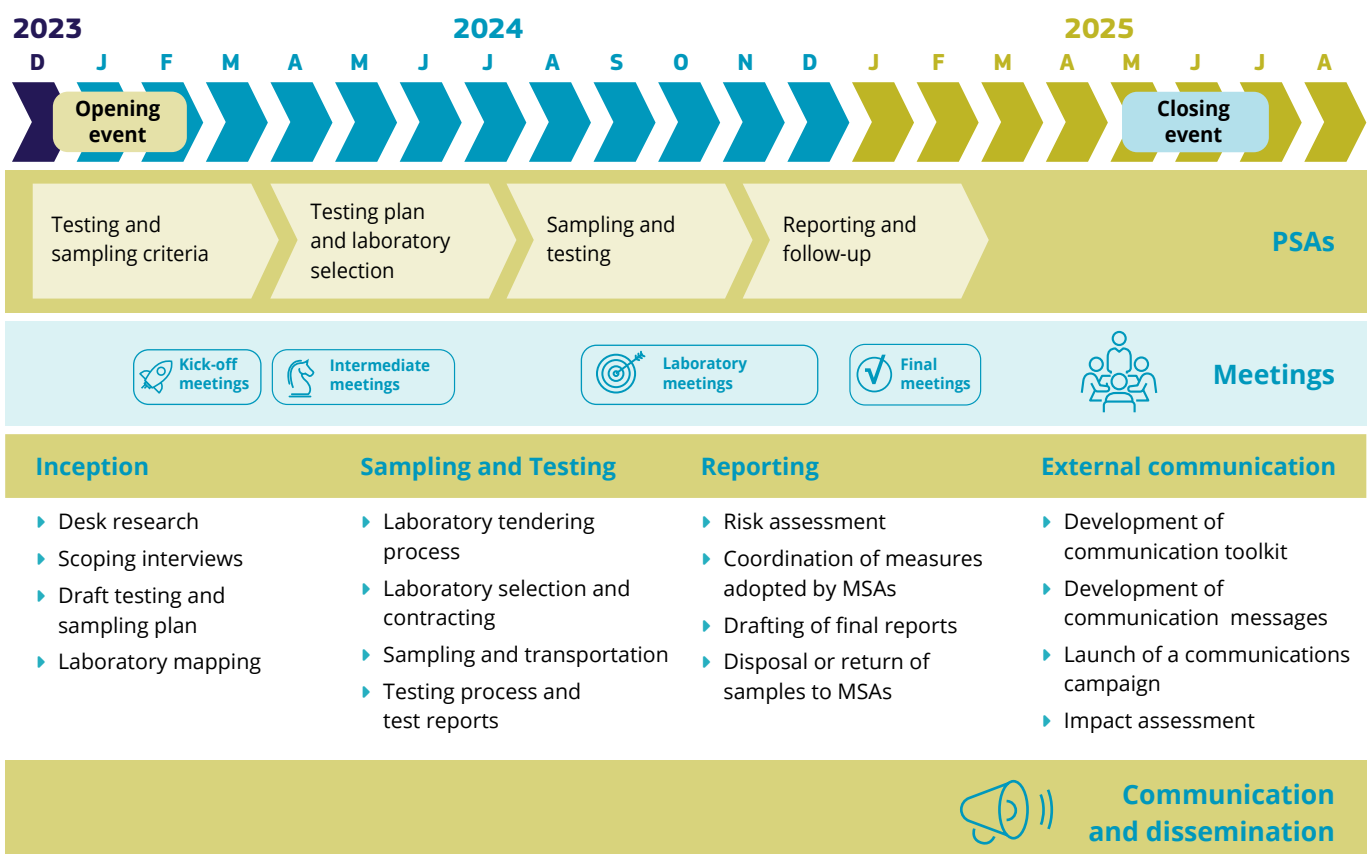


HA 2
Starter kit for newcomers

Roles and responsibilities



Product-specific activities work plan



Product-specific activities processes and tools

<p>0 Pre-CASP process</p> <p>DG JUST conducts a priority-setting exercise with market surveillance authorities to select the product categories for each CASP project. This selection process encompasses both new and previously tested product categories in the framework of a CASP project.</p>	<p>1 Validation of testing and sampling plans</p> <p>The technical experts draft the testing plans based on the priorities set by market surveillance authorities and the main product hazards identified. The drafts are presented at the kick-off meetings, then finetuned and validated by the participants.</p>	<p>2 Laboratory selection</p> <p>The contractor's team maps the testing laboratories and contacts them to collect preliminary fee quotes and other relevant information. The tendering process is launched after the kick-off meetings, and the offers are compared and evaluated. During the intermediate meetings, the market surveillance authorities select one laboratory per activity.</p>
<p>3 Collection and transportation of samples</p> <p>The market surveillance authorities collect samples from their national markets, perform preliminary checks and send them to the selected testing laboratory.</p>	<p>4 Testing and delivery of test reports</p> <p>The laboratory tests the samples according to the agreed testing plan. The market surveillance authorities check and validate the test reports.</p>	<p>5 Risk assessment</p> <p>The technical expert and the market surveillance authorities perform risk assessments on all samples that do not meet the testing requirements.</p>
<p>6 Measures adopted by the market surveillance authorities</p> <p>The market surveillance authorities take corrective measures for the products that do not meet the requirements and issue notifications on Safety Gate.</p>		<p>7 External communications</p> <p>The external communication campaign will launch when all testing results have been validated. It is rolled out via media and influencer engagement activities, supported through stakeholder dissemination activities.</p>

External communication

Communication tools

- ▶ **Final reports** for each activity and for the CASP 2024 project;
- ▶ **Factsheets;**
- ▶ **#ProductGo game and related assets;**
- ▶ **Press kit and social media assets.**

Channels

The communication material is disseminated via:

- ▶ ec.europa.eu web presence ([Safety Gate](#), [CASP](#) webpage, [EISMEA news](#) section);
- ▶ Social media accounts of DG JUST and EISMEA;
- ▶ Communication channels of market surveillance authorities;
- ▶ Selected partner influencers;
- ▶ Selected media partnerships.

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Publications Office
of the European Union

Luxembourg: Publications Office of the European Union, 2025
ISBN 978-92-68-26526-0
doi:10.2838/6080161