



CASP 2024

Slime toys (retesting)

Final activity report

TABLE OF CONTENTS

List of abbreviations.....	III
Executive summary	III

PART I

Overview of the activity	2
Participating MSAs	2
Product scope.....	3
Testing criteria.....	3
Sampling and testing	4
Sampling distribution	4
Testing process.....	4
Test results	5
Overview of the test results and main findings	5
Results per category	5
Results per sampling channel	6
Conclusions of the test results	6
Risk assessment and corrective measures.....	7
Risk levels of products that did not meet the requirements.....	7
Corrective measures	7
Conclusions and recommendations	8
Conclusions	8
Recommendations to stakeholders.....	9

PART II

What is CASP?	11
Product-specific activities work plan	12
Product-specific activities processes and tools	13

List of abbreviations

CASP	Coordinated Activities on the Safety of Products
CEN	European Committee for Standardization
DG JUST	Directorate-General for Justice and Consumers
DIY	Do-it-yourself
EC	European Commission
EFTA	European Free Trade Agreement
EN	European Standard
EU	European Union
GPSR	General Product Safety Regulation 2023/988
KoM	Kick-off meeting
MSA	Market surveillance authority
PSA	Product-specific activity
TC	Technical Committee
TSD	Toy Safety Directive 2009/48/EC

Executive summary

Objectives

The overarching goal of the Coordinated Activity on the Safety of Products (CASP) project is to protect the health and safety of European consumers by supporting national authorities from EU/EFTA countries responsible

for market surveillance (MSAs) to better coordinate their activities. MSAs participate in joint sampling, testing and risk assessment of specific products during the CASP project.

Product scope

Slime toys are soft, stretchy and often colourful substances that can be manipulated and played with. They feel thin and

water-like when handled gently, but show strong resistance when high force is applied to them.

Main testing criteria and results

Each of the 180 samples was tested against the standard **EN 71-3:2013 + A3:2018** for migration of each of the 19 materials listed in the standard, including boron.

Out of the 180 samples, 47 (26 %) did not meet at least one of the requirements of the testing plan: 46 for boron migration and one for lead migration. Examination of the labelling – warnings, markings and instructions – showed that 50 (27.5 %) samples did not meet the requirements.

Conclusions

Slime toys are a significant focus for MSAs due to their main use by vulnerable consumers, children. As a result of the testing campaign, MSAs issued 24 Safety Gate notifications¹ and instructed economic operators to recall

non-compliant products, withdraw them from the market and stop sales. For the samples that failed warning checks, operators were asked to provide appropriate markings and address administrative issues.

Key recommendations to stakeholders

For consumers

- ▶ Unsafe chemicals have been found in slime toys;
- ▶ Not everything trending is safe;
- ▶ Slime smells great, but is not a treat to grab and eat;
- ▶ Be safe, wash hands;
- ▶ Buy slime only from reputable brands and sellers;
- ▶ Product safety awareness is the best protection;
- ▶ Check on [Safety Gate](#) to see if the product you're buying has been identified as dangerous;
- ▶ Report any safety issues or accidents with your product to your consumer protection authority on [Consumer Safety Gateway](#).

Recommendations for standardisation organisations

- ▶ The development of the rod test for slime toys has proven to be highly effective for product categorisation;
- ▶ Slime toys behave differently on a plastic rod and on human skin. For standard EN 71-3, consider using a material that more closely resembles human skin to test slime behaviour.

For economic operators

- ▶ All economic operators must comply with the legal requirements of the toy safety rules when making toys available on the EU market;
- ▶ When considering a change in suppliers, be careful about the potential risks associated with continuity of production and contamination of products;
- ▶ Make sure you are up to date with the new obligations under Article 19 of the General Product Safety Regulation (GPSR) concerning the making of products available for sale online, or through other means of distance sales.

¹ Until 06.03.2025 (included).

Overview of the activity

Participating MSAs

		Country	MSA
1		Austria	Federal Ministry of Social Affairs, Health, Care and Consumer Protection
2		Croatia	State Inspectorate
3		Czechia	Czech Trade Inspection Authority ²
4		Estonia	Consumer Protection and Technical Regulatory Authority
5		France	General Directorate for Competition, Consumer Protection and Fraud Control
6		Germany	Competence Center Market Surveillance - Trade Supervisory Authority - Government of Upper Bavaria
7			State Directorate of Saxony ²
8		Hungary	Ministry of Justice, Consumer Protection Department for Market Surveillance ²
9		Italy	Chamber of Commerce of Milan Monza Brianza Lodi
10			Chamber of Commerce of Reggio Calabria ²
11			Torino Chamber of Commerce
12			Chamber of Commerce of Venezia Rovigo ²
13			Pistoia-Prato Chamber of Commerce
14		Latvia	Consumer Rights Protection Centre
15		Lithuania	State Consumer Rights Protection Authority
16		Malta	Malta Competition and Consumer Affairs Authority
17		The Netherlands	Netherlands Food and Consumer Product Safety Authority
18		Slovakia	Slovak Trade Inspection
19		Spain	Ministerio de Industria, Comercio y Turismo ²



² MSAs can participate in the CASP project in the testing-only modality. They participate in the testing process, but are not involved in the discussions and decision-making and do not take part in the activity meetings.

Product scope

Slime toys are produced by combining polyvinyl alcohol solutions and borate ions. Slime toys gained popularity among children, especially around 2016, due to their tactile and sensory appeal. As a result, 29 MSAs participated in the CASP 2019 slime project, testing a total of 195 slime toys. Between September 2019 and March 2024, 156 Safety Gate notifications were issued for 'slime toy'.

The safety risks of slime products mainly originate from the release of boron, which can affect children's fertility and reproduction by disrupting the gonads; it might also irritate the skin or respiratory system. Additional risks to consumers include choking and/or ingestion.

Table 1: Product scope

Product	Photo	Description
In scope		Slime toys and slime-like materials. Packages with slimes of different colours.
Out of scope		DIY kits. Sandy/powder-like products.

Testing criteria

The slime toys activity is the first re-testing activity of the CASP projects. By employing the testing plan of the CASP 2019 slime activity, re-testing initiatives enable the repetition of large-scale market surveillance of products with high instances of non-compliance and many Safety Gate notifications. This facilitates the comparison of testing results across different CASP editions.

Slime toys were tested against the standard EN 71-3:2013 + A3:2018 with the corresponding limit values for Category I (dry, brittle, powder-like or pliable toy material) and Category II (liquid or sticky toy material). The final testing plan is described in the table below.

In addition to the CASP 2019 slime activity:

- ▶ Migration of all 19 metal and metalloid elements included in the TSD and EN 71-3 were tested (not only boron);
- ▶ Product categorisation was performed by the laboratory according to the newly published technical specification for categorising slime toys (PD CEN/TS 17973:2023).

Table 2: PSA 7 – Slime toys final testing plan

EN 71-3:2019 + A1:2021	Other
<p>Migration of elements according to EN 71-3:2013 + A3:2018 (all 19 materials).</p> <ul style="list-style-type: none"> ▶ Test every sample against standards EN 71-3:2013 + A3:2018; ▶ Provide a table of pass/fail (migration of elements) according to the classification of the technical specification (PD CEN/TS 17973:2023). 	<p>Establish the category of each sample (Category I or II) using the technical specification (PD CEN/TS 17973:2023).</p>

Sampling and testing

Sampling distribution

The sampling process was carried out by the MSAs based on the sampling distribution agreed during the KoM, with minor adjustments for market availability. MSAs collected 184 samples, both online and from physical stores. Out

of the 184 samples, 4 were not tested³. Three products were out of scope: two DIY kits and one Category III product. The fourth toy had slime inside it which was not accessible.

During the PSA7 sampling process, several MSAs collected identical samples. In agreement with the laboratory and the European Commission, instead of discarding those products with the same EAN code, it was agreed that they would be tested as long as the slime colour and/or the batch number were different.

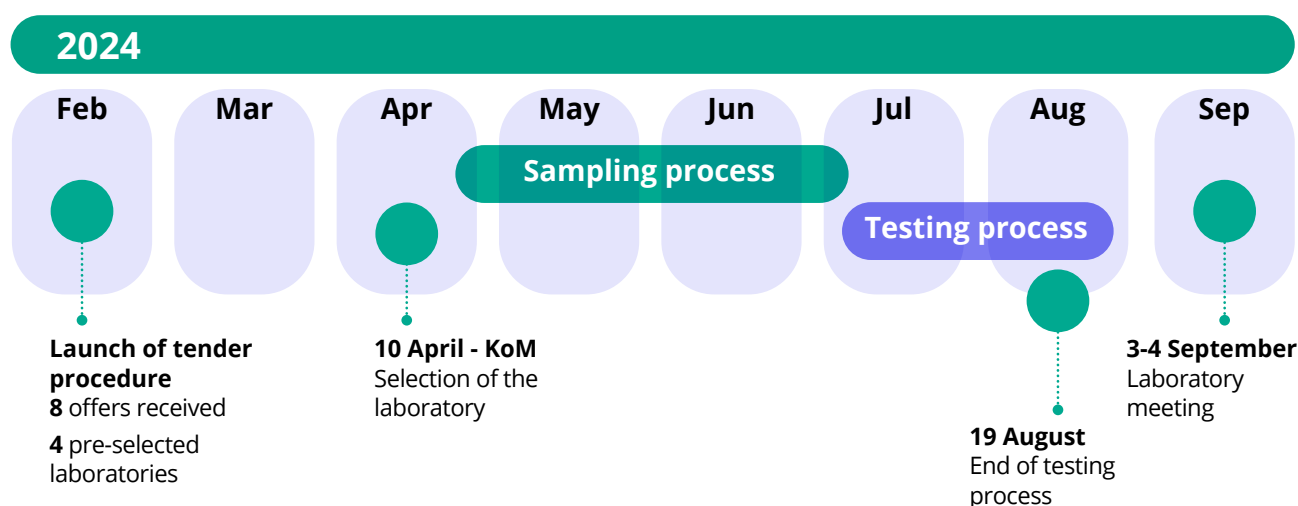
Testing process

The testing laboratory for this activity was selected through a tender procedure. The tender specifications were sent to 42 EU/EFTA laboratories identified through the project team's engagement strategy. Each laboratory was requested to submit an offer, including pricing details, certification evidence, relevant expert experience and test report templates. Eight laboratories submitted offers before the deadline. Based on the completeness and competitiveness of the offers, four were pre-selected and invited to an interview.

During the KoM, the MSAs were presented with comparative analyses of the technical quality and financial aspects of the pre-selected offers. The MSAs selected the laboratory that was awarded the highest number of final points based on the quality and price of their offer.

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

Figure 1: Timeline of the sampling and testing process



³ PSA7_174, PSA7_123, PSA7_100 and PSA7_111.

Test results

Overview of the test results and main findings

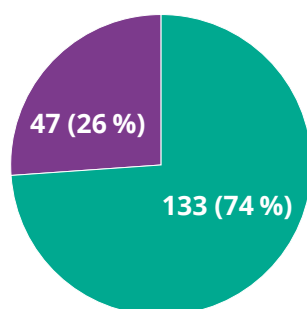
A total of 47 out of 180 samples did not meet one of the requirements outlined in the testing plan. Of the 47 samples that did not meet the testing requirements, 46 failed the boron migration test and one failed the lead migration test.

The MSAs performed checks on warnings, markings and instructions in their national language(s). In total, 50 out of 180 samples did not meet the requirements. The most common non-compliance issues were: warnings, labels and

instructions not in the Member State's official language, age warnings without an indication of the specific hazard, and instructions and safety information not in a language easily understood by consumers.

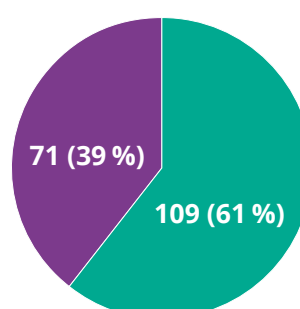
If we consider both the chemical tests performed by the laboratory and the checks on warnings, markings and instructions performed by the MSAs, a total of 71 (39%) samples did not meet at least one of the requirements.

Figure 2: Overall test results (chemical testing) (N=180)



■ Met the requirements ■ Did not meet the requirements

Figure 3: Overall test results (including warnings, markings and instructions) (N=180)

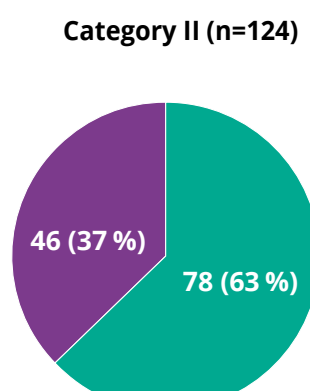
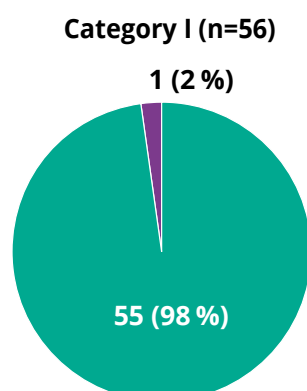


Results per category

Out of the 180 samples tested, 56 were classified as Category I toys, while the remaining 124 were Category II⁴. The failure ratios of the two categories differed

considerably. Only 1 (2%) of the sampled Category I products failed the tests. In contrast, 46 (37%) of Category II toys failed.

Figure 4: Test results per category



⁴ PD CEN/TS 17973:2023 is used to determine which category the slime falls into. The toys are categorised based on the penetration time of the testing rod into the slime: Category I if the penetration time is greater than 180 seconds; Category II if it is less than 180 seconds.

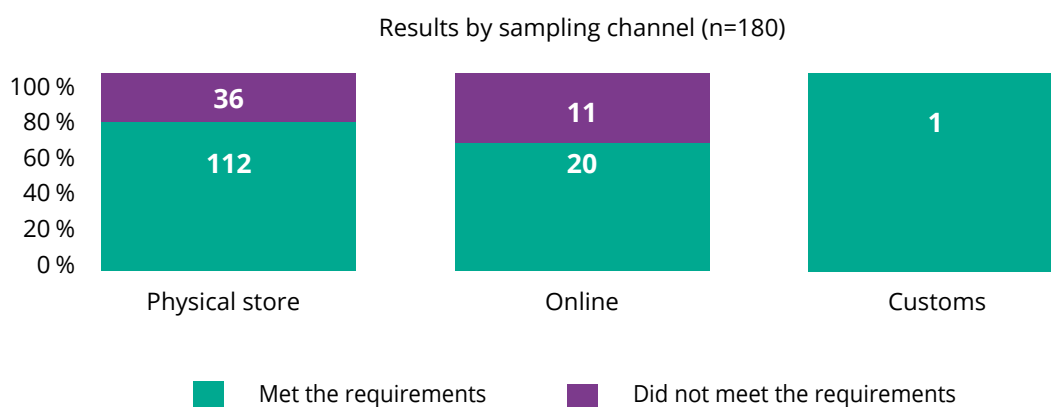
During CASP 2019, 195 slime samples were tested. For Category I, 10 out of 66 (15 %) did not meet the testing requirements for boron migration. For Category II, 29 samples out of 129 (22 %) did not meet the migration criteria. In view of this, it becomes evident that while the outcome of the Category I slime toys' test results has improved, the failure ratio for Category II samples has increased.

Results per sampling channel

A total of 148 samples were obtained in physical stores, 31 were purchased online and one from customs authorities. The test results reveal that 11 (35 %) of

the products purchased online, and 36 (24 %) samples purchased in physical stores, did not meet the requirements.

Figure 5: Test results per sampling channel



Conclusions of the test results

Chemical risks

Of concern is that 46 (25.5 %) of the tested samples failed to meet chemical safety requirements for boron migration, marking an increase from the 20 % failure rate in the CASP 2019 slime project. Of the other 18 metal/metalloid elements analysed, only one sample exceeded

lead limits, indicating that boron remains a significant concern. Manufacturers may be unintentionally or deliberately using higher boron levels to achieve desired visco-elastic properties, despite regulations prohibiting such practices.

Warnings, markings and instructions

The checks performed by the MSAs on warnings, markings and instructions in their national language(s) revealed that 50 samples (27.5 %) did not meet the

requirements. These elements are an essential source of information for parents/caregivers about the product and its safe use.

Risk assessment and corrective measures

Risk levels of products that did not meet the requirements

Toys placed on the Single Market shall comply with the essential safety requirements of the Toy Safety Directive. Toys shall not jeopardise the safety or health of users or third parties when they are used as intended or in a foreseeable way.

When a chemical substance that is banned, or that is present in a concentration exceeding the limits established by European legislation is detected, an individual risk assessment is not required, as the risk level can be automatically classified as a serious risk. However, for borderline cases where chemical migration limits are close to the established thresholds, the measurement uncertainty⁵ can play a significant role in the classification of compliance.

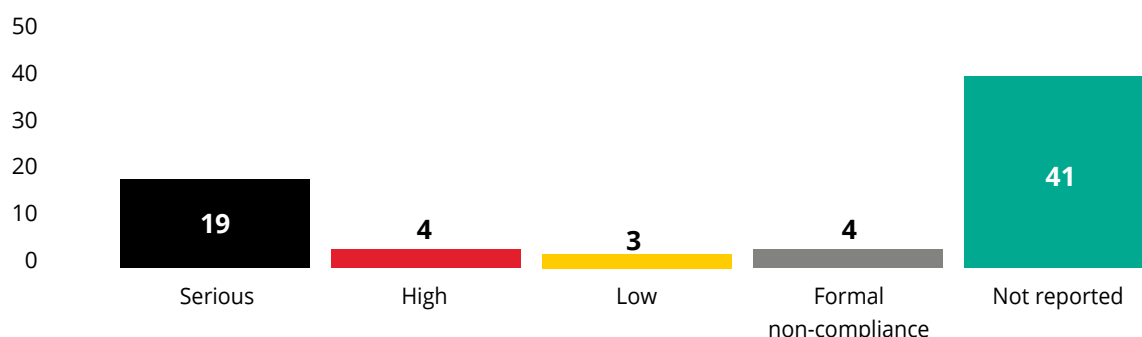
The approach taken by some MSAs may vary. Some MSAs, after considering measurement uncertainty, may determine that the results are within an acceptable range and may not classify those samples as non-compliant with the requirements.

In total, 71 (39 %) samples did not meet all the requirements (chemical tests and checks on warnings, markings and instructions). A total of 47 (26 %) did not meet the requirements of the chemical tests performed by the laboratory. The remaining 24 samples failed to meet formal requirements (of warnings, markings and instructions)⁶.

- Based on the threshold level of the boron migration, 23 samples were assessed as posing either a serious (19) or high risk (4). Three of the 70 samples that did not meet the requirements were evaluated by the responsible MSAs as posing a low risk (2 that failed the boron migration test were assessed as low risk due to their borderline levels of boron migration).

Figure 6 shows the risks levels of the samples that did not meet the requirements.

Figure 6: Risk levels of samples



Corrective measures

Based on the test results, the MSAs determine the corrective measures for products that do not comply with EU legislation and/or applicable standards. Figure 7 illustrates the corrective measures taken for products that failed to meet the requirements.

Additionally, when a serious risk is identified, MSAs are legally required to submit a notification through the Safety Gate Rapid Alert System, in accordance with Article 26 of the GPSR⁷. On the basis of the GPSR and Regulation (EU) 2019/1020⁸, it is also recommended to submit notifications for measures taken against products posing less-than-serious risk.

⁵ Measurement uncertainty refers to the doubt that exists about the result of a measurement, which can arise from factors such as instrument precision, environmental conditions and sample variability. In borderline cases, this uncertainty can lead to different interpretations of whether a sample is within the regulatory limits.

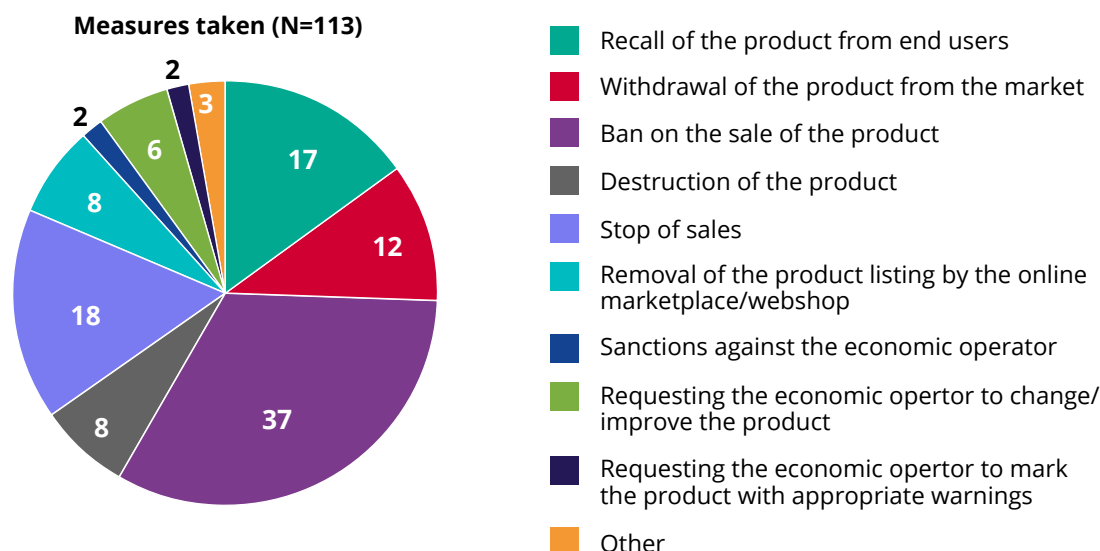
⁶ Products that met the testing requirement, but not the requirements on warnings, markings and instructions, are reported under the label 'Formal non-compliance'.

⁷ Regulation (EU) 2023/988 of the European Parliament and of the Council of 10 May 2023 on general product safety.

⁸ Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products.

Following the actions triggered by this testing campaign, Safety Gate notifications were issued for 24 products.

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



Conclusions and recommendations

Conclusions

Toys represent a product category in which MSAs invest significant resources and continuous enforcement effort due to the vulnerability of their users (children). Due to their popularity, MSAs focused on slime toys in CASP 2019 and CASP 2024. The 2024 re-testing campaign revealed that 25.5% of the 180 tested samples did not meet the testing requirements due to boron migration that exceeded the limits set down in legislation and standards.

MSAs' verification of warnings, markings and instructions in their national language(s) showed that 27.5 % of samples did not meet the requirements. This is an important part

of the risk profile of toys as it provides parents/caregivers with crucial information about a product's correct use and age suitability.

MSAs issued 24 Safety Gate notifications and instructed the economic operators to recall their products from consumers, withdraw them from the market and stop further sales. For samples that failed the checks on warnings, markings and instructions, MSAs mainly asked the economic operators to mark the products with appropriate warnings and to rectify the administrative non-compliances.

Recommendations to stakeholders

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

For consumers

- ▶ Unsafe chemicals have been found in slime toys. Check [Safety Gate](#), the EU's rapid alert system for dangerous, non-food products to see whether problems have been reported for the same slime toy you want to buy;
- ▶ Not everything trending is safe. Do your own research on the safety of a slime toy before you buy it for your child;
- ▶ Slime smells great, but is not a treat to grab and eat;
- ▶ Be safe, wash hands;
- ▶ Buy slime only from reputable brands and sellers;
- ▶ Product safety awareness is the best protection;
- ▶ Check on [Safety Gate](#) to see if the product you're buying has been identified as dangerous;
- ▶ Report any safety issues or accidents with your product to your consumer protection authority on [Consumer Safety Gateway](#).

For economic operators

- ▶ All economic operators must comply with the legal requirements of the toy safety rules when making toys available on the EU market;
- ▶ When considering a change in suppliers, be careful about the potential risks associated with continuity of production and contamination of products;
- ▶ Make sure you are up to date with the new obligations under Article 19 of the General Product Safety Regulation (GPSR) concerning the making of products available on the market online or through other means of distance sales.

For standardisation organisations

- ▶ The development of the rod test for slime toys has proven to be highly effective for product categorisation;
- ▶ Slime toys behave differently on a plastic rod and human skin. For standard EN 71-3, consider using a material to more closely resemble human skin to test slime behaviour.

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.

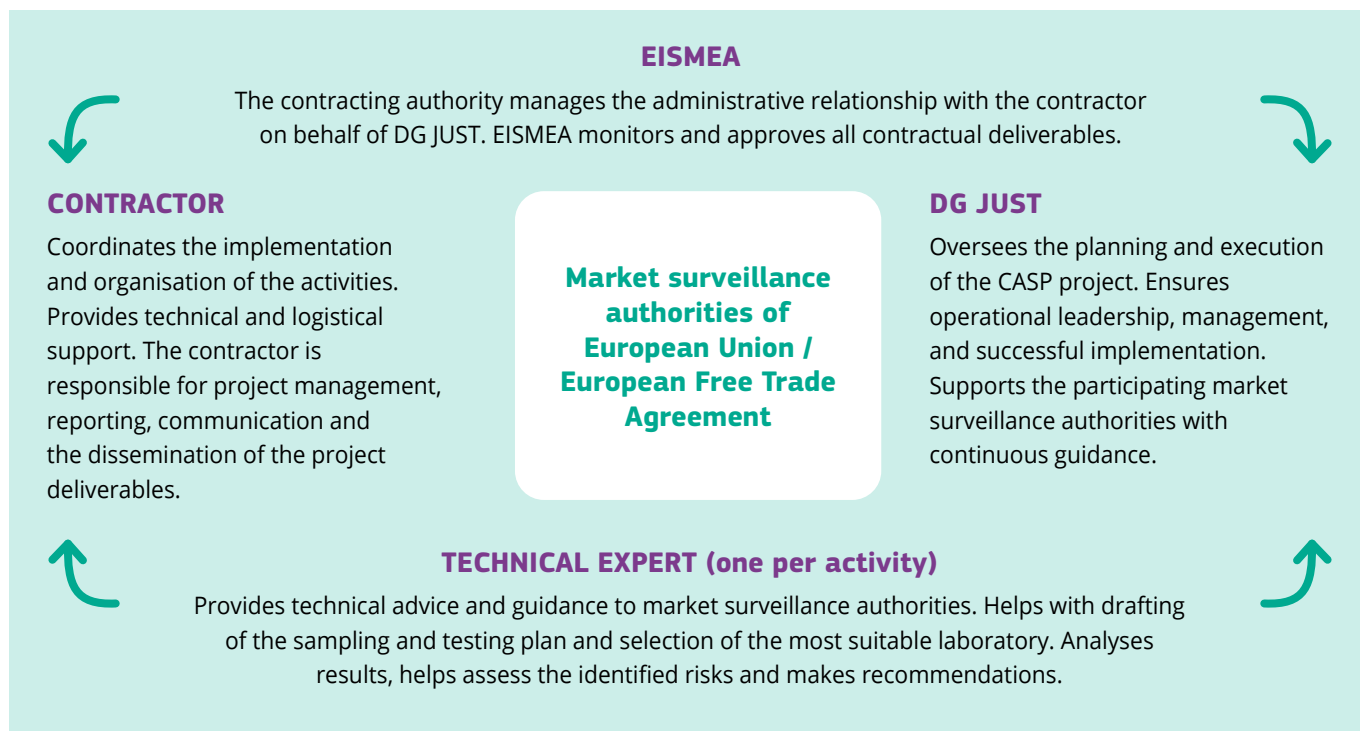


HA 1
Standardisation – use of standards by analogy

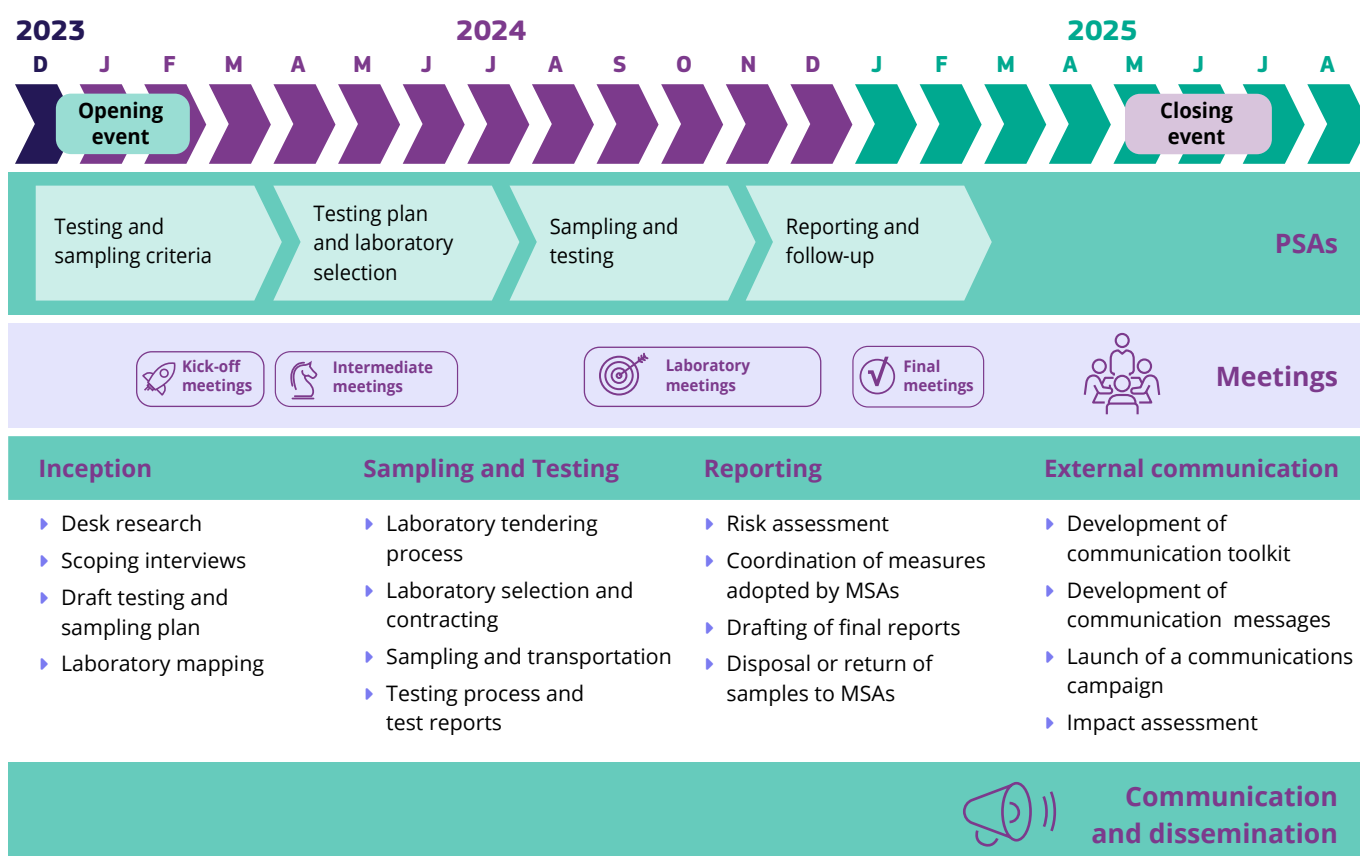


HA 2
Starter kit for newcomers

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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