



Association Internationale de la Savonnerie, de la Détergence et des Produits d'Entretien
International Association for Soaps, Detergents and Maintenance Products

A.I.S.E. TEST PROTOCOL FOR SUPERIOR CHILD IMPEDING CLOSURES FOR RECLOSABLE HAZARDOUS LIQUID LAUNDRY DETERGENT CAPSULES PACKAGING¹

2017

A.I.S.E. Test Protocol

I. SCOPE

This A.I.S.E. Test Protocol specifies a test method for reclosable packages designated as impeding the opening by young children, as prescribed in Commission Regulation (EU) No 1297/2014.

The aim is to provide a quantitative standardised test method and criteria that allow ensuring a superior effectiveness of the package in impeding access by young children (focusing on those children found to be most at risk, i.e. in the age group of 12-36 months). This is to meet and exceed what is required by the design criteria as specified in Commission Regulation (EU) No 1297/2014.

The test protocol does not cover the aspect of convenience and ease-of-use by adults, which is to be assessed and confirmed separately.

II. PACKAGING SAMPLES TO BE TESTED

The testing shall be conducted with new packaging that has been opened and correctly re-closed only once, in order to remove the original detergent content (if present) and to insert a suitable inert substitute product.

For every panellist, a new package shall be provided. Packaging samples that have once been used in a test, shall not be re-used for tests with different panellists. Sufficient packages, conforming to the container and closure technical drawings and specifications, shall be supplied to the testing facility, including a reserve for reference purposes.

Packages that require a destructive action on a tamper evidence sticker, seal or other system prior to their first opening, shall undergo this action according to the use instructions before the test. This seal shall not be re-applied after the insertion of the substitute product. This is relevant for e.g. the

¹ This protocol can also be found as Annex 2 in the [A.I.S.E. Liquid Detergent Capsules Product Stewardship Programme \(PSP\) 2017](#).

A.I.S.E. safe use sticker on plastic tubs, and for stand-up pouches that require the pouch's top edge (situated above the closing system) to be properly removed.

Detergent capsules shall not be present in the packages that are used in the test. A suitable substitute product shall be used instead. The substitute product shall be toxicologically inert, and shall have a size and mass (density) that is equivalent to the detergent capsules. For this purpose, blocks in MDF wood with a size and mass similar to detergent capsules (approx. 2x3x3 cm) may be used. Other substitutes may be used provided they have equivalent dimensions and physical properties as the actual detergent capsules. Packages up to a volume of 1 litre shall be filled to their nominal capacity (i.e. the number of substitutes is the same as the maximal number of detergent capsules for which the pack is designed); packages greater than 1 litre volume shall be filled up to 1 litre with substitute product. The rationale for limiting the amount of substitute product to 1 litre is that such contents provide adequate weight to the container without causing it to become too heavy for the child to lift or manipulate it during the test.

After replacement of the content, the packages shall be correctly re-closed.

Packaging samples of which the closure is judged to be defective during the initial opening and re-closing shall not be used for testing.

III. ETHICAL REVIEW

The company is solely responsible for the choice of testing facility/laboratory used. It must ensure that the testing facility/laboratory holds all necessary approvals and certifications, notably to supervise and carry out tests with (young) children.

IV. TEST PANEL

The test population represents those children most frequently involved in accidental exposures with detergent capsules. For the test protocol, 70% of the population shall be between 12 months and 23 months old, inclusive; and 30% shall be between 24 months and 35 months old, inclusive. Within these sub-groups, the distribution of the ages (in months) shall approximate a uniform distribution, avoiding bias towards either the younger or the older ages within the interval.

There shall be an equal split amongst both genders.

The test panellists shall be recruited from a diversity of social, ethnic and cultural origins.

The test panel size for one package is between 30 and 200 children. The size of the test panel determines the statistical robustness of the test results, and consequently, is taken into account in the pass/fail criteria.

All children in the test panel shall be healthy with no evident mental or physical handicap or problems with eye sight. They shall not have taken part in any previous test on child impeding closures or child resistant closures.

An information and consent letter shall be shared with parents, and their consent to participate to the study shall be documented. A parent shall sign the informed consent statement prior to any test exposure.

V. TEST SETUP

Only one package is to be tested per child.

The testing shall be carried out under the supervision of (an) impartial and appropriately qualified person(s). Specifically, the supervisor(s) shall be skilled and experienced in working with infants and toddlers.

The test shall be conducted in the close presence of a parent or other familiar caregiver of the child (guardian, family member, teacher,...). With the age group tested in this protocol, this is needed to create a comfortable situation for the children. Bias of the results, due to children's behaviour in accordance with implicit or explicit parental expectations, is not yet of relevance in this age group. The test shall be conducted in surroundings that are familiar to the children in the test panel (e.g. their day care, nursery, preschool, etc...). The personnel assisting to or observing the test shall be friendly to the children and shall make them feel at ease.

The children shall be tested individually, at a table or desk, or they may sit on the floor if they wish. The children may adopt any attitude or position they find convenient.

During the test, the children shall be protected from extraneous distractions (such as loud noises, toys close to the test area, etc.), as well as from distraction by other children who may be participating to a similar test.

VI. TEST PROCEDURE

First the supervisor explains the following to the parents (or other caregiver):

- The supervisor takes the parent (or caregiver) through the test procedure and clarifies what are the expectations in terms of instructions and encouragement to the child.
- It is not compulsory for the child to open the container, only to try. If the child does not manage to open it, the test is equally valid. If the child disengages, only gentle verbal encouragement is to be used to ask them to re-engage.
- They must not help the child to open the container. The adult shall not hold the pack so the child can more easily manipulate it. The adult shall not show or explain how to open the pack.
- The children shall not be encouraged by telling them that there are things they like inside the container – such as sweets or toys, etc.

The test consists of two phases, each taking 5 minutes, during which the child can try to open the pack. After the first 5 minutes, the supervisor opens and re-closes the pack while the child is watching.

1. The child is put in a comfortable place (sitting at a table or sitting on the floor).
2. The container is given to the child, and the parent (or caregiver) asks the child to open the pack. The timer is started for 5 minutes.
3. The supervisor and/or the parent (or caregiver) repeatedly (approximately every 30 seconds) encourages the child verbally to keep trying. The following wording (or equivalent) can be used: "You open it", "Come on, open it", "See what's inside", "Now you try, open it", "Try really hard to open it", "How does it open?"
4. If the child disengages and stops trying to open the container, the timer shall continue to run until the 5 minutes have passed. The child shall be verbally encouraged to re-engage by the parent (or caregiver) or supervisor. They shall not be physically led back to the pack. The verbal encouragement shall be repeated with intervals of 1 minute. The wording of the verbal encouragement shall be gentle to avoid anger or frustration with the child. Wording such as "The pack is still there, can you give it another try?" or equivalent shall be used.
5. The container is considered to be open when its contents can be clearly seen and/or can be accessed by the hand of the child. If the child opens the container, or gains access to the contents (e.g. by entering the hand from the side of the pack without fully opening it), the elapsed time is recorded, as well as a description how the child opened the pack, and the test ends.

6. If, on the contrary, after the first 5 minutes the child has not been able to open the container, the supervisor takes a second (identical) pack, and opens and recloses it in full view of the child. This is done in a casual way, without emphasis on the different action steps required to open the pack. No verbal instructions are given how to open the pack. After the demonstration, the supervisor puts the second pack away.
7. The supervisor repeats the instruction to the child: "Now you try it, open it". The timer is started again for 5 minutes. The verbal encouragement is repeated until the pack is opened or until the 5 minutes have passed. The same procedure as described in steps 3, 4 and 5 is followed. Specifically, if the child disengages and stops trying to open the container, the timer shall continue to run, while the verbal encouragement is continued, until the 5 minutes have passed.
8. After having participated in the test, the children shall be instructed that they should never try to open or gain access to the content of detergent packs or other household chemical products. The parent (or caregiver) shall be reminded to always store detergent products out of reach of children, because detergents can be hazardous for them.

Additional notes:

- The results are considered valid as long as the child at some point engages to try and open the pack, even if this is only for a few seconds. However, children who entirely refuse to engage, are to be excluded from the results.
- Children should not be prevented from using their teeth, throwing the container on the floor or using any other means to open the container.
- No tools or implements should be accessible which might be used by the child, except where such tools or devices are specifically supplied as part of the design of the child-impeding package; where this is so, the children shall have unobtrusive access to that tool, but it shall not be drawn to their attention (unless it was used in the demonstration).

VII. RESULTS

The following information shall be included in the report:

1. the name of the agency carrying out the test;
2. the name(s) of the person(s) supervising the test;
3. the date(s) and time of the day on which the test was carried out;
4. the location(s) of the test;
5. the name and address of the manufacturer and/or filler/packer of the package tested;
6. a photograph, a complete description and the specifications of the package tested;
7. a close-up photograph and a description of the closure system of the package tested, and a description how the opening mechanism works;
8. a photograph and a description of the substitute product used in the test;
9. the number of children participating to the test;
10. individual results for all participating children:
 - a. no personally identifiable information shall be included
 - b. the age (in months) and gender of the child
 - c. whether they were able to open the pack
 - d. if yes, whether this was before or after the demonstration
 - e. if yes, how much time (in seconds) was required by the child to open the packaging
 - f. if yes, a brief description of how the child opened the pack
 - g. if no, a brief description of the child's behavior/actions and level of involvement
11. percentage of children who opened the pack during the first 5 minutes, and overall percentage of children who opened the pack during the full study period.

VIII. INTERPRETATION

The pass/fail criteria of the test protocol are reapplied from the ISO 8317 test for child resistant packaging. Out of a sample of 200 children, a minimum of 85% (170 children) shall be unable to open the pack before the demonstration, and a minimum of 80% (160 children) shall be unable to open the pack overall.

If the sample size is smaller, the sequential method shall be applied, as outlined in the ISO 8317 protocol. This approach requires a minimum base size of $n=30$ to have conclusive evidence that the test is successfully passed. With this panel size, it is allowed that maximum 1 child out of 30 can open the pack. If out of this minimum panel size, 10 or more children can open the pack, it conclusively fails the test. Between 2 and 9 packs opened out of 30, the results are inconclusive and further testing (with a larger panel size) is required.

The information about the time it took to open packs, and the mechanisms how the packs were opened, is for information only, and is not taken into account for the pass/fail decision.

IX. EXEMPTION FOR PACKAGING MEETING THE CRITERIA OF EN ISO 8317

Packaging that meets the criteria of the EN ISO 8317 test for child resistant packaging, is deemed to also meet the criteria of the A.I.S.E. Test Protocol on Superior Child-Impeding Closures for Reclosable Hazardous Liquid Laundry Detergent Capsules Packaging, without the need to conduct additional testing.
