

**Mänguasjade ohutus. Osa 4: Katsekomplektid
keemiakatseteks ja samalaadseks tegevuseks**

**Safety of toys - Part 4: Experimental sets for chemistry
and related activities**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 71-4:2013 sisaldab Euroopa standardi EN 71-4:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 71-4:2013 consists of the English text of the European standard EN 71-4:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 27.02.2013.	Date of Availability of the European standard is 27.02.2013.
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ICS 97.200.50

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English Version

Safety of toys - Part 4: Experimental sets for chemistry and related activities

Sécurité des jouets - Partie 4: Coffrets d'expériences chimiques et d'activités connexes

Sicherheit von Spielzeug - Teil 4: Experimentierkästen für chemische und ähnliche Versuche

This European Standard was approved by CEN on 5 January 2013.

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Foreword

This document (EN 71-4:2013) has been prepared by Technical Committee CEN/TC 52 "Safety of toys", the secretariat of which is held by DS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2013, and conflicting national standards shall be withdrawn at the latest by August 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 71-4:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The significant changes from the previous edition of this standard are detailed in Annex D.

This standard is part 4 of a series of standards for the safety of toys.

This part 4 of the EN 71 series is intended to be read in conjunction with EN 71, part 1.

EN 71, *Safety of toys*, consists of the following parts:

- *Part 1: Mechanical and physical properties*
- *Part 2: Flammability*
- *Part 3: Migration of certain elements*
- *Part 4: Experimental sets for chemistry and related activities* (the present document)
- *Part 5: Chemical toys (sets) other than experimental sets*
- *Part 7: Finger paints — Requirements and test methods*
- *Part 8: Activity toys for domestic use*
- *Part 9: Organic chemical compounds — Requirements*
- *Part 10: Organic chemical compounds — Sample preparation and extraction*
- *Part 11: Organic chemical compounds — Methods of analysis*
- *Part 12: N-Nitrosamines and N-nitrosatable substances*
- *Part 13: Olfactory board games, gustative board games, cosmetic kits and gustative kits*
- *Part 14: Trampolines for domestic use*

In addition to the above parts of EN 71, the following guidance documents have been published:

- CR 14379:2002, *Classification of toys — Guidelines*,
- CEN/TR 15071:2005, *Safety of toys — National translations of warnings and instructions for use in EN 71*
- CEN/TR 15371:2013, *Safety of toys — Replies to requests for interpretation of EN 71-1, EN 71-2, and EN 71-8*.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European Standard, EN 71-4, is intended to reduce the risks and health hazards to a child when *experimental sets* involving chemical experiments are used as intended or in a foreseeable way, bearing in mind the behaviour of children.

During use of these *experimental sets*, the hazards should be kept to a minimum by the provision of appropriate information to make the experiments safe and controllable. Therefore, this European Standard specifies warning phrases and instructions for use for *experimental sets*.

As a general rule, *experimental sets* are designed and manufactured for particular ages of children. Their characteristics are related to the age and stage of development of the children, and their use presupposes certain aptitudes. Age requirements are therefore given.

The requirements of this European Standard do not release parents or carers from their responsibility of watching over the child while he or she is carrying out experiments. On the contrary, the use of these sets requires close supervision by adults.

1 Scope

This European Standard specifies requirements for the maximum amount and, in some cases, the maximum concentration of certain substances and mixtures used in *experimental sets* for chemistry and related activities.

These substances and mixtures are:

- those classified as dangerous by the EC-legislation applying to dangerous substances [1], [2] and dangerous mixtures [2], [3];
- substances and mixtures which in excessive amounts could harm the health of the children using them and which are not classified as dangerous by the above mentioned legislation; and
- any other chemical substance(s) and mixture(s) delivered with the *experimental set*.

This standard applies to *experimental sets* for chemistry and related activities including *crystal growing sets*, *carbon dioxide generating experimental sets* and *supplementary sets*. It also covers sets for chemical experiments within the fields of mineralogy, biology, physics, microscopy and environmental science whenever they contain one or more chemical substances and/or mixtures which are classified as hazardous according to Regulation (EC) No. 1272/2008 [2].

This standard also specifies requirements for marking, a contents list, instructions for use, eye protection and for the equipment intended for carrying out the experiments.

This standard does not apply to toys that are covered by EN 71-13 (e.g. cosmetic kits). Requirements for certain other *chemical toys* are given in EN 71-5.

NOTE The terms “substance” and “preparation”, as used in Directives 67/548/EEC [1] and 1999/45/EC [3], are also used in the “REACH Regulation”, Regulation (EC) No. 1907/2006 [4]. According to the Globally Harmonised System (GHS) of classification and labelling of chemicals, which in the European Union has been enacted by Regulation (EC) No. 1272/2008 (classification, labelling and packaging of substances and mixtures) [2], the timetable for the introduction of GHS has to be followed.

The words “preparation” and “mixture” should be considered synonymous; both are a mixture or solution of substances that do not react with each other. The old term “preparation” will be replaced by the new term “mixture” in due course. In this standard, only the term “mixture” is used.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 71-1, *Safety of toys — Part 1: Mechanical and physical properties*

EN 862, *Packaging — Child-resistant packaging — Requirements and testing procedures for non-reclosable packages for non-pharmaceutical products*

EN ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868)*

EN ISO 8317, *Child-resistant packaging — Requirements and testing procedures for reclosable packages (ISO 8317)*

ISO 7619-1, *Rubber, vulcanized or thermoplastic — Determination of indentation hardness — Part 1: Durometer method (Shore hardness)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

chemical toy

toy intended for the direct handling of chemical substances and mixtures and which is used in a manner appropriate to a given age-group and under the supervision of an adult

3.2

experimental set

chemical toy where the experimental and explorative character in playing with single chemical substances and mixtures along strict instructions dominates over the creative ideas of the user

3.3

chemistry set

experimental set consisting of one or more chemical substances and/or mixtures with or without equipment intended for carrying out chemical experiments

Note 1 to entry: The definition also covers *experimental sets* for chemical experiments within the fields of mineralogy, biology, physics, microscopy and environmental sciences whenever they contain one or more chemical substances and/or mixtures which are classified as hazardous according to Regulation (EC) No 1272/2008, excluding *crystal growing sets* and *carbon dioxide generating experimental sets*.

3.4

crystal growing set

experimental set consisting of one or more chemical substances for growing crystals without any reaction between the supplied substances

Note 1 to entry: A *crystal growing set* is used to grow crystals of different substances in aqueous solutions. The crystals may be grown on different materials (e.g. stones or gypsum) and can be coloured in different ways (e.g. with food colours): The expanding nature of the growing crystal is not subject to requirements within EN 71-1 for expanding materials as the expansion is not related to the absorption of water in the crystal and the expansion usually takes place over a long period of time (several days or weeks).

3.5

carbon dioxide generating experimental set

experimental set consisting mainly of a carbon dioxide-donor substance or mixture and a carbon dioxide-liberating substance or mixture which after combination generate carbon dioxide in the presence of water in an open system without any gas-tight restriction or confinement

Note 1 to entry: The set is used to carry out and observe chemical reactions where there is no intention to generate carbon dioxide in order to demonstrate speed, velocity or noise.

3.6

supplementary set

incomplete *experimental set* which is intended to be used with a complete *experimental set*

3.7

cosmetic kit

toy, the purpose of which is to assist a child to learn to make products such as fragrances, soaps, creams, shampoos, bath foams, glosses, lipsticks, other make-up, tooth-paste and conditioners