

**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

Käesolev Eesti standard EVS-EN 71-4:2009 sisaldab Euroopa standardi EN 71-4:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 30.10.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 26.08.2009.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 71-4:2009 consists of the English text of the European standard EN 71-4:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 30.10.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 26.08.2009.

The standard is available from Estonian standardisation organisation.

ICS 97.200.50

### Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Eesti; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

### Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:  
Aru str 10 Tallinn 10317 Estonia; [www.evs.ee](http://www.evs.ee); Phone: +372 605 5050; E-mail: [info@evs.ee](mailto:info@evs.ee)

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 30 July 2009.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

# Contents

Page

Foreword.....	3
Introduction .....	4
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 Chemical substances .....	6
5 Equipment .....	12
5.1 General requirements.....	12
5.2 Containers and glassware .....	12
5.2.1 Test tubes .....	12
5.2.2 Other glassware .....	12
5.2.3 Reagent containers.....	12
5.2.4 Closures.....	13
5.2.5 Empty containers.....	13
5.2.6 Test method for borosilicate glass .....	13
5.3 Equipment for the transfer of liquid.....	14
5.4 Test tube stand and test tube holder.....	14
5.5 Eye protection (see 5.1) .....	14
6 Marking .....	15
6.1 General requirements.....	15
6.2 Marking of individual containers and glassware.....	15
6.3 Marking of the primary packaging .....	16
7 Contents list with warnings and first aid information.....	16
8 Instructions for use .....	17
8.1 General instructions .....	17
8.2 Advice for supervising adults .....	17
8.3 Safety rules.....	18
Annex A (normative) Test methods for closures of reagent containers .....	19
A.1 Closure test A.....	19
A.2 Closure test B.....	19
A.3 Closure test C.....	19
Annex B (informative) Rationale on classification of substances and preparations .....	20
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EC Directive 88/378/EEC.....	21
Bibliography .....	22

## Foreword

This document (EN 71-4:2009) has been prepared by Technical Committee CEN/TC 52 “”, 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 February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.

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 71-4:1990, EN 71-4/A1:1998, EN 71-4/A2:2003 and EN 71-4/A3:2007.

This European Standard 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 88/378/EEC.

For relationship with EU Directive 88/378/EEC, see informative Annex ZA, which is an integral part of this European Standard.

The significant changes from the previous edition of this standard are:

- the foreword has been updated;
- the introduction has been updated;
- the amendments have been consolidated.

This standard is part of series of standards for safety of toys.

This Part 4 shall be read in conjunction with Part 1.

This European Standard for 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*
- Part 5: *Chemical toys (sets) other than experimental sets*
- Part 6: *Graphical symbol for age warning labelling*
- Part 7: *Finger paints – Requirements and test methods*
- Part 8: *Swings, slides and similar activity toys for indoor and outdoor family 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*

NOTE In addition to the above parts of EN 71, the following guidance documents have been published: CEN Report, CR 14379:2002, *Classification of toys - Guidelines*, CEN Technical Report CEN/TR 15071:2005, *Safety of toys - National translations of warnings and instructions for use in EN 71*.

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

## Introduction

This European Standard EN 71-4 is intended to reduce the risks which may present health hazards to a child when the experimental sets are used as intended or in a foreseeable way, bearing in mind the normal 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. Warning phrases and instructions for use are required for experimental sets according to this European Standard.

As a general rule, toys 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. Therefore age requirements are 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 playing. On the contrary, these sets require close supervision by adults.

## 1 Scope

This part of the European Standard EN 71 specifies requirements for the maximum amount of certain substances and preparations used in experimental sets for chemistry and related activities.

These substances and preparations are

- chemicals classified as dangerous by the Directives on dangerous substances [1] and dangerous preparations [2] (including substances which have been self-classified according to the requirements of these Directives),
- substances and preparations which in excessive amounts may harm the health of the children using them but which are not classified as dangerous by the above mentioned Directives and
- any other chemical substances and preparations delivered with the toy.

This standard applies to *chemistry sets* and *supplementary sets*. It also covers toys for experiments within the fields of mineralogy, biology, physics, microscopy and environmental science whenever they contain one or more chemical substances and/or preparations.

It also specifies requirements for marking, contents list, instructions for use and for equipment intended for carrying out the experiments.

Other chemical toys are specified in EN 71-5.

**NOTE** The terms “substance” and “preparation” as used in directives 67/548/EEC [1] and 1999/45/EC [2] are also used in the “REACH Regulation” Regulation (EC) No 1907/2006 [4]. This regulation requires that account be taken of the emerging international standards in the regulation of chemicals such as the Globally Harmonised System (GHS) of classification and labelling of chemicals. The EU has now proposed a timetable for the introduction of GHS and it is expected that the two above mentioned directives will be repealed on 1 June 2015.

In the GHS regulation the term ‘mixture’ rather than ‘preparation’ is used. Preparations and mixtures should be considered synonymous; both are mixtures or solutions of substances that do not react with each other.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. 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 ISO 868, *Plastics and ebonite – Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868:2003)*

EN ISO 8317, *Child-resistant packaging – Requirements and testing procedures for reclosable packages (ISO 8317:2003)*

ISO 7619, *Rubber, vulcanized or thermoplastic – Determination of indentation hardness*

## 3 Terms and definitions

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