

Toys Safety -

Testing for Compliance with European legislation

Toys safety is a prominent issue of policy in the European Union and its member states. Following a recent decision to revise the Toy Safety Directive, the rules on toy safety in the EU will now be substantially strengthened, in particular with regard to the chemical safety of toys. An overview of the legislation that retailers, wholesalers, importers and manufacturers of toys need to be aware of is given below, with information about some of the services that Eurofins can provide to these companies for showing compliance.

European Toys Safety Directive (88/378/EEC)

The European Toys Safety Directive intends to guarantee that any toys placed on the market will not have any negative impact on the safety and health of the users i.e. children less than 14 years of age. For this purpose the CE mark has to be placed on all toys sold in any member state of the EU; this is the manufacturer's or his authorised representative's declaration that the toy satisfies the essential safety requirements set out in the Directive and relevant national legislation.

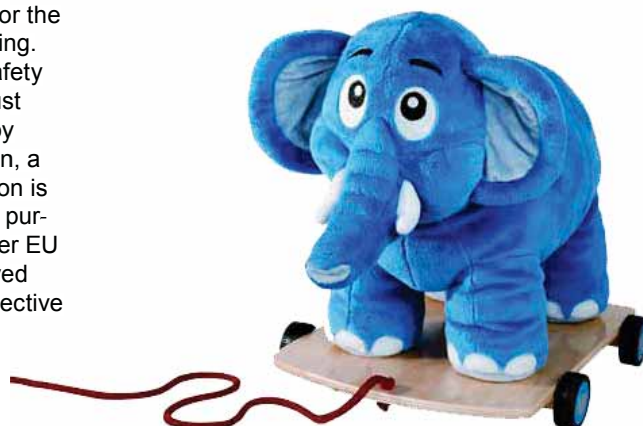
The criteria for granting this CE mark are defined in a series of European standards, EN 71 Parts 1 to 11. If the toy has been manufactured in accordance with these safety standards - and the standards cover all safety aspects relating to the toy - then it can be self-certified. In such cases it is usual for the toy to be submitted for any relevant testing. Where the standards do not cover all safety aspects relating to the toy, a sample must be submitted for EC type-examination by an independent certification organisation, a so-called Notified Body. This organisation is approved by national authorities for this purpose, and this then is notified to the other EU member states - Eurofins are an approved Notified Body under the Toys Safety Directive for carrying out these examinations.

Phthalates

Directive 2005/84/EC defines restrictions for six specific phthalates and prohibits the placing on the market any toys and childcare articles which contain these phthalates above the limits specified.

Three of the phthalates (DEHP, DBP and BBP) are not permitted in plasticized material in amounts of more than 0.1% and three other phthalates (DINP, DIDP and DNOP) are not permitted in plasticized material in amounts of more than 0.1% in toys and childcare articles that can be placed into the mouth.

In Denmark there is a stricter legal rule: No phthalates are allowed at all in any product for children from the age of 0-3 years (statutory order no. 786 of 16/07/2006). In a test, a limit of 0.05% must not be exceeded.



Compliance tests for European

EU Toys Directive und EN standards for CE marking

EN 71-1:	Mechanical and physical properties
EN 71-2:	Flammability
EN 71-3:	Migration of certain elements
EN 71-4:	Experimental sets for chemistry and related articles
EN 71-5:	Chemical toys (sets) other than experimental sets
EN 71-6:	Graphical symbol for age warning labelling
EN 71-7:	Finger paints - Requirements and test methods
EN 71-8:	Swings, slides and similar activity toys for indoor and outdoor family domestic use
EN 71-9:	Organic chemical compounds - Requirements
EN 71-10:	Sample preparation and extraction
EN 71-11:	Methods of analysis

Limitation of Phthalates in toys

Directive no. 2005/84/EC DEHP
(di-2-ethyl hexyl phthalate)

DBP (dibutyl phthalate)
BBP (butyl benzyl phthalate)
DINP (diisononyl phthalate)
DIDP (di-isodecyl phthalate)
DNOP (Di-n-octyl phthalate)

Danish statutory order no. 786
of 16/07/2006 All phthalates

Fragrance chemicals

Anisyl alcohol, amyl cinnamal, amylcinnamyl alcohol, benzyl alcohol, benzyl benzoate, benzyl cinnamate, benzyl salicylate, cinnamyl alcohol, cinnamal, citral, citronellol, coumarin, eugenol, farnesol, geraniol, hexyl cinnamaldehyde, hydroxycitronellal, lialial, d-limonene, linalool, lylal, isoeugenol, methyl heptin carbonate, oakmoss and tree-moss extracts.

Heavy metals

Including; antimony, arsenic, barium, cadmium, chromium, lead, mercury and selenium.

REACH and Carcinogenic, mutagenic or toxic for reproduction (CMR) substances

Toys should comply with REACH legislation and the revised Toy Directive proposes to prohibit the use of CMR substances in all accessible parts of toys.

Electrical Safety

Notified Body for LVD 2006/95/EC
Test Lab: EN 62115, EN 61558-2-7, EN 60335-2-29
All electrical powered products with power supply > 50 VAC and 75 VDC e. g. Toy PC, night lamps, toy railway with AC-transformer

Azo dyes

4-Amino azo benzene (4-amino-2',3-dimethylazobenzene), o-amino azo toluene (4-amino-2',3-dimethylazobenzene), 4-aminodiphenyl, 2-aminotoluene (o-toluidine), 2-amino-4-nitrotoluene, benzidine, p-chloroaniline, 4-chloro-o-toluidine, 4-cresidine, 2,4-diaminobenzidine, 4,4'-diaminodiphenylmethane (4,4'-methylenedianiline), 2,4-diaminotoluene (2,4-toluylendiamine), 3,3'-dichlorobenzidine, 3,3'-dimethoxybenzidine, 3,3'-dimethylbenzidine (o-tolidine), 3,3'-dimethyl-4,4'-diaminodiphenyl methane, 4,4'-methylen-bis-(2-chloroaniline), 2-naphthylamine, 4,4'-oxydianiline, 4,4'-thiodianiline, 2,4,5-trimethylaniline.

RoHS

Lead, cadmium, mercury, chromium VI, PBB and PBDE (brominated flame retardants)

The Packaging Waste Directive

Cadmium, lead, chromium VI and mercury

Identification of material

X-ray (survey of elements)
GC/MS screening (survey of organic compounds)
IR (molecular structures)

and national laws



EMC

Notified Body for EMC 2004/108/EC
Test Lab: EN 55014-1, EN 55014-2, EN 55022, EN 55024,
All products with clock cycle > 9 kHz e. g. game console,
model cars with remote control

Wireless/Radio

Notified Body for R&TTE 1999/5/EC
Test Lab: EN 301 489, EN 300 220, EN 300 330
All radio applications e. g. Toy Walkie Talkie, Baby Monitor,
model aircraft with remote control

Health (SAR)

Test Lab: EN 50371, EN 62209-1, EN 62209-2, EN 62311,
ANSI C95.1, IEEE 1528, OET Bulletin 65 C
Every radio product particularly radio device held on head or
worn on body e. g. Toy Mobile, Walkie Talkie

Heavy metals

Heavy metals may be ingredients of plastic materials, but are also used in pigments. They may therefore be found in many types of materials, such as plastics, textiles, rubber, cardboard, paper etc. - and in toys. The Toy Directive currently regulates the release of eight elements and the revised Toy Safety Directive proposes to restrict additional elements and reduce existing limits even further.

Eurofins is also accredited by the US Consumer Product Safety Commission (CPSC) for testing lead in paint as required by US legislation (Consumer Product Safety Improvement Act - CPSIA).

Azo dyes

Earlier, azo dyes were widely used in textiles and leather. Some azo dyes, however, may break down into carcinogenic aromatic amines. Use of such azo dyes in textiles and leather that may come into contact with human skin or mouth is not allowed. Azo dyes are restricted in EU Directive 2002/61/EC on azo colorants and in EN 71-9 under the Toys Directive.

Fragrances

Today, fragrances in toys are a major focus of attention, as the number of people suffering from allergy to fragrances is rising. The revised Toy Directive proposes to prohibit certain allergenic fragrances in toys (apart from unavoidable traces up to 100ppm) and the certain allergens must be listed if they are added to toys at concentrations exceeding 0.01%.

REACH and Carcinogenic, mutagenic or toxic for reproduction (CMR) substances

In order to protect children against recently discovered risks, the requirements on chemical substances in toys will be considerably strengthened in the future. In particular toys should comply with REACH legislation and restrictions on substances that are classified as carcinogenic, mutagenic or toxic for reproduction (CMR) are to be introduced.

In the future safety and risk assessments will be required before a toy can be placed on the market.

RoHS Directive on electrical and electronic devices

All elements of electrical and electronic devices must not exceed limit values for some metals and for two brominated flame retardants (RoHS Directive 2002/95/EC). This applies also to toys with electric or electronic equipment. For more details of declaration and testing - please see our special "RoHS" flyer.

The Packaging Waste Directive

All packaging – including packaging for toys – is regulated by European Directive 94/62/EC. In Denmark there is a specific regulation (statutory order no. 477 of 28/05/2006). The content of the metals cadmium, lead, chromium VI and mercury must be documented to be under the limit values – no matter whether the packaging is made of plastic, cardboard, paper, textile or other material.

European EMC Directive 2004/108/EC

Electromagnetic Compatibility (EMC) is the ability of systems, equipment and devices to utilize the electromagnetic spectrum to operate in their intended operational environments without suffering unacceptable degradation or causing unintentional degradation through electromagnetic radiation or response.

Regulations for wireless products

To avoid interference of wireless products there are regulations established in the worldwide markets. There is a distinction between compliance with international regulations (e.g. ETSI, FCC, IC,...) and compliance with independent program requirements (e.g. Bluetooth, WLAN,...).

Electrical safety

Electric toys and other electrically operated products intended for use by children can be extremely hazardous if improperly used, used without supervision, or not properly designed and/or constructed. The possible dangers are many: electric shock, burns, especially if the product has a heating element; and a wide variety of mechanical hazards common to toys in general, such as sharp edges and points and dangerous moving parts.

Eurofins services

Eurofins is a world-wide operating provider of analytical services to industry and trade, with more than 8000 employees in 30 countries. Several services on toys testing are available within the network of the Eurofins Group.

Compliance testing

Eurofins can offer the necessary tests for all mentioned legislation, and also a number of tests for additional national legislation throughout Europe.

These tests may require determination of hazardous ingredients, or migration from the material into human skin (sweat and skin fat), or saliva - or emission into surrounding air. Selection of appropriate migration simulants is decisive for a reliable test.

Within European Toys Directive, Eurofins is operating two notified bodies for CE marking, one in Italy and one in the UK. Eurofins is approved testing lab for Blue Angel for wooden toys.

Characterisation of material

If the composition of a material and its content of additives needs to be known, Eurofins can carry out different analyses, e.g.

- Material characterisation by IR analysis
- Identification of ingredients by a combination of GC/MS survey and X-ray.

These analyses give a clear indication of the chemical composition of the material.

Consulting

Eurofins follows development of legislation on toys closely. This enables us to support our clients with qualified guidance regarding legislation and how to comply, with assistance for

defining specifications to suppliers, and much more.

Good reasons for selecting Eurofins as your business partner

- Focus on solutions that add value to the customer
- Flexible partner with significant capacity
- High quality for fair and sustainable prices
- Reasonable delivery time
- Clear reporting
- Qualified consulting
- International presence
- and our customers will certainly be able to give more good reasons.

We shall always be pleased to give you further information on our tests and analyses, and to prepare a quotation.



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