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Toy safety requirement

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TÜV SÜD offers a one-stop solution for testing, auditing, certification and advisory on regulatory testing standards for the toy industry. Our global network of accredited laboratories provides testing services in line with the various regulatory standards and directives. We can support you from the beginning of the product lifecycle, starting at the design stage prior to prototyping. Combined with our in-depth understanding of standards, we help you achieve safety compliance and save on costly rework.



Introduction

The European Union and the United States are two major markets for toys. The toy safety requirements are comparatively more stringent than other countries or regions. While there are overlaps in the toy regulatory requirements in the EU and US, there are also some differences in scope and limits. This leaflet will provide you with an overview and comparison of some highlighted requirements in these two markets.

For example, the reporting obligation in the EU, if an article contains any Substances of Very High Concern (SVHC) on the candidate list exceeding 0.1% by weight, the supply chain communication is required. In case the tonnage threshold of such SVHC is over 1 tonne/year, then notification to the European Chemical Agency (ECHA). As part of the EU Waste Framework Directive (WFD), ECHA has built a database for storing safe-use information for SVHC present in articles placed on the market in the EU, both waste operators and consumers can access such information. From 5 January 2021, all manufacturers, importers, and distributors within the EU are required to make submissions to the SCIP database for any article that contains SVHC in concentration above 0.1% by weight. In the US, there is similar reporting obligation of hazardous substances in children's products in Washington, Maine, Vermont and Oregon states. If you operate a business in California and your products may expose Californians to any chemical that are listed under Proposition 65, you should provide clear and reasonable warnings on the products or pass along the written notice with warning materials. The EU requires toys to comply with Toy Safety Directive

2009/48/EC and other relevant chemical and environmental regulations. Manufacturers can use the internal product control procedure or test their products at a third party laboratory to demonstrate the compliance. All toys sold in the EU must carry a CE marking. This is the manufacturer's declaration that the toy satisfies the essential safety requirements. EN 71 standards outline the safety requirements for toys in many aspects, including physical and chemical properties, flammability, and warning requirements. In the United States, federal law requires that every children's product should be tested by a CPSC-accepted third party laboratory for compliance with the applicable federal children's product safety requirements. Note that there are limited exemptions from testing, such as exemptions for some small batch manufacturers or for some materials determined not to contain lead or phthalates. The toy safety standard refers to ASTM F963-17, as incorporated with a modification shown in 16 CFR Part 1250, is a comprehensive standard addressing numerous hazards that have been identified with toys. The Consumer Product Safety Improvement Act of 2008 (CPSIA) mandated that the voluntary toy safety standard became a nationwide mandatory children's product safety rule since 2008.

In this leaflet, we highlighted essential toy requirements in the EU and the US. Certain test parameters with high market concern are elaborated and compared in later appendix.

Highlights of toy related requirements in the EU and US

Test item	EU	US
Physical and mechanical, labeling (see appendix 1, 2)	EN 71-1:2014+A1:2018	ASTM F963-17
Cleanliness of stuffing material	EN 71-1:2014+A1:2018	ASTM F963-17 There are also requirements in states Pennsylvania, Massachusetts, Ohio.
Flammability	EN 71-2:2020	ASTM F963-17
Soluble elements (see appendix 3)	EN 71-3:2019+A1:2021	ASTM F963-17
Kerosene and polychlorinated biphenals in stuffed toys	–	Regulations of Connecticut State Agencies, Sec. 21a-336-1 Limit: not detected
Nitrosamines and nitrosatable substances	EN 71-12:2016* Limits: i) Nitrosamines: 0.05 mg/kg for elastomer; 0.02 mg/kg for finger paint ii) Nitrosable substances: 1 mg/kg for elastomer and finger paint	ASTM F963-17 A test sample of nipples shall not contain more than 10 ppb in each of three aliquots of any one nitrosamine. In addition, the total nitrosamines shall not exceed 20 ppb.
Total lead	RREACH annex XVII – entry 63 i) In general consumer products: Limits: - total lead: 500 mg/kg, or - the rate of lead release: 0.05 µg/cm2/h ii) In jewellery Limit: 500 mg/kg	CPSIA section 101, ASTM F963 Limits: i) Surface coating: 90 mg/kg ii) Substrate: 100 mg/kg California Health and Safety Code Section 25214.1-2 for children's jewellery Limits: i) Surface coating: 90 mg/kg ii) Substrate: 100 mg/kg Illinois Lead Prevention Act Limit: 40 mg/kg New York ECL Limit: 40 mg/kg in children's jewellery

* Only applicable to toys or parts of toys intended for use by children under 36 months or intended to be placed in the mouth.

Highlights of toy related requirements in the EU and US (con't)

Test item	EU	US
Cadmium	EN 71-3:2019+A1:2021 Limits: see appendix 3 REACH annex XVII – entry 23 Limit: i) Plastic, paint, jewelry, hair accessories: 100 mg/kg; ii) Painted articles: 1000 mg/kg	ASTM F963-17 Limits: i) Soluble cadmium for accessible substrates: 75 mg/kg; ii) Soluble cadmium for small part metal: 200 µg unless total content < 75 mg/kg. California Health and Safety Code Section 25214.1-2 for children's jewelry Limit: i) Surface coating: 75 mg/kg (soluble) ii) Substrate: 300 mg/kg Washington CPSA Limit: 40 mg/kg Various state laws: Limit: 75 ppm for children's jewelry (total and/or soluble)
Phthalates (see appendix 5, 7)	REACH annex XVII – entry 51, 52, 72	CPSIA section 108, 16 CFR 1307 Various state laws: California, Vermont, Washington, TPCB etc.
Azo dyes	REACH annex XVII – entry 43, 72 Textile and leather: 30 mg/kg	–
PAHs (see appendix 6)	REACH annex XVII – entry 50, 72 Limit: 0.5 mg/kg	–
Organotin compounds	REACH annex XVII – entry 20 Limit: 1000 mg/kg	–
Benzene	REACH annex XVII – entry 5 Limit: 5 mg/kg	–
Nickel release	REACH annex XVII – entry 27 Limits: i) Body piercing components: 0.2 µg/cm ² /week; ii) Parts with direct and prolonged skin contact: 0.5 µg/cm ² /week	ASTM F2923-20 for children's jewelry Limits: i) Body piercing components: 0.2 µg/cm ² /week. ii) Parts with direct and prolonged skin contact: 0.5 µg/cm ² /week.
Chromium VI	REACH annex XVII - entry 47 Limit: 3 mg/kg in leather	–

Highlights of toy related requirements in the EU and US (con't)

Test item	EU	US
Flame retardants	i) Toy directive 2009/48/EC appendix C* Limit: 5 mg/kg each of TCEP, TCPP, TDCP ii) REACH annex XVII - entries 4, 7, 8 Limit: Not used for textile articles iii) REACH annex XVII - entry 45 Limit: 1000 mg/kg of OctaBDE iv) Regulation (EU) 2019/1021 (POPs) Limits: - sum of PBDEs: 500 mg/kg - HBCDD: 0.01% by weight	Federal: 40 CFR 751.405 - DecaBDE (not used) Various state laws: in California, Washington, New York, Minnesota, Vermont, etc.
Bisphenol A	Toy directive 2009/48/EC appendix C* Limit: 0.04 mg/l	Restricted in various states including California, Vermont, Minnesota, etc.
Phenol	Toy directive 2009/48/EC appendix C* i) Polymeric materials Limit: 5 mg/l (migration limit); ii) Aqueous toy materials Limit: 10 mg/kg (content limit)	–
Anilie	Toy directive 2009/48/EC appendix C* i) Textile: 30 mg/kg after reductive cleavage ii) Leather: ≤ 30 mg/kg after reductive cleavage iii) Finger paints ≤ 10 mg/kg as free aniline and ≤ 30 mg/kg after reductive cleavage	–
Formamide	Toy directive 2009/48/EC appendix C* Limit: 200 mg/kg (content limit) If content limit is exceeded, shall perform emission testing for a maximum of 28 days from commencement. Limit: 20 µg/m³ (emission limit)	–

* Only applicable to toys or parts of toys intended for use by children under 36 months or intended to be placed in the mouth.

Highlights of toy related requirements in the EU and US (con't)

Test item	EU	US
Formaldehyde	<p>Toy directive 2009/48/EC appendix C*</p> <p>Limits:</p> <p>i) Polymeric materials: 1.5 mg/l (migration limit);</p> <p>ii) Resin-bonded wood materials: 0.1 ml/m³ (emission limit);</p> <p>iii) Textile materials: 30 mg/kg;</p> <p>iv) Leather materials: 30 mg/kg;</p> <p>v) Paper materials: 30 mg/kg;</p> <p>vi) Water-based materials: 10 mg/kg</p> <p>REACH annex XVII - entry 72</p> <p>Limit: see appendix 7</p>	<p>40 CFR 770, CARB ATCM</p> <p>Limits:</p> <p>i) Hardwood plywood (laminated product exempted until 22 March 2024): 0.05 ppm;</p> <p>ii) Medium-density fiberboard: 0.11 ppm;</p> <p>iii) Thin medium-density fiberboard (≤ 8mm in thickness) : 0.13 ppm;</p> <p>iv) Particleboard: 0.09 ppm.</p>
Short-chain chlorinated paraffins (SCCPs)	<p>Regulation (EU) 2019/1021 (POPs)</p> <p>Limit: 0.15 % by weight in articles</p>	—
Preservatives (BIT, reaction mass of CMI and MI (3:1), CMI, MI)	<p>Toy directive 2009/48/EC appendix C*</p> <p>Limits:</p> <p>i) BIT: 5 mg/kg;</p> <p>ii) CMI: 0.75 mg/kg;</p> <p>iii) MI: 0.25 mg/kg;</p> <p>iv) CMI and MI in a ratio of 3:1 (Katone): 1 mg/kg.</p>	—
Pentachlorophenol (PCP) and its salts and esters	<p>Regulation (EU) 2019/1021 (POPs)</p> <p>Limit: 5 mg/kg</p>	—
Nonylphenol ethoxylates (NPE)	<p>REACH annex XVII - entry 46a</p> <p>Textile articles expected to be washed in water during their normal lifecycle: 100 mg/kg</p>	—

* Only applicable to toys or parts of toys intended for use by children under 36 months or intended to be placed in the mouth.

Highlights of toy related requirements in the EU and US (con't)

Test item	EU	US
Specific CMRs (carcinogenic, mutagenic and reproductive toxic) substances (see appendix 7)	REACH annex XVII - entry 72 Clothing and accessories, other textiles which come into contact with skin, footwear: comply with the limit values of the listed CMRs (Cadmium, Chromium (VI), Arsenic, Lead, Benzene, PAHs, Chlorinated toluenes, Formaldehyde, Phthalates, NMP, DMAc, DMFo, Dyestuffs, Arylamine salts, Quinoline)	—
Hazardous substances in electrical and electronic equipment	RoHS directive 2011/65/EU	California state adopted regulations restricting hazardous substances in lighting and certain electronic devices, in line with EU RoHS
Batteries	Directive 2006/66/EC	i) US public law 104-142, mercury-containing and rechargeable battery management act ii) Various state laws also restricted mercury contents in button cells
Toy standard for electric toy safety	EN IEC 62115:2020 EN IEC 62115:2020/A11:2020	ASTM F963-17, 16 CFR 1505, UL 696
Microbiological safety	Toy directive 2009/48/EC, EP	ASTM F963-17, USP, CTFA
Toxicological risk assessment (TRA)	Toy directive 2009/48/EC	ASTM F963-17 16 CFR 1500.3 (b)(5) and 1500.3 (b)(7)-(9)
LHAMA evaluation in art materials	—	16 CFR 1500.14(b)(8) ASTM D4236-94(R2021)
Heavy metals in packaging material (see appendix 8)	Directive 94/62/EC	Model Legislation of Toxics in Packaging Clearinghouse (TPCH) 40 CFR 721: LCPFACs
Per- and polyfluoroalkyl substances (PFAS)	i) REACH annex XVII - entry 68 PFCAs ii) Regulation (EU) 2019/1021 (POPs) - PFOA, PFOS	Various state laws, such as California Proposition 65, TPCH, chemical reporting obligations, disclosure of cookware, regulations for food packaging, juvenile products, clothing, carpet and rugs.
Polystyrene foam materials ban	—	Sale prohibition of pool or beach toy in San Francisco.

Appendix 1 - physical and mechanical requirements highlight
(EU and US)

Test item		EU (EN 71-1:2014+A1:2018)	US (ASTM F963-17, 16 CFR 1500.51-53)		
Age grade (months)		—	0 to ≤ 18	> 18 to ≤ 36	> 36 to ≤ 96
Abuse test	Torque test	0.34 Nm	2 in-lbf	3 in-lbf	4 in-lbf
	Tension test	Accessible dimension ≤ 6 mm : 50 N Accessible dimension > 6 mm : 90 N Protective components : 60 N Seams: 70 N	10 lbf	15 lbf	15 lbf
	Compression test	110 N	20 lbf	25 lbf	30 lbf
	Drop test	850 mm x 5 times	4.5 ft x 10 times	3.0 ft x 4 times	3.0 ft x 4 times
	Tip over test (for large and bulky toys)	3 times	3 times		
	Flexure test	Metallic wires and other metallic components that are designed and intended to be bent: ≤ 70 N x 30 cycles Metallic wires likely to be bent: ≤ 70 N x 1 cycle	10 lbf x 30 cycles	15 lbf x 30 cycles	15 lbf x 30 cycles
	Impact test	1 kg from height of 100 mm	N/A		
	Tumble test for wheeled toys (for toy weight between 3-10 lb)	N/A	6 steps for 4 attitudes x 2 times tip over		
	Bite test (for mouth toys)	N/A	25 lbf	50 lbf	100 lbf
Soaking test (for glued wooden toys and glued plastic decals)		At 20°C for 4 min x 4 times	N/A		

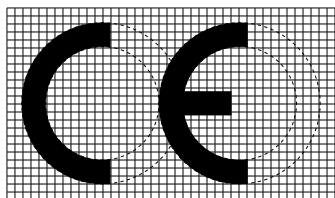
Appendix 2 - labeling requirements (EU)

General information

- Toy shall bear
 - the name and address of manufacturer and/or importer
 - the product identification: type, batch, serial or model number or other element allowing their identification

CE mark

The CE marking shall be affixed visibly, legibly and indelibly to the toy, to an affixed label or to the packaging. The CE marking shall be at least 5 mm high and shall consist of the initials 'CE' taking the following form.



Warning statement

- Small part warning

Toys which are not intended for but might be dangerous for children under 36 months shall be accompanied by a warning, such as:

"Warning. Not suitable for children under 36 months" or

"Warning. Not suitable for children under three years"

together with a brief indication of the specific hazard calling for this restriction.

Example: "Warning. Not suitable for children under 36 months. Small parts"

The phrase: "Not suitable for children under 36 months" or "Not suitable for children under three years" may be substituted by the symbol as follow:



Labeling requirements (US)

CPSIA

- Tracking label

Children's products that are designed or intended primarily for use by children ages 12 or younger must have distinguishing permanent marks that are

 - Affixed to the product and its packaging and
 - Provide certain identifying information.

ALL tracking labels must contain certain basic information, including:

1. Manufacturer or private labeler name;
2. Location and date of production of the product;
3. Detailed information on the manufacturing process, such as a batch or run number, or other identifying characteristics; and
4. Any other information to facilitate ascertaining the specific source of the product.



ASTM F963-17

- Warning statement
Safety labeling shall consist of:
 - an alert symbol (an exclamation mark within an equilateral triangle);
 - a signal word (CAUTION or WARNING);
 - text that describes the hazard that is present and may contain text about what to do or not to do to avoid injury (e.g. “Keep out of baby’s reach”).

All labeling statements shall comply with the type size requirements based on the computed area of the principal display panel according to the standard. For these purposes, Signal Word means the word “Warning” and the words “Safety Warning”; Statement of Hazard means “Choking Hazard”; Other Material means all other remaining statements.

Area, in. ²	0-2	+2-5	+5-10	+10-15	+15-30	+30-100	+100-400	+400
Type Size— Signal Word	3⁄64 in.	1⁄16 in.	3⁄32 in.	7⁄64 in.	1⁄8 in.	5⁄32 in.	1⁄4 in.	1⁄2 in.
Type Size— Statement of Hazard	3⁄64 in.	3⁄64 in.	1⁄16 in.	3⁄32 in.	3⁄32 in.	7⁄64 in.	5⁄32 in.	1⁄4 in.
Type Size— Other Material	1⁄32 in.	3⁄64 in.	1⁄16 in.	1⁄16 in.	5⁄64 in.	3⁄32 in.	7⁄64 in.	5⁄32 in.

Small part warning
For toys and games intended for children at least 3 years old but less than 6 years of age, and which contain as-received small part(s), the labeling shall read:

⚠ WARNING:
CHOKING HAZARD—Small parts.
Not for children under 3 yrs.



Appendix 3 - migration of certain elements requirements of EN 71-3 and ASTM F963

The European commission set out the migration limit values for 19 elements for different toy materials under Toy safety directive, and the harmonised standard EN 71-3 adopted the same set of limits. The limit values are revised from time to time depending on the latest scientific research outcome.

In the United States, the limits for 8 soluble heavy metals are laid down in the toy standard ASTM F963 mandated under Consumer Product Safety Improvement Act (CPSIA).

	EN 71-3:2019+A1:2021 (mg/kg)			ASTM F963-17 (mg/kg)	
Elements	CAT. 1 dry, brittle, powder-like or pliable toy material	CAT. 2 liquid or sticky toy material	CAT. 3 scraped-off toy material	General	Modelling clay
Aluminium	2250	560	28130	—	—
Antimony	45	11.3	560	60	60
Arsenic	3.8	0.9	47	25	25
Barium	1500	375	18750	1000	250
Boron	1200	300	15000	—	—
Cadmium	1.3	0.3	17	75*	50
Chromium	—	—	—	60	25
Chromium (III)	37.5	9.4	460	—	—
Chromium (VI)	0.02	0.005	0.053	—	—
Cobalt	10.5	2.6	130	—	—
Copper	622.5	156	7700	—	—
Lead	2.0	0.5	23	90	90
Manganese	1200	300	15000	—	—
Mercury	7.5	1.9	94	60	25
Nickel	75	18.8	930	—	—
Selenium	37.5	9.4	460	500	500
Strontium	4500	1125	56000	—	—
Tin	15000	3750	180000	—	—
Organic tin	0.9	0.2	12	—	—
Zinc	3750	938	46000	—	—

* Soluble cadmium for small part metal: 200 µg unless total content < 75 mg/kg.

Appendix 4 - phthalates requirements in the EU and US

Phthalates are generally used as plasticisers and could be found as impurities. However, they are known to reduce fertility and can be very harmful to children. Currently in the **EU**, the use of **7 phthalates** in toys and childcare articles is restricted under REACH Regulation (EC) No 1907/2006.

In the **United States**, there are **8 phthalates** being prohibited in toys and childcare articles under CPSC regulations. The final rule 16 CFR 1308 determines that seven specified plastics as follows are exempted from third party testing.

However, manufacturer still have to ensure that these plastics meet the phthalates requirement.

1. Polypropylene (PP)
2. Polyethylene (PE)
3. Acrylonitrile butadiene styrene (ABS)
4. High-impact polystyrene (HIPS)
5. General purpose polystyrene (GPPS)
6. Medium-impact polystyrene (MIPS)
7. Super high-impact polystyrene (SHIPS)

It is noticeable that addition phthalates are required for toys sell in California State, while most of the phthalates are also regulated in the EU.



Comparison of regulated phthalates in the EU and US

		EU	US	California State
Chemical name	Abbreviation	REACH Annex XVII	CPSIA section 108, 16 CFR 1307	HSC code, Proposition 65
Bis (2-ethylhexyl) phthalate	DEHP	√	√	√
Dibutyl phthalate	DBP	√	√	√
Benzyl butyl phthalate	BBP	√	√	√
Di-isodecyl phthalate	DIDP	√		√
Di-n-octyl phthalate	DNOP/DnOP	√		√
Diisononyl phthalate	DINP	√	√	√
Diisobutyl phthalate	DIBP	√	√	
Di-n-hexyl phthalate	DnHP/DHP/DHEXP		√	√
Dipentyl phthalate	DPP/DPENP		√	
Dicyclohexyl phthalate	DCHP		√	

Scope and limits of phthalates for toys and childcare articles

Country/Region	Scope	Phthalate	Limit
EU	Any plasticised material	DEHP, DBP, BBP, DIBP	0.1% by weight (sum or individual)
	Any plasticised material that can be placed into mouth	DINP, DIDP, DNOP	
US CPSIA	Any phthalates-containing material	DEHP, DBP, BBP, DINP, DIBP, DPENP, DHEXP, DCHP	0.1% by weight (each)
US California	Any phthalates-containing material	DEHP, DBP, BBP, DINP, DIDP, DNOP, DnHP	0.1% by weight (each)*

*For California Proposition 65, should also observe the reformulation in specific settlement or judgement.

Appendix 5 - PAHs requirement (EU and Germany)

Toys placing on the EU market have to comply with the PAH requirement under REACH Regulation. For toys that would also be placed on the Germany market and bear the voluntary GS mark,

in addition to REACH requirement, they need to fulfill the AfPS PAH Decision which has its own scope, test parameters and limits.

REACH Annex XVII - entry 50

Substance name	CAS No.	Limit (mg/kg)
		Rubber or plastic components that come into direct (prolonged or short-term repetitive) contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use
		Toys and childcare articles
Benzo[a]pyrene (BaP)	50-32-8	≤ 0.5
Benzo[e]pyrene (BeP)	192-97-2	≤ 0.5
Benzo[a]anthracene (BaA)	56-55-3	≤ 0.5
Chrysene (CHR)	218-01-9	≤ 0.5
Benzo[b]fluoranthene (BbFA)	205-99-2	≤ 0.5
Benzo[j]fluoranthene (BjFA)	205-82-3	≤ 0.5
Benzo[k]fluoranthene (BkFA)	207-08-9	≤ 0.5
Dibenzo[a,h]anthracene (DBAhA)	53-70-3	≤ 0.5



AfPS GS 2019:01 Decision on PAH for GS-Mark Certification

Substance name	CAS No.	Limit (mg/kg)				
		Category 1	Category 2		Category 3	
		Materials, that are intended to be taken in the mouth, or materials in toys or articles for use by children up to 3 years of age with intended long-term skin contact (longer than 30s)	Materials, not covered in Cat. 1, with intended or foreseeable contact to skin longer than 30 s (long-term skin contact) or repeated short-term skin contact		Materials, that do not fall in Cat. 1 or 2, with intended or foreseeable contact to skin up to 30 s (short-term skin contact)	
		Toys and childcare articles	a. Use by children^	b. Other consumer products	a. Use by children^	b. Other consumer products
Benzo[a]pyrene (BaP)	50-32-8	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[e]pyrene (BeP)	192-97-2	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[a]anthracene (BaA)	56-55-3	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[b]fluoranthene (BbFA)	205-99-2	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[j]fluoranthene (BjFA)	205-82-3	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[k]fluoranthene (BkFA)	207-08-9	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene (CHR)	218-01-9	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo[a,h]anthracene (DBAhA)	53-70-3	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[g,h,i]perylene	191-24-2	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno[1,2,3-cd]pyrene	193-39-5	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Phenanthrene	85-01-8	Sum: < 1	Sum: < 5	Sum: < 10	Sum: < 20	Sum: < 50
Pyrene	129-00-0					
Anthracene	120-12-7					
Fluoranthene	206-44-0					
Naphthalene	91-20-3	< 1	< 2	< 2	< 10	< 10
Sum of 15 PAH above		< 1	< 5	< 10	< 20	< 50

^ A "child" is legally defined as a person before reaching the age of 14 years; the use by children includes both active and passive direct contact.



Appendix 6 - specific CMRs in EU REACH annex XVII - entry 72

Entry 72 to EU REACH regulation Annex XVII restricts a number of hazardous substances (carcinogenic, mutagenic or toxic for reproduction (CMRs) category 1A or 1B) in clothing, other textile articles which come into contact with human skin and footwear. In order to clarify the scope of this entry, the EC has published an explanatory guide to elaborate the requirement and provide examples for reference.

These groups of restricted substances include heavy metals, phthalates, polycyclic aromatic hydrocarbons (PAHs), formaldehyde, certain azo dyes, and so on. Some of these restricted substances are overlapped with other REACH restrictions or other EU legislations. According to the new restriction, if there is any other stricter restriction or legislation on the chemical listed in this new restriction, the stricter one will apply.

Substance	CAS No.	Limit (by weight in homogenous materials)
Cadmium and its compounds (listed in Annex XVII, Entry 28, 29, 30, Appendices 1-6)	–	Extractable Cadmium: 1 mg/kg
Chromium VI compounds (listed in Annex XVII, Entry 28, 29, 30, Appendices 1-6)	–	Extractable Chromium VI: 1 mg/kg
Arsenic compounds (listed in Annex XVII, Entry 28, 29, 30, Appendices 1-6)	–	Extractable Arsenic: 1 mg/kg
Lead and its compounds (listed in Annex XVII, Entry 28, 29, 30, Appendices 1-6)	–	Extractable Lead: 1 mg/kg
Benzene	71-43-2	5 mg/kg
Benz[a]anthracene	56-55-3	1 mg/kg (each)
Benz[e]acephenanthrylene	205-99-2	
Benzo[a]pyrene; benzo[def]chrysene	50-32-8	
Benzo[e]pyrene	192-97-2	
Benzo[j]fluoranthene	205-82-3	
Benzo[k]fluoranthene	207-08-9	
Chrysene	218-01-9	
Dibenz[a,h]anthracene	53-70-3	1 mg/kg
a,a,a, 4-tetrachlorotoluene; p-chlorobenzotrichloride	5216-25-1	
a,a,a-trichlorotoluene; benzotrichloride	98-07-7	
a-chlorotoluene; benzylchloride	100-44-7	1 mg/kg
Formaldehyde	50-00-0	75 mg/kg
		For jackets, coats, upholstery: ≤ 300 mg/kg in homogenous material (during 1 November 2020 to 1 November 2023)

Substance	CAS No.	Limit (by weight in homogenous materials)
1,2-benzenedicarboxylic acid; di-C 6-8-branched alkylesters, C 7-rich	71888-89-6	1000 mg/kg (individually or in combination with other phthalates in this entry or in other entries of Annex XVII that are classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 in any of the hazard classes CMR 1A or 1B)
Bis(2-methoxyethyl) phthalate	117-82-8	
Diisopentylphthalate	605-50-5	
Di-n-pentyl phthalate (DPP)	131-18-0	
Di-n-hexyl phthalate (DnHP)	84-75-3	
N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone (NMP)	872-50-4	3000 mg/kg
N,N-dimethylacetamide (DMAC)	127-19-5	3000 mg/kg
N,N-dimethylfomamide; dimethyl fomamide (DMF)	68-12-2	3000 mg/kg
1,4,5,8-tetraaminoanthraquinone; C.I. Disperse Blue 1	2475-45-8	50 mg/kg
Benzenamine, 4,4'-(4-iminocyclohexa-2,5-dienylidenemethylene)dianiline hydrochloride; C.I.Basic Red 9	569-61-9	50 mg/kg
[4-[4,4'-bis(dimethylamino)benzhydrylidene] cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride; C.I. Basic Violet 3 with ≥ 0,1% of Michler's ketone (EC no. 202-027-5)	548-62-9	50 mg/kg
4-chloro-o-toluidinium chloride	3165-93-3	30 mg/kg
2-Naphthylammoniumacetate	553-00-4	30 mg/kg
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	39156-41-7	30 mg/kg
2,4,5-trimethylaniline hydrochloride	21436-97-5	30 mg/kg
Quinoline	91-22-5	50 mg/kg

Appendix 7 - toxic substances in packaging materials

Apart from the product, the toxicity of the packaging material is also a concern. In order to reduce the impact from packaging and packaging waste to the environment, the restriction of toxic substances in packaging material are laid down in EU Directive 94/62/EC and Model Legislation of Toxics in Packaging Clearinghouse (TPCH) in the United States.

	EU	US
Toxic substances	94/62/EC	TPCH
Pb, Cd, Hg and Chromium (VI)	Sum of four elements: ≤ 100 ppm	
Phthalates	N/A	100 ppm (sum)
PFAS	N/A	Not detectable

Global toy standards

Country	Certification	Highlights of toy standard/legislation
Argentina	S-mark/lot approval	IRAM NM 300
Australia and New Zealand	RCM (only for electrical toys)	AS/NZS ISO 8124 AS/NZS 62115 (voluntary in Australia but mandatory in New Zealand)
Brazil	INMETRO	ABNT NBR NM 300 ABNT NBR 16040
Canada	No scheme	SOR/2011-17 SOR/2016-188 SOR/2018-83
China	CCC-mark	GB 14746 - 14749 GB 6675 GB 19865/GB 27887
Chile	No scheme	NCh3251 Decree No. 114/2005 and its amendment decree no.47/2009
Colombia	No scheme	Toy Resolution No. 686/2018
Ecuador	No scheme	RTE INEN 089 EN 71 or ISO 8124
Egypt	GOEIC	ES 3123 ES 7093/2014 ES 7269/2017 ES 7562/2013
Eurasian Economic Union (Belarus, Kazakhstan, Russia, Armenia and Kyrgyzstan)	EAC	TR TC 008/2011 TP TC 020/2011
Hong Kong	No scheme	Phthalates ISO 8124/EN 71/ASTM F963 IEC 62115 or EN 62115
India	ISI standard mark	Toys (Quality Control) Order, 2020 IS 9873 IS 15644
Indonesia	SNI mark	SNI ISO 8124 series SNI 7617 SNI IEC 62115
Israel	SII Type Approval	SI 562 SI 62115 or IEC 62115
Japan	ST-mark (for all toys) PSE mark (for electrical toys)	Food Sanitation Law, Consumer Product Safety Act ST 2016, IEC 60335
Korea	KC-mark	Special Act on the safety of children's products; Common safety standards for children's products; Toy Safety Standard

Global toy standards (con't)

Country	Certification	Highlights of toy standard/legislation
Malaysia	MC-mark	MS ISO 8124 or ISO 8124 or EN 71 or ASTM F963 MS 1774 MS 62115 or EN 62115 or IEC 62115
Mexico	NOM-mark	NOM-015-SCFI-2007 NOM-252-SSA1-2011 NMX-I-102-NYCE-2007 NOM-015-SCFI-2007 NOM-001-SCFI-2018
Philippines	COC	PNS BHD ISO 8124 PNS 1408 PNS 175, PNS 176 IEC 62115
Saudi Arabia	SABER, GCC and G-mark	SASO 1063 - 1065 EN 71 or ISO 8124 SASO 62115
GCC GSO (Saudi Arabia, Kuwait, Oman, Qatar, UAE, Bahrain, Yemen)	GCTS-mark	TR BD131704-01
Singapore	No scheme	Phthalates ISO 8124/EN 71/ASTM F963 IEC 62115 or EN 62115
South Africa	No scheme	SANS 50071 SABS IEC 62115
Taiwan	BSMI-mark	CNS 4797 CNS 14276
Thailand	TISI	TIS 2236-2548 TIS 685
Vietnam	CR-mark	TCVN 6238 Circular 09/2019/TT-BKHCN QCVN 3:2019/BKHCN



TÜV SÜD certification mark for toy



The TÜV SÜD certification mark is a widely recognised voluntary certification mark specifically for toys. It implies the compliance with the EU as well as German mandatory requirements.

Today many companies in Europe use this mark for their products because it is a symbol of trust, well-known and an excellent sales tool.

Advantages of using the TÜV SÜD certification mark for toys

- A symbol of safety and quality recognised by consumers.
- Provides competitive edge by creating purchase motivation as it provides confidence to consumers.
- Provides manufacturers with the confidence that their products are safe and of high quality.
- Emphasises your company's commitment to product safety and quality.
- Assures end users that the product has been independently tested by an authorised third-party company.



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