



Review of chemicals-related Toy Safety Policies and Regulations in selected Low- and Middle-Income Countries



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1 Background, aims and scope

With a total revenue of more than 90 billion USD in 2018¹, the global toy market is an important sector of consumer products. Like many other products, toys are composed of a diverse range of materials, such as plastics, textiles, wood, or metals. Many of these materials are made of, or contain manufactured chemicals, such as polymers, pigments, or plasticizers. Most of these chemicals are intentionally added, but some can also be present as unintended contaminants.

Many chemicals have properties that can make them hazardous to human health and/or the environment. The potential use of such chemicals in toys is especially concerning since children can be more vulnerable to health impacts of certain chemicals. Due to this, chemicals of concern in toys have been a longstanding priority for activities under the Strategic Approach to International Chemicals Management (SAICM). As part of these activities under SAICM, a current GEF funded project aims at accelerating the adoption of measures by value chain stakeholders, including governments, to track and to control chemicals in the supply chain of toys. It aims at engaging the toy manufacturing sector and policymakers to address chemicals of concern in toys and to strengthen toy safety around the world.

Given the special vulnerability of children to potential impacts, chemical use in toys is a relatively highly regulated area throughout the world. To obtain a baseline and starting point for further activities under SAICM and the GEF funded project, an overview analysis of toy safety policies addressing chemicals of concern in toys was conducted. The focus of the analysis was put on policies in low- and medium- income countries that are importing toys from China. The scope of the analysis was defined as toy safety policies explicitly addressing the use of chemicals in toy materials. Safety regulations solely addressing chemical toys, such as educational experimenting sets, or electronic toys were not considered. In addition, general chemical regulations or regulations addressing chemical related issues during production or waste disposal were not considered, although they may also hold certain relevance for the toy sector.

2 Methodology

In order to guide the research on toy safety policies, a list of low- and medium-income countries importing toys from China was extracted from the United Nation's Comtrade Database². For this, the database was queried for all export trade flows reported by China for the HS commodity code 95 (Toys, games and sports requisites; parts and accessories thereof) for the year 2018. The resulting list was filtered for low- and medium-income countries according to the World Bank list of economies and income group categorization (June 2019)³ and sorted by the total import value of toys from China.

Based on this list, a targeted online research for toy safety policies was conducted for the ten medium-income and the ten low-income countries with the highest total import value of toys from China. Upper and lower middle-income countries according to the World Bank income group categorization were both considered equally as medium-income countries. The resulting list of countries targeted in the research and their respective total import value of toys from China are provided in Figure 1 and Figure 2. The online research was conducted mainly in English and in French. Documents only available in other languages were accessed with the aid of machine-based translation tools where possible.

¹ Statista. *Total revenue of the global toy market from 2007 to 2018*. Accessed 05/06/2020. <https://www.statista.com/statistics/194395/revenue-of-the-global-toy-market-since-2007/>

² United Nations. *UN Comtrade Database*. Accessed 27/04/2020. <https://comtrade.un.org/data/>

³ The World Bank. *World Bank Country and Lending Groups*. Accessed 27/04/2020.

<https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

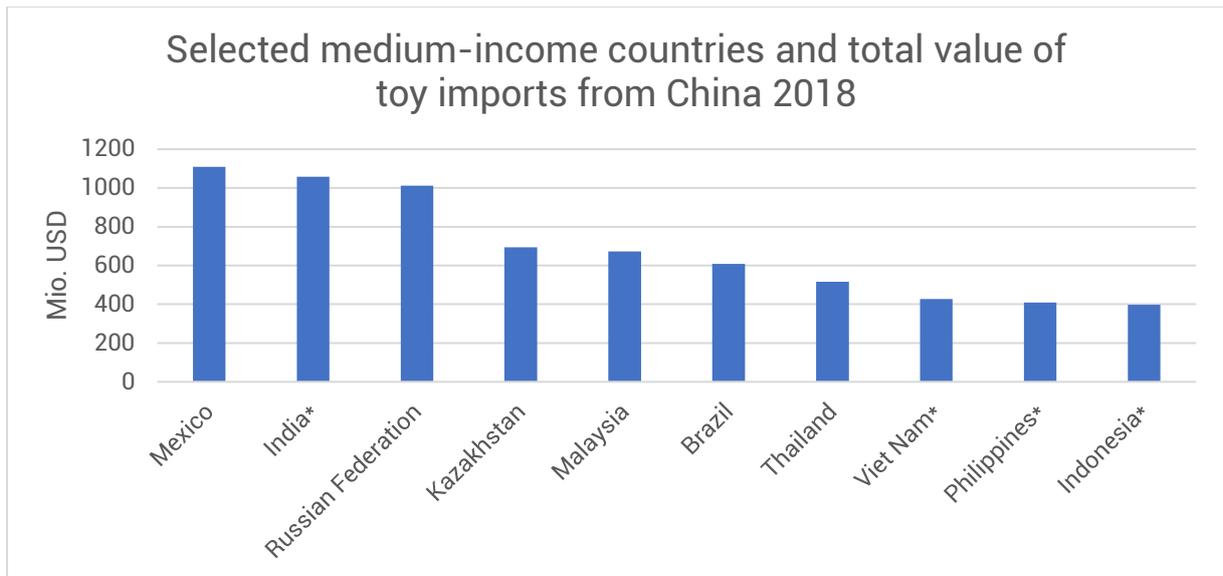


Figure 1: Selected medium-income countries and their respective total value of toy imports from China, for which a targeted research on toy safety policies was conducted. Countries denoted with an asterisk are categorized as lower middle-income countries and the rest as upper middle-income countries by the World Bank.

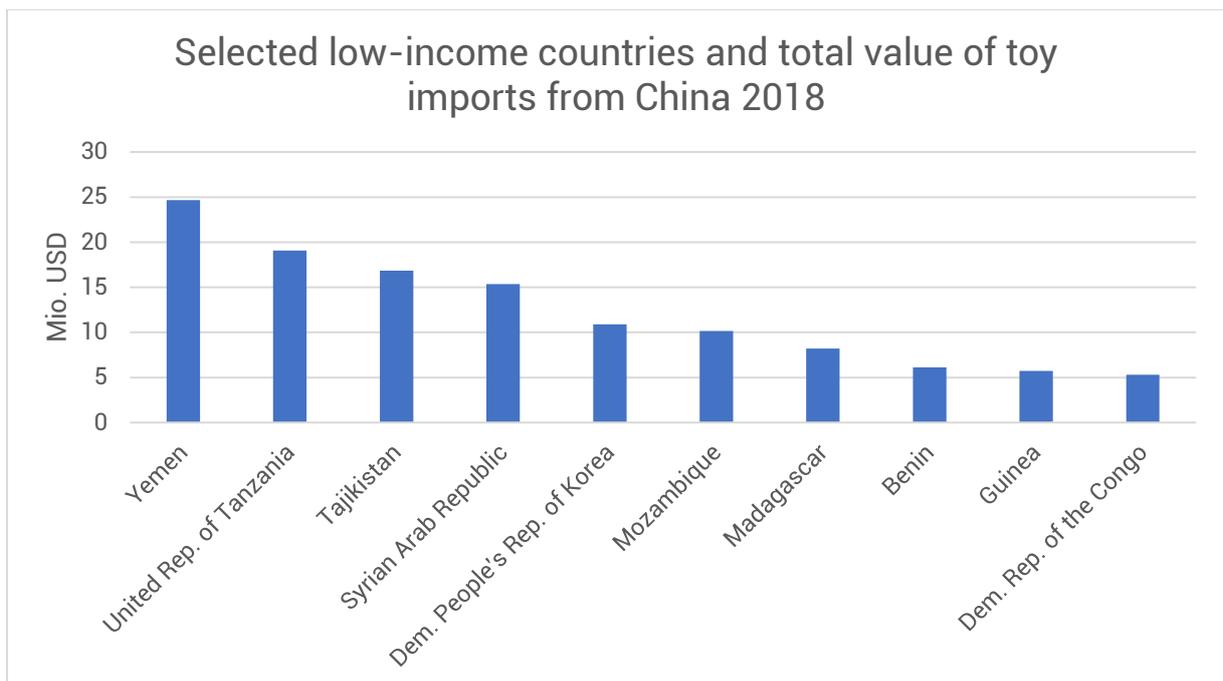


Figure 2: Selected low-income countries and their respective total value of toy imports from China, for which a targeted research on toy safety policies was conducted.

3 Results

3.1 Toy safety policies in medium-income countries

In all ten medium-income countries considered in the targeted research, safety policies addressing chemical requirements for toys are in place. Besides requirements related to chemical safety, several of these policies also include other safety requirements for toys, such as physical stability, size requirements for certain parts or electrical safety requirements. Many policies furthermore contain a

general provision stating that chemicals used in toys must not cause harm or be of risk to cause harm to a child's health. In addition, all policies contain provisions outlining specific requirements for certain chemicals in toys or certain toy materials. Table 2 provides a summary of these policies and their respective provisions related to specific chemicals.

The provisions addressing specific chemicals within the analysed safety policies can be broadly categorized into three categories: (i) migratory limits for antimony (Sb), arsenic (As), barium (Ba), cadmium (Cd), chromium (Cr), lead (Pb), mercury (Hg) and selenium (Se) in toy materials, (ii) content restrictions for certain ortho-Phthalates, (iii) content requirements for other substances. Not all analysed safety policies contain provisions on all three categories and in certain policies, the exact requirements for certain categories do not become fully clear from the publicly available regulatory text; an overview is provided in Table 1 .

Table 1: Overview on provisions for three broad substance categories in individual countries' toy safety policies. All categories for which provisions exist within a specific framework are marked with x. (x) denotes cases, where provisions seem to exist, but where the nature of these provisions is not fully clear from the publicly available regulatory text.

Country	Migratory limits for Sb, As, Ba, Cd, Cr, Pb, Hg, Se	Content restriction for certain ortho-Phthalates	Provisions for other chemicals
Mexico	x		
India	x	(x)	
Russian Federation	x	x	x
Kazakhstan	x	x	x
Malaysia	x	(x)	(x)
Brazil	x	x	x
Thailand	x		
Viet Nam	x	x	x
Philippines	x	x	
Indonesia	x	(x)	(x)

Table 2: Summary of toy safety policies in the ten medium-income countries with the largest import value of toys from China.

Country	Summary of policy or regulation	Scope of policy or regulation	Chemicals that are specifically addressed by policy or regulation
Mexico	<ul style="list-style-type: none"> - Official Mexican Standard <i>NOM-252-SSA1-2011</i>⁴ establishes migration limits and testing methods for certain elements in certain toys. - Adherence to standard is mandatory for persons or companies manufacturing, importing or commercializing toys on the Mexican domestic market. 	<ul style="list-style-type: none"> - Migration limits for lead in toys, modelling pastes and finger paints for children up to 12 years of age. - Migration limits for lead and other heavy metals in toys for children up to 3 years of age, school items for pre-schoolers, modelling pastes and finger paints. - Certain toys are exempted from the standard. 	<ul style="list-style-type: none"> - <i>Material specific migration limits & methods for determination for:</i> antimony, arsenic, barium, cadmium, chromium, lead, mercury, selenium.
India	<ul style="list-style-type: none"> - Toys (Quality Control) Order, 2020⁵ establishes that toys shall conform to a specified list of Indian Standards and shall bear the Standard Mark under a license for the Bureau of Indian standards (BIS) - Specified standards include: <ul style="list-style-type: none"> o IS 9873 (Part 3) 2017*: Safety Requirements for Toys Part 3 Migration of Certain Elements (Identical with ISO 8124-3) o IS 9873 (Part 7) 2017*: Safety of Toys Part 7 Requirements and Test Methods for Finger Paints o IS 9873 (Part 9) 2017: Safety of Toys Part 9 Certain Phthalates Esters in Toys and Children's Products 	<ul style="list-style-type: none"> - Products or materials designed or clearly intended, whether or not exclusively, for use in play by children under 14 years of age or any other product as notified by the Central Government. - No exemptions for certain toys are specified in the order. 	<ul style="list-style-type: none"> - <i>Certain elements;</i> not further specified in the order. ISO-8124-3:2010* outlines material-specific migratory limits & methods for determination for antimony, arsenic, barium, cadmium, chromium, lead, mercury, selenium. - <i>Certain Phthalates;</i> not further information available.

⁴ Secretaría de Gobernación. NORMA Oficial Mexicana NOM-252-SSA1-2011, Salud ambiental. Juguetes y artículos escolares. Límites de biodisponibilidad de metales pesados. Especificaciones químicas y métodos de prueba. 15 May 2012. Accessed 10/06/2020.

http://diariooficial.gob.mx/nota_detalle.php?codigo=5248622&fecha=15/05/2012

⁵ Government of India, Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade. *Notifications*. Accessed 10/06/2020.

<https://dipp.gov.in/policies-rules-and-acts/notifications>

Country	Summary of policy or regulation	Scope of policy or regulation	Chemicals that are specifically addressed by policy or regulation
Russian Federation & Kazakhstan (EEU)	<ul style="list-style-type: none"> - <i>Technical regulation TR ZU 008/2011</i>⁶ establishes mandatory requirements for toys placed on the market within the Eurasian Economic Union. - It establishes a ban on the use of chemicals of hazard class 1⁷ in toys for children under 3 years of age and on the use of secondary raw materials derived from recycling of used material. - The requirements furthermore encompass general maximum migratory limits for certain elements and material-specific migratory limits for other elements and organic chemicals. 	<ul style="list-style-type: none"> - Toys, defined as products or materials intended for playing by a child aged under 14 years including specific requirements for modelling masses and finger paints. - Additional requirements for toys for children under 3 years of age. - Certain toys are exempted from the standard. 	<ul style="list-style-type: none"> - <i>Elements with general migratory limits:</i> antimony, arsenic, barium, cadmium, chromium, lead, mercury, selenium. - <i>Elements with material-specific migratory limits:</i> aluminium, copper, iron, manganese, nickel, silver, tin, zinc. - <i>Organic chemicals with material-specific migratory limits:</i> alpha-methylstyrol, acetaldehyde, acetone, acetophenone, agidol 2, agidol 40, acrylonitrile, altax, benzaldehyde, benzene, benzo[a]pyrene, boron, butadiene, butyl acetate, butyl alcohol, captax, chlorobenzene, dibutyl phthalate, diethyl phthalate, dimethyl phthalate, dimethyl terephthalate, dioctyl phthalate, diphenylpropane, E-caprolactam, epichlorohydrin, ethylacetate, ethylbenzene, ethylene glycol, formaldehyde, heptane, hexane, hexamethylenediamine, hexene, isobutyl alcohol, isopropyl alcohol, kumol, methyl alcohol, methylene chloride, methylmethacrylate, phenol, propyl alcohol, styrene, sulfenamide C, toluol, titanium, tiuram D, tiuram E, vinyl chloride, vulcancyte, xylene mixture, zinc diethyldithiocarbamate, zinc dimethyldithiocarbamate.
Malaysia	<ul style="list-style-type: none"> - The <i>consumer protection (Safety Standard for Toys) regulation 2009</i>⁸ and its 2016⁹ Amendment prescribe a 	<ul style="list-style-type: none"> - Toys, defined as any goods designed or intended for the use in play by children of less than 14 years of age. 	<ul style="list-style-type: none"> - <i>MS ISO 8124-3:</i> no information available - <i>ISO 8124-3*:</i> material-specific migratory limits & methods for determination for antimony, arsenic,

⁶ Eurasian Economic Commission. *On Safety of Toys*. Accessed 10/06/2020. <http://www.eurasiancommission.org/en/act/texnreg/deptexreg/tr/Pages/bezopToys.aspx/>

⁷ Hazard Class I = extremely hazardous substances based on selected human health criteria. Further information can be found in: Reihlen et al. The Russian system of chemicals management. Baltic Environmental Forum Group, June 2010. https://www.umweltbundesamt.de/sites/default/files/capchemru_chemmgmtru_final.pdf

⁸ Ministry of Domestic Trade and Consumer Affairs (MDTCA) Malaysia. *Consumer Protection Law*. Accessed 10/06/2020. <https://mysafe.kpdnhep.gov.my/portal/post/6>

⁹ Ministry of Domestic Trade and Consumer Affairs (MDTCA) Malaysia. *Consumer Protection (Safety Standards For Toys) (Amendment) Regulations 2016*. Federal Government Gazette 10 October 2016. Accessed 10/06/2020. [https://mysafe.kpdnhep.gov.my/img/portal/consumer-safety/P_U_%20\(A\)%20257%20-%20Consumer%20Protection%20\(Safety%20Standards%20For%20Toys\)%20\(Amendment\)%20Regulations%202016.pdf](https://mysafe.kpdnhep.gov.my/img/portal/consumer-safety/P_U_%20(A)%20257%20-%20Consumer%20Protection%20(Safety%20Standards%20For%20Toys)%20(Amendment)%20Regulations%202016.pdf)

Country	Summary of policy or regulation	Scope of policy or regulation	Chemicals that are specifically addressed by policy or regulation
	<p>list of existing toy safety standard for the Malaysian market</p> <ul style="list-style-type: none"> - Standards relevant to chemical requirements include: <ul style="list-style-type: none"> o MS ISO 8124-3 Safety of Toys – Part 3: Migration of certain elements o ISO 8124-3 Safety of Toys – Part 3: Migration of certain elements (maximum acceptable migration levels)* o ISO 8124-6 Safety of Toys – Part 6: Certain Phthalates ester is toys and children's products* o EN 71-3 Safety of Toys – Part 3. Migration of certain Elements* o ASTM F963 Standard consumer safety specification for toy safety* 	<ul style="list-style-type: none"> - Certain toys are exempted from the regulation. 	<p>barium, cadmium, chromium, lead, mercury, selenium.</p> <ul style="list-style-type: none"> - <i>ISO 8124-6*</i>: method for determination of DIDBP, DBP, BBP, DEHP, DNOP, DINP, DIDP - <i>EN 71-3*</i>: requirements and test methods for the migration of aluminium, antimony, arsenic, barium, boron, cadmium, chromium (III), chromium (VI), cobalt, copper, lead, manganese, mercury, nickel, selenium, strontium, tin, organic tin, zinc - <i>ASTM F963*</i>: no information available.
Brazil	<ul style="list-style-type: none"> - <i>Inmetro Ordinance no 563/2016</i>¹⁰ defines safety requirements for toys marketed in Brazil. - In general, toys shall not contain elements or radioactive substances in concentrations that could cause harmful effects on the health of children. - Outlines bans and restrictions on the use of certain chemicals in toy materials, specific requirements for migratory limits of certain elements and chemical requirements for toy materials. - Assessment of conformity and certification of manufactured or marketed in Brazil is mandatory. 	<ul style="list-style-type: none"> - Chemical requirements apply to toys and part of toys which, because of their accessibility can be sucked, licked or swallowed, all toys intended for oral contact or contact with food and cosmetic toys for dolls. - Toys which are intended for children over 6 years of age which, due to their accessibility, function, mass, size or other characteristics obviously exclude any risk due to suction, licking or swallowing. 	<ul style="list-style-type: none"> - <i>Ban on any materials containing</i> metallic mercury, asbestos, 1,4-butanediol, ammonium nitrate, strong acids and bases. - <i>Material specific content limits for:</i> DEHP, DBP, BBP, DINP, DNOP, Formamide, Lead and Cadmium. - <i>Migratory limits for:</i> Antimony, antimony, arsenic, barium, cadmium, chromium, lead, mercury, selenium.
Thailand	<ul style="list-style-type: none"> - Standard <i>TIS 685 (Part 1-3)</i>¹¹ defines mandatory requirements for all toys on the Thai market. 	<ul style="list-style-type: none"> - Toys, defined as object manufactured as playthings for children up to 14 years of age. 	<ul style="list-style-type: none"> - <i>Material-specific migratory limits for:</i> antimony, arsenic, barium, cadmium, chromium, lead, mercury, selenium.

¹⁰ Inmetro Brazil. *Legislação*. Accessed 10/06/2020. <http://www.inmetro.gov.br/legislacao/>

¹¹ Thailand Industrial Standards Institute (TISI). *List of Compulsory Standards*. 31 January 2021. Accessed 10/06/2020. https://www.tisi.go.th/website/standardlist/comp_thai/en

Country	Summary of policy or regulation	Scope of policy or regulation	Chemicals that are specifically addressed by policy or regulation
	<ul style="list-style-type: none"> - Provisions include requirements on toy materials and chemical safety of toys. It includes regulation on material-specific migratory limits for certain elements, the use of reprocessed materials and establishes that additives and wood preservatives used for toy materials shall not be toxic or hazardous to health. - Recently, revisions of the existing standards have been proposed, but these have not yet entered into force. These proposed revisions include provisions on certain phthalates in toys, lowers the migratory limits for certain elements in finger paints, and includes migratory limits for certain elements in textiles. 	<ul style="list-style-type: none"> - Certain toys are exempted from the regulation. 	
Viet Nam	<ul style="list-style-type: none"> - Recently approved <i>QCVN 3:2019/BKHCN Technical Regulation on Toy Safety</i>¹² outlines requirements for toys sold on the Vietnamese market. It replaces the current technical regulation and entered into force on 31 December 2019. With a grace period of 1 year, all toys (domestically manufactured or imported) must comply with the new regulation from 1 January 2021 onwards. - Regulations include the requirement for toys to conform with the Vietnamese Standard TCVN 6238-3:2011) outlining migratory limits for certain elements (equivalent to ISO 8124-3:2010*). - Further requirements include restrictions for the contents of formaldehyde in toys intended for children under 3 years of age, as well as restrictions of certain phthalates, material-specific restrictions for aromatic amines and restrictions for liquids in toys to a pH value between 3.0 and 10.0. 	<ul style="list-style-type: none"> - Toys that are used by children under 16 years of age as defined by a positive list in the regulation's appendix. 	<ul style="list-style-type: none"> - <i>ISO 8124-3:2010*</i>: material-specific migratory limits & methods for determination for: antimony, arsenic, barium, cadmium, chromium, lead, mercury, selenium. - Material specific content limits for formaldehyde - <i>Restrictions</i> on contents of DEHP, DBP, BBP, DINP, DIDP, DNDP/DnOP - <i>Material and toy specific content limits for:</i> benzidine, 2-naphtylamine, 4-chloroaniline, 3,3'-dichlorobenzidine, 3,3'-dimethoxybenzidine, 3,3'-dimethylbenzidine, o-toluidine, 2-methoxyaniline, aniline.

¹² Ministry of Science and Technology Viet Nam. *No 09/2019 / TT-BKHCN. Circulars promulgating the "national technical regulation on child safety"*. 30 September 2019. Accessed 11/06/2020. <https://thuvienphapluat.vn/van-ban/Linh-vuc-khac/Thong-tu-09-2019-TT-BKHCN-Quy-chuan-ky-thuat-quoc-gia-ve-an-toan-do-choi-tre-em-429472.aspx>

Country	Summary of policy or regulation	Scope of policy or regulation	Chemicals that are specifically addressed by policy or regulation
Philippines	<ul style="list-style-type: none"> - The <i>Department of Health Administrative Order 2009-0005</i>¹³ outlines the revised policies for the regulation of toys. It outlines, that all toy manufactured, imported and distributed in the country must comply with the Philippine National Standards on Safety of Toys. Relevant National Standards establish migratory limits for certain elements (identical to ISO 8124-3:1997*). - Addendum to the Administrative order No. 2009-0005-A¹⁴ furthermore restricts the use of certain phthalates in toys. - Further regulation on labelling requirements have been approved but have not yet been implemented¹⁵. 	<ul style="list-style-type: none"> - Toys defined as objects or number of objects clearly intended as plaything for children below 14 years of age. 	<ul style="list-style-type: none"> - <i>ISO 8124-3:2010*</i>: material-specific migratory limits & methods for determination for: antimony, arsenic, barium, cadmium, chromium, lead, mercury, selenium. - <i>Restrictions on contents of DEHP, DBP, BBP, DINP, DIDP, DnOP</i> -
Indonesia	<ul style="list-style-type: none"> - Regulation of Minister of Industry of the Republic of Indonesia No. 24/M-IND/PER/4/24¹⁶ and its amendment 55/M-IND/PER/11/2013¹⁷ stipulate that toys manufactured for or sold on the Indonesian market must comply with a list of Indonesian National (SNI) and international standards. - Relevant standards include SNI ISO 8124-3:2010* (identical to ISO8124-3:1997*), SNI 7617:2010* and SNI 7617:2010* and parts of EN71-5*. 	<ul style="list-style-type: none"> - Toys, defined as products designed for children up to and including 14 years of age, including baby walkers, tricycles, scooters, pedal cars, dolls, electric trains and accessories thereof, construction sets, stuffed toys and other toys. 	<ul style="list-style-type: none"> - <i>ISO 8124-3:1997*</i>: material-specific migratory limits & methods for determination for: antimony, arsenic, barium, cadmium, chromium, lead, mercury, selenium. - <i>SNI7617:2010*</i>: Material-specific content limits for formaldehyde and azo-dyes - <i>EN71-5*</i>:Content limit for: certain phthalates.

* Available for cost from the respective standardization organisations.

¹³ Republic of the Philippines Food and Drug Administration. *Administrative Order No. 2009-0005*. Accessed 11/06/2020. <https://ww2.fda.gov.ph/index.php/issuances-2/cosmetic-laws-and-regulations-pertaining-to-all-regulated-cosmetic-products/cosmetic-administrative-order/299956-administrative-order-no-2009-0005-revised-policies-and-guidelines-on-the-issuances-of-a-license-to-operate-lto-certificate-of-conformity-and-clearance-for-customs-release-prescribed-to-manufacturers-importers-and-distributors-of-toys-in-the-philippines>

¹⁴ Republic of the Philippines Food and Drug Administration. *Administrative Order No. 2009-005A*. Accessed 11/06/2020. <https://ww2.fda.gov.ph/index.php/issuances-2/cosmetic-laws-and-regulations-pertaining-to-all-regulated-cosmetic-products/cosmetic-administrative-order/299957-administrative-order-no-2009-005-a-addendum-to-administrative-order-no-2009-0005-revised-policies-and-guidelines-on-the-regulations-on-the-issuances-of-a-license-to-operate-lto-certificate-of-conformity-and-clearance-for-customs-release-prescribed-to-manu>

¹⁵ International Pollutants Elimination Network (IPEN). n.d. *Harmful Chemicals Detected in Toys sold in the Philippines*. Accessed 11/06/2020. <https://ipen.org/documents/harmful-chemicals-detected-toys-sold-philippines>

¹⁶ Republic of Indonesia Ministry of Industry. *Regulatory Database*. Accessed 11/06/2020. http://jdih.kemenperin.go.id/site/baca_peraturan/1484

¹⁷ Republic of Indonesia Ministry of Industry. *Regulatory Database*. Accessed 11/06/2020. http://jdih.kemenperin.go.id/site/baca_peraturan/1598

3.1.1 Migratory limits for certain elements

All policies and regulations contain provisions on migratory limits for the same 8 elements: antimony (Sb), arsenic (As), barium (Ba), cadmium (Cd), chromium (Cr), lead (Pb), mercury (Hg) and selenium (Se). These are the same elements that are also addressed under the current ISO standard 8124-3:2020 "Safety of toys – Part 3: Migration of certain elements"¹⁸.

Half of the analysed policies and regulations (Mexico, Russian Federation, Kazakhstan, Brazil, Thailand) explicitly state these requirements within their regulatory text or in publicly accessible standards. All of these policies specify the same numerical values for the migratory limits of these elements for two different material categories: (i) modelling pastes or clays and finger paints and, (ii) any other toy materials except modelling pastes / clays and finger paints (Table 3).

Table 3: Numerical requirements for maximum acceptable migration limits as explicitly outlined in the toy safety policies of Mexico, the Russian Federation, Kazakhstan, Brazil & Thailand.

	Maximum acceptable migration limits (mg/kg toy material)	
	Modelling clays and finger paints	Any other toy material except modelling clays and finger paints
Antimony	60	60
Arsenic	25	25
Barium	250	1000
Cadmium	50	75
Chromium	25	60
Lead	90	90
Mercury	25	60
Selenium	500	500

The other five country policies or regulations (India, Malaysia, Viet Nam, Philippines, Indonesia) reference existing industry standards which containing requirements for these elements. These standards are not publicly available but can be purchased for cost from the respective standardization bodies.

3.1.2 Content limits for certain ortho-phthalates

Out of ten analysed national toy safety policies, the frameworks of the Russian Federation, Kazakhstan, Brazil, Viet Nam, and the Philippines contain explicit requirements for certain ortho-phthalates. Table 4 summarizes these requirements.

In the toy safety policies of Brazil, Viet Nam and the Philippines, the same six ortho-phthalates (DEHP, BBP, DBP, DIDP, DINP, DNOP) are addressed and the provisions for maximum content in the respective material is identical. However, the materials or toys addressed with these provisions differ slightly between the toy safety policies in Brazil and the ones in Viet Nam or the Philippines: While the safety policy in Brazil regulates DINP, DIDP, and DNOP in the plasticised material of all toys intended for children under three years of age, the policies of Viet Nam and the Philippines regulated these three ortho-phthalates in toys that can be placed into a child's mouth.

In comparison, the policies governing ortho-phthalates in toys in the Eurasian Economic Union (EACU) differ significantly. The regulations apply for all toys made from polyvinyl chloride as well as rubber and latex composition, address different ortho-phthalates and, instead of a maximum content, providing migratory limits for aqueous media and air. In addition to the regulations on ortho-phthalates, the toy safety policies of the Russian Federation and Kazakhstan also contain provisions

¹⁸ ISO 8124-3:2020, Safety of Toys – Part 3. Migration of certain elements. Accessed 15/06/2020. <https://www.iso.org/standard/72600.html>

for dimethyl terephthalate in toys made from polyethylene terephthalate (PET) and terephthalic acid-based co-polymers (not featured in the table).

Table 4: Summary of provisions for certain ortho-phthalates in the toy safety policies of the Russian Federation, Kazakhstan, Brazil, Viet Nam, and the Philippines

Country	Material / Toy	Ortho-Phthalate	Provision
Russian Federation & Kazakhstan (EEU)	Polyvinyl chloride & rubber and latex compositions	Dibutyl Phthalate (DBP)	Not allowed
		Dimethyl phthalate (DMP)	Migratory limit for - aquat. Media: 0.3 mg/L - air: 0.007 mg/m ³
		Diocetyl phthalate	Migratory limit for - aquat. Media: 2 mg/L - air: 0.02 mg/m ³
		Diethyl phthalate	Migratory limit for - aquat. Media: 3 mg/L - air: 0.01 mg/m ³
Brazil	Plasticised material of all vinyl toys	Bis(2-ethylhexyl) phthalate (DEHP)	Max. content of 0.1% by weight in toy material for each phthalate.
		Dibutyl phthalate (DBP)	
		Benzyl butyl phthalate (BBP)	
	Plasticised material of all toys for children under 3 years of age	Di-isononyl Phthalate (DINP)	Max. content of 0.1% by weight in toy material for each phthalate.
		Diisodecyl Phthalate (DIDP)	
		Di-n-octyl Phthalate (DNOP)	
Viet Nam	All toys	Bis(2-ethylhexyl) phthalate (DEHP)	Max. content of 0.1% by weight in toy material for each phthalate.
		Dibutyl phthalate (DBP)	
		Benzyl butyl phthalate (BBP)	
	All toys that can come into contact with a child's mouth	Di-isononyl Phthalate (DINP)	Max. content of 0.1% by weight in toy material for each phthalate.
		Diisodecyl Phthalate (DIDP)	
		Di-n-octyl Phthalate (DNOP)	
Philippines	All toys	Bis(2-ethylhexyl) phthalate (DEHP)	Max. content of 0.1% by weight in toy material for each phthalate.
		Dibutyl phthalate (DBP)	
		Benzyl butyl phthalate (BBP)	
	All toys that can come into contact with a child's mouth	Di-isononyl Phthalate (DINP)	Max. content of 0.1% by weight in toy material for each phthalate.
		Diisodecyl Phthalate (DIDP)	
		Di-n-octyl Phthalate (DNOP)	

The toy safety policies of India, Malaysia and Indonesia appear to also contain provisions addressing the use of certain ortho-phthalates in toys. However, the exact nature of these provisions is not clear, since the regulatory texts do not outline the specific requirements but only reference industry standards addressing certain ortho-phthalates.

3.1.3 Provisions for other chemicals

Besides the provisions on migratable elements and ortho-phthalates, the toy safety policies of the Russian Federation, Kazakhstan, Brazil, and Viet Nam also contain specific requirements for other chemicals in toys. Furthermore, the toy safety policies of Malaysia and Indonesia appear to also contain provisions addressing other chemicals than the eight migratable elements and ortho-phthalates. However, the exact nature of these provisions is not clear, since the regulatory texts do not outline the specific requirements but only reference standards addressing certain specific chemical substances. All substances that are addressed by the considered toy safety policies are summarized in Table 2.

The respective provisions on these “other chemicals” vary quite significantly and very little overlap exists between the different policies. The only substance that is addressed by more than one toy safety policy is formaldehyde. However, the specific provisions for formaldehyde also differ between the policies, with some frameworks outlining migration limits and other frameworks outlining different maximum contents in certain toy materials. Other chemicals that are addressed by different toy safety policies include formamide, aromatic amines, azo dyes, organic solvents, or asbestos. In terms of numbers of substances explicitly addressed, the toy safety policies of the Eurasian Economic Union are the most extensive of the policies considered in this review.

3.2 Toy safety policies in low-income countries

For two low-income countries, namely the United Republic of Tanzania and Tajikistan, evidence for toy safety policies could be found by the targeted online research. According to company information, the Tanzanian Bureau of Standards (TBS) has appointed several compliance consulting companies to implement a Pre-Shipment Verification of Conformity (PVoC) Programme for selected goods entering the country¹⁹. Several of these companies explicitly name toys being one product group falling under the scope of these PVoC programs. However, no regulatory text or information on relevant national standards could be found with the applied research method.

For Tajikistan, a similar compliance consulting company reported that a law on safety of toys entered into force on 24 February 2017 which requires all toys placed on the market in Tajikistan to be certified in accordance with a technical regulation²⁰. However, no further information on this technical regulation or potentially included provisions regarding certain chemicals in toys could be found.

For all other targeted low-income countries, no information could be found regarding toy safety policies, either in the form of laws, technical regulations or standards. This does not conclude however, that no such policies exist in these countries, but only that the relevant documents may not be accessible by means of the applied research method of a targeted online search.

¹⁹ E.g. SGS. *Tanzania – PVOC Program*. Accessed 16/06/2020 <https://www.sgs.com/en/public-sector/product-conformity-assessment-pca/tanzania-pvoc-program>, or CMA CGM. *Tanzania Regulations*. Accessed 16/06/2020. <https://www.cma-cgm.com/static/eCommerce/Attachments/Tanzania%20111115.pdf>

²⁰ Pravsky Consulting – *Tajikistan: Law on safety of toys enters into force on 24 February 2017*. Accessed 16/06/2020. <http://www.pravsky.com/tajikistan-law-safety-toys-enters-force-24-february-2017>

4 Conclusions

All ten targeted medium-income countries have toy safety policies in place that contain specific provisions for the content of certain chemicals in toy. All policies contain provisions on material-specific migration limits for eight elements (Antimony, Arsenic, Barium, Cadmium, Chromium, Lead, and Selenium). While some of the countries state specific requirements for these elements in their regulatory text, others only reference national or international standards outlining requirements for these elements.

Furthermore, safety policies in eight medium-income countries address certain ortho-phthalates. Regulatory frameworks of five of these countries contain explicit requirements regarding certain ortho-phthalates in toys. These requirements mostly address six ortho-phthalates (DEHP, DBP, BBP, DINP, DIDP, DNOP). The regulatory frameworks of three further countries do not outline specific requirements in publicly accessible regulatory texts, but reference standards addressing certain ortho-phthalates.

The targeted research on toy safety policies in low-income countries resulted in evidence for existing regulation in Tajikistan and the United Republic of Tanzania. However, for both countries, no regulatory text or relevant standards outlining any chemical related requirements could be found online. For all other targeted low-income countries, no information could be found regarding toy safety policies, either in the form of laws, technical regulations, or standards. This does not conclude however, that no such policies exist in these countries, but only that the relevant documents may not be accessible through the applied research approach.

Given the vulnerability of children to chemical-related risks, toys and toy materials are amongst the group of consumer products for which chemical safety requirements exist in many countries. For some chemicals, such as the highlighted migratable elements and certain ortho-phthalate plasticizer, the degree of alignment between regulations in different countries is high and extends beyond the regulatory frameworks considered in this study. In China, for example, standards on requirements for chemical safety in toys stipulate similar or identical requirements for migratory levels of the eight elements (Antimony, Arsenic, Barium, Cadmium, Chromium, Lead, and Selenium) and the six ortho-phthalates (DEHP, DBP, BBP, DINP, DIDP, DNOP) as have been identified in the present study ²¹.

Yet, despite the degree of global alignment on requirements for these eight elements and six ortho-phthalates, there are still many areas where considerable differences between chemical requirements of toy safety policies exist. The EU toy safety directive ²², for example, severely restricts all chemicals which are known, presumed or suspected to have carcinogenic, mutagenic or reprotoxic effects for use in toys. This differs from a chemical-by-chemical approach applied in many other toy safety regulations. In addition, the EU toy safety directive also stipulates migratory limits for 19 different elements and bans an additional 55 fragrances from use in toys. This represents a much larger range of chemicals than typically found in the regulations reviewed in the present research.

In general, international standards appear to be a key entry point for countries establishing chemical-related toy safety policies and given the international nature of markets and supply chains in the toy sector, standardization is an important process. Yet it is important that existing standards and trade policies are ambitious and flexible and facilitate rather than hamper the establishment of stricter safety requirements where needed.

²¹ Basel Convention Regional Centre for Asia and the Pacific / Stockholm Convention Regional Centre for Capacity Building and the Transfer of Technology in Asia and the Pacific (2020). Summary on Chemicals in Toys Policy in China. Available from: <https://saicmknowledge.org/library/summary-chemicals-toys-policy-china>

²² Directive 2009/48/EC of the European Parliament and of the Council of 18 June 2009 on the safety of toys. Available from: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0048-20181126> (accessed 22 April 2021)

Besides regulatory requirements being in place, compliance and enforcement are additional key factors in ensuring the protection of children from chemical-related risks of toys. Toy manufacturers need to have an understanding of the regulatory requirements of the markets they are selling to and, ideally, the capacity to control and ensure respective requirements in the raw material. This can be challenging, especially for small- and medium-sized companies or companies not integrated into highly controlled supply chains of original equipment manufacturers or large retailers. In addition, countries manufacturing or importing toys should establish market surveillance and enforcement mechanisms to ensure compliance with local regulatory requirements.

By enhancing collaboration between stakeholders in the toy value chain and improving the interplay of regulatory requirements, industry capacity for compliance, transparency along the supply chain and coordinated enforcement, protection of children from chemical-related risks in toys can be further augmented on a global scale.