4.2 – Product Specific Requirements (PSR) Chemicals

4.2.1 Introduction and definitions

This chapter cover requirements for chemical substances of certain concern as they are hazardous and sometimes also regulated. These chemical substances are restricted in products and packaging as delivered to Kid/Hemtex.

Please also note Appendix 4.1 "PSR Quality" regarding restricted substances for Food-safe products, EE products and paper products.

Definitions

Requirements for substances are given in the form of tables as the examples shows below. Headings of columns are given also as below:

Chemical substance	CAS RN	Limit value (mg/kg)	Test method	Target material(s) / Use

Chemical substance
International recognized name of chemical substance or group of substances

CAS RN, Chemical Abstract Services Registration Number
CAS RN are given for specific defined chemical substances. Note that some requirements are given for a group or category for substances, were no single CAS RN may be given.
The CAS number included may be for the anhydrous form only, and therefore the CAS No shown does not always describe the entry accurately. See http://echa.europa.eu/

Limit value

A. Total content
Requirements for chemical substances are given as limit values, as measured and calculated in mg/kg from the weight of tested material or component, if not stated differently. Composite testing may be used only if approved by Kid/Hemtex, for complex articles were limit values and analytical method allow.
Limits may be relating to legal limits, or as agreed in business sector. Requirements are given with digits and/or less than digits also taking into account the possible unintended contamination of materials

B. Migration limit/Extractable limit
For some requirements due to legal reasons, the limit value is given as maximum acceptable migration or extraction of a substance, as tested by the standard. This is the case for food contact materials and toys, but also for example Nickel in skin contact.

C. In case of conflict with eco label criteria; If the Kid/Hemtex requirement is stricter, the Kid/Hemtex requirement shall supersede the eco label criteria.

Test Method
Test method is given by one of the following

A. International ISO or CEN standardized test method if such exists. Note that the latest edition of every standard shall be used.
B. Test equipment if no standardized test method exists
C. No information given, please check available test method with lab.

Target material(s) / Use
The target material(s) is defined as the type of material(s) where the chemical substance is most likely to be found. Note that this information is only given as guidance. The requirements are valid for all materials. When known, the most relevant use is given for information.

Test equipment abbreviations

GC= Gas chromatography: analyses of organic compounds
- Detectors used together with GC:
- MS: Mass selective detector: GC-MS
- DAD: Diode array detector: GC-DAD
- ECD: Electron capture detector: GC-ECD

LC= Liquid chromatography: analyses of organic compounds
HPLC= High Performance Liquid Chromatography.
- Detectors used together with LC:
- MS: Mass selective detector: LC.MS
- DAD: Diode array detector: LC-DAD
- ECD: Electron capture detector: LC-ECD
- UV/VIS: Ultraviolet/visible spectrophotometric detector: LC-UV/VIS

ICP= Inductively Coupled Plasma Spectrometry: analyses of metals
- Detectors together with ICP:
- OES: Optical emission spectrometer: ICP-OES
- MS: Mass selective detector: ICP-MS
- Atomic absorption spectrophotometer: AAS

XR= X-ray fluorescence: screening analyses of elements

Guidance on relationship between units

1000	mg/kg	equals	1000	ppm	(parts per million)
			1 000 000	µg/kg	(microgram per kilogram)
			0.1	%	(by weight)
			x	µg/m2	x depends on the thickness of the fabric (kg/m2)
			x	µg/cm2/week	x is a measure of the release of a substance from a surface, and is only partially dependent on the concentration of the substance

4.2.2 General chemical requirements

The supplier is responsible to produce and deliver products and packaging without using and/or having chemical substances that are restricted or prohibited as a result of national or international regulations, or of environmental and/or health concerns. Note that all amendments of all legislation shall be followed. Please note the Kid/Hemtex requirement for substances listed in the REACH candidate list. It is the supplier's responsibility to keep updated with the latest legal requirements at all times.

Legislation, Policy	Kid/Hemtex Requirements.
Battery directive 2006/66/EC	Full compliance with directive. See specific Kid/Hemtex requirements for primary batteries in Appendix 4.1, "PSR Quality" chapter 4.1.10 (Specific requirements for EE-products).
Biocidal Products Regulation (EU) 528/2012	Full compliance with regulation. Note transitional period for certain provisions. Kid/Hemtex does not accept any if its products having. - Antibacterial substances as additives if the active substances remain in the finished product as delivered. - Anti mould finishes Biocides used in production, storage or transport shall meet requirements in biocide regulation 528/2012 unless stated as limited in this HPI.
Regulation (EC) 1907/2006 (REACH), **Candidate list** *Substances of Very High Concern, SVHC* http://www.echa.europa.eu/web/guest/candidate-list-table	The use in products and packaging of a substance taken into the candidate list shall be phased out within twelve (12) months from the date of publishing the substance in the candidate list. From January 2021, companies will also have to notify products containing SVHCs to ECHA's SCIP database on substances of concern in articles and products. The database aims to ensure transparent information on articles containing hazardous chemicals throughout their whole lifecycle. General limit if not stated differently in this HPI: < 0,1%* w/w each substance **0,1% = 1000 ppm = 1000 mg/kg* *The following lists cover SVHC with known relevance to products and packaging supplied to Kid/Hemtex.* *However , the requirement covers the entire candidate list*
Regulation (EC) 1907/2006 (REACH), **Annex XIV** *Authorisation substances* https://echa.europa.eu/authorisation-list	Products and packaging shall not contain authorisation substances according to Regulation (EC) 1907/2006 (REACH), Annex XIV. General limit if not stated differently in this HPI: < 0,1% w/w each substance
Regulation (EC) 1907/2006 (REACH), **Annex XVII** *Restricted substances* https://echa.europa.eu/substances-restricted-under-reach	Restricted substances according to Regulation (EC) 1907/2006 (REACH) may only be used in accordance with the provisions in Annex XVII to the regulation. Note more strict requirements for some substances according to this PSR.
Regulation (EC) 1907/2006 (REACH), **Chemical substance**	A supplier of products classified as chemical substances or preparations shall fulfil all obligations according to REACH Regulation 1907/2006/EC, either by itself or through a so called "Only Representative" within the EU. A copy of the contract with the "Only Representative" shall be provided to Kid/Hemtex.

Legislation, Policy	Kid/Hemtex Requirements.
	Candles are defined as a combination of an article and a chemical substance/mixture, the wick is the article and the wax is the substance / mixture.
Regulation EC 2019/1021 **POPs regulation on Persistent Organic Pollutants**	Full compliance with regulation.
Directive 2011/65/EU **Restriction of Hazardous Substances in electrical and electronic (EEE) products. RoHS**	Full compliance with directive. Note that RoHS apply for all parts of an EEE as defined by homogenous material. *See also Kid/Hemtex PSR Quality and specific requirement for EE-products.*
Regulation 1005/2009/EC **Substances that deplete the ozone layer**	Full compliance with regulation.
Regulation 1272/2008/EC **CLP, Classification, labelling and packaging**	Full compliance with CLP must be followed. Sensitizing substances should not be used above thresholds for the classification and labelling according to CLP regulation, * * if exception agreed with buyer labelling according to CLP and complete SDS with exact shares is required
Directive 2009/48/EC **EU Toy Safety Directive**	All toys must comply with the demands of EU Toy Safety Directive 2009/48/EC concerning safety-, chemical- and construction requirements of toys. This includes all chemical requirements listed in the EN 71-X standards serie.
Regulation (EC) No 1223/2009 **Regulation on Cosmetic Products**	Full compliance with the Regulation on Cosmetic Products, including all annexes.

4.2.3 Specific requirements

These lists below include the 10-06-2022 and 17-01-2023 updates of the REACH candidate list.
See previous section for Kid/Hemtex requirements for phase out period. Note that some chemicals are already restricted by Kid/Hemtex before inclusion in the REACH candidate list.

As a general approach, the substances in the REACH candidate list are included in the most relevant section of this PSR. SVHC containing toxic heavy metals are covered by other requirements in this chapter. Please note that several substances may have multiple uses.
Other substances are not listed, but still the same requirements apply to all substances included in the REACH candidate list.

Requirements relating to chemistry but not to specific substances.

Feature	Kid/Hemtex Requirements	Target material(s) / Use
Bleaching	Kid/Hemtex recommends that bleaching of textiles is carried out without use of chlorine and that hydrogen peroxide is used instead.	Textile Paper
pH	Textile: Baby products (0-3 years)*: Between 4,0 and 7,5 All other products: Between 4,0 and 8,5 Leather: Between 3,5 and 6,0	Textile ISO 3071 Leather ISO 4045
Strong smell / odour	Kid/Hemtex do not accept any strong odour products. Note test instruction for VOC	All
*** ”Items that might come into contact with children” are products such as bed sheet, bed set, pillow cases, towels and similar products from Kid/Hemtex´s assortment.**		

Chemical requirements concerning EEE product shall not contain the substances in the list of declarable substances in IEC 62474- Material Declaration for Products of and for the Electrotechnical Industry . IEC 62474 database is regularly updated with legally restricted substances relevant for EE products. http://std.iec.ch/iec62474
This list is not exhaustive, substances with legal requirements and/or Kid/Hemtex policy requirements still need to be acknowledged.

When SVHCs listed as exemptions in RoHS are used in EEE products, the supplier shall inform Kid/Hemtex.

4.2.4 Process Chemicals

Process chemicals are used in the manufacturing process but have no function in the finished product. Remains may however be found in the finished product and cause health and environmental problems.

4.2.4.1 Alkylphenol Ethoxylates and Alkylphenols

Requirements based on Water framework directive, REACH Annex XVII, Annex XIV and Candidate list and

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s) / Use
Alkylphenoletoxylates, APEO, such as: - Nonylphenol ethoxylates (NPEO) -Octylphenolethoxylates (OPEO) - Heptylphenol ethoxylates (HpPEO) - Hexylphenol ethoxylates (HxPEO) - Pentaphenol ethoxylates (PePEO)	Several	APEO shall not be used in processes. Verification by testing sum <100 mg/kg in product	Textile: ISO 18254-1, -2 (APEO) ISO 21084:2019 (AP) Leather: ISO 18218-1, -2	Textile PU Coatings Down/feather Leather Electric-equipment
Alkylphenols (AP), such as: - Nonylphenol, (NP) - Octylphenol (OP) - Heptylphenol (HpP) - Hexylphenol (HxP) - Pentaphenol (PeP) -4-tert-butylphenol -TNPP	Several	<10 mg/kg for sum		

4.2.4.2 Bisphenols

Requirements based on REACH annex XVII (entry 66 thermal paper) and Candidate list.

Chemical substance	CAS No	Limit value	Test method*	Target material(s) / Use
Bisphenol-A; BPA (4,4'-isopropylidenediphenol)	80-05-7	0,04 mg/l from migration	EN71-10 and EN71-11	Toys in polycarbonate, Leather
		Not detected	LC-MS	Plastic, paper, Leather
2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	10	GC-MS LC-MS	Plastic, paper, polycarbonate, Leather
Bisphenol B; BPB (4,4'-(1-ethylpropylidene)bisphenol)	77-40-7	10	GC-MS LC-MS	Plastic, paper, polycarbonate, Leather
Bisphenol S; BPS (4,4'-sulphonyldiphenol)	80-09-1	10	LC-MS, GC-MS	Plastic, paper, polycarbonate, Leather

pr ISO 11936 (leather)

4.2.4.3 Chlorinated organic solvents and carriers

Requirements based on REACH annex XVII, Candidate list, EU **regulation** 2037/2000, IED 2010/75/EU and Substances that deplete the ozone layer

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
Chlorinated organic solvents (aliphatic):		Not detected	GC-MS GC-ECD No standardised test method available. Detection limit 0,1 mg/kg	Leather Paints, prints, stain removers, textile fibres washed, dyed and /or printed, PU, synthetic rubber.
Trichloromethane, (Chloroform)	**1**67-66-3			
Trichloroethylene	79-01-6			
Tetrachloroethylene	127-18-4			
1,1-Dichloroethylene	75-35-4			
1,2-dichloroethane	107-06-2			
1,4-Dichlorobenzene	106-46-7			
1,1,1-Trichloroethane	71-55-6			
1,1,2-Trichloroethane	79-00-5			
1,2,3- Trichloropropane	96-18-4			
1,1,2,2,-Tetrachlorethane	79-34-5			
1,1,1,2-Tetrachloroethane	630-20-6			
Carbon tetrachloride	56-23-5			
Pentacholorethane	76-01-7			
Chlorinated Toluenes:		1	EN 17137	
α,α,α,4- tetrachlorotoluene: p-clorobenzotrichlorid	5216-25-1			
α,α,α- trichlorotoluene; benzotrichloride	98-07-7			
α-chlorotoluene: benzyl chloride	100-44-7			
Chlorinated organic carriers (aromatic):		1,0 for sum	DIN 54232 Extraction GC-MS	
Chlorinated benzenes	Several			
Chlorinated toluenes	Several			
Chlorinated naphthalenes	Several			
Chlorinated xylenes	Several			

4.2.4.4 Isocyanates

Requirements based on annex XVII (EC) No 1907/2006 (REACH)

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
2,2'-Methylenediphenyl diisocyanate (MDI)	2536-05-2	< 200	No standardised test method available	Rigid foams, fibers, coatings such as paints and varnishes, and elastomers
2,4'-Methylenediphenyl diisocyanate (MDI)	5873-54-1			
4,4'-Methylenediphenyl diisocyanate (MDI)	101-68-8			
Methylenediphenyl diisocyanate (MDI)	26447-40-5			
2,4-Toluene diisocyanate (2,4 TDI)	584-84-9			
m-tolylidene diisocyanate (TDI)	26471-62-5			
Hexane, 1,6-diisocyanato (HDI)	822-06-0			
Isophorone diisocyanate (IPDI)	4098-71-9			
Tetramethylxylene diisocyanate (TMXDI)	2778-42-9			
Benzene, 1,3-diisocyanato-2-methyl	91-08-7			

4.2.4.5 Pesticides used in the supply chain

Chemical substances listed in the Rotterdam Convention, annex III and recommended for listing in annex III, and chemical substances listed in annexes to the Stockholm Convention shall not be intentionally formed/used in agricultural or production processes or in products/packaging delivered to Kid/Hemtex.
Residues below Level of Quantification, (LOQ) based on Mass Spectroscopy analysis of products/packaging are regarded as unintentional formation/use.
For more information, please see the following URL: http://www.pic.int/

4.2.4.6 Polycyclic aromatic hydrocarbons, PAH

Requirement based on REACH Candidate list, annex XVII entry 50, amended by EU Regulation 1272/2013 (eight first substances in the table)
For products with direct, prolonged or multiple short, skin contact.

Chemical substance	CAS RN	Limit value (mg/kg)	Test method	Target material(s)
Benzo(a)pyrene	50-32-8	0,2 Each PAH Toys and childcare articles; 0,2 each PAH	ISO 21461 (NMR) (rubber) EN 17132 (textile) Footwear: AfPS GS 2019-01 PAK ISO/TS 16190 Detection limit: 0.2 mg/kg	Rubber Leather Black plastic materials PU-elastane Neoprene
Benzo(e)pyrene	192-97-2			
Benzo(a)anthracene	56-55-3			
Benzo(a)phenanthrene (Chrysene)	218-01-9			
Benzo(b)fluoranthene	205-99-2			
Benzo(j)fluoranthene	205-82-3			
Benzo(k)fluoranthene	207-08-9			
Dibenzo(a,h)anthracene	53-70-3			
Benzo(ghi)perylene	191-24-2			
Fluoranthene	206-44-0			
Anthracene (Also biocid) (Also anthracene oil distillation fractions)	120-12-7			
Phenanthrene	85-01-8			
Acenaphthene	83-32-9	10 of sum of all 18 PAHs		
Acenaphtylene	208-96-8			
Fluorene	86-73-7			
Indeno(1,2,3-cd)pyrene	193-39-5			
Naphthalene	91-20-3			
Pyrene	129-00-0			

TESTING AND ASSESSMENT OF POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) IN THE AWARD OF THE GS MARK – SPECIFICATION PURSUANT TO §21(1) NO. 3 OF THE PRODUCT SAFETY ACT (PRODSG) AFPS GS 2019:01 PAK, MAY 15, 2019

	CATEGORY 1	CATEGORY 2		CATEGORY 3	
	Materials intended to be placed in the mouth or materials in toys (Directive 2009/48/EC) or articles for children up to 3 years of age with intended long-term skin contact (> 30 seconds) (mg/kg)	Materials that are not in Category 1, with intended or foreseeable long-term skin contact (> 30 seconds) or short-term repetitive contact with the skin		Materials not covered by Category 1 or 2, with intended or foreseeable short-term skin contact (≤ 30 seconds)	
		2a Use by children under 14 (mg/kg)	2b Other consumer products (mg/kg)	3a Use by children under 14 (mg/kg)	3b Other consumer products (mg/kg)
Benzo[a]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[e]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[a]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[b]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[j]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[k]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo[a,h]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[g,h,i]perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno[1,2,3-cd]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Anthracene, fluoranthene, phenanthrene, pyrene	< 1 (sum)	< 5 (sum)	< 10 (sum)	< 20 (sum)	< 50 (sum)
Naphthalene	< 1	< 2	< 2	< 10	< 10
Total 15 PAHs	< 1	< 5	< 10	< 20	< 50

Effective date = July 1, 2020 (for issuing GS-Mark)

4.2.4.7 Quaternary ammonium compounds

Requirements based on PARCOM Recommendation 93/4 for complete phase-out

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
DSDMAC	107-64-2	Not detected	LC-MS Detection limit 10 mg/kg	Textile Leather Cosmetics
DTDMAC	68783-78-8			
DHTDMAC	61789-80-8			

4.2.4.8 Solvents

Kid/Hemtex does not accept any strong odour products. Assurance shall, if requested, be verified by the following general set up:

A. Odour test:
   a. result pass; no further test and product is accepted
   b. inconclusive result. Continue with GC-MS Headspace according to table VOC, named substances
      i. GC-MS test pass all limit values; no further test and product is accepted even if inconclusive result from odour test.
      ii. GC-MS test do not pass all limit values; no further test and product is not accepted.
   c. result fail; no further test and product is not accepted
B. Kid/Hemtex may also request VOC to be tested according Tenax method; ISO 16000-6
C. For specific products, as described in inquiry, tests for individual substances from lists VOC may be requested.

Parameter	Requirement	Test method
Odour test	< 3; Pass 3 - 3,5; Inconclusive; shall be followed by VOC test, Table VOC, GC-MS Headspace as below > 3,5; Fail Kid/Hemtex accept only panel tests for odour performed at labs in Hong Kong or Shanghai or European Locations. Accepted labs are ITS, SGS, UL or TUV Rheinland	Panel test with reference to SNV 195651 / DIN 10955 Scale 1 to 5

Requirements are based on REACH Annex XVII and Candidate list, Product safety directive IED 2010/75/EU. Some of listed substances may also function as biocides.

Chemical substance	VOC	CAS No	Limit value (mg/kg)	Test method	Target material(s) / Use
Aromatic organic solvents					
Benzene	Yes	71-43-2	1	GC/MS VOC; Headspace	Paints, Lacquers Textiles Plastics Adhesives
Ethylbenzene	Yes	100-41-4	20		
Styrene	Yes	100-42-5	10		
Toluene	Yes	108-88-3	5		
Total Xylenes	Yes	1330-20-7 Various	20		
Cyclohexane	Yes	108-94-1	100		
Acetophenone	Yes	98-86-2	Sum < 300		Polymer foam except PU
2 phenyl-2-propanol	Yes	617-94-7			EVA foam
Phenol		108-95-2	50	HPLC-DAD	Rubber, Polymeric material, Adhesives
Glycols					
2-ethoxietylacetate		111-15-9	100	GC/MS VOC; Headspace	Paints, Lacquers Textiles, Plastics Adhesives
2,2'dimethyldiether, DEGDME		111-96-6	100		
Other organic solvents					
DMFa, N,N-Dimethylformamide	Yes	68-12-2	500	EN 17131:2019 (textile)	PU, Acrylic, Paper
NMP N-methylpyrrolidone	Yes	872-50-4		GC/MS VOC; Headspace	PU, Styrene-butadiene, latex
DMAC N,N-dimethylacetamide,		127-19-5			PU, Acrylic, Polyamide
Formamide	Yes	75-12-7		Detection limit 1 mg/kg	EVA foam, PU, paper
ADCA Azodicarbonamide	Yes	123-77-3	Not detected	GC-MS	Plastics, rubber, foaming agent in EVA, PE and PVC*

Hydrazine	Yes	302-01-2 7803-57-8	1000	UV-VIS Or GC-MS	Foaming agent in polymer foams, EVA
1,4 dioxane		123-91-1	< 100	-	Foaming agent, wetting agent in textiles

*See separate requirement for PVC in this chapter and in PAR 3.5.8

4.2.4.9 Tin organic compounds

Requirements based on REACH, Candidate list and annex XVII. Children requirements based on Oeko-tex®.

Chemical substance	CAS RN	Limit value (mg/kg)	Test method	Target material(s)
Dibutyltin compounds DBT, DBTC and various DBTs	1002-53-5 683-18-1, 818-08-6 1067-33-0, 3349-36-8 15546-11-9, 4731-77-5 85702-74-5, 15546-16-4 2781-10-4, 77-58-7 13323-63-2, 5847-55-2 13323-62-1, 85391-79-3 95873-60-2	Not detected	GC-MS Detection limit: 0,2 mg/kg Possible reference to; EN ISO 22744-1 (textile) ISO/TS 16179 (footwear) DIN 38407 F13:2001 U ISO 17353 (Water and sediment)	PU Coatings PVC* Rubber TPR
Tributyltin compounds (TBT) Bis(Tributyltin)Oxide, TBTO (also biocid)	688-73-3, 56573-85-4 56-35-9			
Dioctyltin compounds (DOT) (DOTE, MOTE)	870-08-6 15571-58-1 27107-89-7			
Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	-			
Dibutylbis(pentane-2,4-dionato-O,O') tin	22673-19-4			
Triphenyltin compounds (TPhT)	900-95-8, 379-52-2, 892-20-6, 76-87-9, 668-34-8, 639-58-7			
Trimethyltin (TMT)	1631-73-8			
Tricyclohexyltin (TCyHT)	6056-50-4			
Trioctyltin (TOT)	250252-89-2			
Tripropyltin (TPT)	-			

*See separate requirement for PVC in this chapter and in PAR 3.5.8

4.2.4.10 Other process chemicals

Requirements based on REACH Candidate list and Kid/Hemtex policy.

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s) / Use
3-ethyl-2-methyl-2-(3-methylbutyl)-1, 3-oxazolidine	143860-04-2	1000	No specified	PU, Moisture scavenger
Triglycidyl isocyanurate,TGIC	2451-62-9	1000	LC-MS	Hardener, Coatings, Prints
β-Triglycidyl isocyanurateβ-TGIC	59653-74-6	1000	LC-MS	Solder mask ink, Coatings on metal
Technical MDA	25214-70-4	1000	GC-MS	Hardener in hard ware
Ethylenethiourea	96-45-7	1000	LC-MS	Accelerator in rubber
Ethylenediamine, EDA	107-15-3	Not detected	GC-MS	Textiles, PU, Epoxy resins (in glues, adhesives, paints)
N-nitrosamines	Several	0.5 mg/kg	GB/T 24153: determination using GC/MS with LC/MS/MS verification if positive. Alternatively, LC/MS/MS may be performed on its own.	Natural and synthetic rubber
Quinoline	91-22-5	50	GC-MS LC-MS	Textiles
2-methoxyethyl acetate	110-49-6	100	GC-MS LC-MS	Solvent for celluloseacetete and textile printing, laquers
Bis(2-(2-methoxyethoxy)ethyl)ether	143-24-8	1000	-	Solvent/extraction agent. Can be used in inker prints
tris(2-methoxyethoxy)vinylsilane	1067-53-4	1000		Polymers (Rubbers, plastics, sealants) Can be used in plating agent and surface treating agent.
Imidazoles: 1-vinylimidazole 2-methylimidazole	1072-63-5 693-98-1	< 200	No standardised test method available.	Adhesives, epoxy resins, textiles
Hydroxymethyl acrylamide	924-42-5	500	LC-MS, GC-MS	Textile, paper
Melamine	108-78-1	1000	LC-MS, GC-MS	Polymers, leather, textile finishes and coatings

4.2.5 Product Related (property lending) Chemicals

Product related substances that are used with intended function in the finished product.

4.2.5.1 Aromatic Amines from Azo Dyes

Requirements based on REACH annex XVII - entry 43 and entry 72 as well as the Candidate list

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
Benzidine	92-87-5	Not detected	EN ISO 14362-1/ -3 for textiles EN ISO 17234-1, -2 for leather Detection limit 20 mg/kg (per each of the arylamine breakdown product)	Textile Leather Feathers Paper
Biphenyl-4-ylamine	92-67-1*			
4-Chloro-o-toluidine	95-69-2			
2-Naphthylamine	91-59-8			
o-Aminoazotoluene	97-56-3*			
5-Nitro-o-toluidine	99-55-8			
4-Chloroaniline	106-47-8			
4-methoxy-m-phenylenediamine	615-05-4			
4,4-Methylenedianiline	101-77-9			
3,3-Dichlorobenzidine	91-94-1			
o-Dianisidine	119-90-4			
4,4'-bi-o-toluidine	119-93-7			
4,4-Methylenedi-o-toluidine	838-88-0*			
p-Cresidine	120-71-8*			
4,4'-Methylene-Bis-(2-Chloroaniline)	101-14-4			
4,4'-Oxydianiline	101-80-4*			
4,4'-Thiodianiline	139-65-1			
o-Toluidine	95-53-4*			
2,4,5-Trimethylaniline	137-17-7			
4-methyl-m-phenylenediamine	95-80-7*			
o-Anisidine	90-04-0*			
2,4-xylidine	95-68-1			
2,6-xylidine	87-62-7			
4-Aminoazobenzene	60-09-3*			
4-chloro-o-toluidinium chloride	3165-93-3**			
2-Naphthylammoniumacetate	553-00-4**			
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	39156-41-7**			
2,4,5-trimethylaniline hydrochloride	21436-97-5**			

** SVHC substances*
*** CMR fast track substances*

4.2.5.2 Borate compounds

Requirements based on REACH Candidate list

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
Boric Acid	10043-35-3 11113-50-1	Not detected (LOQ: 25 mg/kg for individual compounds (10 mg/kg for total Boron content))	AAS Detection as 100 µg /kg as Boron ICP-MS and ICP-OES Detection limit as 1 µg/kg as Boron	Wood, Slime, Biocides, Glue, Detergents, Flame retardant, Paper, Rubber, Plastic, Ceramic
Tetraboron disodium heptaoxid, hydrate	12267-73-1			
Diboron trioxide	1303-86-2			
Disodium tetraborate anhydrous	1330-43-4, 12179-04-3 1303-96-4			
Sodium peroxometaborate	7632-04-4			
Sodium perborate; perboric acid, sodium salt	239-172-9, 234-390-0			
Disodium octaborate,	12008-41-2			
Orthoboric acid, sodium salt, e.g	13840-56-7			
Barium diboron tetraoxide	13701-59-2			

4.2.5.3 UV Stabilizers

Requirements based on REACH Candidate list

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s) / Use
Benzotriazols				
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	50	ISO 24040:2022	Plastics, PU, Rubber, Wood Coatings
2,4-di-tert-butyl-6-(5-chlorobenzo triazol-2-yl)phenol (UV-327)	3864-99-1			
2-(2H-benzotriazol-2-yl)-4,6-ditert pentylphenol (UV-328)	25973-55-1			
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3			
Other UV Stabilizers				
3-benzylidene camphor (1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1] heptan-2-one) (3-BC)	15087-24-8	< 100	GC MS LC-MS GC-ECD	Cosmetics, polymeric materials
6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)	119-47-1			Rubber, plastic, adhesives, inks,

4.2.5.4 Dyes pigments colorants

Requirements based on Commission Decision 2009/567/EC, EU flower, REACH Annex XVII, REACH Candidate list

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
CMR, Carcinogenic Mutagenic, Reproductive toxic Dyestuffs				
C.I. Disperse Orange 11	82-28-0	Not Detected	Extractable dyestuff EN ISO 16373 Detection limit 20 mg/kg (per substance)	Textile Leather Feather, Paper inks, Packaging
C.I. Basic Red 9	569-61-9**			
C.I Direct Red 28*	573-58-0*			
C.I. Disperse Violet 14	632-99-5			
C.I. Direct Black 38	1937-37-7*			
C.I. Disperse Blue 1*	2475-45-8**			
C.I. Direct Blue 6	2602-46-2			
C.I. Acid Red 26	3761-53-3			
C.I. Direct Brown 95	16071-86-6			
C.I. Disperse Orange 149	85136-74-9			
Michlers base*	101-61-1*			
Michlers ketone	90-94-8			
C.I. Solvent Blue 4*	6786-83-0*			
C.I. Basic Blue 26*	2580-56-5*, **			
C.I. Basic Violet 3*	548-62-9*			
4,4'-bis(dimethylamino)-4''-(methylamino)trietylalcohol*	561-41-1*			
C.I. Disperse Yellow 3	2832-40-8			
				** SVHC substances* ***CMR fast track*
Allergenic Dyestuffs:				
C.I. Disperse Blue 1*	2475-45-8	Not Detected	DIN 54231 Method to be followed strictly including methanol extraction Detection limit 50 mg/kg (per substance) Extractable dyestuffs EN ISO 16373	Textile Leather Feather
C.I. Disperse Blue 3	2475-46-9			
C.I. Disperse Blue 7	3179-90-6			
C.I. Disperse Blue 26	3860-63-7 100357-99-1 13324-23-7			
C.I. Disperse Blue 35	12222-75-2			
C.I. Disperse Blue 102	12222-97-8			
C.I. Disperse Blue 106	12223-01-7 68516-81-4			
C.I. Disperse Blue 124	61951-51-7			
C.I. Disperse Brown 1	23355-64-8			
C.I. Disperse Orange 1	2581-69-3			
C.I. Disperse Orange 3	730-40-5			
C.I. Disperse Orange 37	12223-33-5			
C.I. Disperse Orange 59**	13301-61-6			
C.I. Disperse Orange 76**	51811-42-8			
C.I. Disperse Red 1	2872-52-8			
C.I. Disperse Red 11	2872-48-2			
C.I. Disperse Red 17	3179-89-3			
C.I. Disperse Yellow 1	119-15-3			
C.I. Disperse Yellow 3	2832-40-8			
C.I. Disperse Yellow 9	6373-73-5			
C.I. Disperse Yellow 23	6250-23-3			
C.I. Disperse Yellow 39	12236-29-2			
C.I. Disperse Yellow 49	54824-37-2			
Navy Blue	405-665-4 118685-33-9			
				** Both allergenic and carcinogenic;* *** Equivalent to C.I, Disperse Orange 37*

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
Pigment salts				
All lead and chromate pigment salts		See section toxic heavy metals	1. XRF 2. AAS 3. ICP-MS ICP-OES	Enamel coated metal Colored plastic Colored rubber Plastisol Prints Ceramics
Cobalt(II)sulphate	10124-43-3	1000		

4.2.5.5 Electrolyte

Requirements based on REACH Candidate list and REACH authorization list (Annex XIV)

Chemical substance	CAS No	Limit value	Target material(s)
1,3-propanesultone	1120-71-4	1000 mg/kg	Electrolyte in Li ion batteries May be found in printing inks
1,2-bis(methoxy) ethane (TEGDME)	112-49-2		
1,2-dimethoxyethane (EGDME)	110-71-4		
Bis(2-(2-methoxyethoxy)ethyl)ether (tetraglyme/TEGDME)	143-24-8		
Bis(2-methoxyethyl) ether (diglyme/DEGDME)	111-96-6	Not detected	

4.2.5.6 Flame retardants, FR

Requirements based on REACH, Water Framework Directive and POPs regulation
Some substances listed under flame retardants may also have other use in processes or products.
See also chapter Boron compounds

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
Antimony based FR				
Antimony(III) Oxide	1309-64-4	10 Polyester: 200	XRF screening GC MS ICP-OES	Plastics Textile Gypsum
Brominated, Chlorinated FR				
Tetrabromodiphenyl ether, TetraBDE	5436-43-1	Not detected	EN ISO 17881-1 (textiles). EN16377 for PBB (plastics) XRF Screening* GC-MS, LC-MS For LC-MS recommended detection limit 1 mg/kg	Plastics Textile Foam Coatings, Electronics
Polybrominated Biphenyls (Mix) PBB	59536-65-1 Various			
Pentabromodiphenyl ether, PBDE	32534-81-9 60348-60-9			
Hexabromobiphenyl	36355-01-8			
Hexabromodiphenyl ether, HexaBDE	68631-49-2 207122-15-4			
Heptabromodiphenyl ether, HeptaBDE	207122-16-5 446255-22-7			
Octabromodiphenyl ether, OctaBDE	32536-52-0			
Decabromobiphenyl ether, DecaBDE	1163-19-5			
Tetrabromobisphenol A TBBPA	79-94-7			
Hexabromocyclododecane HBCDD	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8			

Chemical substance	CAS No	Limit value (mg/kg)	Test method	Target material(s)
Dechlorane Plus™	13560-89-9; 135821-74-8; 135821-03-3			
1,1'-[ethane-1,2-diylbisoxy]bis[2,4,6-tribromobenzene] (BTBPE)	37853-59-1			
Bis(2-ethylhexyl) tetrabromophthalate (TBPH)	26040-51-7 (several)	100		Plasticizer, Adhesives & sealants
Chlorinated Paraffins				
Short chained chlorinated paraffin, SCCP (C10-C13),	85535-84-8	100	EN ISO 22818 (textile) ISO 18219 (leather) Plastic	Rubber Leather Paints PU PVC**
Medium-chain chloroparaffins, MCCP (C14-C17)	85535-85-9	1000		
Long-chain chloroparaffins, LCCP (C18-)	85535-86-0	1000		
Phosphate and phosphonium based FR				
Tri-O-Cresylphosphate (TOCP)	78-30-8	10	For non-textile materials: XRF Screening*, GC-MS LC-MS Detection limit for LC-MS 1 mg/kg For textiles: EN ISO 17881-2	Plastics Textile Rubber Foam
Tris(2-Chloroethyl) Phosphate (TCEP)	115-96-8	Not detected		
Phosphonium Tetrakis (Hydroxymethyl)-Chloride	124-64-1	10		
Tris(2,3-Dibromopropyl) Phosphate (TBPP)	126-72-7	10		
Tris(1-Aziridinyl)-Phosphine Oxide (TEPA)	545-55-1	10		
Dimethyl Methylphosphonate (DMMP)	756-79-6	10		
Tricresyl Phosphate (TCP)	1330-78-5	10		
2-Propanol, 1-Chloro-, Phosphate (3:1) (TCPP)	13674-84-5	5		
Tris(1,3-Dichloro-2-Propyl) Phosphate (TDCPP)	13674-87-8	5		
Phosphoric Acid, Methylphenyl	26444-49-5	10		
Phosphoric Acid, (1,1-Dimethylethyl) Phenyl Diphenylester	56803-37-3	10		
Triphenyl phosphate	115-86-6	10		
Trixylyl phosphate	25155-23-1	10		
Isopropylated phenyl phosphate (3:1)	68937-41-7			

*Requirement XRF screening test:
Substances that contain bromine, chlorine, heavy metals may be screened with XRF for a first indication of presence of elements in the sample.
For quantitative determination of listed substances GC-MS or LC- MS may be requested.
*See separate requirement for PVC in this chapter and in PAR 3.5.8

4.2.5.7 **Formaldehyde**

Requirement based on REACH, Annex XVII, entry 28-30 and several legal requirements.

Chemical substance	CAS No	Limit value	Test method	Target material(s) / Use
Formaldehyde	50-00-0	Children <36 months* 16 mg/kg All other 75 mg/kg	ISO 14184-1 Leather: ISO 17226-2 and ISO 17226-1 confirmation method in case of interferences. Note requirements for sampling in standard*. EN 645 (paper) EN 1541 (paper)	Textile Leather
		0,124 mg/m³ <3,5 mg/m2 xh	EN 717-1:2004 EN ISO 12460-3	Wood based panels Adhesives
***"Items that might come into contact with children" are products such as bed sheet, bed set, pillow cases, towels and similar products from Kid/Hemtex´s assortment**				

*Due to its volatility, formaldehyde is "contagious". If a garment containing formaldehyde is placed on top of a garment without formaldehyde, the latter garment will be "infected". Fabric samples for testing must be packed in air dense plastic bags (polyethylene, PE, or polypropylene, PP).

4.2.5.8 Heavy metals and their compounds in textile and leather

Requirements based on General Product Safety directive.
Note that several salts related with these requirements are included in the REACH candidate list.

Chemical substance	CAS No	Limit value (mg/kg) adults	Limit value (mg/kg) children <36 months*	Test method
Antimony, Sb	7440-36-0	30	30	Extraction in accordance with ISO 105 E04, 40°C 1 h and analysis AAS, or ICP-MS, ICP-OES (For children up to 36 months:saliva solution. For other products: sweat solution EN 16711-1 (total content in textiles). EN 16711-2 (extractable content in textile) Leather; EN ISO 17072-1 (extractable) ISO 17072-2 (total content)
Arsenic, As, and arsenic compounds: Diarsenic Pentoxide Diarsenic Trioxide Triethyl arsenate Arsenic acid Calcium arsenate	7440-38-2 1303-28-2 1327-53-3 15606-95-8 7778-39-4 7778-44-1	1,0	0,2	
Cadmium, Cd and cadmium compounds	7440-43-9 1306-19-0 1306-23-6 10108-64-2 7790-79-6 10124-36-4 31119-53-6 10325-94-7 513-78-0 21041-95-2	0,1	0,1	
Cobalt, Co	7440-48-4	4,0	1,0	
Copper, Cu	7440-50-8	50	25	
Lead, Pb and lead salts (see appendix Lead compounds)	7439-92-1	1,0	0,2	
Mercury, Hg, and mercury compounds: Phenylmercury neodecanoat Phenylmercury octanoate Phenylmercury 2-ethylhexanoate Phenylmercury propionate Phenylmercury acetate	7439-97-6 26545-49-3 13864-38-5 13302-00-6 103-27-5 62-38-4	0,02	0,02	
Nickel, Ni	4770-02-0	4,0	1,0	
Chromium, Cr		0,5	0,5	
Hexavalent Chrome, Cr +6 (see appendix Chromium compounds)	18540-29-9	Not detected	Not detected	For leather: EN ISO 17075-1, (Colorimetric method), EN ISO 17075 -2 (Chromatographic method) Detection limit: 3 mg/kg. ISO 19071 (in chromium tanning agents) EN ISO 10195 (pre-aged leather) For textiles. UV-VIS Spectrometer, ICP-MS Detection limit: 0.5 mg/kg
*** "Items that might come into contact with children" are products such as bed sheet, bed set, pillow cases, towels and similar products from Kid/Hemtex´s assortment.**				

Substances that contain bromine, chlorine, heavy metals may be screened with XRF for a first indication of presence in the sample. Stated test methods should be used for quantitative determination where applicable.

Appendix Chromium compounds

See requirements for Chromium in list Toxic Heavy metals.
Requirements based on Candidate list of Substances of Very High Concern, SVHC, Regulation (EC) No 1907/2006 (REACH) and Annex XIV

Chemical substance	CAS No
Ammonium dichromate	7789-09-05
Potassium chromate	7789-00-6
Potassium dichromate	7778-50-9
Sodium chromate	7775-11-3
Sodium dichromate dehydrate	7789-12-0, 10588-01-9
Strontium chromate	7789-06-2
Chromium trioxide	133-82-0
Chromic acid	7738-94-5
Dichromic acid	13530-68-2
Lead chromate	7758-97-6
Lead sulfochromate	1344-37-2
Lead chromate molybdate sulphate	12656-85-8
Dichromium tris(chromate)	24613-89-6
Potassium hydroxyoctaoxodizincatedichromate	11103-86-9
Pentazinc chromate octahydroxide	49663-84-5

Appendix Lead compounds

See requirements for Lead in list Toxic Heavy metals. Requirements based on Candidate list of Substances of Very High Concern, SVHC, Regulation (EC) No 1907/2006 (REACH)

Chemical substance	CAS No
Lead chromate	7758-97-6
Lead sulfochromate	1344-37-2
Lead chromate molybdate sulphate	12656-85-8
Lead(II)picrate	6477-64-1
Lead styphnate	15245-44-0
Lead diazide	13424-46-9
Lead hydrogen arsenate	7784-40-9
Lead monoxide (Lead oxide)	1317-36-8
Orange lead (Lead tetroxide)	1314-41-6
Lead bis(tetrafluoroborate)	13814-96-5
Trilead bis(carbonate)dihydroxide	1319-46-6
Lead titanium trioxide	12060-00-3
Lead titanium zirconium oxide	12626-81-2
Lead(II)bis(methanesulfonate	17570-76-2
Silicic acid, lead salt	11120-22-2
Silicic acid (H2Si2O5), barium salt (1:1), leaddoped	68784-75-8
Acetic acid, lead salt, basic	51404-69-4
Lead oxide sulfate	12036-76-9
[Phthalato(2-)]dioxotrilead	69011-06-9
Dioxobis(stearato)trilead	12578-12-0
Fatty acids, C16-18, lead salts	91031-62-8
Lead cynamidate	20837-86-9
Lead dinitrate	10099-74-8
Pentalead tetraoxide sulphate	12065-90-6
Pyrochlore, antimony lead yellow	8012-00-8
Sulfurous acid, lead salt, dibasic	62229-08-7
Tetraethyllead	78-00-2
Tetralead trioxide sulphate	12202-17-4
Trilead dioxide phosphonate	12141-20-7
Lead di(acetate)	301-04-2

4.2.5.9 Heavy metals in hardware (non-textile and non-leather products)

Requirements based on REACH. Several substances of relevance in the Candidate list.

Chemical substance	CAS No	Limit value (mg/kg) Total content	Test method	Target material(s)
Arsenic, As and arsenic compounds: Diarsenic Pentoxide Diarsenic Trioxide Triethyl arsenate Arsenic acid Calcium arsenate	7440-38-2 1303-28-2 1327-53-3 15606-95-8 7778-39-4 7778-44-1	25 Wood: not detected	Microwave assisted acidic digestion, determination with ICP/MS, AAS or ICP-OES	Metal, Plastic, Glass, Wood
Cadmium, Cd and cadmium compounds	7440-43-9 1306-19-0 1306-23-6 10108-64-2 7790-79-6 10124-36-4 31119-53-6 10325-94-7 513-78-0 21041-95-2	75 in plastic material or paint. Not detected in brazing fillers or in jewellery.		Plastic Metal
Lead, Pb and lead salts (see appendix Lead compounds)	7439-92-1 Various	90		Metal, Plastic, Glass, Ceramics
Mercury, Hg, and mercury compounds: Phenylmercury neodecanoat Phenylmercury octanoate Phenylmercury 2-ethylhexanoate Phenylmercury propionate Phenylmercury acetate	7439-97-6 26545-49-3 13864-38-5 13302-00-6 103-27-5 62-38-4	0,5		Gypsum, Metal, Plastic
Nickel, Ni **In metal with intended prolonged** skin contact.** >10 min on three or more occasions or, >30 min on one or more occasions within two weeks	7440-02-0	0.5 µg per cm2 and week for products intended to come into direct and prolonged contact with the skin.	Screening test with dimethyl glyoxime and ammonium hydroxide, if positive: Part with coating or plating: EN 12472:2005 +A1:2009 and EN 1811:2011+ A1:2015 Part without coating or plating: EN 1811:2011+ A1:2015	Metal, Plastic, Metal-coatings
Hexavalent Chrome, Cr +6 (see appendix Chromium compounds)	18540-29-9 Various	3*, Cr VI substances shall not be used	Alkaline digestion and colorimetric analysis Possible reference to IEC 62321	Plastic Wood Metal Cement

Articles may be screened with XRF for a first indication of presence of heavy metals in the sample. Stated test methods should be used for quantitative determination where applicable.

*Limit for unintentional occurrence. Compliance may be shown by total chrome content.
**See definition of prolonged skin contact in the case of Nickel restriction;
http://echa.europa.eu/documents/10162/13641/nickel_restriction_prolonged_contact_skin_en.pdf

4.2.5.10 Heavy metals in packaging

Requirement based on Directive 94/62/EC, Packaging and Packaging waste. Wood preservatives regulated in Annex XVII. Note also requirements for PVC, DMFu and other biocides.

Chemical substance	CAS No	Limit value (mg/kg) Total content	Test method	Target material(s)
Cadmium, Cd and cadmium compounds	7440-43-9, 1306-19-0, 1306-23-6, 10108-64-2, 7790-79-6, 10124-36-4, 31119-53-6 10325-94-7 513-78-0 21041-95-2	Sum < 100 Max 75 mg/kg for Cd	CEN/CR 13695-1:2000 CEN/TR 13695-2:2004	Packaging.
Hexavalent Chrome, Cr +6 (see appendix Chromium compounds)	18540-29-9, Various			
Lead, Pb and lead salts (see appendix Lead compounds)	7439-92-1, Various			
Mercury, Hg, and mercury compounds: Phenylmercury neodecanoat Phenylmercury octanoate Phenylmercury 2-ethylhexanoate Phenylmercury propionate Phenylmercury acetate	7439-97-6 26545-49-3 13864-38-5 13302-00-6 103-27-5 62-38-4			

Substances that contain heavy metals may be screened with XRF for a first indication of presence in the sample. Stated test methods should be used for quantitative determination where applicable.

4.2.5.11 Heavy metals in EE products, except batteries

Requirements based on RoHS directive, note exceptions in directive.
If there is a conflict between specific requirement in other part of this PSR and exception in RoHS, the requirement in the RoHS directive shall apply. Still, if levels from exceptions exceeds 1000 mg/kg the supplier must inform Kid/Hemtex. The supplier shall in that case also provide SCIP-registration number to Kid/Hemtex for the item containing SVHC above 0,1%

Note also requirements for flame retardants, and other restricted chemical substances.

Chemical substance	CAS No	Limit value (mg/kg)	Test methods
Cadmium, Cd and cadmium salts	7440-43-9, 1306-19-0, 1306-23-6, 10108-64-2, 7790-79-6, 10124-36-4, 31119-53-6	100	The harmonized standard EN 50581 shall be followed for showing full compliance with directive. XRF, screening* Note also the EN 62321 series for showing compliance. Valid for all homogenous materials in EE products.
Hexavalent Chrome, Cr +6	18540-29-9	1000	
Lead, Pb	7439-92-1	1000	
Mercury, Hg	7439-97-6	1000	

*Materials may be screened with XRF for an indication of presence of heavy metals.

4.2.5.12 Heavy metals in batteries

Requirements based on Battery directive 2006/66/EC and EU Ecolabel. Note also substances of relevance included in the Candidate list. For example 1,2-dimethoxyethane.

Chemical substance	**CAS No**	**Limit value w/w% (x ppm)**	**Limit value Mid/ high prize product, ppm** (Nordic Ecolabel)	**Test methods**
Mercury, Hg	7439-97-6	0,0005w/w% (5 ppm)	< 0,1 ppm	Battery Industry Standard Analytical Method. For the determination of Mercury, Cadmium and Lead in Alkaline Manganese Cells Using AAS, ICP-AES and Cold Vapour, European Portable Battery association (EPBA), Battery Association of Japan (BAJ), National Electrical Manufactures Association (NEMA; USA) April 1998 Comparable test method can be approved if it, by an independent party, has been valued and estimated as equal to the recommended methods.
Cadmium, Cd	7440-43-9	0,002w/w % (20 ppm)	< 1,0 ppm	
Lead, Pb	7439-92-1	0,004w/w % (40 ppm)	< 10 ppm	

4.2.5.13 Nickel in metals with intended contact with skin

Requirement based on REACH, Annex XVII, entry 27.

Chemical substance	**CAS No**	**Limit value µg/cm² and week**	**Test method**
Nickel, Ni, in metal with intended prolonged* skin contact. *>10 min on three or more occasions* *or, >30 min on one or more occasions within two weeks*	7440-02-0	0,5 Note result interpretation in standard.	Screening test with dimethyl glyoxime and ammonium hydroxide, if positive: Part with coating or plating: EN 12472:2005 +A1:2009 and EN 1811:2011+ A1:2015
For metal accessories pierced from the skin, such as the pin at an earring	7440-02-0	0,2 Note result interpretation in standard.	Part without coating or plating: EN 1811:2011+ A1:2015

*See definition of prolonged skin contact in the case of Nickel restriction;
http://echa.europa.eu/documents/10162/13641/nickel_restriction_prolonged_contact_skin_en.pdf

4.2.5.14 PFAS, Per and polyfluorinated alkyl substances*

Requirement based on REACH Candidate list and Stockholm Convention on Persistant Organic Pollutants (POPs) and Kid/Hemtex policy.

Chemical substance	Acronym	CAS Number	Test method	Target material
PFSA related substances			Not detected For FTOHs: Solvent extraction according to CEN/TS 15968 and analysis by GC-MS-MS Recommended reporting limit 10µg/m2 For Others: CEN/TS 15968 Solvent extraction and analysis by LC-MS-MS Recommended reporting limit 0,5 µg/m2 For textiles: EN 17681-1, 2. LoQ 0.1 µg/m2. For leather: ISO 23702-1. LOQ: 10 µg/kg	Textile, Coatings and impregnations, Paints *Note requirements in Appendix 4.1 "PSR Quality" regarding Food contact products*
Perfluoroctane sulfonate	PFOS	1763-23-1		
Perfluoroctanesulfonamide	PFOSA	754-91-6		
N-Methyl-Perfluoroctanesulfonamide	N-Me-FOSA	31506-32-8		
N-Ethyl-Perfluoroctanesulfonamide	N-Et_FOSA	4151-50-2		
N-Methyl-Perfluoroctanesulfonamidoethanol	N-Me-FOSE	24448-09-7		
N-Ethyl-Perfluoroctanesulfonamidoethanol	N-Et-FOSE	1691-99-2		
Perfluorohexane sulfonate	PFHxS	355-46-4		
Perfluorobutane sulfonic acid and its salts	PFBS	various		
PFCA related substances				
Perfluoroctane acid	PFOA	335-67-1		
Perfluorononanoic acid	PFNA	375-95-1		
Perfluorodecanoic acid	PFDA	335-76-2		
Perfluoroundecanoic acid	PFUnA	2058-94-8		
Heptacosafluorotetradecanoic acid	PFTA	376-06-7		
Tricosafluorododecanoic acid	PFDoA	307-55-1		
Pentacosafluorotridecanoic acid	PFTrDA	72629-94-8		
Ammonium pentadecafluorooctanoate	APFO	3825-26-1		
Sodium perfluorooctanoate	Na-PFO	335- 95-5		
Potassium perfluorooctanoate	Ca-PFO	2395-00-8		
Silver perfluorooctanoate	Ag-PFO	335-93-3		
Perfluorooctanoyl fluoride	F-PFO	335-66-0		
Methyl pentadecafluorooctanoate	Me-PFO	376-27-2		
Ethyl perfluorooctanonate	Et-PFO	3108-24-5		
Perfluorobutanoic acid	PFBA	375-22-4		
Perfluoropentanoic acid	PFPeA	2706-90-3		
Perfluorohexanoic acid	PFHxA	307-24-4		
Perfluoroheptanoic acid	PFHpA	375-85-9		
2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid	HFPO-DA	13252-13-6		
2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionyl fluoride		2062-98-8		
Ammonium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoate		62037-80-3		
Potassium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionate		67118-55-2		
reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine		Several		
Flourtelomers (precursors)				

Chemical substance	Acronym	CAS Number	Test method	Target material
4:2 fluorotelomer sulfonate	4:2 FTS	757124-72-4		
6:2 fluorotelomer sulfonate	6:2 FTS	27619-97-2		
8:2 fluorotelomer sulfonate	8:2 FTS	39108-34-4		
1H,1H,2H,2H-Perfluorooctylacrylat	6:2 FTA	17527-29-6		
1H,1H,2H,2H-Perfluorodecylacrylat	8:2 FTA	27905-45-9		
1H,1H,2H,2H-Perfluorohexanol	4:2 FTOH	2043-47-2	GC-MS	
1H,1H,2H,2H-Perfluoro-1-octanol	6:2 FTOH	647-42-7		
1H,1H,2H,2H-Perfluoro-1-decanol	8:2 FTOH	678-39-7		
1H,1H,2H,2H-Perfluorododecane-1-ol	10:2 FTOH	865-86-1		

***Note the general ban of PFAS** in Kid/Hemtex assortment, given in section 3.5.8 of the PAR. Impurities are accepted if unavoidable in the production process, reasons must be discussed with Kid/Hemtex CR Department. Kid/Hemtex approves Bionic Finish Eco from Rudolf Group, OrganoTex from OrganoClick, Arkophob by Acroma, and Phobotex PFC-free products from Huntsman as alternatives for water repellent treatments.

4.2.5.15 Phthalates

Requirements based on REACH Annex XVII, Annex XIV, Candidate list, RoHS directive and Kid/Hemtex policy.

Chemical substance	CAS RN	Required Limit value (mg/kg)	Test method	Target material(s)
DIBP*	84-69-5	Sum of all listed <1000	Extraction and GC-MS, with possible reference to standards: EN ISO 14389:2022 EN ISO 18856:2005 CPSC-CH-C1001-09.3 ISO 8124-6	PVC** PU EVA Rubber Paint Lacquers
DBP*	84-74-2			
BBP*	85-68-7			
DEHP*	117-81-7			
DMEP	117-82-8			
DNOP	117-84-0			
DIDP	26761-40-0, 68515-49-1			
DINP	28553-12-0, 68515-48-0			
DHNUP	68515-42-4			
DIHP	71888-89-6			
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0			
DIPP	605-50-5			
N-pentyl-iso pentylphthalate	776297-69-9			
DPP	131-18-0			
Dihexyl phthalate (DnHP)	84-75-3			
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4			
1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters with,1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5 68648-93-1			
DCHP **(**dicyclohexyl phthalate)	84-61-7			
Diisohexyl phthalate	71850-09-4			
** Regulated in RoHS directive for electrical and electronic equipment*				

**See separate requirement for PVC in this chapter and in PAR 3.5.8 and 4.2.5.16.

4.2.5.16 PVC, Polyvinylchloride

Requirement based on Kid/Hemtex policy, section 3.5.8 of PAR.

Chemical substance	CAS No	Requirement	Test method
PVC	9002-86-2	**Packaging and products shall not contain PVC.** Exceptions decided by Kid/Hemtex Management can be made if specific technical and/or quality requirements exist, and if there are no equivalent materials on the market. If exception is given, plasticizers DINP, DIDP, DNOP and any plasticizers in the REACH candidate list, Bisphenols, SCCP, and the metal based stabilizers tin (Sn), cadmium (Cd) and lead (Pb) are not allowed in the PVC	Screening test: Beilstein/Flame test or XRF. (In case Positive screening test, FTIR test shall be performed) If decided exception: DINP, DIDP, DNOP and any plasticizers. See also chapters Bisphenoles, Short Chain Chlorinated Paraffines, Flame retardents, metal based stabilizers tin (Sn), cadmium (Cd) and lead (Pb) and Organotin compounds for testing methods.

4.2.5.17 Siloxanes

Requirements based on REACH Candidate list and the Regulation (EC) No 1223/2009 on cosmetic products

Chemical substance	CAS No	Required Limit value (mg/kg)	Test method	Target material(s)
Octamethylcyclotetrasiloxane (D4)	556-67-2	Sum <1000	GC-MS	Textiles Cosmetic and personal care Paper and cardboard Polymers
Decamethylcyclopentasiloxane (D5)	541-02-6			
Dodecamethylcyclohexasiloxane (D6)	540-97-6			

4.2.5.18 Other product related chemicals

Chemical substance	CAS No	Required Limit value (mg/kg)	Test method	Target material(s)
2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers	75166-31-3 80-54-6 75166-30-2	Sum < 1000		Cleaning agents, cosmetics, in scented articles
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1] heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC)	1782069-81-1 95342-41-9 852541-25-4 36861-47-9 741687-98-9 852541-30-1 852541-30-1	Sum < 1000		Cosmetics, sunscreen preparations.
Perchlorates	14797-73-0	60 mg/kg	LC-MS	Batteries (Lithium, coin cell)

Chemical substance	CAS No	Required Limit value (mg/kg)	Test method	Target material(s)
Aniline	62-53-3	< 10 mg/kg in toys intended for children under 36 months		Toys (textile, leather, polymers)

4.2.6 Biocidal agents

Biocidal agents are both used as process chemicals to prohibit growth of microbes in supply chain and as product related chemicals to render biocidal property to the finished article.

Kid/Hemtex do not accept any if its products having.
- Antibacterial treatment as additives if the active substances remain in the finished product as delivered.
- Anti mould finishes

Biocides used in production, storage or transport shall meet requirements in biocide regulation 528/2012 unless stated as limited in this HPI.

Requirements based on Biocidal Products Regulation BPR (EU) 528/2012, (existing biocides), REACH (restricted biocides) POPs Regulation, Water framework directive and Kid/Hemtex Policy and guidelines.
Biocidal substances with decision of non-approval shall be phased out within 180 days from the day of decision. http://echa.europa.eu/regulations/biocidal-products-regulation/treated-articles

Note requirements for other substances also with biocide function, such as:
Borate compounds, Toxic heavy metals, Organotin compounds

Chemical substance	CAS No	Limit value (mg/kg) adults	children <36 months*	Test method	Target materials(s)
PHMB	27083-27-8 32289-58-0	Not detected		No standardised test method	Leather Textile Wood Polymers
Carbendazim	10605-21-7			GC-MS, LC-MS.	
Permethrin	52645-53-1			Textile: GC-MS, LC-MS Leather: EN ISO 22517 LoQ 5 mg/kg	
Zincpyrithion	13463-41-7			GC-MS, LC-MS. Detection limit 0,1 mg/kg	
Silver and its compounds	Several			ICP-MS, ICP-OES or AAS. Detection limit 0,1 mg/kg	
Methyl Bromide	74-83-9	1,0	0,5	GC-MS, LC-MS	
Ortho-phenyl phenol, (2-Phenyl phenol)	90-43-7	100	50		

Chemical substance	CAS No	Limit value (mg/kg) adults	children <36 months*	Test method	Target materials(s)
Sodium Methyldithiocarbamate	137-42-8	1,0	0,5		
Dimethylfumurate, DMFu	624-49-7	0,1	0,1	ISO/TS 16186	
Triclosan and Triclocarban	Triclosan: 3380-34-5, Triclocarban: 101-20-2	Not detected		EN 17134 (textiles) GC-MS, LC-MS Detection limit 10 mg/kg	
Cu-HDO	312600-89-8	1,0	1,0	ICP- AES	
Glutaral (Glutaraldehyd)	111-30-8	Not detected		LC-UV, GC-UV	
Kathone	55965-84-9	10	1,0	GC-MS analysis after extraction with ethyl acetate	Preservative aqueous materials, Cosmetics, Detergents
5-Chloro-2-methyl-isothiazolin-3(2H)-one	26172-55-4	7,5	0,75		
2-methylisothiazolin-3(2H)-one	2682-20-4	2,5	0,25		
1,2,Benzisothiazol 3(2h)One	2634-33-5	1,0	0,5		
2-Octyl-2h-Isothiazol-3-One	26530-20-1	1,0	0,5		
Parabenes (various) incl. Butyl 4-hydroxybenzoate (Butylparaben) and Isobutyl 4-hydroxybenzoate (isobutylparabene (IBP))	94-26-8 4247-02-3	100	Not detected	GC-MS, LC-MS	
Chlorinated Phenols					
Pentachlorophenol, PCP	87-86-5, 131-52-2	Not detected		ISO 17070 (leather) XP G 08-015 (PCP in textiles) Detection limit: 0.05 mg/kg CEN/TR 14823 (wood) EN ISO 15320 (Pulp, paper and board)	Textile Leather Wood
Tetrachlorophenols TeCP	935-95-5 58-90-2 4901-51-3 And other isomers TeCP				
Tributyltin compounds					
Tributyltin oxide (TBTO)	56-35-9	Not detected		EN ISO 22744-1, -2 (textiles) Possible reference to; ISO/TS 16179 EN ISO 17353 (water and sediment)	Textile Leather
Tributyltin chloride	1461-22-9				
Tributyltin fluoride	1983-10-4				
Tributyltin methacrylate	2155-70-6				
Tributyltin benzoate	4342-36-3				
Tributyltin linoleate	24124-25-2				
Tributyltin naphthenate	85409-17-2				
***"Items that might come into contact with children" are products such as bed sheet, bed set, pillow cases, towels and similar products from Kid/Hemtex´s assortment.**					

4.2.7 Chemical testing procedure

The maximum limits shall never be exceeded in any product supplied to Kid/Hemtex.
It is the supplier's responsibility to make sure that all chemical requirements are met.

Kid/Hemtex will on regular basis ask for test reports according to the below specified procedure.
Kid/Hemtex reserve the right to perform inspections and tests on any ordered products, at any time and at any stage of production.
If any deviations from the requirements are found, Kid/Hemtex reserve the right to

- cancel the order,
- claim compensation or
- take any other action in accordance with the General Agreement.

All chemical testing shall be done according to instructions given in PSR Appendix 4.1, chapter 4.1.1 at laboratories approved and listed in chapter 4.1.2

Kid/Hemtex routine for testing chemicals is **based on two different way of work** and Kid/Hemtex will on regular basis ask for test reports according to below specified procedures:

1. One way is **random chemical testing** where one nominated chemical is tested each quarter. The target materials to be tested are defined in the instruction sent out each quarter. Approximately 10% of the orders placed by Kid/Hemtex at each supplier should be tested for the specified chemical each quarter, maximum 3 orders per supplier and quarter.
2. The other way is that Kid/Hemtex for every order test **the basic chemicals** included in the testing chart for quality requirements in Appendix 4.1.

In addition to above two ways of working, if there in Kid/Hemtex assortment are products that could have an increased risk of finding one of the restricted chemicals, Kid/Hemtex will choose specific chemicals for these products which is required to be tested on a regular basis during the year.

If a failed test report is received a decision how to handle the actual order will be taken and an action plan will be established. Three follow up tests on suppliers following orders will be included in the action plan.

4.2.7.1 Checklist for laboratories

This checklist is to be used by the laboratories performing tests for Kid/Hemtex items. The selected test methods in this PSR shall be used to the utmost extent.

If there are published EN or EN ISO or ISO methods available always use that method and clearly report in the test protocol. If other methods are used e.g., in-house test methods, always carefully answer each section below.

In case the applied EN, EN ISO or ISO method is modified by the test laboratory, always report these modified procedures in the test report.

All test reports should be signed by an authorised person at the laboratory.

Testing
For those chemical substances to be tested, where no official international standard test method exists, the test report should include the following:

4.2.7.1.1 Sample preparation

- Amount of specimen for preparation, weight, and size
- procedure of extraction, solvents used, and equipment used for extraction e.g., Soxhlet

4.2.7.1.2 Instrumental performance

- instrument used e.g GC-MS etc.
- lab specific detection limit(s) where preferably LOQ (limit of quantification) are reported
- standard deviation in analytical results

4.2.7.1.3 Other information of importance

- describe modified procedures from applied established ISO/EN standard methods if available.
- always present test results in mg/kg
- description of the recalculation from mg/kg if the test result is presented in another unit e.g ppm, ppb, ug/kg etc

4.2.7.1.4 Instruction to the laboratory

- always present the actual test result of the analysis and not any letter combinations if not properly described e.g N/A
- if not detected, report always below the actual LOQ (< LOQ) values

4.2.8 Chemical guideline overview

Below are examples and guidelines of what chemicals can most probably be found in which materials to help minimize the risk of product failure.
Please note that the restricted and limited substances should not be found in quantities higher than stated in our requirement list in any of Kid/Hemtex products.

	Textile Material									Miscellaneous								
	Natural material		Synthetic material				Prints for textile	Leather	Down	Metal	Plastic				Minerals		Wooden	Adhesives and glues
Substance	Cellulosic textile (ex. Cotton, Viscose, Flax)	Proteinic natural textile (ex Wool, Silk)	PU-elastan	PES	PA	Acrylic, Mod-acrylic					Rubber	EVA	PU/ TPU	Melamine	Ceramic & Glass	Gipsym		
	Process related chemicals																	
AP, APEO	X	X	X	X	X	X	X	X	X		X							
Bisphenols							X Thermal	X			X		X					
Chlorinated Organic Solvents and Carriers				X		X	X	X		X								X
Pesticides	X	X						X	X									
PAH			X				X	X			X Black	X Black	X Black	X Black				
Quaternary ammonium compounds	X			X	X	X	X											
Solvents			X			X	X	X Printed, coated			X	X	X					X
Tin organic compounds			X	X	X	X	X	X			X	X	X					X
Melamine	X							X						X				
	Product related chemicals																	
Aromatic Amines	X	X	X	X	X	X	X	X										
Borate compounds																	X	
Benzotriazols					X	X					X	X	X					

	Textile Material									Miscellaneous									
	Natural material		Synthetic material				Prints for textile	Leather	Down	Metal	Plastic				Minerals		Wooden	Adhesives and glues
Substance	Cellulosic textile (ex. Cotton, Viscose, Flax)	Proteinic natural textile (ex Wool, Silk)	PU-elastan	PES	PA	Acrylic, Mod-acrylic					Rubber	EVA	PU/ TPU	Melamine	Ceramic & Glass	Gipsym		
Dyes Pigment Colorants																	X Coloured paper	
- CMR	X	X	X	X	X	X	X	X										
- Allergenic Dyes				X	X	X	X											
- Pigment Salts							X			X	X	X	X	X	X			
Flame retardents	X	X	X	X	X		X						X					
Formaldehyde	X	X					X	X						X			X	X
Toxic Heavy Metals & their compounds;																		
- Antimony, Sb				X														
- Arsenic, As															X	X	X	
- Cadmium, Cd			X	X	X		X	X Coated		X Enameld	X	X	X		X		X	
- Chromium VI and its compounds		X			X			X		X Chromating								
- Chromium, Cr										x								
- Cobalt, Co		x			x					X Deep blue green					X Deep blue green			
- Copper, Cu		X			X												X	
- Lead, Pb							X			X Brass	X	X	X		X Black			
- Mercury, Hg							X			X	X	X	X			X	X	
- Nickel, Ni										X								
PFAS	X Water repellent anti-pilling	X Anti-pilling	X Water repellent Anti-pilling				X Surfactant	X Coated	X	X Chromating								
Phthalates			X				X	X			X		X					X

	Textile Material									Miscellaneous									
	Natural material		Synthetic material				Prints for textile	Leather	Down	Metal	Plastic				Minerals		Wooden	Adhesives and glues
Substance	Cellulosic textile (ex. Cotton, Viscose, Flax)	Proteinic natural textile (ex Wool, Silk)	PU-elastan	PES	PA	Acrylic, Mod-acrylic					Rubber	EVA	PU/ TPU	Melamine	Ceramic & Glass	Gipsym		
PVC							X								X Printed			
Biocidal agents	X	X	X	X	X	X	X	X	X		X	X	X				X	X

4.2.9 Revision log vers. 1.4: Chapter 4.2 PSR Chemical.

4.2.4.2	- Added Bisphenol S - Added pr ISO 11936 (for leather) - Updated target material with leather
4.2.4.10	- Added Melamine - Added Hydroxymethyl acrylamide
4.2.4.14	- Added “reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine”
4.2.5.2	- Added Barium diboron tetraoxide - Added Paper, Rubber, Plastic and Ceramic as target material
4.2.5.3	- Changed header name from Benzotriazols to UV Stabilizers - Did some layout changes and updated target materials - Moved DBMC to UV Stabilizers.
4.2.5.6	- Added Bis(2-ethylhexyl) tetrabromophthalate - Revised target materials - Added 1,1'-[ethane-1,2-diylbisoxy]bis[2,4,6-tribromobenzene]
4.2.5.8	- Added Chromium, Cr. In this way we can test total chrome with the same test method as other heavy metals.
4.2.5.14	- Added test method for textile and leather - Added Arkophob by Acroma as PFAS-free alternative
4.2.5.15	- Revised the test metod to latest version: EN ISO 14389:2022 (textile)
4.2.5.18	- Deleted 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol also called A-TBBPA, since it is already listed under Flame Retardants, 4.2.5.6
4.2.6	- Added Isobutyl 4-hydroxybenzoate to parabens - Added detergents as target material - Added EN ISO 22744-1, -2 (textiles) for Trisubstituted tin organic compounds
4.2.8	- Changed from Bisphenol A to Bisphenols in matrix - Added melamine as risk chemical