

The supplier/service provider is obliged to take into account current changes to the requirements of this document.

Test Matrix for Restricted Substances - Version 3.0, dated 02/2021										
Test Items	Proposed Test Methods	Limits	Material Types							
			Leather	Synthetic Leather (PU, PVC imitation leather)	Polymeric components (PU, EVA, TPU, PVC, Rubber, TPR, etc.)	Textiles			Coating, Paint, Pigment Print, Flocking Print, etc	Metals
						Synthetic	Natural	Blends		
NPEOs	DIN EN ISO 18254-1:2016 (textile) DIN EN ISO 18218-1:2015 (leather)	REACH Annex XVII < 100 mg/kg (Year 2021)		•		•	•	•	• (test with fabric/leather)	
Azo Dyes	EN ISO 14362-1/3:2017 EN ISO 17234-1:2015 EN ISO 17234-2: 2011	≤20 mg/kg (28 amines)	•	• (with textile backing only)		•	•	•	• (only test when with fabric/leather)	
Allergenic and Disperse Dyes	DIN 54231:2005	< 50 mg/kg		• (with textile backing only)		•		•	• (only test when with fabric)	
Dimethyl fumarate (DMFu)	ISO/TS 16186	<0.1 mg/kg	•	Suggest test where dessicant sachet present in package, especially for skin contact material						
Short Chain Chlorinated Paraffins (SCCP)	Combined CADS/ISO 18219:2015 method	<1% in substances or preparations <0.15% in articles	•	•	•	• test for flame resistance treated material			• (if non-scrappable, test with fabric/leather)	
Flame Retardants (OctaBDE, TEPA, TRIS, PBBs, TetraBDE, PentaBDE, HexaBDE, HeptaBDE, HBCDD)	Solvent extraction, followed by GCMS/LCMS	Not detected (DL: 10 mg/kg)	• test for flame resistance treated material			• test for flame resistance treated material			• (test with fabric/leather)	
Formaldehyde	Textile - EN ISO 14184-1 Leather - EN ISO 17226-1 Suggest ISO 17226-2:2008 with confirmation method ISO 17226-1:2008 in case of interferences	Infant Items < 20 mg/kg Items with direct skin contact < 75 mg/kg Leather 75 mg/kg Jackets, coats or upholstery 300 mg/kg Pls see details in RSL table	•	•		•	•	•	• (test with fabric/leather)	
Chromium VI	DIN EN ISO 17075-1:2017 after ageing 24h/80°C/<10% r.h. wool (without aging)	<3 mg/kg	•				• wool			

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						Synthetic	Natural	Blends		
Nickel Release	EN 12472: 2005+ A1:2009 EN 1811: 2011+A1:2015	≤0.5 µg/cm ² /week (direct prolonged skin contact) ≤0.2 µg/cm2/week (piercing item)								•
Total Lead	Acid digestions followed by ICP/AAS analysis can also use standard method: CPSC-CH-E1002.08.3 (substrate: Non-metal); CPSC-CH-E1001.08.3 (Substrate: Metal); CPSC-CH-E1003.09.1(Surface Coating)	Children's items 90 mg/kg (coatings) 100 mg/kg (substrates) Illinois only: 40 mg/kg (labelling necessary) Adult items 90 mg/kg (coatings) 100 mg/kg (substrates)	• (if coated, painted, pigment treated)	•	•				• (if non-scrappable, test with fabric/leather)	•
Total Cadmium	Acid digestions followed by ICP/AAS analysis can also use standard method: Textiles, plastics, and metal: DIN EN 16711-1:2016 Leather: DIN EN ISO 17072-2:2017	100 mg/kg US Washington CSPA: 40 mg/kg (children's products)	• (if coated, painted, pigment treated)	•	•				• (if non-scrappable, test with fabric/leather)	•
Metals (Extractable) Pls see details in RSL table	EN 16711-2:2015 Followed by modified ISO 17075-1/2 for CrVI verification	1.0 mg/kg				•	•	•		
Organotin Compounds Tri-substitued organostannic compounds (TBT, TPhT) DBT, DOT Pls see details in RSL table	Extraction with methanolic buffer/diethyldithiocarbamate followed by ISO 17353 CEN ISO/TS 16179:2012 (Footwear)	Monobutyl Tin - 100 mg/kg Others 1.0 mg/kg	• (if coated, painted, pigment treated)	•	•	• (if with antibacterial function/ with print or coating)	• (if with antibacterial function/ with print or coating)	• (if with antibacterial function/ with print or coating)	• (test with fabric/leather)	
Perfluorooctane sulfonic acid and its derivatives (PFOS) Perfluoro octanoic acid (PFOA)	CEN/TS 15968:2014	<1.0 µg/m ² in textiles or other coated materials Pls see details in RSL table	● Only for materials with water/oil/stain repellent functions							
Pentachlorophenol Tetrachlorphenols	KOH extraction, derivatization and analysis § 64 LFGB B 82.02-08 or DIN EN ISO 17070:2015	PCP 0,05 mg/kg (textiles) 0,5 mg/kg (leather & all other materials) TeCP 0.5 mg/kg Pls see details in RSL table	•	• (with textile backing only)		•	•	•	• (test with fabric/leather)	

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						Synthetic	Natural	Blends		
Phthalates <i>Pls see details in RSL table</i>	Textiles with prints DIN EN ISO 14389 all other articles: CPSC-CH-C1001-09.3	0.1% in total		•	•				• (if non-scrappable, test with fabric/leather)	
pH	textiles: ISO 3071 leather: ISO 4045	Textile: Infants: 4.0-7.5 skin contact: 4.0 - 8.5 without skin contact: 4.0 - 9.0 Leather: 3.5-7.5	•	•		•	•	•	• (test with fabric/leather)	
Polycyclic Aromatic Hydrocarbons (PAHs)	AFPS GS:2014	General: ≤1 mg/kg each PAH Toys/childcare articles: ≤0.5 mg/kg each PAH Sum of all PAH: 10 mg/kg		•	•	• Dark color		• can test when synthetic content > 10%, dark color	• (if non-scrappable, test with fabric/leather)	

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Alkyl phenols (AP) and Alkylphenol ethoxylates (APEO)								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Nonylphenol ethoxylates (NPEO)	Various	100 mg/kg	DIN EN ISO 18254-1:2016 (textile) DIN EN ISO 18218-1:2015 (leather)	natural fibres and composites with natural fibres; PES paddings, downs Synthetic fibers, print/coating, natural leather/synthetic leather	APEOs are used as wetting agents and emulsifiers in silk, linen, cotton and leather APEOs are widely used surfactants through supply chain: APEOs can be used as or found in detergents, scouring agents, spinning oils, wetting agents, softeners, emulsifying/dispersing agents for dyes and prints, impregnating agents, de-gumming for silk production, dyes and pigment preparations, polyester padding and down/feather fillings.	1000 mg/kg REACH Annex XVII in preparations NPEO in textile REACH Annex XVII < 100 mg/kg (Year 2021)	100 mg/kg in EU	AP are restricted in SVHC which are already restricted as last item in this table. OPEO is restricted in commercial standard like OEKO or other buyer's RSL.
Azo Dyestuffs (which by reductive cleavage of one or more azo-groups may release one or more amines listed below)								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
4-Aminobiphenyl	92-67-1	20 mg/kg			<p>Textile material: EN ISO 14362-1:2017 (test method for natural and synthetic fibres) additionally to the tests above, in every case where one of the above tests is requested a separate additional test on 4-aminoazobenzene (EN ISO: 14362-3:2017)</p> <p>Leather material: DIN EN ISO 17234-1:2015 (test method for leather) additionally to the tests above, in every case where one of the above tests is requested a separate additional test on 4-aminoazobenzene DIN EN ISO 17234-2:2011-06)</p>	1907/2006/EC (REACH) Annex XVII, No. 43, 72 GB 18401	30 mg/kg in EU 20 mg/kg in China	
Benzidine*	92-87-5							
4-Chlor-o-toluidine	95-69-2							
2-Naphthylamine	91-59-8							
o-Aminoazotoluene	97-56-3							
2-Amino-4-nitrotoluene	99-55-8							
p-Chloraniline	106-47-8							
2,4-Diaminoanisole	615-05-4							
4,4'-Diaminodiphenylmethane	101-77-9							
3,3'-Dichlorbenzidine	91-94-1							
3,3'-Dimethoxybenzidine	119-90-4							
3,3'-Dimethylbenzidine	119-93-7							
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0							

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Azo Dyestuffs (which by reductive cleavage of one or more azo-groups may release one or more amines listed below)								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
p-Cresidine	120-71-8	20 mg/kg			<p>Textile material: EN ISO 14362-1:2017 (test method for natural and synthetic fibres) additionally to the tests above, in every case where one of the above tests is requested a separate additional test on 4-aminoazobenzene (EN ISO: 14362-3:2017)</p> <p>Leather material: DIN EN ISO 17234-1: 2015 (test method for leather) additionally to the tests above, in every case where one of the above tests is requested a separate additional test on 4-aminoazobenzene DIN EN ISO 17234-2:2011-06)</p>	1907/2006/EC (REACH) Annex XVII, No. 43, 72 GB 18401, GB 31701 etc	30 mg/kg in EU 20 mg/kg in China	
4,4'-Methylen-bis(2-chloraniline)	101-14-4							
4,4'-Oxydianiline	101-80-4							
4,4'-Thiodianiline	139-65-1							
o-Toluidine	95-53-4							
2,4-Toluyldiamine	95-80-7							
2,4,5-Trimethylaniline	137-17-7							
2,4-Dimethylaniline (2,4-xylydine)	95-68-1							
2,6-Dimethylaniline (2,6-xylydine)	87-62-7							
2-Methoxyaniline (= o-anisidine)	90-04-0							
4-Aminoazobenzene *	60-09-3							
4-Chloro-o-toluidinium chloride	3165-93-3							
2-Naphthylammoniumacetate	553-00-4							
4-Methoxy-m-phenylene diammonium sulphate	39156-41-7							
2,4,5-Trimethylaniline hydrochloride	21436-97-5							

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Allergenic Disperse Dyes and other forbidden dyestuffs								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Disperse blue 1	2475-45-8	Limit=50mg/kg DL=15mg/kg	DIN 54231:2005	synthetic fibres and blends with synthetic fibres, cellulose acetate	Disperse dyes can be found in synthetic fibres, especially PES and are more common in dark fabrics	§ 30 German LFGB South Korea KC Mark 1907/2006/EC (REACH) Annex XVII, No. 72	Usage ban in Germany, no limit fixed. South Korea (50 mg/kg) Some restricted in EU - 50 mg/kg	
Disperse blue 3	2475-46-9							
Disperse blue 7	3179-90-6							
Disperse blue 26	3860-63-7							
Disperse blue 35	12222-75-2							
Disperse blue 102	12222-97-8							
Disperse blue 106	12223-01-7							
Disperse blue 124	61951-51-7							
Disperse brown 1	23355-64-8							
Disperse orange 1	2581-69-3							
Disperse orange 3	730-40-5							
Disperse orange 37 / 59 / 76 *	12223-33-5 13301-61-6 51811-42-8							
Disperse orange 149	85136-74-9							
Disperse red 1	2872-52-8							
Disperse red 11	2872-48-2							

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Allergenic Disperse Dyes and other forbidden dyestuffs								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Disperse red 17	3179-89-3	Limit=50mg/kg DL=15mg/kg	DIN 54231:2005	synthetic fibres and blends with synthetic fibres, cellulose acetate	Disperse dyes can be found in synthetic fibres, especially PES and are more common in dark fabrics	§ 30 German LFGB South Korea KC Mark 1907/2006/EC (REACH) Annex XVII, No. 72	Usage ban in Germany, no limit fixed. South Korea (50 mg/kg) Some restricted in EU - 50 mg/kg	
Disperse yellow 1	119-15-3							
Disperse yellow 3	2832-40-8							
Disperse yellow 9	6373-73-5							
Disperse yellow 23 *	6250-23-3							
Disperse yellow 39	12236-29-2							
Disperse yellow 49	54824-37-2							
Basic Red 9	569-61-9							
Basic Violet 3	548-62-9							
Biological Active Substances								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Dimethylfumarate (DMFu)	624-49-7	0,1 mg/kg	ISO/TS 16186:2012	shoes, all item packed together with silicagel bags leather	anti mold agent, added to silical bags, often found in shoes Leather material	REACH Annex XVII	0,1 mg/kg	

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Chlorinated Aromatic Hydrocarbons								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
α,α,α-trichlorotoluene; benzotrichloride	98-07-7	1.0 mg/kg	EN 17137:2018	Polyester fibres	May be used as carriers in the dyeing process of polyester or wool/ polyester fibers.	1907/2006/EC (REACH) Annex XVII, No. 72	as stated	
α-chlorotoluene; benzyl chloride	100-44-7							
α, α, α, 4-tetrachlorotoluene; p- chlorobenzotrichloride	5216-25-1							
Chlorinated Paraffins								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Short chain (C10-C13) * Short-chain Chlorinated Paraffins (SCCPs) (C10-C13)	85535-84-8	1500 mg/kg	Combined CADS/ISO 18219:2015 method	leather, prints plastic&polymers, coating, textile with flame resistance treatments	Used as fat-liquoring agents in leather production; also as a plasticizer in polymer production; and flame retardants	Regulation (EU) 2019/1021 (POP regulation)	<1% in substances or preparations <0.15% in articles	
Flame Retardants								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Tris-(2,3-dibromopropyl)-phosphate (TRIS)	126-72-7	Not detected (DL: 10 mg/kg)	Extraction with methanol, GC/MS or LC/MS	Materials if flame resistance finish applied	no findings within last 10 years For materials if flame resistance finish applied	1907/2006/EC (REACH) Annex XVII, No. 4	Not permitted for use TRIS, TEPA,PBB: Prohibited	Note: Tetra, Penta, Hexa, Hepta, Octa, Deca BDE all belongs to PBDEs, can just list and test Poly Brominated Diphenylethers (PBDEs) as one item.
Tris(aziridinyl)-phosphine oxide (TEPA)	5455-55-1				no findings within last 10 years For materials if flame resistance finish applied	1907/2006/EC (REACH) Annex XVII, No. 7		
Polybromobiphenyls (PBB)	59536-65-1		extraction with Methanol, GC/MS or LC/MS		findings are extremely rare For materials if flame resistance finish applied	1907/2006/EC (REACH) Annex XVII, No. 8	OctaBDE, TCEP, TXP, Boron contained compounds: 0.1%(w/w) HBCDD: 100 mg/kg	
Octabromodiphenyl Ether (OctaBDE)	32536-52-0				findings are extremely rare For materials if flame resistance finish applied	1907/2006/EC (REACH) Annex XVII, No. 45		
Tetrabromodiphenyl ether(TetraBDE)	Various				For materials if flame resistance finish applied	Regulation (EU) 2019/1021 (POPs)		
Pentabromodiphenyl Ether (PentaBDE)	32534-81-9				findings are extremely rare For materials if flame resistance finish applied	Regulation (EU) 2019/1021 (POPs)	TetraBDE, PentaBDE, HexaBDE, HeptaBDE, DecaBDE: Substances - 10 mg/kg	
Decabromodiphenyl Ether (DecaBDE)	1163-19-5				findings are extremely rare For materials if flame resistance finish applied	Regulation (EU) 2019/1021 (POPs)	Articles - 500 mg/kg for sum of tetra-, penta-, hexa-, hepta- and decaBDE	
Hexabromodiphenyl ether(HexaBDE)	various				For materials if flame resistance finish applied	Regulation (EU) 2019/1021 (POPs)		

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Heptabromodiphenyl ether(HeptaBDE)	various	Not detected (DL: 10 mg/kg)	extraction with Methanol, GC/MS or LC/MS	Materials if flame resistance finish applied	For materials if flame resistance finish applied	Regulation (EU) 2019/1021 (POPs)	Not permitted for use TRIS, TEPA,PBB: Prohibited OctaBDE, TCEP, TXP, Boron containted compounds: 0.1%(w/w) HBCDD: 100 mg/kg TetraBDE, PentaBDE, HexaBDE, HeptaBDE, DecaBDE: Substances - 10 mg/kg Articles - 500 mg/kg for sum of tetra-, penta-, hexa-, hepta- and decaBDE	
Hexabromocyclododecane (HBCDD)	25637-99-4, various				findings are extremely rare For materials if flame resistance finish applied	Regulation (EU) 2019/1021 (POPs)		
Tris (2-chloroethyl) phosphate (TCEP)	115-96-8				For materials if flame resistance finish applied	REACH SVHC candidate list		
Trixylyl phosphate(TXP)	25155-23-1				For materials if flame resistance finish applied	REACH SVHC candidate list		
Tris(1,3-dichloro-isopropyl) phosphate (TDCPP)	13674-87-8				For materials if flame resistance finish applied	US states law		
Tetrabromobisphenol A (TBBP A)	79-94-7				For materials if flame resistance finish applied	US states law		
Diboron trioxide	1303-86-2				For materials if flame resistance finish applied	REACH SVHC candidate list		
Disodium tetraborate, anhydrous	1330-43-4, 12179-04-3, 1303-96-4		Boron contained compounds: Acid Digestion, followed by ICP analysis		For materials if flame resistance finish applied	REACH SVHC candidate list		
Boric acid	10043-35-3, 11113-50-1				For materials if flame resistance finish applied	REACH SVHC candidate list		
Tetraboron disodium heptaoxide, hydrate	12267-73-1				For materials if flame resistance finish applied	REACH SVHC candidate list		
Formaldehyde								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Formaldehyde	50-00-0	Infant Textiles with direct skin contact 20 mg/kg 16 ppm (Japan law 112)	EN ISO 14184-1:2011 GB/T 2912.1-2009 JIS L 1041-1983 A	Textiles	Formaldehyde resins are commonly used to suppress wrinkling and shrinking or for pleating (plissees) Formaldehyde also often used in adhesives(e.g flocking print, shoes) Presevatives in pigment print/paint/net stiffeners of size	1907/2006/EC (REACH) Annex XVII, No. 72 Others. Denmark 07/2000 GB China GB 18401 no exemptions for velvet in NL, Norway, Finland, Poland Japan law 112	the mentioned values are mandatory for many countries	
		Other Textiles skin contact 75 mg/kg jackets, coats or upholstery 300 mg/kg	EN ISO 14184-1:2011 GB/T 2912.1-2009	Textiles				
		Leather: 75 mg/kg (direct skin contact) 20 mg/kg (infants under 2Y) Non direct skin contact (300 mg/kg) in China	DIN EN ISO 17226-1 Suggest ISO 17226- 2:2008 with confirmation method ISO 17226- 1:2008 in case of interferences China method: GB/T 19941	leather	used as preservative Formaldehyde also often used in adhesives(e.g flocking print, shoes)	Slovakia Decree 635/2005 China GB 20400		

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Metals								
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Chromium VI (Chromate)	18540-29-9	3 mg/kg	DIN EN ISO 17075-1:2017 after ageing 24h/80°C<10% r.h. Wool (without aging)	leather	Associated with leather tanning and wool dyeing	German Consumer Goods Ordinance Annex 4, No. 2 1907/2006/EC (REACH) Annex XVII, No. 47	as stated (EU and South Korea)	
Nickel release	7440-02-0	≤0.5 µg/cm ² /week (general) ≤0.2 µg/cm ² /week (piercing item)	EN 12472: 2005+ A1:2009, EN 1811:2011+A1:2015	metal parts	metal accessories, jewellery with prolonged skin contact Or piercing parts	1907/2006/EC (REACH) Annex XVII, No. 27	as stated	
Metals (Extractable)								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Cadmium and its compounds		1 mg/kg	EN 16711-2:2015	Textile items	All dyed textiles	1907/2006/EC (REACH) Annex XVII, No. 72	as stated	
Chromium VI compounds			EN 16711-2:2015 Followed by modified ISO 17075-1/2					
Arsenic compounds			EN 16711-2:2015					
Lead and its compounds								
Metals - total content								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Lead *	7439-92-1	Children's items 90 mg/kg (coatings) 100 mg/kg (substrates) Illinois only: 40 mg/kg (labelling necessary)	Acid digestions followed by ICP/AAS analysis Can also use standard method: CPSC-CH-E1002.08.3 (substrate: Non-metal); CPSC-CH-E1001.08.3 (Substrate: Metal); CPSC-CH-E1003.09.1(Surface Coating)	Surface coatings, Plastics, paints, inks, non-dyed print(pigments), metals, rubber, treated leather According to scope of 16 CFR Part 1500	all articles Associated with pigments, as heat/light stabilizer for plastic, electroplating agent in alloys.	US State Law, Denmark Statutory order N. 1012	lead restriction (US): 90 mg/kg (coatings) 100 mg/kg (substrates) Illinois only: 40 mg/kg (labelling necessary) lead restriction REACH Annex XVII, No. 63: 500 mg/kg (jewellery)	Pls also refer to additional restrictions about heavy metals in China (total As, extractable heavy metal, leachable/soluble heavy metals) in additional document (Additional China restriction) sent in the email.
		Adult items 90 mg/kg (coatings) 100 mg/kg (substrates)		Surface coatings, Plastics, paints, inks, non-dyed print(pigments), metals, rubber, treated leather According to scope of 16 CFR Part 1500	all articles Associated with pigments, as heat/light stabilizer for plastic, electroplating agent in alloys.	US State Law, Denmark Statutory order N. 1012	Articles or accessible parts may be placed in the mouth by children: 500 mg/kg; Or rate of lead release ≤0.05 µg/cm ² per hour	

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Cadmium*	7440-43-9	100 mg/kg US Washington CSPA: 40 mg/kg (children's products)	Acid digestions followed by ICP/AAS analysis Can also use standard method: Textiles, plastics, and metal: DIN EN 16711- 1:2016 Leather: DIN EN ISO 17072-2:2017	Surface coatings, plastics, paints, inks, non-dyed print (pigments), metals, rubber, treated leather	all articles Associated with pigments, as stabilizer for plastic, electroplating agent in alloys.	1907/2006/EC (REACH) Annex XVII, No. 23 US states law	US Washington CSPA: 40 mg/kg (children's products) REACH Annex XVII, No. 23: 100 mg/kg(plastic, Metal Jewelry) 0.1% (painted articles)	
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Organotin Compounds								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Monobutyl tin (MBT)	various	100 mg/kg	extraction with methanolic buffer/ diethyldithiocarbamate followed by ISO 17353 CEN ISO/TS 16179:2012 (Footwear)	all PU items, plastic accessories, adhesives, coating, print, paint, rubber	prints, adhesives, PU, silicon (zipper pullers) lacqueres As catalysts in plastic and glue production, and heat stabilizers in plastics/rubber. Associated with inks, paints, coating, print, metallic glitter, polyurethane products and heat transfer material.	2009/425/EC South Korea, Japan	South Korea –clothing (Infants: TBT 0,5 and DBT 1,0 mg/kg; Adults: TBT 1 mg/kg) EU REACH Annex XVII No. 20: 1000 mg/kg referring to tin content (Tri-substituted organostannic compounds <u>such as</u> TBT, TPhT) Japan: TBT, TPhT 1mg/kg, each	Same as TBT, TPhT, newly added organotin compounds (TMT, TOT, TPT,TCyHT) all belongs to Tri-substituted organostannic compounds
Dibutyl tin*(DBT)	various	1 mg/kg						
Tributyl tin (TBT)+compounds	various	1 mg/kg						
Diocetyl tin (DOT) + compounds	various	1 mg/kg						
Triphenyl tin (TPhT) + compounds	various	1 mg/kg						
Trimethyltin (TMT)	Various	1 mg/kg						
Trioctyltin (TOT)	Various	1 mg/kg						
Tripropyltin (TPT)	Various	1 mg/kg						
Tri-cyclohexyltin(TCyHT)	Various	1 mg/kg						
pH Value								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
pH	N/A	Textile: Infants: 4.0-7.5 skin contact: 4,0 - 8,5 without skin contact: 4,0 - 9,0 ; Leather: 3.5-7.5	textiles: ISO 3071 leather: ISO 4045	all textile and leather items	often checked by Chinese authorities (quick and cheap test)	GB 18401 (textile)	as stated	
Perfluorinated Compounds								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Perfluoro octane sulphonate (PFOS) and related substances	1763-23-1 Various	1 µg/m²	CEN/TS 15968:2014	stain and/or water /oil repellend finished textiles and leathers	Test only necessary if the product was finished in Asia	Regulation (EU) 2019/1021 (POPs)	as stated PFOA in REACH Annex XVII: 25 ppb PFOA-related substance in REACH Annex XVII: 1000 ppb	
Perfluoro octanoic acid (PFOA) its salts	335-67-1 Various					1907/2006/EC (REACH) Annex XVII, No.68 Regulation (EU) 2020/784 (POPs)		
PFOA-related substance	Various	1 mg/kg						

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Phthalates								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Dibutylphthalate (DBP)	84-74-2	1000 mg/kg, sum	Textiles with prints DIN EN ISO 14389 all other articles CPSC-CH-C1001-09.3	plastics, prints, accessories, coatings	very common in prints and coatings, plastics (packagings if lacquered), can also be found in adhesives&glues.	1907/2006/EC (REACH) Annex XVII, No. 51&52, REACH SVHC Candidate list, New US CPSIA, California Prop. 65, California Toxic Toy Bill AB1108 Turkey The Ministry of Economy Import Inspection Requirements for Footwear	1907/2006/EC (REACH) Annex XVII, No. 51&52 and 72 Sum of DBP/BBP/DEHP ≤ 0.1 %	Pls note the update effect from April 25, 2018. U.S. Consumer Product Safety Commission (CPSC) voted to approve a Final Rule 16 CFR 1307 : delete DNOP and DIDP, adding DIBP,DPP,DnHP, DCHP to accessible plasticized components of a toy or child care article products. In total 8P: DEHP; DBP; BBP; DINP; DIBP; DPP; DnHP; DCHP .
Benzylbutylphthalate (BBP)	85-68-7							
Bis-(2-ethylhexyl)phthalate (DEHP) *	117-81-7							
Di-iso-butylphthalate (DIBP)	84-69-5							
Diisononylphthalate (DINP)	28553-12-0							
Diisodecylphthalate (DIDP)	26761-40-0							
Di-n-octylphthalate (DNOP)	117-84-0							
Dipentylphthalate (DPP)	131-18-0							
Dihexylphthalate (DnHP)	84-75-3							
1,2-Benzenedicarboxylicsäure, di-C6-8-branched alkyl esters, C7-rich	71888-89-6							
Bis(2-methoxyethyl)phthalate(DMEP)	117-82-8							
Diisopentylphthalate(DIPP)	605-50-5							
Di-cyclohexyl phthalate (DCHP)	84-61-7							
Dipentyl phthalate, branched and linear(1,2- Benzenedicarboxylic acid, dipentylester, branched and linear)	84777-06-0							
1,2-Benzenedicarboxylicacid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4							
n-Pentyl-isopentylphthalate(NPIPP)	776297-69-9							
Dihexyl phthalate, branched and linear (1,2-Benzene- dicarboxylic acid, dihexylester, branched and linear)(DHXP/DIHEXP)	68515-50-4							
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥0.3% of dihexyl phthalate	68515-51-5 68648-93-1							
Diisohexyl phthalate (DIHEXP)	71850-09-4							
					not often in use	1907/2006/EC (REACH) Candidate List	New US CPSIA Sec 108(16 CFR 1307): 1000mg/kg, each 1000 mg/kg (REACH SVHC) Turkey: Sum of DBP/BBP/DEHP/DINP/DIDP/D NOP 0.1%	Although California, REACH etc. still have restriction for DNOP and DIDP.
					can be found in prints and coatings, plastics (packagings if lacquered), adhesives &glues.			

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Chlorinated Phenols								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Pentachlorophenol (PCP)	87-86-5	0,05 mg/kg (textiles) 0.5 mg/kg (leather & all other materials)	KOH extraction, derivatization and analysis § 64 LFGB B 82.02-08 or DIN EN ISO 17070:2015	leather, silk, PES, natural fibers, print	leather preservative, to be found also in printed silk, printed PES from India as well as in dyed PES in dark shades Suggest adding: Preservatives in print pastes, prevent mould and kill insects in natural fiber like cotton	Regulation (EU) 2019/1021 (POPs) German Chemicals Prohibition Ordinance Annex to § 1, No. 15 China GB 25036 and GB 25038 for textile and synthetic leather materials.	Prohibited 5 mg/kg China: Not detected (0.5 mg/kg)	
Tetrachlorphenols (TeCP)	58-90-2 4901-51-3 935-95-5	0.5 mg/kg				Swiss Regulation 814.82 China GB 25036 and GB 25038 for textile and synthetic leather materials.	ban of use no limit fixed China: Not detected (0.5 mg/kg)	

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Polycyclic Aromatic Hydrocarbons (PAH)								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Benzo[a]anthracene	56-55-3	each PAH: 1,0 mg/kg Toys&childcare products: 0.5 mg/kg, each; Other articles: 1mg/kg, each	(AIPS GS 2014:01 PAK)	rubber, black plastics, black lacquered item, coating, print	Existed in softener or extender or carbon black as contamination during plastic&rubber manufacturing. May be found in rubber, plastics, lacquers and coatings. PAHs can be found in shoes outsoles and in printing. Naphthalene may be used as intermediates in the production of textile dye dispersing agents and may be found in textiles. PAHs may be found in synthetic material especial dark color.	1907/2006/EC (REACH) Annex XVII, No. 50 1907/2006/EC (REACH) Annex XVII, No. 72	1907/2006/EC (REACH) Annex XVII, No. 50; Toys&childcare products: 0.5 mg/kg, each; Other articles: 1mg/kg, each	
Benzo[a]pyrene	50-32-8							
Benzo[b]fluoranthene	205-99-2							
Benzo[e]pyrene	192-97-2							
Benzo[j]fluoranthene	205-82-3							
Benzo[k]fluoranthene	207-08-9							
Chrysene	218-01-9							
Dibenzo[a,h]anthracene	53-70-3							
Acenaphthene	83-32-9	sum all PAH: 10 mg/kg				Eco-Labels GS mark	GS mark requirements(Category 1,2,3)	
Acenaphthylene	208-96-8							
Anthracene	120-12-7							
Benzo[ghi]perylene	191-24-2							
Cyclopenta[c,d]pyrene	27208-37-3							
Dibenzo[a,e]pyrene	192-65-4							
Dibenzo[a,h]pyrene	189-64-0							
Dibenzo[a,i]pyrene	189-55-9							
Dibenzo[a,l]pyrene	191-30-0							
Fluoranthene	206-44-0							
Fluorene	86-73-7							
Indeno[1,2,3-cd]pyrene	193-39-5							
1-Methylpyrene	2381-21-7							
Naphthalene	91-20-3							
Phenanthrene	85-01-8							
Pyrene	129-00-0							

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Quinoline								
RESTRICTED SUBSTANCE	CAS NUMBER	LIMIT VALUE	TEST METHOD	Matrix	REMARKS	Legal Basis	Mandatory Limit	Note
Quinoline	91-22-5	50 mg/kg	DIN 54231:2005 with methanol extraction	all textile and leather items	May be found as an impurity in polyester and some dyestuffs.	1907/2006/EC (REACH) Annex XVII, No. 72	as stated	
Solvents								
Dimethylformamide (DMFa) N, N-dimethylformamide	68-12-2	500 ppm	Textiles: EN 17131:2019 All other materials: DIN CEN ISO/TS 16189:2013	PU, PU coatings	Commonly used in the production of solvent-based polyurethane materials. May also be used to process adhesives, plastics, PU resins, or as a cleaning solvent.	REACH Candidate List 1907/2006/EC (REACH) Annex XVII, No. 72	SVHC 1000mg/kg 1907/2006/EC (REACH) Annex XVII, No. 72 <3000 mg/kg	
N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone (NMP)	872-50-4	1000 ppm		Some synthetic fibres	Commonly used as solvent for fibres production e.g. polyacrylnitrile, spandex			
N,N-dimethylacetamide (DMAC)	127-19-5			Textile treatments	May be used as a solvent for surface treatment on textiles, resins.			
Toxic elements in Packaging								
Cadmium, Lead, Chromium (VI), Mercury	Various	sum 100 mg/kg	Acid Digestion and ICP analysis Cr VI refer to IEC62321:2008 UV-vis or ISO 17075 UV-vis	Packaging	Packaging	2004/12/EC (Packaging and packaging waste) US TPCH (The Toxics in Packaging Clearinghouse)	sum of the 4 heavy metals: 100 mg/kg	

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Additional SVHCs

The REACH Regulation has other requirements for substances in articles which are identified as substances of very high concern (SVHC). These SVHCs are detailed in Annex XIV of the REACH Regulation 1907/2006. This list is updated periodically and suppliers must be aware of the requirements

Porsche Design Group requires that the substances listed in Annex XIV should not be used in the manufacture of any of its products.

However, if any of the substances are used, Porsche Design Group may be required to provide consumers with information to ensure the safe use of the product and may also be required to provide consumers safety information about the SVHC when requested.

If any SVHC is used in the production of any Porsche Design Group product, the supplier MUST advise of the presence in the article to ensure that Porsche Design Group is in a position to fulfill any obligations.

The list of SVHCs can be found at

Candidate list of Substances of Very High Concern (SVHC) for authorisation: <http://echa.europa.eu/web/guest/candidate-list-table>

Summary of obligations resulting from inclusion in the Candidate List of Substances of Very High Concern for authorisation: <http://echa.europa.eu/web/guest/candidate-list-obligations>

Legend:

* = most critical substances

conversion table between mg/kg and %

mg/kg	%-value
0.01	0.000,001
0.1	0.000,01
1	0.000,1
10	0.001
100	0.01
1000	0.1
10 000	1
100 000	10
1 000 000	100