

# Varner chemical requirements and Restricted Substances List

## Legal compliance

A product produced for Varner shall always comply with all directives, regulations, laws and standards applicable to the product and the market where it is sold. Therefore, we expect all suppliers to be well informed on the legal requirement for Europe when trading with Varner brands. Compliance to REACH and the Product Safety Directive, together with product specific directives/regulations, and Varner Restricted Substances List are regarded as an inevitable part of knowledge when supplying goods to Varner. All suppliers must fill out, sign, and return the Chemical Self-Assessment before supplier approval, see Appendix 5.

## Quality Assurance & Control

We expect all suppliers to have an implemented a proper quality management system in all parts of their production. These shall always be written down and available upon request.

## 1.Chemical requirement

### Varner Restricted Substances List (RSL)

#### The way we work

The list of restricted substances shows restricted substances and the maximum concentration. It applies to all our suppliers, their manufacturing units, and their sub-contractors. All suppliers of raw materials, ginning mills, spinning mills, knitting, and weaving mills, laundries, tanneries, dye houses, printing facilities or garment factories must follow our requirements. The RSL also includes requirements for packaging. As a supplier, you have the responsibility to pass on the RSL and its requirements upstream your supply chain.

All orders for Varner must comply with all requirements in the RSL. Please note, unless otherwise is stipulated in the RSL, all suppliers are required to follow the EU regulatory framework for Chemicals. In addition to the RSL, you also need to fulfil the requirement stated in the chapter Chemical Handling.

Sanctions for violation of chemical requirements as listed in the Supplier manual's Restricted Substances List and procedures: In case of claims Varner has the right to be fully compensated for financial losses and expenses due to a non-delivery clause with our final customers.

## Chemical Testing

A test report performed by a Varner nominated laboratory may be requested. Supplier must also follow the test programs for the different product groups. Workflow for testing you will find described in the test program in Appendix 6.

Varner reserves the right to cancel orders, in complete or in part, and claim or take other action if products or tests do not comply with our chemical requirements. The buying department reserves the right to ask for additional documentation showing the requirements have been respected and random controls may be carried.

A list of Varner nominated labs you will find in Appendix 7.

Chemical testing might be exempted in special cases, if the supplier holds a full certification of Step, Oekotex, Nordic Ecolabel, Cradle to Cradle (Silver or above) or similar. Please contact Varner Quality Assurance Specialist for information, requirements, and procedure.

## General Requirements for all materials

### **REACH (Registration, Evaluation, Authorization, and restriction of Chemicals)**

**SVHC** (Substance of Very High Concern) Products produced for Varner cannot contain more than 1000 mg/ kg of substances on the SVHC list. If substances are stated both in the Varner RSL and in the SVHC list, the Varner RSL requirements should be followed.

### **PBT, vPvB, CMR or ED**

Substances defined as persistent, bio accumulative and toxic (**PBT**), very persistent and very bio accumulative (**vPvB**), carcinogenic, mutagenic, and toxic for reproduction (**CMR**), endocrine disruptors (**ED**) or equivalent concern but not yet regulated and specified in the RSL, cannot exceed 1000 mg/kg in a product. If a specific substance is stated both in Varner RSL and as PBT, vPvB, CMR or ED, the Varner requirements must be followed.

## Highlighted Bans

**Biocides** including all antibacterial treatments on finished products are banned by Varner.

All **fluoro chemicals** in production are banned.

**Mold** Spores and mycelia of mold cannot be detected.

**PVC** is banned.

**Flame retardants** are banned.

If any questions, contact [sustainability@varner.com](mailto:sustainability@varner.com)

## Legal background

### REACH

As a Varner supplier, you are required to comply with the European Chemicals legislation called REACH that is in force since 1st of June 2007. REACH is an abbreviation for **Registration, Evaluation, Authorisation, and restrictions of Chemicals**.

The essence of REACH is to ensure a high level of safety for human health and environment, focused on substances in general and hazardous substances in particular, that are manufactured in EU, imported into EU and used within EU. It is the responsibility of all manufacturers, importers, and users of substances within EU to ensure that the substances they manufacture, import or use do not pose any risk to human health and environment.

REACH affects all EU-actors that professionally manufacture, import, sell, buy, distribute, or use chemicals as such and in articles.

Varner require that all our suppliers are prepared for REACH and that you follow updated information on the website of the European Chemicals Agency (ECHA), <http://ECHA.europa.eu> that is the European Authority for REACH on behalf of the European Commission.

### Registration

One of the requirements of REACH is that manufacturers of chemicals and importers of chemicals and articles have a duty to register substances. For importers of articles registration requirements apply to substances intentionally released from articles.

### Duty to inform your customer on substances for authorization

Since 28<sup>th</sup> of October 2008 all EU-actors that professionally manufacture, import, sell or distribute articles are legally obliged to inform their customer about the presence of Substances of Very high Concern (SVHC), (also called candidate substances) in articles they sell.

To find the latest list of SVHC we ask you to read this on ECHA:s website, <https://echa.europa.eu/web/guest/candidate-list-table>

It is your responsibility as a supplier to keep updated on the Candidate list of authorization, annex XIV of authorization substances and annex XVII of restricted substances.

You are not allowed to use any substances for authorization from the Candidate list and annex XIV and additionally restricted substances in annex XVII.

The full legal text of REACH is enclosed in the link below that include the current text of annex XIV and XVII, see link below,

### REACH legislation

<https://echa.europa.eu/regulations/reach/legislation>

### Annex XIV

[Authorisation List - ECHA \(europa.eu\)](#)

### Annex XVII

[Substances restricted under REACH - ECHA \(europa.eu\)](#)

### Stockholm Convention on Persistent Organic Pollutants (POPs)

Stockholm Convention on Persistent Organic Pollutants (<http://chm.pops.int>) is an international environmental treaty, signed in 2001 and effective from May 2004, that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs), addressed as the Stockholm Convention. In EU /EEA this international treaty is regulated in Regulation EU 2019/1021:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02019R1021-20210315&from=EN>

### Biocidal Product Regulation

The Biocidal Product Regulation (BPR, Regulation (EU) 528/2012, <http://echa.europa.eu/regulations/biocidal-products-regulation/legislation>) concerns the placing on the market and use of biocidal products, which are used to protect humans, animals, materials or articles against harmful organisms, like pests or bacteria, by the action of the active substances contained in the biocidal product.

The Biocidal Products Regulation (BPR) also sets rules for the use of articles treated with, or intentionally incorporating, one or more biocidal products.

Varner has a ban for biocidal products. These substances cannot be used in our production.

Directive on Packaging and Packaging Waste 94/62/EC,

<http://ec.europa.eu/environment/waste/packaging/legis.htm> concerns the management of packaging and packaging waste. The directive includes demands on weight and volume of packaging, content of hazardous substances and materials in the packaging material and its components and the design of reusable or recoverable packaging.

### Instruction for the 3<sup>rd</sup> party laboratory

All test reports must be uploaded and sent through the Interlink system. No manual TRF will be accepted.

In the test report, always present the actual result of the analysis. State your specific limit of detection substance by substance. Please note that the reporting format should be < x mg/kg or for PFAS <x µg/m<sup>2</sup>. If nothing detected, note the detection limit of the instrument (i.e. < x mg/kg, not n/d).

## Descriptions & Explanations

### Definitions

CAS RN	Chemical abstract services registration number. CAS RN are given for specific defined substances.
++	The ++ sign shows that names and CAS number for each substance in this group are specified in Table 1-15.
Various	Is stated instead of CAS number, the substance has several substances and CAS numbers covered by the specification.
Limit of Detection (LOD)	Is defined as the lowest concentration that the test equipment can detect.
Limit of Quantification (LOQ)	Limit of quantification (LOQ). The smallest concentration of an analyte that can be reliably measured by an analytical procedure.
Not Detected	Substance stated with "Not Detected" as a requirement cannot be found above the Detection Limit.
Banned	When a substance is defined as "Banned" this means that the substance cannot be used in production. Those substances cannot be present in the product over the Detection Limit.
Required Limit value	Limit value as agreed in business sector and or by legal requirements. Note that limit value is measured in products. Weight percent shall be calculated from the weight of the whole product if nothing else is stated

### Relationship between units used by laboratories

1000	mg/kg	equals	1000	ppm	(Parts per million)
			1 000 000	ppb	(Parts per billion)
			1 000 000	µg/kg	(Microgram per kilogram)
			0,1	% (by weight)	
			x	µg/m <sup>2</sup>	x depends on the thickness of the fabric (kg/m <sup>2</sup> )
			x	µg/cm <sup>2</sup> /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.

### Relationship between surface concentration and total concentration (relevant for PFAS restrictions for example)






Substance [µg/m <sup>2</sup> ]	Surface weight [g/m <sup>2</sup> ]		Substance [ppb = µg/kg]
1	40	equals	25
2.5	100	equals	25
5	200	equals	25
Substance [ppb = µg/kg]	Surface weight [g/m <sup>2</sup> ]		Substance [µg/m <sup>2</sup> ]
25	40	equals	1
25	100	equals	2.5
25	300	equals	7.5

### Symbols

- > - Greater than
- ≥ - Greater than or equal to
- < - Less than
- ≤ - Less than or equal to

## Extensive List of Restricted Substances

The symbols below give an indication in which type of material the respective chemical is most likely used/ or present.

	<b>Textile</b>	Textile material, both natural and synthetic fibres
	<b>Leather</b>	Leather, both natural and leather imitation
	<b>Trims</b>	Metal, plastics etc. used in e.g., buckles, buttons, and zippers. Rubber and glue.
	<b>Packaging</b>	Packaging material in accordance with the Packaging Directive 94/62/EC. Paper, cardboard, plastic bags, tags, labels, plastic sleeves etc.
	<b>Jewellery</b>	Earrings and other body piercing items Necklaces, bracelets, chains, anklets, and finger/toe rings Brooches and cufflinks Wristwatches and wristwear, watch straps and tighteners Metal and/or embellished hair accessories (bobby pins, crowns/diadems, hair pin/clip, hair combs etc) Glass bead, metal beads, metal components and parts of jewellery and imitation jewellery articles

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### ALKYLPHENOL ETHOXYLATES (APEO) and derivatives

Nonylphenol Ethoxylates (NPEO)	Various	Total content should not exceed 100 mg/kg	ISO 18254-1 (textile), APEO
Octylphenol Ethoxylates (OPEO)	Various		Not detected during testing.
Nonylphenol (NP)	Various	Leather: ISO 18218-1,-2 (leather)	
Octylphenol (OP)	Various	LOQ: 10mg/kg	

**Legal background:** Legal limit: 0.1% by weight for nonylphenol ethoxylate (NPEO) as a substance or constituent of preparations (closed systems exempted), entry 46. NPEOs shall not be placed on the market in textile articles, in concentrations equal to or greater than 0.01% by weight of that textile article or of each part of the textile article. Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 46a. Norway restricts manufacture, import, export, sale, and use of octylphenol and octylphenol ethoxylates, and mixtures containing these substances, FOR 2004-06-01-922. 4-Nonylphenol, branched and linear (4-NP, various CAS RN), 4-Nonylphenol, branched and linear, ethoxylated (4-NPnEO, various CAS RN), 4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-OP, CAS RN 140-66-9), 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated (4-tert-OPnEO, UVCB substance, no CAS RN), 4-tert-butylphenol (CAS RN 98-54-4) and tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with = 0.1% w/w of 4-nonylphenol, branched and linear (4-NP) (no CAS RN) are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH). 4-NPnEO and 4-tert-OPnEO are also included in Annex XIV to REACH.



### BIOCIDES




Biocides <sup>1</sup>	++	Banned, Not detected during testing	Solvent Extraction followed by GC-MS
<b>Permethrin</b>  <b>Legal background:</b> Permethrin is on the list of temporarily permitted existing biocides within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Product Regulation (EU 528/2012)	52645-53-1	Banned, Not detected during testing	EN ISO 22517 (pesticide residues in leather) Test equipment: GC-MS, LC-MS. LOQ: 5mg/kg.
<b>Silver and its compounds</b>  <b>Legal background:</b> Legal limit: No legal limits for silver compounds exist in textiles and leather. Some silver compounds are on the list of temporarily permitted existing biocides within PT9 (product type 9) that includes textiles, polymers, and leather, according to the Biocidal Product Regulation (EU 528/2012). Silver as such is not allowed as a biocidal active substance	7440-22-4	Banned, Not detected during testing	Test equipment: ICP-MS, ICP-OES or AAS. LOQ: 10 mg/kg.
<b>Trisubstituted tin organic compounds</b>	++	Banned, Not detected during testing	EN ISO 22744-1, -2 (textiles) GC-MS.

<sup>1</sup> Table 1 Biocides

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	
<p><b>Legal Background:</b> Legal Limit: 0.1% by weight. All tri-substituted organostannic compounds such as tributyltin (TBT) are restricted in articles in annex XVII of the Regulation (EC) No 1907/2006 (REACH), entry 20. The seven TBT compounds listed above are also included in the Rotterdam convention. Tributyltin oxide (TBTO) 56-35-9 and Dibutyltin dichloride (DBTC), 683-18-1 are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH).</p>				<p>EN ISO17353 (water and sediment) textile CEN ISO/TS 16179:2012 (leather)</p> <p>LOQ: 0.2 mg/kg</p>
<p><b>Triclosan and Triclocarban</b></p> <p><b>Legal Background:</b> Triclosan is banned within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Product Regulation 528/2012. Triclocarban is not on the active substance list for PT9 and thus not allowed to use in textiles, polymers and leather.</p>	3380-34-5, 101-20-2	Banned, Not detected during testing		<p>ISO 22992-2 (textile)pH EN 17134 (textile) Test equipment: GC-MS, LC-MS. LOQ: 10mg/kg</p>
<p><b>Zincpyrithion</b></p> <p><b>Legal background:</b> Zincpyrithion is on the list of temporarily permitted existing biocides within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Product Regulation (EU 528/2012).</p>	13463-41-7	Banned, Not detected during testing		<p>GC-MS, LC-MS. LOQ: 1000 mg/kg (100 mg/kg via Zinc)</p>
<p><b>Cu-HDO (Bis-(N-cyclohexyldiazoniumdioxo) – copper)</b></p> <p><b>Legal Background:</b> Cu-HDO is banned within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Product Regulation (EU 528/2012)</p>	312600-89-8	Banned, Not detected during testing		<p>ICP-AES LOQ: 50 mg/kg</p>
<p><b>Dimethyl fumarate (DMFu)</b></p> <p><b>Legal background:</b> Legal limit: 0.00001% by weight (0.1 mg/kg) in articles or any parts thereof. Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 61.</p>	624-49-7	Should not be detected during testing		<p>SS-EN 17130 (textile and textile material) ISO 16186 (footwear)</p> <p>GC-MS, LC-MS LOQ: 0.1 mg/kg.</p>
<p><b>Guanidine, N,N''-1,6-hexanediylbis[N'-cyano-, polymer with 1,6-hexanediamine, hydrochloride (PHMB 1600; 1.8)</b></p> <p><b>Legal Background:</b> PHMB is banned within PT9 (product type 9) that includes textiles, polymers and leather, according to the Biocidal Product Regulation (EU 528/2012).</p>	27083-27-8, 32289-58-0	Banned, Should not be detected during testing		<p>LC-MS</p>
<p><b>Carbendazim</b></p> <p><b>Legal background:</b> Carbendazim is banned within PT9 (product type 9) that includes</p>	10605-21-7	Banned, Should not be detected during testing		<p>GC-MS, LC-MS</p>



FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	
textiles, polymers and leather, according to the Biocidal Product Regulation (EU 528/2012).				
<b>Parabenes inkl. Butyl 4-hydroxybenzoate (Butylparaben)</b>  <u>Legal background:</u> Butyl 4-hydroxybenzoate (Butylparaben) is listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH). Butyl 4-hydroxybenzoate (Butylparaben) is an allowed preservative under the Regulation (EC) No 1223/2009 (cosmetic products)	94-26-8 ++		Banned, Should not be detected during testing	<b>GC-MS, LC-MS.</b> <b>LOQ: 100 mg/kg</b>
<b>Glutaral</b> <u>Legal background:</u> Glutaral is listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH).	111-30-8		Banned, Should not be detected during testing	<b>LC-UV, GC-UV</b> <b>LOQ:-</b>

 				
<b>BISPHENOLS</b>				
<b>Bisphenol A; BPA (4,4'-isopropylidenediphenol)</b>	80-05-7	Banned, Not detected during testing	Solvent extraction followed by LC-MS LOQ: 10mg/kg	
<b>2,2-bis(4'-hydroxyphenyl)-4-methylpentane</b>	6807-17-6			
<b>Bisphenol B; (4,4'-(1-methylpropylidene)bisphenol)</b>	77-40-7			
<u>Legal Background:</u> BPA, Bisphenol B and 2,2-bis(4'-hydroxyphenyl)-4-methylpentane are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH). Bisphenol A (BPA) content in thermal paper (0.02% by weight), is restricted from January 2020 according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 66				
				
<b>C,C'-AZODI(FORMAMIDE) (ADCA)</b>				
<b>C,C'-azodi(formamide) (ADCA)</b>	123-77-3	Banned, Not detected during testing	GC-MS, LC-MS LOQ:200mg/kg	
<u>Legal Background:</u> ADCA is listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH).				

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### PENTACHLORPHENOL (PCP) AND ALL ISOMERS OF TETRACHLORPHENOLS (TeCP)

<b>Pentachlorophenol (PCP) and all isomers of Tetrachlorophenols (TeCP)</b>	87-86-5 (PCP), 131-52-2 (PCP sodium salt), TeCP; 935-95-5, 4901-51-3, 58-90-2 (isomers of TeCP)	Banned, Not Detected during testing	ISO 17070 (leather) XP G 08-015 (French standard method for PCP in textiles). LOQ: 0.1 mg/kg CEN/TR 14823 (wood). Detection limit 25 mg/kg EN ISO 15320 (Pulp, paper and board)
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Legal background: Legal limit: PCP and its salts and esters shall not occur. Pentachlorophenol and its salts and esters are listed in the Stockholm Convention on Persistent Organic Pollutants (POPs) and banned in EU by the POPs Regulation (EU) No 2019/1021. Residues below 5 mg/kg in substances, mixtures, and articles are allowed to be placed on the market and used, as this is the amount that may be present as an impurity in an article. Pentachlorophenol is listed in the Rotterdam convention.



### CHLORINATED AROMATIC HYDROCARBONS; BENZENES, TOLUENES, NAPHTALENES & XYLENES <sup>2</sup>

<b>Chlorinated benzenes</b>	++	Total content should not exceed 1 mg/kg	EN 17137: 2018
<b>Chlorinated naphthalenes</b>	++		
<b>Chlorinated toluenes</b>	++		
<b>Chloroxylenes</b>	++		



### CHLOROPARAFFINS

<b>Short chained chlorinated paraffins (SCCPs) C10-C13</b>	85535-84-8	Banned	Leather: ISO 18219-1:2021 (SCCP), ISO 18219-2:2021 (MCCP)
<b>Medium chained chlorinated paraffins (MCCPs) C14-C17</b>	85535-85-9 198840-65-2 1372804-76-6	Should not be detected during testing	Textiles: ISO 22818:2021 (SCCP + MCCP)  LOQ: 100 mg/kg (textiles)
<b>Long chained chlorinated paraffins C18 – C28</b>	85535-86-0		

Legal background: Legal limit: Shall not occur. Short-chain chloroparaffins are listed as POP in the Stockholm Convention on Persistent Organic Pollutants (POPs) and banned in EU by Regulation (EU) No 2019/1021. Residues below 0.15 % SCCP by weight in articles are allowed to be placed on the market and used, as this is the amount of SCCP that may be present as an impurity in an article produced with MCCP. Short-chain chloroparaffins (C10-C13) and Medium-chain chloroparaffins (C14-

<sup>2</sup> Table 2 - Chlorinated aromatic hydrocarbons

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	

C17) are listed on the Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH).



### FLAME RETARDANTS<sup>3</sup>

<b>Hexabromocyclododecan (HBCDD)</b>	++	Banned, Not Detected during testing	EN ISO 17881-1 (textiles) LOQ: 20 mg/kg
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Legal background: Legal limit: Shall not occur. Hexabromocyclododecane is listed as POP in the Stockholm Convention on Persistent Organic Pollutants (POPs) and is banned in EU by Regulation (EU) No 2019/1021. Residues below 100 ppm by weight are allowed in articles, as this amount may be present as an impurity. Hexabromocyclododecane (HBCDD) and all major isomers are listed in both annex XIV and in the Candidate List of Substances of Very High Concern for authorization of Regulation (EC) No 1907/2006 (REACH).



### FLAME RETARDANTS<sup>4</sup>

<b>Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE)</b>	++	Banned, Not Detected during testing	EN ISO 17881-1 (textiles) EN 16377 for PBB (plastics) LOQ: 10 mg/kg
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Legal background: Legal limit: Shall not occur. TetraBDE, PentaBDE, HexaBDE, HeptaBDE, DecaBDE and Hexabromobiphenyl are listed as POP in the Stockholm Convention on Persistent Organic Pollutants (POPs) and are banned in EU by the POPs regulation (EU) No 2019/1021. Residues of TetraBDE, PentaBDE, HexaBDE, HeptaBDE, DecaBDE in mix-tures and articles are considered as impurities if the sum of them is below 500 ppm. In substances, residues below 10 mg/kg by weight of each brominated diphenylether is considered as impuri-ties. Hexabromobiphenyl is banned in detectable content. OctaBDE, and polybrominated biphenyls (PBBs), are restric-ted in Entry 45 and Entry 8 of Annex XVII to Regulation (EC) No 1907/2006 (REACH). -The legal limit for PBBs in textile articles with skin contact is detection limit. -The legal limit for OctaBDE in articles or in flame-retardant parts of articles is 0.1 % by weight. DecaBDE is listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH).PBBs are listed in the Rotterdam Convention.

<sup>3</sup> Table 7 – Flame retardants

<sup>4</sup> Table 7 – Flame retardants

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### FLAME RETARDANTS

<b>TCEP</b>	Tris(2-chlorethyl)phosphate (TCEP): 115-96-8	Banned, Not Detected during testing	EN ISO 17881-2 (textiles) Test equipment (for non-textile materials): GC-MS, LC-MS or GC-ECD LOQ: 5 mg/kg
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Legal background: Tris(2-chlorethyl) phosphate (TCEP) is listed in the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH)



### FLAME RETARDANTS Trisubstituted phosphates

<b>Trixylyl phosphate</b>	Trixylyl phosphate: 25155-23-1	Banned, Not Detected during testing	EN ISO 17881-2 (textiles) Test equipment (for non-textile materials): GC-MS, LC-MS or GC-ECD LOQ: 5 mg/kg
<b>isopropylated phenyl phosphate (3:1)</b>	68937-41-7		

Legal Background: Legal limit: Trixylyl phosphate: 25155-23-1 and Phenol, isopropylated, phosphate (3:1), 68937-41-7 are listed in the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH).



### FLAME RETARDANTS<sup>5</sup>

<b>Flame retardants</b>	++	Banned, Not Detected during testing	EN ISO 17881-1 (textiles) EN 16377 for PBB (plastics) LOD: 5mg/kg for each
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<sup>5</sup> Table 7 – Flame retardants

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	

#### FLAME RETARDANTS- Dechlorane™ Plus

<b>Dechlorane™ Plus</b> <b>(1,6,7,8,9,14,15,16,17,17,18,18</b> <b>Dodecachloropentacyclo[12.2.1.16,9.02,13.05</b> <b>,10] octadeca-7,15-diene)</b>	13560-89-9; 135821-74-8; 135821-03-3	Banned, Not Detected during testing	GC-MS, LC-MS or GC-ECD, LOQ: 100 mg/kg
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Legal background: Dechlorane™ Plus is listed in the Candidate List of Substances of Very High Concern for authorization of Regulation (EC) No 1907/2006 (REACH).




#### FLAME RETARDANTS- BORIC ACID, BORATE COMPOUNDS

<b>Boric acid, borate compounds<sup>6</sup></b>	++	Not detected.	1) AAS. 2) ICP-MS and ICP-OES LOQ: 25 mg/kg for individual compounds (10 mg/kg for total Boron content).
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Legal background: Boric acid, disodium tetraborate anhydrous, disodium octaborate, tetraboron disodium heptaoxide, hydrate, sodium perborate; perboric acid, sodium salt, sodium peroxometaborate and Orthoboric acid, sodium salt are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH).


<sup>6</sup> Table 15- Boric acid, Borate compounds

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	
				
<b>BANNED ARYLAMINES RELATED FROM AZO DYES</b>				
<b>Azo Colorants – releasing following arylamines <sup>7</sup></b>		++	Not Detected during testing	EN 14362-1, -3 (textile) EN ISO 17234-1, -2 (leather) (methods specified in REACH Annex XVII, Appendix 10) LOQ: 20 mg/kg (per each of the arylamine breakdown products).
<p><u>Legal background:</u> Legal limit in textile and leather articles: 0.003% by weight (30 mg/kg) per each of the arylamine breakdown products in the dyed parts of the article, which may come into direct and prolonged contact with the human skin or oral cavity. Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 43. 4-chloro-o-toluidinium chloride, 2-Naphthylammoniumacetate, 4-methoxy-m-phenylene diammonium sulphate, 2,4-diaminoanisole sulphate and 2,4,5-trimethylaniline hydrochloride have a restriction limit of 30 mg/kg in textiles (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. Several arylamines are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH). The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE). Azo colorants that may release carcinogenic amines mentioned in REACH, entry 43 are limited in PPE clothing and protective gloves.</p>				
<b>CMR, Carcinogenic, Mutagenic, Reproductive toxic dyestuffs</b>				
<b>Carcinogenic Dyestuff <sup>8</sup></b>		++	Banned, Not Detected during testing	EN ISO 16373 (all extractable dyes) DIN 54231 for textiles (qualitative and not recommended). LOQ: 50mg/kg
<p><u>Legal background:</u> C.I. Solvent Blue 4, C.I. Basic Blue 26, C.I. Basic Violet 3, Michler's base (101-61-1), 4,4'-is(dimethylamino)-4''-(methylamino)trityl alcohol (561-41-1), C.I. Direct Black 38 (1937-37-7) and C.I. Direct Red 28 (573-58-0) are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH). Restrictions for use of substances, harmonised classified as CMR according to CLP, as substances, as constituents of other substances or in mixtures. These are found in REACH annex XVII, entry 28-30. C.I. Disperse Blue 1, C.I. Basic Red 9 and C.I. Basic Violet 3 with <math>\geq 0,1</math> % of Michler's ketone have a restriction limit of 50 mg/kg in textiles (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH). The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE).</p>				
<b>ALLERGENIC DYES</b>				
<b>Allergenic Dyes <sup>9</sup></b>		++	Banned Not Detected during testing	DIN 54231 for textiles

<sup>7</sup> Table 3 – Banned arylamines derived from azo dyes

<sup>8</sup> Table 4 – Carcinogenic colorants

<sup>9</sup> Table 5 – Allergenic dyes

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	
				(qualitative and not recommended). EN 16373 (extractable dyestuff) LOQ: 50 mg/kg (per substance)
<u>Legal Background:</u> Legal limit: 0.1% by weight for Navy Blue, EC# 405-665-4 in chemical preparations used for colouring textile and leather articles in Annex XVII (entry 43) of Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH). Eight disperse dyestuffs are banned in Germany.				
<b>OTHER HAZARDOUS DYES</b>				
<b>Other Hazardous Dyes <sup>10</sup></b>	++	Banned Not Detected during testing		DIN 54231 (only disperse dyes) EN 16373 (all extractable dyes) LOD: 20mg/kg (per substance)
				
<b>FORMALDEHYDE</b>				
<b>Formaldehyde</b>	50-00-0	Not detected during testing	75 mg/kg for all clothing and related accessories, as well as textiles and leather goods that under normal or reasonably foreseeable conditions of use, come into direct contact with the human skin to an extent similar to clothing.  20 mg/kg for textiles and leather goods for children under the age of two	Textile: ISO 14184- 1 ISO 17226-1 (leather, HPLC analysis) ISO 17226-2 (leather, colorimetric analysis) LOQ: 16mg/kg
<u>Legal background:</u> Formaldehyde has a restriction limit of 75 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear <sup>4</sup> (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH),				

<sup>10</sup> Table 6 – Other Hazardous Dyes

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	

entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE. Wooden products shall not release formaldehyde. Cleaning and finishing agents shall not contain formaldehyde above 0.2%.

Formaldehyde -packaging	50-00-0	30 mg/kg (for paper)	EN1541
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#### METAL & METAL COMPOUNDS- EXTRACTABLE METALS

Substance	CAS No	Children <3 yrs.	Adults & Children >3 yrs.	TEST METHODS
Antimony and its compounds	7440-36-0	5 mg/kg	30 mg/kg	EN ISO 16711-2
Barium and its compounds	7440-39-3	10 mg/kg		
Chromium and its compounds	7440-47-3	1 mg/kg	2 mg/kg	
Cobalt and its compounds	7440-48-4	1,0 mg/kg	4,0 mg/kg	
Copper and its compounds	7440-50-8	25,0 mg/kg	50,0 mg/kg	
Zinc and its compounds	7440-66-6	60 mg/kg		
Lead and its compounds	7439-92-1	0,5 mg/kg		



#### METAL & METAL COMPOUNDS- TOTAL HEAVY METALS

Substance	CAS No	Limit	TEST METHODS
Antimony and its compounds	7440-36-0	260 mg/kg	EN ISO 16711-1 Textiles ISO17072-2 Leather



#### METAL & METAL COMPOUNDS- TOTAL HEAVY METALS

Substance	CAS No	Limit	TEST METHODS
Total heavy metals Cadmium, Lead, Chromium VI, and Mercury	7440-43-9, 7439-92-1, 18540-29-9, 7439-97-6	Total content should not exceed 100 mg/kg	Total digestion, analysis by ICP-AES and / or ICP-MS packaging



FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



**METAL & METAL COMPOUNDS-TOTAL CHROMIUM VI**

<b>Chromium (VI) and its compounds<sup>11</sup></b>	18540-29-9 ++	Not detected during testing	ISO 17075 (leather).  EN ISO 10195 (pre-aged leather)  No standardized test method available for textiles. Test equipment: UV-VIS Spectrometer.  LOQ: 0.5 mg/kg  Test equipment: XRF screening for metal chromium  LOQ: 50 mg/kg
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Legal background: Legal limit: 0.0003% by weight (3 mg/kg) for leather in direct skin contact. Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 47. Chromium (VI) compounds listed on the Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH) are listed in **Table 17**. Several Chromium compounds are also included in REACH Annex XIV. Chromium VI compounds have a restriction limit of 1 mg/kg (extractable chromium VI content) in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE). The sum of concentration levels of lead, cadmium, mercury and chromium VI present in packaging or packaging components shall not exceed 100 ppm by weight. Directive (EC) No 94/62/EC of 20 December 1994 on packaging and packaging waste. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE). Chromium VI is limited (3 ppm) in PPE standard for leather clothing and footwear.

<sup>11</sup> Table 17 Chromium SVHC compounds

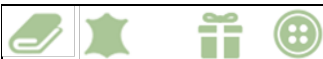
FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### METAL & METAL COMPOUNDS- NICKEL

<b>Nickel and its compounds</b>	7440-02-0	<0,5 µg/cm <sup>2</sup> /week (articles in skin contact)	EN 12472:2020 and EN 1811:2011+A1:2015 (for coated items)
		<0,2 µg/cm <sup>2</sup> /week (pierced part)	EN 1811:2011+A1:2015 (for non-coated item) EN16128:2015 spectacle frames and sunglasses. (CEN methods specified in REACH Annex XVII, entry 27) LOQ: 0.02 µg/cm <sup>2</sup> /week

Legal background: 0.5 µg per cm<sup>2</sup> and week for products intended to come into direct and prolonged contact with the skin. 0.2 µg per cm<sup>2</sup> and week for piercing items. Annex XVII of Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH, entry 27. Nickel release is limited (0.5 µg/cm<sup>2</sup> per week) in PPE standard for metallic material in skin contact.





### METAL & METAL COMPOUNDS- CADMIUM & CADMIUM SALTS

<b>Cadmium (Cd) and cadmium salts</b>	7440-43-9	Not detected during testing	EN 16711-1 (total content in textiles). EN 16711-2 (extractable content in textiles). (Coated fabrics and garment components (e.g., buttons, zips, etc.) can also be tested by the methods above.) EN ISO 17072-1 (extractable content in leather). EN ISO 17072-2 (total content in leather).  LOQ: 10 mg/kg (total content), (0.1 mg/kg (extractable content). Test equipment: XRF screening for metal cadmium. LOQ: 50 mg/kg
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Legal background: Legal limit: 0.01% by weight (100 mg/kg) in articles produced from plastic material and in the paint of painted articles. Shall not be used in brazing fillers or in jewellery. Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 23. Cadmium, Cadmium oxide (1306-19-0), Cadmium sulphide (1306-23-6), Cadmium chloride (10108-64-2), Cadmium fluoride (7790-79-6), Cadmium sulphate (10124-36-4, 31119-53-6), Cadmium nitrate (10325-94-7), Cadmium carbonate (513-78-0) and Cadmium hydroxide (21041-95-2) are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH). The sum of concentration levels of lead, cadmium, mercury and hexavalent chromium present in packaging or packaging components shall not exceed 100 ppm by weight. Directive (EC) No 94/62/EC of 20 December 1994 on packaging and packaging waste. Cadmium and its compounds have a restriction limit of 1 mg/kg (extractable content) in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	

(REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE).

 			
METAL & METAL COMPOUNDS- LEAD			
Lead (Pb) and lead salts <sup>12</sup>	7439-92-1	<p>Not detected during testing for textile</p> <p>100 mg/kg for lead as a metal in plastic and metallic accessories.</p>	<p>EN 16711-1 (total content in textiles)</p> <p>EN 16711-2 (extractable content in textile) (Coated fabrics and garment components (e.g., buttons, zips, etc.) can also be tested by the methods above.)</p> <p>ISO 17072-1 (extractable content in leather)</p> <p>ISO 17072-2 (total content in leather)</p> <p>LOQ: 10 mg/kg (total content), 0.1 mg/kg (extractable content).</p>

Legal background: L Lead and lead salts are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH). SVHC lead compounds are listed in Appendix 6. The sum of concentration levels of lead, cadmium, mercury and hexavalent chromium present in packaging or packaging components shall not exceed 100 ppm by weight Directive (EC) No 94/62/EC of 20 December 1994 on packaging and packaging waste.

Lead salts are restricted in paint products (no restriction on painted articles) within the EU, entry 16 (lead carbonates) and 17 (lead sulphates). Lead and its compounds are restricted in jewellery articles and hair accessories within EU with a legal limit: 500 mg/kg (0.05%), entry 63. Lead and its compounds are restricted in articles that may be placed in the mouth by children with the legal limit 500 mg/kg (0.05%)<sup>5</sup>, entry 63. Annex XVII of Regulation (EC) No 1907/2006 (REACH). Lead and its compounds have a restriction limit of 1 mg/kg (extractable content) in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE). Lead is restricted in Denmark. Danish legal limits: 100 mg/kg. (Bekendgørelse nr. 856 af 5. September 2009 om forbud mod import og salg af produkter, der indeholder bly).

<sup>12</sup> Table 17 SVHC Lead compounds

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### METAL & METAL COMPOUNDS- MERCURY

<b>Mercury</b>	Mercury(metal): 7439-97-6 Phenylmercury neodecanoat: 26545-49-3 Phenylmercury octanoate: 13864-38-5 Phenylmercury 2-ethylhexanoate: 13302-00-6 Phenylmercury propionate: 103-27-5 Phenylmercury acetate: 62-38-4	Not detected during testing	EN 16711-1 (total content in textiles) EN 16711-2 (extractable content in textiles) ISO 17072-1 (extractable content in leather) ISO 17072-2 (total content in leather)  LOQ: 10 mg/kg (total content), 0.02 mg/kg (extractable content).
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**Legal background:** Mercury compounds are restricted in impregnation of heavy-duty industrial textiles and yarn intended for their manufacture in Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 18. Phenyl mercury compounds are also restricted in entry 62 with a restriction limit of 0.01% = 100 mg/kg. Article 1 of the European Parliament and Council Regulation (EC) No 1102/2008 of 22 October 2008 ban the exports of metallic mercury and certain mercury compounds and mixtures. Products containing mercury may not be placed on the Swedish market. Norway prohibits the manufacture, import, export, and sale of articles that contain mercury or mercury compounds (0.001% (10 ppm). Denmark prohibits the import, export and sale of articles and part of articles that contain mercury or mercury compounds (0.01% (100 ppm). Mercury is under restriction globally through the Minamata Convention. The sum of concentration levels of lead, cadmium, mercury and hexavalent chromium present in packaging or packaging components shall not exceed 100 ppm by weight. Directive (EC) No 94/62/EC of 20 December 1994 on packaging and packaging waste. Mercury and its compounds are listed in the Rotterdam convention.



### ARSENIC COMPOUNDS

<b>Arsenic compounds<sup>13</sup></b>	++	Not detected/Banned.	EN 16711-1 (total content in textiles). EN 16711-2 LOQ: 0,1mg/kg (extractable content) (Coated fabrics and garment components (e.g. buttons, zips, etc.) can also be tested by these methods.)
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**Legal Background:** Diarsenic Pentoxide; 1303-28-2, Diarsenic Trioxide; 1327-53-3, Triethyl arsenate; 15606-95-8, Arsenic acid; 7778-39-4, Calcium arsenate; 7778-44-1 are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH). As wood preservatives regulated in Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 19 (limit level; no intentionally added content). Arsenic and its compounds have a restriction limit of 1 mg/kg (extractable content) in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE).

<sup>13</sup> Table 16 – Arsenic Compounds

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



## CHLORINATED ORGANIC SOLVENTS

### Chlorinated Organic Solvents <sup>14</sup>

	++	Not present in products, not used in processes.	No standardised test method for all substances available. Test equipment: GC-MS or GC-ECD EN 17137 (textile) for chlorotoluenes and chlorobenzenes. LOQ: 0.5 mg/kg
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**Legal background:** Manufacturers in EU are required to follow the Industry Emissions Directive (IED), 2010/75/EU.

Solvent	CAS-RN	Legal framework	Legal requirement
Chloroform	67-66-3	Annex XVII of Regulation (EC) No 1907/2006 (REACH).	Shall not be placed on the market, or used as substances, as constituents of other substances or in mixtures in concentrations equal to or greater than 0.1% by weight.
1,1,2-trichloroethane	79-00-5		
1,1,2,2-tetrachloroethane	79-34-5		
1,1,1,2-tetrachloroethane	630-20-6		
Pentachloroethane	76-01-7		
1,1-dichloroethylene	75-35-4		
1,4-dichlorobenzene	106-46-7		
Carbon tetrachloride	56-23-5	Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.	Shall not be produced, placed on the market, or used.
1,1,1-trichloroethane	71-55-6		
$\alpha,\alpha,\alpha,4$ -tetrachlorotoluene;	5216-25-1	Annex XVII of Regulation (EC) No 1907/2006 (REACH).	1 mg/kg <sup>1</sup>
p-chlorobenzotrichloride	98-07-7		
$\alpha,\alpha,\alpha$ -trichlorotoluene;	100-44-7		
benzotrichloride			
$\alpha$ -chlorotoluene;			
benzyl chloride			
Trichloroethylene	79-01-6	Listed in both annex XIV and in the Candidate List of Substances of Very High Concern for authorization and annex XIV in Regulation (EC) No 1907/2006 (REACH).	0.1% by weight in articles for information duty.
1,2,3-trichloropropane	96-18-4	Candidate List of Substances of Very High Concern for authorization in Regulation (EC) No 1907/2006 (REACH).	0.1% by weight in articles for information duty.

<sup>1</sup> The named solvents have a restriction limit of 1 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE).



FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### OTHER ORGANIC SOLVENTS

<b>N,N-Dimethylformamide (DMFa)</b>	68-12-2	Should not be present in products in concentrations above 500 mg/kg (sum of DFMa, DMAC and NMP).	EN 16778 (protective gloves) ISO 16189 (footwear and footwear components) EN 17131 (textile) Test equipment: GC-MS LOQ: 10 mg/kg
<p><u>Legal Background:</u> Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH). DMFa have a restriction limit of 3000 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 016/425 (PPE). The standard for protective gloves (PPE) limits DMFa (1000 ppm) in gloves containing PU. Restricted in polyurethane-coated work gloves in Germany. The maximum DMFa content must be less than 10 mg/kg glove material (TRGS 401).</p>			
<b>N,N-dimethylacetamide (DMAC)</b>	127-19-5	Should not be present in products in concentrations above 500 mg/kg (sum of DFMa, DMAC and NMP).	GC-MS LOQ: 10mg/kg  (EN 17131 can be used as reference for in-house methods though it only applies to DMFa)
<p><u>Legal background:</u> Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH). DMAC has a restriction limit of 3000 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE).</p>			
<b>N-methyl-2-pyrrolidone (NMP)</b>	872-50-4		

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	
<p><u>Legal background:</u> Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH). NMP has a restriction limit of 3000 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE). NMP has also a limit value for working environment under Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 71.</p>			<p>Should not be present in products in concentrations above 500 mg/kg (sum of DFMa, DMAC and NMP).</p>	<p>ISO 19070 (leather) Textile GC-MS, LC-MS LOQ: 25 mg/kg (EN 17131 can be used as reference for in-house methods though it only applies to DMFa)</p>
<b>Ethylene glycol monoethyl ether</b>	110-80-5	Banned		GC-MS or GC-ECD LOQ: 5mg/kg

 				
AROMATIC ORGANIC SOLVENTS				
<b>Aromatic organic solvents</b>	Various, 71-43-2	Not present in product		<p>SNV 195 651, screening method. Panel odour test. Detection Limit: No odour. No standardized quantitative test method available. (EN 17137 (textile) can be used as reference for in-house methods though it only applies to chlorobenzenes and chlorotoluenes)</p> <p>LOQ: 0.5 mg/kg</p>
<p><u>Legal Background:</u> Benzene (CAS RN 71-43-2) has a restriction limit of 5 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE). Manufacturers in the EU are required to follow the Industry Emissions Directive "IED", 2010/75/EU.</p>				

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### TIN ORGANIC COMPOUNDS (ORGANOSTANNIC COMPOUNDS)

<b>Tin organic compounds</b> <sup>15</sup>	++	Banned	No standardised test method for textile available. CEN ISO/TS 16179 (footwear). Test equipment: GC-MS. LOQ: 0.2 mg/kg
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**Legal background:** Legal Limit: 0.1% by weight Dioctyltin (DOT), dibutyltin (DBT) compounds and tri-substituted organostannic compounds such as tributyltin (TBT) shall not be used in articles. Annex XVII of the Regulation (EC) No 1907/2006 (REACH), entry 20. Tributyltin oxide (TBTO), 56-35-9, Dibutyltin dichloride (DBTC), 683-18-1, 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia- 4-stannatetradecanoate (DOTE), 15571-58-1 and reaction mass of DOTE and MOTE 2, Dibutylbis(pentane-2,4-dionato-O,O')tin, 22673-19-4 and 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 are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH).



### ETHYLENETHIOUREA

<b>Imidazolidine-2-thione (2-imidazoline-2-thiol) also called ethylenethiourea</b>	96-45-7	Banned	LC-MS LOQ:20mg/kg
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**Legal background:** Ethylenethiourea is listed on the Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH).



### ETHYLENEDIAMINE (EDA)

<b>Ethylenediamine (EDA)</b>	107-15-3	Banned	GC-MS or LC-MS LOQ:100mg/kg
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**Legal background:** Ethylenediamine is listed on the Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No1907/2006 (REACH).



### FORMAMIDE


<b>Formamide</b>	75-12-7	Banned	GC-MS or LC-MS LOQ: 50mg/kg
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**Legal Background:** Formamide is listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH). Formamide is restricted in puzzle mats in Belgium and France and is included in the Toy Safety Directive (limit value 200 mg/kg).


<sup>15</sup> Table 9 – Organotin Compounds




FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	

			
<b>HYDRAZINE</b>			
<b>Hydrazine</b>	302-01-2, 7803-57-8	Banned	GC-MS or LC-MS LOQ: 200mg/kg
<b>Legal background:</b> Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH).			

			
<b>PESTICIDES</b>			
<b>Pesticides</b> <sup>16</sup>	++	Total content should not exceed 1 mg/kg	Solvent Extraction followed by GC-MS or LC-MS

			
<b>POLYCHLORINATED COMPOUNDS</b>			
<b>Polychlorinated biphenyls (PCB)</b>	1336-36-3 ++	Total content should not exceed 0,5 mg/kg	Extraction followed by GC-MS or LC-MS
<b>Polychlorinated terphenyls (PCTs)</b>	61788-33-8 ++		

			
<b>PER- AND POLYFLUORATED CHEMICALS (PFAS) - Varner has a ban for all PFAS substances</b>			
<b>Highly fluorinated carboxylic acids (PFOA and related substances)</b> <sup>17</sup>	335-67-1	Banned, Should not be detected during testing	LC-MS- MS LOQ: 10 µg/kg
<b>Legal background:</b> Legal limit: Shall not occur. PFOA, its salts and related compounds are listed in the Stockholm Convention on Persistent Organic Pollutants (POPs) and banned in EU by the POPs Regulation (EU) No 2019/1021. Residues below 0.025 mg/kg of each substance, and 1 mg/kg of a combination of PFOA-related substances in substances, mixtures, and articles are allowed to be placed on the market and used, as these are amounts that may be present as impurities. From 4 July 2023 the restriction applies to textiles for the protection of workers from dangerous liquids. C9-C14 linear and/or branched perfluorocarboxylic acids (C9-C14 PFCAs), their salts and C9-C14 PFCAs-related substances, are restricted in articles (25 ppb) annex XVII Regulation (EC) No 1907/2006 (REACH), entry 68. Long chain PFCAs (C8-C14) including their salts (sodium and ammonium) and precursors are also listed as a group in the Candidate List of Substances of Very High Concern for authorization of Regulation (EC) No 1907/2006 (REACH). Examples of C8-C14 PFCAs are listed below:- (C8) Pentadecafluorooctanoic acid (PFOA) and its ammonium salt (APFO), 335-67-1, 3825-26-1,- (C9) Perfluorononan-1-oic-acid (PFNA) and its sodium and ammonium salts, 375-95-1, 21049-39-8, 4149-60-4,- (C10) Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts, 335-76-2, 3108-42-7, 3830-45-3, - (C11) Henicosafluoroundecanoic acid (PFUnA), 2058-94-8, - (C12) Tricosafluorododecanoic acid (PFDoA), 307-55-1, - (C13) Pentacosfluorotridecanoic acid (PFTrDA), 72629-94-8,			

<sup>16</sup> Table 10 - Pesticides

<sup>17</sup> Table 13- Per- and polyfluorinated chemicals

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	

- (C14) Heptacosafuorotetradecanoic acid (PFTA), 376-06-7,(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) silanetriolis restricted in spray products (2 ppb) annex XVII Regulation (EC) No 1907/2006 (REACH), entry 73.Declaration duty in Sweden to the Swedish Chemicals Agency for PFAS in chemical products that are deliberately added. Composition needs not to be specified but the information duty applies without any concentration limit.

<b>Highly fluorinated sulfonic acids (PFOS and related substances)</b> <sup>18</sup>	Example: 1763-23-1, 355-46-4	Banned, Should not be detected during testing	CEN/TS 15968 LC-MS-MS LOQ: 0.1 µg/m <sup>2</sup>
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Legal Background: Legal limit: Shall not occur. PFOS and its derivatives are listed in the Stockholm Convention on Persistent Organic Pollutants (POPs) and banned in EU by the POPs Regulation (EU) No 2019/1021. Residues below the following limits are allowed to be placed on the market and used, as these are the amounts that may be present as impurity: 6:1 µg/m<sup>2</sup> applies to coated textiles and leather products. 0.1% by weight applies to articles or part of articles. Perfluorobutane sulfonic acid (PFBS) and its salts, Perfluorohexane-1-sulphonic acid and its salts (PFHxS), are listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH). Declaration duty in Sweden from 1 January 2019 to the Swedish Chemicals Agency for PFAS in chemical products that are deliberately added. Composition needs not to be specified but the information duty applies without any concentration limit.

<b>Highly fluorinated ethers (PFAS)</b> <sup>19</sup>	13252-13-6	Banned, Should not be detected during testing	Analysis with LC-MS-MS LOD: 0,01mg/kg
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Legal background: HFPO-DA, its salts, and its acyl halides (CAS 13252-13-6, 67118- 55-2, 2062-98-8 and 62037-80-3) are listed in the Candidate List of Substances of Very High Concern for authorization of Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH). Declaration duty in Sweden from 1 January 2019 to the Swedish Chemicals Agency for PFAS in chemical products that are deliberately added. Composition needs not to be specified but the information duty applies without any concentration limit.



## PHthalates ESTHERS

<b>Phthalates</b> <sup>20</sup>	++	Banned	EN ISO 14389 analysis with GC-MS or LC-MS LOQ: 100 mg/kg
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Legal Background: Annex XVII of Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH) addresses the following legal limits: 0.1% by weight of the plasticized material in all articles for the sum of DEHP, DBP, BBP and DIBP, entry 51. 0.1% by weight in toys and childcare articles which can be placed in the mouth for DINP, DIDP and DNOP, entry 52. DIHP, DMEP, DIPP, DPP and DnHP have a restriction limit of 1000 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. This limit applies to each substance individually or in combination with other phthalates that are classified as CMR substances. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE). Phthalate ester substances listed in both Annex XIV and/ or the Candidate List of Substances of Very High Concern for authorization of Regulation (EC) No 1907/2006 (REACH) is found in Appendix 8. All phthalates in toys and childcare articles for children aged 0-3 years are restricted (0.05%) in Denmark (BEK nr 855).

<sup>18</sup> Table 13- Per- and polyfluorinated chemicals

<sup>19</sup> Table 13- Per- and polyfluorinated chemicals

<sup>20</sup> Table 11 - Phthalates

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### POLYCYCLIC AROMATIC HYDROCARBONS (PAH)

PAH <sup>21</sup>	++	<0,5 mg/kg for each PAH.	<1 mg/kg for each PAH.	AfPS GS 2019-01 PAK ISO/TS 16190 (footwear) EN 17132 (textile) LOQ:0,2mg/kg
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**Legal background:** Eight PAHs are listed in annex XVII, entry 50 of the Regulation (EC) No 1907/2006 (REACH). Rubber and plastic materials in skin contact shall not include any of those eight PAHs in amounts higher than 1 mg/kg. For materials in toys or childcare articles the limit value is 0.5 mg/kg. Eight PAHs are listed in annex XVII, entry 72 (CMR fast track) of the Regulation (EC) No 1907/2006 (REACH), with a restriction limit of 1 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear. Ten PAHs are included in the Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH). The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE). The voluntary German GS standard that most products in the German market follows, has requirements for 16 PAHs.



### POLYVINYLCHLORIDE (PVC) – Total ban

Polyvinylchloride (PVC)	9002-86-2	Banned	FTIR
Polyvinylidenchloride (PVDC)	9002-85-1		



### QUATERNARY AMMONIUM SALTS

Dihydrogenated tallowdimethyl ammoniumchloride (DHTDMAC)	61789-80-8	Banned in production	Solvent extraction LC-MS-MS LOQ 10mg/kg
Ditallowdimethyl ammonium chloride (DTDMAC)	68783-78-8		
Distearyldimethyl ammoniumchloride (DODMAC; DSDMAC)	107-64-2		



### BENZOTRIAZOLS (UV-320, UV-327, UV-328 and UV-350)

Benzotriazols <sup>22</sup>	++	Not detected during testing	LC-MS, GC-MS or GC-ECD LOQ: 50mg/kg
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**Legal background:** UV-320, UV-327, UV-328 and UV-350 are listed in the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH).

<sup>21</sup> Table 12 – Polycyclic Aromatic Hydrocarbons-PAH

<sup>22</sup> Table 14- Benzotriazols

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### NITROSAMINES

<b>Nitrosamines (Relevant for rubber and latex with skin contact)</b>	Various	Not detected < 1.0 µg/dm <sup>2</sup>	EN 12868 or EN 71-12
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### QUINOLINE

<b>Quinoline</b>	91-22-5	50 mg/kg	GC-MS, LC-MS LOQ 10mg/kg
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Legal background: Quinoline has a restriction limit of 50 mg/kg in clothing, related accessories, textiles other than clothing in skin contact, or footwear (CMR fast track) according to Annex XVII of Regulation (EC) No 1907/2006 (REACH), entry 72. The CMR fast track restriction does not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 (PPE).



### SILOXANES

<b>Octamethylcyclotetrasiloxane (D4)</b>	556-67-2	100 mg/kg	GC-MS LOQ 100mg/kg
<b>Decamethylcyclopentasiloxane (D5)</b>	541-02-6		
<b>Dodecamethylcyclohexasiloxane (D6)</b>	540-97-6		

Legal Background: 1000 mg/kg (0.1% by weight). D4, D5 and D6 are listed in the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH)



### 2-METHOXYETHYL ACETATE

<b>2- methoxyethyl acetate</b>	110-49-6	Not detected	Solvent extraction. GC-MS, LC-MS LOQ 100mg/kg
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Legal Background: 2-methoxyethyl acetate is listed on the Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 (REACH)



### 3-BENZYLIDENE CAMPHOR (1,7,7- trimethyl-3-(phenylmethylene)bicyclo[2.2.1] heptan-2-one

<b>3-Benzylidene camphor (1,7,7- trimethyl-3-(phenylmethylene)bicyclo[2.2.1] heptan-2-one)</b>	15087-24-8	Not detected	LC-MS, GC-MS LOQ: 100 mg/kg
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Legal Background: 1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one is listed on the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH).

FAMILY OF CHEMICAL SUBSTANCES	CAS No	LIMIT		TEST METHODS
		Children <3 yrs.	Adults & Children >3 yrs.	



### 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)

<b>6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)</b>	119-47-1	Not detected	LC and GC-MS LOQ: 100 mg/kg
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Legal Background: 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol is listed on the Candidate list of Substances of Very High Concern (SVHC) for the authorization of the Regulation (EC) No 1907/2006 of the European Parliament of the Council (REACH).



### pH VALUE

Clothing and textiles for babies or that come in direct contact with skin: pH 4,0-7,5 Clothing and textiles that do not come into direct contact with skin: pH 4,0-8,5 Leather products: pH 3,5-7,0 Down: 6,6 – 8,0	ISO 3071 (textiles) ISO 4045 (leather)
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Legal Background: None. A pH higher than 10 or lower than 3 can cause skin irritation.

## Tables –Chemical Substances

Table 1

BIOCIDES	CAS NO
Ethyltrianol	107534-96-3
1,2-benzisothiazol 3(2H)one	2634-33-5
1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3	60207-90-1
2-bromo-2-nitropropane-1,3 diol	52-51-7
2-octyl-2H-isothiazol-3-one	26530-20-1
Aluminum sodium silica silver complex	130328-18-6
Silver Zinc Zeolite	130328-20-0
Chitosan	9012-76-4
Chlorocresol	59-50-7
Disodium tetraborate, anhydrous	1330-43-4, 12179-04-3, 1303-96-4
Permethrin	52645-53-1
Silver chloride	7783-90-6
Silver sodium hydrogen zirconium	422-570-3
Silver-zinc-aluminium-borofosfatglas	398477-47-9
Sodium 2-biphenylate	132-27-4
Sodium methylthiocarbamate	137-42-8
Sulphuryl difluoride	2699-79-8
TCMTB	21564-17-0
Thiabendazole	148-79-8
Thiram	137-26-8
Triclosan	3380-34-5
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
Cu-HDO (Bis-(N-cyclohexyldiazoniumdioxo) –copper)	312600-89-8
Silver complexes in nano size (Ag +)	
Guanidine, N,N''-1,6-hexanedylbis[N'-cyano-, polymer with 1,6-hexanediamine, hydrochloride (PHMB 1600; 1.8)	27083-27-8, 32289-58-0

Table 2

CHLORINATED AROMATIC HYDROCARBONS	CAS NO
1,2-Dichlorobenzene	95-50-1
1,2-Dichlorobenzene-D4	2199-69-1
1,3-Dichlorobenzene	541-73-1
1,4-Dichlorobenzene	106-46-7
Trichlorobenzenes	12002-48-1
1,2,4-Trichlorobenzene	120-82-1
1,2,3-Trichlorobenzene	87-61-6
1,3,5-Trichlorobenzene	108-70-3
1,2,3,4-Tetrachlorobenzene	634-66-2
1,2,3,5- Tetrachlorobenzene	634-90-2
1,2,4,5- Tetrachlorobenzene	95-94-3
Hexachlorobenzenes	118-74-1
Pentachlorobenzenes	608-93-5
Monochlorobenzenes	108-90-7

Dichloromethylbenzene	98-87-3
2,4,5-Trichlorotoluene	6639-30-1
Dichlorotoluenes	29797-40-8
2,6-Dichlorotoluene	118-69-4
3,4-Dichlorotoluene	95-75-0
2,4-Dichlorotoluene	95-73-8
a,2,6-trichlorotoluene	2014-83-7
a,a,2,6- tetrachlorotoluene	81-19-6
a,a,a,4-tetrachlorotoluene	5216-25-1
2-Chlorotoluene	95-49-8
3-Chlorotoluene	108-41-8
4-Chlorotoluene	106-43-4
a-chlorotoluene	100-44-7
2,3,4,5,6-Pentachlorotoluene	877-11-2
a,a,a-Trichlorotoluene	98-07-7
Tetrachloroethylene	127-18-4
a,o-Dichlorotoluene	611-19-8
a,p-Dichlorotoluene	104-83-6
$\alpha,\alpha,\alpha,4$ -tetrachlorotoluene; p-chlorobenzotrichloride	5216-25 1
$\alpha,\alpha,\alpha$ -trichlorotoluene;benzotrichloride	98-07-7
$\alpha$ -chlorotoluene; benzyl chloride	100-44-7

**Table 3**

BANNED ARYLAMINES RELEASED FROM CERTAINS AZO COLORANTS	CAS NO	CANDIDAT E LIST	ANNEX XVII, ENTRY 43	ANNEX XVII, ENTRY 72
4,4-Methylene-bis[2-chloro-aniline]	101-14 - 4	x	x	
4,4-Methylenedianiline	101-7 7- 9	x	x	
4,4'-oxydianiline	101-80-4	x	x	
4-chloroaniline	106-47-8		x	
o-Dianisidine	119-90-4		x	
4,4'-bi-o-toluidine	119 - 9 3 - 7		x	
p-Cresidine	120 -71-8	x	x	
2,4,5-trimethylaniline	137-17-7		x	
4,4'-thiodianiline	13 9 - 6 5 -1		x	
4-Aminoazobenzene	60-09-3	x	x	
4-methoxy-m-phenylenediamine	615-05-4		x	
4,4-Methylenedi-o-toluidine	838-88-0	x	x	
o-Anisidine	90-04-0	x	x	
2-Naphthylamine	91-59-8		x	
3,3-Dichlorobenzidine	91-94-1		x	
Biphenyl-4-ylamine	9 2 - 67-1	x	x	
Benzidine	92-87-5		x	
o-Toluidine	95-53-4	x	x	
4-Chloro-o-toluidine	95-69-2		x	
4-methyl-m-phenylenediamine	95-80-7	x	x	
o-Aminoazotoluene	97- 5 6 - 3	x	x	
5-Nitro-o-toluidine	99-55-8		x	
4-chloro-o-toluidinium chloride	3165-93-3			x
2-Naphthylammoniumacetate	553-00-4			x
4-methoxy-m-phenylene diammonium sulphate; 2,4-diaminoanisole sulphate	39156 -41-7			x
2,4,5-trimethylaniline hydrochloride	21436-97-5			x

**Table 4**

CARCINOGENIC DYESTUFF	CAS NO
C.I. Acid Red 26	3761-53-3
C.I. Basic Red 9	569-61-9**
C.I. Basic Violet 3	548-62-9*,**
C.I. Basic Violet 14	632-99-5
C.I. Basic Blue 26	2580-56-5*
C.I. Direct Black 38	1937-37-7*
C.I. Direct Blue 6	2602-46-2
C.I. Direct Blue 15	2429-74-5
C.I. Direct Red 28	573-58-0*
C.I. Direct Brown 95	16071-86-6
C.I. Disperse Orange 11	82-28-0
C.I. Disperse Orange 149	85136-74-9
C.I. Disperse Yellow 3	2832-40-8
C.I. Disperse Blue 1	2475-45-8**
C.I. Solvent Blue 4	6786-83-0*
Michler's base	101-61-1*
4,4'-bis(dimethylamino)-4''- (methylamino)trityl alcohol	561-41-1*

\*SVHC substances

\*\*CMR fast track substances

**Table 5**

ALLERGENIC DYESTUFF	CAS NO
C.I. Disperse Blue 1	2475-45-8*
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 37/59/76	13301-61-6*
C.I. Disperse Orange	51811-42-8
C.I. Disperse Orange 149	85136-74-9
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 39	12236-29-2
C.I. Disperse Yellow 49	54824-37-2
Navy blue (banned mordant dye)	405-665-4(EC#)

\*Banned in Germany



**Table 6**

OTHER HAZARDOUS DYES	CAS NO
C.I. Acid Red 5	5858-63-9
C.I. Basic Green 4	569-64-2, 18015-764
C.I. Basic Red 46	62163-53-5, 12221-69-1
C.I. Disperse Yellow 23	6250-23-3
Navy Blue	118685-33-9
4,4''''-bis(dimethylamino)benzophenone	90-94-8
Carbon Black or Pigment black 7	1333-86-4

**Table 7**

FLAME RETARDANTS	CAS NO
2,2-Bis(bromomethyl)-1,3-propanediol 2- Propanol, 1-chloro-, phosphate (3:1) (TCPP)	3296-90-0 13674-84-5
Antimony(III) oxide	1309-64-4
Bis(2,3-dibromopropyl)phosphate	5412-25-9
Dimethyl methylphosphonate (DMMP)	756-79-6
Hexabromobiphenyl	36355-01-8
Hexabromocyclododecane (HBCDD)	3194-55-6, 25637-99-4, 134237-50-6, 134237-51-7, 134237-52-8
Polybrominated diphenyl ether (PBDE)	Various
Phosphoric acid, methylphenyl	26444-49-5
Phosphonium tetrakis (hydroxymethyl)-chloride	124-64-1
Phosphonium tetrakis(hydroxymethyl)-sulphate (2:1)salt	55566-30-8
Phosphoric acid, (1,1-dimethylethyl)phenyl diphenylester	56803-37-3
Phosphoric acid, 2,2-bis(chloromethyl)-1,3propanediyl tetrakis(2chlorethyl)ester	38051-10-4
Polybrominated Biphenyls (PBB)	59536-65-1
Tetrabromobisphenol A (TBBP A)	79-94-7
Triallyl phosphate	1623-19-4
Tricresyl phosphate (TCP)	1330-78-5
Tri-o-cresyl phosphate	78-30-8
Tris(1,3-dichloroisopropyl)phosphate(TDCP)	13674-87-8
Triphenyl phosphate (TPhP)	115-86-6
Tris(1-aziridiny) phosphine oxide (TEPA)	545-55-1
Tris(2-chloroethyl)phosphate (TCEP)	115-96-8
Pentabromodiphenyl ether (PentaBDE)	32534-81-9, 60348-60-9
Octabromodiphenyl ether (OctaBDE)	32536-52-0
Decabromodiphenyl ether (DecaBDE)	1163-19-5
Tetrabromodiphenyl ether (TetraBDE)	5436-43-1
Heptabromodiphenyl ether (HeptaBDE):	207122-16-5, 446255-22-7
Hexabromodiphenyl ether (HexaBDE):	68631-49-2, 207122-15-4

**Table 8**

CHLORINATED ORGANIC SOLVENTS	CAS NO
Carbon tetrachloride/ tetrachloromethane	56-23-5
Chloroform	67-66-3
1,1-Dichloroethene	75-35-4
Ethylene glycol monoethyl ether	110-80-5
n-Hexane	110-54-3
N-Methyl-2-pyrrodone (NMP)	872-50-4
Methyl ethyl ketone (MEK)	78-93-3
N,N-dimethylacetamide (DMAC)	127-19-5
Pentachloroethane	76-01-7
Phenol	108-95-2
Tetrachloroethane (PERC)	127-18-4
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
1,1,1-Trichloroethane	71-55-6
1,1,2-Trichloroethane	79-00-5
Tricolorethylene (TCE)	79-01-6
1,2,3- Trichloropropane	96-18-4
Toluene	108-88-3
1,4- dichlorobenzene	106-46-7

**Table 9**

ORGANOTIN COMPOUNDS	CAS NO
Bis(tributyltin)oxide (TBTO)	56-35-9
Dibutyltin (DBT) and dibutyltin compounds	Various
Diocetyl tin (DOT) and dioctyltin compounds	Various
Dibutyltin dichloride (DBTC)	683-18-1
Monobutyltin (MBT) compounds	Various
Monooctyltin (MOT) compounds	Various
Tributyltin (TBT) compounds	Various
Tricyclohexyltin (TCyHT) compounds	Various
Triocetyl tin (TOT) compounds	Various
Tripropyltin (TPT) compounds	Various
Triphenyltin (TPhT) and triphenyltin compounds	Various
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1
Diocetyl tin 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	Various
reaction mass of DOTE and MOTE 2, Dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4

**Table 10**

PESTICIDES	CAS NO
2,4-D	94-75-7

Cypermethrin	52315-07-8
Aldrine	309-00-2
$\alpha$ -Hexachlorocyclohexane	319-84-6
$\beta$ - Hexachlorocyclohexane	319-85-7
$\delta$ - Hexachlorocyclohexane	319-86-8
Azinophosethyl	2642-71-9
Azinophosmethyl	86-50-0
Bromophos-ethyl	4824-78-6
Captafol	2425-06-1
Carbaryl	63-25-2
Chlordane	57-74-9
Chlordimeform	6164-98-3
Chlordimeform hydrochloride	19750-95-9
Chlorfenvinphos	470-90-6
Chlorobenzilate	510-15-6
2,4,5-T	93-76-5
Chloropicrin	76-06-2
Coumaphos	56-72-4
Cyfluthrin	68359-37-5
Cyhalothrin	91465-08-6
2,4-DDD	53-19-0
4,4'-DDD	72-54-8
2,4-DDE	3424-82-6
4,4-DDE	72-55-9
2,4-DDT	789-02-6
4,4-DDT	50-29-3
DEF	78-48-8
Deltamethrin	52918-63-5
Diazinon	333-41-5
Dibromochloropropane (DBCP)	96-12-08
Dichlofenthion	97-17-6
Dichlorprop	120-36-5
Dieldrin	60-57-1
Dicrotophos	141-66-2
Diflubenzuron	35367-38-5
Dimethoate	60-51-5
Dinoseb and salts	88-85-7
Disulfiram	97-77-8
DTTB-(Timiperone)	57648-21-12
Endosulfan	115-29-7
Endosulfan II (beta)	33213-65-9
Endrin	72-20-8
Esfenvalerate	66230-04-4
Ethylene dibromide	106-93-4
Fenvalerate	51630-58-1
Flumethrin	69770-45-2
Heptachlor	76-44-8
Heptachloroepoxide	1024-57-3
Hexachlorobenzene	118-74-1
Isodrin	465-73-6
Kelevan	4234-79-1
Kepone	143-50-0
Lindane ( $\gamma$ -HCH, including mixtures of isomers of HCH (BHC))	58-89-9 608-73-1
MCPA	94-74-6
MCPB	94-81-5

Mecoprop	93-65-2
Metamidophos	10265-92-6
Methoxychlor	72-43-5
Methyl bromide	74-83-9
Mirex	2385-85-5
Monocrotophos	6923-22-4
Monomethyldibromodiphenylmethane	99688-47-8
Monomethyldichlorodiphenylmethane	-
Monomethyltetrachlorodiphenyl-methane	76253-60-6
Parathion-methyl	298-00-0
Phosdrin / Mevinphos	7786-34-7
Quintozene	82-68-8
Paraquat dichloride	1910-42-5
Parathion	56-38-2
Permethrin	52645-53-1
Perthane	72-56-0
Phosphamidon	13171-21-6
Profenophos	41198-08-7
Propetamphos	31218-83-4
Quinalphos	13593-03-8
Strobane	8001-50-1
Telodrin	297-78-9
Toxaphene	8001-35-2
Triflumuron	64628-44-0
Trifluralin	1582-09-8
2,3,5,6-Tetrachlorophenol	935-95-5

**Table 11**

Substances listed in Annex XIV, Annex XVII and/or the Candidate List of Substances of Very High Concern for authorization of Regulation (EC) No 1907/2006 (REACH)

PHTHALATES ESTERS	CAS NO	CANDIDATE LIST	ANNEX XIV	ANNEX XVII
Bis (2-ethylhexyl) phthalate) (DEHP)	117-81-7	x	x	x (entry 51)
Dibutyl phthalate (DBP)	84-74-2	x	x	x (entry 51)
Benzyl butyl phthalate (BBP)	85-68-7	x	x	x (entry 51)
Diisobutyl phthalate (DIBP)	84-69-5	x	x	x (entry 51)
Di-isononyl phthalate (DINP)	28553-12-0 68515-48-0			x (entry 52)
Di-isodecyl phthalate (DIDP)	26761-40-0 68515-49-1			x (entry 52)
Di-n-octyl phthalate (DNOP)	117-84-0			x (entry 52)
1,2-benzenedicarboxylic acid, di-C6-8-branched alkylesters, C7- rich	71888-89-6	x	x	x (entry 72)
Di-n-pentyl phthalate (DPP)	131-18-0	x	x	x (entry 72)
Di-n-hexyl phthalate (DnHP)	84-75-3	x	x	x (entry 72)
Diisopentyl phthalate	605-50-5	x	x	x (entry 72)
Bis (2-methoxyethyl) phthalate	117-82-8	x	x	x (entry 72)
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	x	x	
n-pentyl-isopentyl phthalate	776297-69-9	x	x	
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	x		
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	x	x	
1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters, with ≥ 0.3% of dihexyl phthalate	68648-93-1	x	x	
1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters, with ≥ 0.3% of dihexyl phthalate	68515-51-5	x	x	
Dicyclohexyl phthalate (DCHP)	84-61-7	x		
Diisohexyl phthalate	71850-09-4	x		

**Table 12**

PAH substances listed in Annex XVII and/or the Candidate List of Substances of Very High Concern for authorization of the Regulation (EC) No 1907/2006 (REACH). The German GS standard is not legally binding.

POLYCYCLIC AROMATIC HYDROCARBONS - PAH	CAS NO	CANDIDATE LIST	ANNEX XVII, Entry 50	ANNEX XVII, Entry 72	German GS standard
Benzo(a)anthracene	56-55-3	x	x	x	x
Benzo(a)phenanthrene (chrysene)	218-01-9	x	x	x	x
Benzo(a)pyrene	50-32-8	x	x	x	x
Benzo(b)fluoranthene	205-99-2		x	x	x
Benzo(j)fluoranthene	205-82-3		x	x	x
Benzo(k)fluoranthene	207- 08 - 9	x	x	x	xx
Dibenzo(a,h)anthracene	53-70-3		x	x	x
Benzo[e]pyrene	19 2- 97-2		x	x	x
Benzo[ghi]perylene	191-24-2	x			x
Anthracene	120 -12-7	x			x
Anthracene oil distillation fractions		x			
Fluoranthene	206-44-0	x			x
Phenanthrene	85-01-8	x			x
Pyrene	129-00-0	x			x
Naphthalene	91-20-3				x
Indeno[1,2,3-cd]pyrene	193-39-5				x

**Table 13**

\*Included in the Norwegian regulation

PER- AND POLYFLUORINATED CHEMICALS	CAS NO
PFOS RELATED SUBSTANCES	
Perfluorooctane sulfonate (PFOS)	1763-23-1
Perfluorooctanesulfonamide (PFOSA)	754-91-6
N-Methyl-Perfluorooctanesulfonamide (N-Me-FOSA)	31506-32-8
N-Ethyl-Perfluorooctanesulfonamide (N-Et-FOSA)	4151-50-2
N-Methyl-Perfluorooctanesulfonamidoethanol (N-Me-FOSE)	24448-09-7
N-Ethyl-Perfluorooctanesulfonamidoethanol (N-Et-FOSE)	1691-99-2
PFOA RELATED SUBSTANCES	
Perfluorooctane acid (PFOA)	335-67-1*
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 perfluorooctanoate (Et-PFO)	3108-24-5*
1H,1H,2H,2H-Perfluorodecylacrylat (8:2 FTA)	27905-45-9
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)	678-39-7
PFAS RELATED SUBSTANCES	
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnA)	2058-94-8
Heptacosafuorotetradecanoic acid (PFTA)	376-06-7
Tricosafuorododecanoic acid (PFDoA)	307-55-1
Pentacosafuorotridecanoic acid (PFTTrDA)	72629-94-8
1H,1H,2H,2H-Perfluorododecane-1-ol (10:2 FTOH)	865-86-1
1H,1H,2H,2H-Perfluorooctylacrylat (6:2 FTA)	17527-29-6
1H,1H,2H,2H-Perfluoro-1-octanol (6:2 FTOH)	647-42-7
1H,1H,2H,2H-Perfluorododecylacrylat (10:2 FTA)	17741-60-5

**Table 14**

BENZOTRIAZOLS (UV-320, UV-327, UV-328 AND UV-350)	CAS NO
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3

**Table 15**

BORIC ACID, BORATE COMPOUND	CAS NO

Boric acid	10043-35-3 and 11113-50-1
Disodium tetraborate anhydrous	1303-96-4, 12179-04-3 and 1330-43-4
Tetraboron disodium heptaoxid, hydrate	12267-73-1
Sodium perborate; perboric acid, sodium salt	234-390-0
Sodium peroxometaborate	7632-04-04
Disodium octaborate	12008-41-2

**Table 16**

ARSENIC COMPOUNDS	CAS NO
Diarsenic Pentoxide	1303-28-2
Diarsenic Trioxide	1327-53-3
Triethyl arsenate	15606-95-8
Arsenic acid	7778-39-4
Calcium arsenate	7778-44-1

**Table 17**

Chromium (VI) substances listed in Annex XIV and the Candidate List of Substances of Very High Concern for authorization of Regulation (EC) No 1907/2006 (REACH)

CHROMIUM (VI) SVHC COMPOUNDS	CAS NO
Ammonium dichromate	7789-09-5
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	1333-82-0
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 hydroxyoctaoxidizincatedichromate	11103-86-9
Pentazinc chromate octahydroxide	49663-84-5

**Table 18**

SVHC LEAD METAL AND ITS COMPOUNDS	CAS NO
Lead chromate	7758-97-6
Lead sulfochromate	1344-37-2
Lead chromate molybdate sulphate	12656-85-8
Lead dipicrate	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 (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), barium salt (1:1), lead-doped	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 cyanamate	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