

# Product Safety

## Restricted Substances List

**V 2.0**

**Status:** Released  
**Valid from:** January 2017  
**Valid for:** All Vendors / Leineweber  
**Updated by:** Corporate Responsibility Manager / Alissa Sekulic  
**Released by:** Division Head of Corporate Responsibility / Stefan Hausfeld

© Leineweber GmbH & Co. KG.

**BRAX**  
F E E L G O O D

## Table of Content

---

<b>1</b>	<b>INTRODUCTION</b>	<b>3</b>
1.1	General Introduction	3
1.2	Vendor Obligations	3
1.3	Definition of Restricted Substances	3
1.4	Legal Consequences in Case of Violation	3
<b>2</b>	<b>RESTRICTED SUBSTANCES IN TEXTILE AND ITS COMPONENTS</b>	<b>4</b>
2.1	Chlorinated Paraffins	4
2.2	Allergenic Disperse Dyes	4
2.3	Carcinogenic Dyes	4
2.4	AZO Dyes by Reductive Cleavage (may release one or more Arylamines)	5
2.5	Dyes with Environmental Problems	5
2.6	Formaldehyde	5
2.7	Heavy Metal, Total Content	6
2.8	Chromium VI, also after Aging	6
2.9	Heavy Metal, Releasable Nickel	6
2.10	Organotin Compounds	6
2.11	Biocide	6
2.12	Chlorinated Phenols	7
2.13	Perfluorinated Chemicals	7
2.14	Polycyclic Aromatic Hydrocarbons (PAH)	7
2.15	Vinyl Chloride	8
2.16	Chlorinated Benzenes and Toluenes	8
2.17	Chlorinated aliphatic solvents	8
2.18	Other Requirements	9
2.19	Substances Relevant for REACH According to Appendix XVII	9
<b>3</b>	<b>ABOVE 1000 PPM IN TEXTILE AND ITS COMPONENTS</b>	<b>9</b>
3.1	Phthalates	9
3.2	Alkyphenols (AP) and Alkylphenol Ethoxylates (APEO)	10
3.3	Solvents	10
3.4	Substances Relevant for REACH According to Candidate List (SVHC)	10
<b>4</b>	<b>FURTHER LAWS TO OBEY</b>	<b>11</b>
4.1	Product Safety Act (ProdSG)	11
4.2	German Food and Feed Code (LFGB)	11
4.3	German Commodity Ordinance (BedGgstV)	11
<b>5</b>	<b>PRODUCT TESTING</b>	<b>11</b>
5.1	Nominated Laboratories	11
5.2	Testing Advice	12
5.2.1	Based on Material Type and Treatment	12

## **1 Introduction**

### **1.1 General Introduction**

BRAX developed the Restricted Substances List (hereinafter RSL) at hand to ensure that two critical components of product safety are met: (1) highest standards for chemical safety in the production and (2) lowest possible chemical impact on BRAX products.

The RSL is not only valid for all products delivered to BRAX, but also for all packaging and all other articles related to the product. This includes clothes hanger, hang tags, care labels, polybags and/or other material related to the product.

The Leineweber RSL is addressed at all vendors, who procure, produce or handle products for BRAX directly. The RSL is also addressed at suppliers, who themselves supply materials to vendors in the supply chain, which are later used for BRAX products.

The Leineweber RSL is also available at [www.brax.com/conditions](http://www.brax.com/conditions).

### **1.2 Vendor Obligations**

The strict compliance with the requirements of the RSL is binding for all vendors. It is for this reason that all vendors have to guarantee that all usage bans, usage limitations or further requirements of the RSL are met for all products, materials or further components used in BRAX production.

### **1.3 Definition of Restricted Substances**

Restricted Substances are those chemicals, which are either prohibited or limited by law or by BRAX Quality Management.

Generally, the RSL knows two groups of limitations: On the one hand a complete usage ban for certain chemical compounds and on the other hand set limitations for concentrations of chemical compounds based on international, EU or national guidelines.

The Vendor is obliged to inform BRAX about any failure to comply with the requirements without delay.

### **1.4 Legal Consequences in Case of Violation**

The RSL is valid for all transactions which are concluded with Leineweber GmbH & Co. KG, Wittekindstraße 16-18, D-32051 Herford.

Items that do not comply with the thresholds set out in the RSL cannot be used by Leineweber and the delivery of such items constitutes a fundamental breach which entitles Leineweber to declare the production order avoided without any further grace period or other precondition.

If the vendor fails to comply with his before mentioned duties and delivers items which exceed the thresholds set out in the RSL, notwithstanding other legal remedies, Leineweber is entitled to claim damages from the vendor. Without prejudice to any additional claims for all direct or indirect expenses, losses or disadvantages incurred by Leineweber, Leineweber is entitled - without providing any further evidence – to claim liquidated damages for the lost profit margin in the amount of the purchase price of the items. The vendor reserves its right to prove that the damage did either not occur at all, or to a significantly smaller extend.

## 2 Restricted Substances in Textile and its Components

Chemical Substance	CAS Number	Test Method	Brax Limit
<b>2.1 Chlorinated Paraffins</b>			
Short-chain chlorinated paraffins (SCCP)	85535-84-8	GC-MS or LC-MS	n.d. detection limit: 50 mg/kg
Medium-chain chlorinated paraffins (MCCP)	85535-85-9	GC-MS or LC-MS	n.d. detection limit: 100 mg/kg
<b>2.2 Allergenic Disperse Dyes</b>			
C.I. Disperse Blue 1	2475-45-8	DIN 54231	n.d. detection limit: 20 mg/kg
C.I. Disperse Yellow 3	2832-40-8		
C.I. Disperse Blue 35	12222-75-2		
C.I. Disperse Blue 106	12223-01-7		
C.I. Disperse Blue 124	61951-51-7		
C.I. Disperse Orange 3	730-40-5		
C.I. Disperse Orange 37/59/76	12223-33-5 / 13301-61-6		
C.I. Disperse Red 1	2872-52-8		
C.I. Disperse Blue 3	2475-46-9		
C.I. Disperse Blue 7	3179-90-6		
C.I. Disperse Blue 26	3860-63-7		
C.I. Disperse Blue 102	12222-97-8		
C.I. Disperse Brown 1	23355-64-8		
C.I. Disperse Orange 1	2581-69-3		
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 9	6373-73-5		
C.I. Disperse Yellow 39	12236-29-2		
C.I. Disperse Yellow 49	54824-37-2		
C.I. Disperse Orange 149	85136-74-9		
C.I. Disperse Yellow 23	6250-23-3		
<b>2.3 Carcinogenic Dyes</b>			
C.I. Acid Red 26	3761-53-3	DIN 54231	n.d. detection limit: 20 mg/kg
C.I. Basic Red 9	569-61-9		
C.I. Direct Black 38	1937-37-7		
C.I. Direct Blue 6	2602-46-2		
C.I. Direct Red 28	573-58-0		
C.I. Disperse Blue 1	2475-45-8		
C.I. Disperse Yellow 3	2832-40-8		
C.I. Basic Violet 14	632-99-5		
C.I. Disperse orange 11	82-28-0		

Chemical Substance	CAS Number	Test Method	Brax Limit
<b>2.4 AZO Dyes by Reductive Cleavage (may release one or more Arylamines)</b>			
Biphenyl-4-ylamin, 4-aminobiphenyl xenylamine	92-67-1	EUROPE: Textiles: EN 14362-1:2012 Leather: EN ISO 17234-1:2010  CHINA: Textiles: GB/T 17592-2011 Leather and fur: GB/T 19942-2005  Test Method for confirmation of 4-Aminoazobenzene (4AAB)  EUROPE: Textiles: EN 14362-3: 2012 Leather: EN ISO 17234-2: 2011  CHINA: Textiles: GB/T 17592-2011 Leather and fur: GB/T 1994	n.d. detection limit: 20 mg/kg
Benzidine	92-87-5		
4-chloro-o-toluidine	95-69-2		
2-naphtylamine	91-59-8		
o-aminoazotoluene, 4-amino-2',3-dimethylazobenzene 4-o-tolylazo- otoluidine	97-56-3		
5-nitro-o-toluidine	99-55-8		
4-chloroaniline	106-47-8		
4-methoxy-m-phenylenediamine	615-05-4		
4,4'-methylenedianiline 4,4'- diaminodiphenylmethane	101-77-9		
3,3'-dichlorobenzidine 3,3'-dichlorobiphenyl-4,4'-ylenediamine	91-94-1		
3,3-dimethoxybenzidine o-dianisidine	119-90-4		
3,3-dimethylbenzidine, 4,4'-bi-o-toluidine	119-93-7		
4,4'-methylenedi-o-toluidine	838-88-0		
6-methoxy-m-toluidine p-cresidine	120-71-8		
4,4'-methylene-bis-(2-chloro-aniline) 2,2'-dichloro- 4,4'-ethylenedianiline	101-14-4		
4,4'-oxydianiline	101-80-4		
4,4'-thiodianiline	139-65-1		
o-toluidine, 2-aminotoluene	95-53-4		
4-methyl-m-phenylenediamine	95-80-7		
2,4,5-trimethylaniline	137-17-7		
o-anisidine (2-methoxyanilin)	90-04-0		
4-amino azobenzene	60-09-3		
2,4-xylidine	95-68-1		
2,6-xylidine	87-62-7		
C.I. Pigment Red 104	12656-85-8		
<b>2.5 Dyes with Environmental Problems</b>			
Navy blue 018112	118685-33-9	GC-MS or LC-MS	n.d. detection limit: 50 mg/kg
<b>2.6 Formaldehyde</b>			
Formaldehyde	50-00-0	Textiles: ISO 14184-1  Leather: ISO 17226	75 mg/kg

Chemical Substance	CAS Number	Test Method	Brax Limit
<b>2.7 Heavy Metal, Total Content</b>			
Cadmium and its compounds	7440-43-9	EN 1122	100 mg/kg
Chromium and its compounds for Wool and Leather	7440-47-3	Textile: DIN 54233-3 Leather: DIN EN ISO 17072-1	1000 mg/kg
Lead and its compounds	7439-92-1	Total Content: Microwave digestionplastic	90 mg/kg
<b>2.8 Chromium VI, also after Aging</b>			
Chromium VI (Cr VI)	7440-47-3	ISO 17075 Aging conditions: Temperature: 80°C Hours: 24 h Humidity: max. 5 % Shut oven (no air intake / no fresh air) Cut sample into small pieces of approx. 2 mm instead of grinding	3 mg/kg
<b>2.9 Heavy Metal, Releasable Nickel</b>			
Nickel	7440-02-0	EN 12472/1811 Abrasion of coated items Nickel release	Products, which can come into contact with the human skin for a longer period must not release more than 0.5 µg nickel per cm <sup>2</sup> per week
<b>2.10 Organotin Compounds</b>			
Tributyltin (TBT) + compounds	56573-85-4	ISO 17353	each 1 mg/kg
Triphenyltin (TPhT) + compounds	668-34-8		
Dibutyltin (DBT) + compounds	1002-53-5		
Diocetyl tin (DOT) + compounds	15231-44-4		
<b>2.11 Biocide</b>			
Triclosan	3380-34-5	Extraction, GC-MS	n.d. detection limit: 0,5 mg/kg
Dimethylfumarate	624-49-7	HPLC	0,1 mg/kg

Chemical Substance	CAS Number	Test Method	Brax Limit
<b>2.12 Chlorianted Phenols</b>			
Pentachlorophenol (PCP)	87-86-5	1 – Extraction with ASE or alkaline extraction (KOH)	1mol/L KOH ; 16h at 90 degree Celsius
Tetrachlorophenol e (TeCP), its salts and compounds, 2,3,5,6-TeCP	25167-83-3 and 935-95-5	Extraction / Derivation followed by GC-MS analysis	n.d. detection limit: 0,5 mg/kg
2,3,4,5-tetrachlorophenol	4901-51-3		
2,3,4,6- tetrachlorophenol	58-90-2		
2,3,4,6- tetrachlorophenol	935-95-5		
2-chlorophenol	95-57-8		
2,4-dichlorophenol	120-83-2		
2,5-dichlorophenol	583-78-8		
2,6-dichlorophenol	87-65-0		
2,4,5-trichlorophenol	95-95-4		
2,4,6-trichlorophenol	88-06-2		
3,5-dichlorophenol	591-35-5		
2,3-dichlorophenol	576-24-9		
3,4-dichlorophenol	95-77-2		
3-chlorophenol	108-43-0		
4-chlorophenol	106-48-9		
2,3,4-trichlorophenol	15950-66-0		
2,3,5-trichlorophenol	933-78-8		
3,4,5-trichlorophenol	609-19-8		
<b>2.13 Perfluorinated Chemicals</b>			
Perfluoroctanesulfonates (PFOS)	1763-23-1	Solvent extraction, LC-MS	each ≤ 1µg / m <sup>2</sup>
Perfluoroctane acids (PFOA)	335-67-1		
Fluortelomer alcohols (FTOHs)	various		
Fluortelomer olefins (FTOs)	various		
<b>2.14 Polycyclic Aromatic Hydrocarbons (PAH)</b>			
Benzo[a]anthracen	56-55-3	ZEK 01.4.-08	each 1 mg/kg
Chrysen	218-01-9		
Benzo[a]pyren	50-32-8		
Benzo[b]fluoranthen	205-99-2		
Benzo[k]fluoranthen	207-08-9		
Dibenzo[a,h]anthracen	53-70-3		
Benzo[e]pyren	192-97-2		
Benzo[j]fluoranthen	205-82-3		
Anthracene	120-12-7		
Pyrene	129-00-0		
Benzo[ghi]perylene	191-24-2		
Ideno[1,2,3-cd]pyrene	193-39-5		
Fluoranthene	206-44-0		
Acenaphthylene	208-96-8		
Acenaphthene	83-32-9		
Phenanthrene	85-01-8		
Fluorene	86-73-7		
Naphthalene	91-20-3		

Chemical Substance	CAS Number	Test Method	Brax Limit		
<b>2.15 Vinyl Chloride</b>					
Vinyl chloride Monomer	75-01-4	DIN 53743	1 mg/kg		
<b>2.16 Chlorinated Benzenes and Toluenes</b>					
Dichlorobenzenes	various	Extraction / Derivation followed by GC-MS analysis	1 mg/kg		
1,2-Dichlorobenzene	95-50-1				
1,3-Dichlorobenzene	541-73-1				
1,4-Dichlorobenzene	106-46-7				
Trichlorobenzenes	various				
1,2,3-Trichlorobenzene	87-61-6				
1,2,4-trichlorobenzene	120-82-1				
1,3,5-Trichlorobenzene	108-70-3				
Tetrachlorobenzene	12408-10-5				
1,2,3,4-tetrachlorobenzene	634-66-2				
1,2,3,5-tetrachlorobenzene	634-90-2				
1,2,4,5-tetrachlorobenzene	95-94-3				
Pentachlorobenzene	608-93-5				
Hexachlorobenzene	118-74-1				
2-chlorotoluene	95-49-8	Solvent extraction and GC-MS analysis	1 mg/kg		
3-chlorotoluene	108-41-8				
4-chlorotoluene	106-43-4				
2,3-dichlorotoluene	32768-54-0				
2,4-dichlorotoluene	95-73-8				
2,5-dichlorotoluene	19398-61-9				
2,7-dichlorotoluene	118-69-4				
3,4-dichlorotoluene	95-75-0				
2,3,6-trichlorotoluene	2077-46-5				
2,4,5-trichlorotoluene	6639-30-1				
Benzotrichloride	98-07-7				
alfa, 2,4-trichlorotoluene	94-99-5				
alfa, 2,6-trichlorotoluene	2014-83-7				
alfa, 3,4-trichlorotoluene	102-47-6				
alpha, alpha, 2,6-tetrachlorotoluene	81-19-6				
alpha, alpha, alpha, 2,-tetrachlorotoluene	2136-89-2				
alpha, alpha, alpha, 4-tetrachlorotoluene	5216-25-1				
2,3,4,5,6-pentachlorotoluene	877-11-2				
<b>2.17 Chlorinated aliphatic solvents</b>					
Dichlormethane	75-09-2			Extraction, followed by GC/MS	1 mg/kg
Trichlorethylene	79-01-6				
Perchlorethylene	127-18-4				
1,2-Dichloroethane	107-06-2				



Chemical Substance	CAS Number	Test Method	Brax Limit
<b>2.18 Other Requirements</b>			
Odor		SNV 195651	No abnormal odor allowed. If odor rating < 3, VOC test to be
pH value for textiles		ISO 3071	4.0 – 7.5
pH value for leather		ISO 4045	3.5 – 7.5

### 2.19 Substances Relevant for REACh According to Appendix XVII

Chemical Substances	BRAX Limit
List of substances of very high concern under REACh (SVHC) to be found under the following web links: EN: <a href="http://echa.europa.eu/addressing-chemicals-of-concern/restrictions/list-of-restrictions/list-of-restrictions-table">http://echa.europa.eu/addressing-chemicals-of-concern/restrictions/list-of-restrictions/list-of-restrictions-table</a>	each listed substances in finished goods or materials: USAGE BAN above given limit
<b>At start of the season the Vendor is obliged to regularly check for REACh Appendix XVII substances which are relevant for respective products.</b>	

## 3 Above 1000 ppm in Textile and its Components

Chemical Substance	CAS Number	Test Method	Brax Limit
<b>3.1 Phthalates</b>			
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	EN 15777	1000,0 mg/kg
Dibutyl phthalate (DBP)	84-74-2		
Butylbenzyl phthalate (BBP)	85-68-7		
Di-isobutyl phthalate (DIBP)	84-69-5		
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUF)	68515-42-4		
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6		
Bis(2-methoxyethyl) phthalate (BMEP)	117-82-8		
Di-n-hexyl phthalate (DHP)	84-75-3		
Di-iso-nonyl phthalate (DEHP)	28553-12-0		
Di-n-octyl phthalate (DNOP)	117-84-0		
Di-iso-decyl phthalate (DIDP)	26761-40-0		
1,2-Benzendicarboxylic acid, dipentylester, branched an linear	84777-06-0		
Di-iso-pentyl phthalate (DIPP)	605-50-5		
N-pentyl-iso-pentyl phthalate (PIPP)	776297-69-9		
Di-pentyl phthalate (DPP)	131-18-0		
Dinonyl phthalate (DNP)	84-76-4		
Diethyl phthalate (DEP)	84-66-2		
Di-n-propyl phthalate (DPRP)	131-16-8		
Di-cyclohexyl phthalate (DCHP)	84-61-7		
Di-iso-octyl phthalate (DIOP)	27554-26-3		

Chemical Substance	CAS Number	Test Method	Brax Limit
<b>3.2 Alkylphenols (AP) and Alkylphenol Ethoxylates (APEO)</b>			
Nonylphenols (NP)	104-40-5	Extraction, GC-MS	100 mg/kg
Octylphenols (OP)	140-66-9		
Nonylphenoethoxylates (NPEO)	68412-54-4	Extraction, LC-MS	
Octylphenoethoxylates (OPEO)	9036-19-5		
<b>3.3 Solvents</b>			
DMAC (N,N-dimethylacetamide)	127-19-5	Headspace GC-MS [120°C; 45 minutes]	1000,0 mg/kg
DMFa (N,N Dimethylformamide)	68-12-2		
<b>3.4 Substances Relevant for REACH According to Candidate List (SVHC)</b>			
Chemical Substances	BRAX Limit		
List of substances of very high concern under REACH (SVHC) to be found under the following web links: EN: <a href="http://echa.europa.eu/candidate-list-table">http://echa.europa.eu/candidate-list-table</a>	each listed substance in finished goods or materials: USAGE BAN above 1000,0 mg/kg		
<b>At start of the season the Vendor is obliged to regularly check for SVHC candidate list which are relevant for respective products.</b>			

## 4 Further Laws to Obey

At the start of the season the Vendor is obliged to check relevant laws. The following list of laws needs to be crosschecked with regards to all products produced by the Vendor.

### 4.1 Product Safety Act (ProdSG)

To be found under the following web link:

EN:

[http://www.gesetze-im-internet.de/englisch\\_prodsg/index.html](http://www.gesetze-im-internet.de/englisch_prodsg/index.html)

### 4.2 German Food and Feed Code (LFGB)

To be found under the following web link:

DE:

<http://www.gesetze-im-internet.de/lfgb/index.html>

### 4.3 German Commodity Ordinance (BedGgstV)

To be found under the following web link:

DE:

<http://www.gesetze-im-internet.de/bedggstv/>

## 5 Product Testing

### 5.1 Nominated Laboratories

The Vendor is obliged to carry out its product tests in an accredited laboratory. For this purpose, the nearest laboratory has to be used (including across countries).

Nominated laboratories by Leineweber are:

- Bureau Veritas
- Intertek
- SGS
- UL

### 5.2 Testing Advice

The following matrix is intended to help BRAX vendors as it depicts necessary tests per type of material. The matrix shall help to identify risks and is meant merely as a recommendation. Apart from this support, after having received the RSL and all necessary information, the supplier is obliged to guarantee full compliance. Hence, the supplier is responsible for conducting all necessary analytical tests for its products. The supplier must secure that all products comply with the requirements of the RSL completely. Please be advised that more test than depicted in the matrix might be necessary.

#### 5.2.1 Based on Material Type and Treatment

Chapter	Substance	Natural textile	Synthetic textile & mixed fibers	Artificial & Synthetic Leather	Leather & Fur	Prints	Coatings	Foams / Rubber	Plastic	Metal	Wood, Paper, Paperboard etc.
2.1	Chlorinated Paraffins				x						
2.2	Allergenic Disperse Dyes		x	x	x	x	x	x	x		
2.3	Carcinogenic Dyes	x	x	x	x	x	x	x	x		x
2.4	AZO Dyes by Reductive Cleavage	x	x	x	x	x	x	x	x		x
2.5	Lead Pigments		x			x	x				
2.7	Formaldehyde	x	x	x	x	x	x	x			x
2.8	Cadmium and its compounds						x		x		
2.8	Chromium and its compounds	x			x					x	
2.8	Lead and its compounds		x			x	x		x	x	
2.9	Chromium VI, also after Aging	x			x						
2.10	Heavy Metal, Releasable Nickel									x	
2.11	Organotin Compounds			x		x	x		x		
2.12	Pentachlorophenol (PCP)	x	x	x	x						x
2.12	Triclosan	x	x	x	x						
2.12	Dimethylfumarate				x						
2.14	Polycyclic Aromatic Hydrocarbons (PAH)							x	x		
2.16	Chlorinated Benzenes and Toluenes		x								
2.17	Odor	entire Product									
2.17	pH value	x	x	x	x	x	x				
2.18	Substances Relevant for REACH according to Appendix XVII	x	x	x	x	x	x	x	x	x	x
3.1	Phthalates			x		x	x	x			
3.2	Alkylphenols (AP) and Alkylphenol Ethoxylates (APEO)	x	x	x	x	x	x	x			
3.3	Solvents			x	x		x				
3.4	Substances Relevant for REACH according to Candidate List	x	x	x	x	x	x	x	x	x	x