

## LPP Restricted Substances List (RSL) for textile products, accessories and footwear 2020

Substance	CAS No.	Limits in finished product	Proposed test method <sup>(1)</sup>	Material type											
				Natural Fibers	Synthetic Fibers	Blends	Leather	Synthetic leather	Polymers (PU, EVA, TPU, PVC, rubber, TPR, etc.)	Metals (non-jewelry)	Metals (jewelry, hair accessories etc.)	Coatings, prints, paints, pigment paints etc.	Glues		
<b>Alkylophenols (APs), alkylophenol ethoxylates (APEOs) and isomers</b>															
Nonylphenol (NP), and its isomers	multiple	<100 ppm	Textiles and leather: EN ISO 21084:2019												
Nonylphenol ethoxylates (NPEs), and its isomers	multiple		All materials except leather: EN ISO 18254-1:2016 Leather: EN ISO 18218-1:2015	X	X	X	X	X	X				X	X	
<b>Azo-amines and arylamine salts</b>															
4-aminobiphenyl xenylamine	92-67-1	Not detected	All materials except leather: EN ISO 14362-1:2017 Leather: EN ISO 17234-1:2015												
Benzidine	92-87-5														
4-chloro-o-toluidine	95-69-2														
2-naphthylamine	91-59-8														
o-aminoazotoluene	97-56-3														
5-nitro-o-toluidine	99-55-8														
4-chloroaniline	106-47-8														
4-methoxy-m-phenylenediamine	615-05-4														
4,4'-methylenedianiline	101-77-9					X	X	X	X	X				X	
3,3'-dichlorobenzidine	91-94-1														
3,3'-dimethoxybenzidine	119-90-4														
3,3'-dimethylbenzidine	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)	101-14-4														
4,4'-oxydianiline	101-80-4														
4,4'-thiodianiline	139-65-1														
o-toluidine	95-53-4														



Benzyl chloride	100-44-7																	
1,2-dichlorobenzene	95-50-1																	
<b>Dimethylfurfate</b>																		
Dimethylfurfate (DMFu)	624-49-7	≤0.1 ppm	Textiles: EN 17130:2019 Other materials: CEN ISO/TS 16186:2012					X										
<b>Dyes</b>																		
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																	
C.I. Disperse Blue 35A	56524-77-7																	
C.I. Disperse Blue 35B	56524-76-6																	
C.I. Disperse Blue 102	12222-97-8																	
C.I. Disperse Blue 106	12223-01-7																	
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 11	82-28-0																	
C.I. Disperse Orange 37/76/59	12223-33-5 13301-61-6 51811-42-8																	
C.I. Disperse Orange 149	85136-74-9																	
C.I. Disperse Red 1	2872-52-8	≤ 50 ppm each	DIN 54231:2005					X	X			X						X
C.I. Disperse Red 11	2872-48-2																	
C.I. Disperse Red 17	3179-89-3																	
C.I. Disperse Red 151	61968-47-6																	
C.I. Disperse Yellow 1	119-15-3																	
C.I. Disperse Yellow 3	2832-40-8																	
C.I. Disperse Yellow 7	6300-37-4																	
C.I. Disperse Yellow 9	6373-73-5																	
C.I. Disperse Yellow 23	6250-23-3																	
C.I. Disperse Yellow 39	12236-29-2																	
C.I. Disperse Yellow 49	54824-37-2																	
C.I. Disperse Yellow 56	54077-16-6																	
C.I. Acid Red 26	3761-53-3																	
C.I. Basic Red 9	569-61-9																	
C.I. Basic Green 4	569-64-2 2437-29-8 10309-95-2																	
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 Red 28	573-58-0														
C.I. Direct Brown 95	16071-86-6														
Component 1: C <sub>39</sub> H <sub>23</sub> ClCrN <sub>7</sub> O <sub>12</sub> S <sub>2</sub> Na	118685-33-9														
Component 2: C <sub>46</sub> H <sub>30</sub> CrN <sub>10</sub> O <sub>20</sub> S <sub>2</sub> ·3Na	Not allocated														
<b>Flame retardants</b>															
Tetrabromodiphenyl ether (tetraBDE)	40088-47-9 and others	≤500 ppm total	EN ISO 17881-1:2016												
Pentabromodiphenyl ether (pentaBDE)	32534-81-9 and others														
Hexabromodiphenyl ether (hexaBDE)	36483-60-0 and others														
Heptabromodiphenyl ether (heptaBDE)	68928-80-3 and others														
Decabromodiphenyl ether (decaBDE)	1163-19-5														
Hexabromocyclododecane (HBCDD) and its diastereoisomers	multiple	≤100 ppm	EN ISO 17881-2:2016												
Octabromodiphenyl ether (octaBDE)	32536-52-0	≤1000 ppm													
Polybromobiphenyls (PBB)	59536-65-1	Not detected													
Tris(2,3-dibromopropyl)phosphate (TRIS)	126-72-7	Not detected													
Tris(aziridinyl)phosphin oxide (TEPA)	545-55-1	Not detected													
<b>Formaldehyde</b>															
Formaldehyde	50-00-0	75 ppm, 300 ppm <sup>(2)</sup>	All materials except leather: EN ISO 14184-1:2011 Leather: EN ISO 17226-1:2019	X	X	X	X	X					X	X	
<b>Heavy metals</b>															
Arsenic compounds	multiple	≤1 ppm	All materials except leather: DIN EN 16711-2:2016 Leather: DIN EN ISO 17072-1:2017 (Extractable) Paints and surface coatings: ASTM F2923:2014	X	X	X	X						X		
Cadmium and its compounds	multiple	≤1 ppm					X	X	X	X	X	X	X		
Chromium(VI) compounds	multiple	≤1 ppm	Leather: EN ISO 17075-2:2017 (Extractable)				X								
Lead and its compounds	multiple	≤1 ppm	All materials except leather: DIN EN 16711-2:2016 Leather:				X	X	X	X	X	X	X		

			DIN EN ISO 17072-1:2017 (Extractable) Paints and surface coatings: ASTM F2923:2014												
Mercury compounds	multiple	<100 ppm	Paints and surface coatings: ASTM F2923:2014											X	
Nickel	7440-02-0	release <0.2 ug/cm <sup>2</sup> /week <sup>(3)</sup> ≤0.5 ug/cm <sup>2</sup> /week <sup>(4)</sup>	EN 12472:2005 with A1:2009, EN 1811:2011 with A1:2015							X	X				
<b>Organotin compounds</b>															
Dibutyltin (DBT) compounds	multiple	≤1000 ppm	CEN ISO/TS 16179:2012	X <sup>(5)</sup>	X <sup>(5)</sup>	X <sup>(5)</sup>	X <sup>(5)</sup>	X	X					X	X
Diocetyl tin (DOT) compounds	multiple														
Tributyltin (TBT) compounds	multiple														
Triphenyltin (TPT) compounds	multiple														
<b>Perfluorinated and polyfluorinated chemicals</b>															
Perfluorooctanoic acid (PFOA) and its salts	335-67-1 and others	<25 ppm	All materials except leather: CEN/TS 15968:2010	X <sup>(9)</sup>	X <sup>(9)</sup>	X <sup>(9)</sup>	X <sup>(9)</sup>	X <sup>(9)</sup>	X <sup>(9)</sup>					X <sup>(9)</sup>	
PFOA-related substances	multiple	<1000 ppm <sup>(6)</sup>	Leather: EN ISO 23702-1:2008												
Perfluorooctane sulfonic acid (PFOS) and its derivatives	multiple	<1000 ppm <sup>(7)</sup> <1 ug/m <sup>2</sup> <sup>(8)</sup>													
<b>Phthalates</b>															
Diisononylphthalate (DINP)	28553-12-0	≤1000 ppm	EN ISO 14389:2014												
Di-n-octylphthalate (DNOP)	117-84-0														
Diisodecylphthalate (DIDP)	26761-40-0														
Di(2-ethylhexyl)phthalate (DEHP)	117-81-7	<1000 ppm total													
Butylbenzylphthalate (BBP)	85-68-7														
Dibutylphthalate (DBP)	84-74-2														
Diisobutylphthalate (DIBP)	84-69-5														
Di-n-hexylphthalate (DnHP)	84-75-3	≤1000 ppm <sup>(10)</sup>													
Di-n-pentyl phthalate (DPP)	131-18-0														
1,2-Benzenedicarboxylic acid; di-C6-8-branched alkyl esters, C7-rich	71888-89-6														
Bis(2-methoxyethyl)phthalate	117-82-8														
Diisopentylphthalate (DIPP)	605-50-5														
<b>Polycyclic aromatic hydrocarbons (PAHs)</b>															
Benzo(a)anthracene (BaA)	56-55-3	≤1 ppm each <sup>(11)</sup>	AFPS GS 2019					X	X					X	X
Benzo(a)pyrene (BaP)	50-32-8														
Benzo(b)fluoranthene (BbFA)	205-99-2														
Benzo[e]pyrene (BeP)	192-97-2														
Benzo[j]fluoranthene (BjFA)	205-82-3														
Benzo(k)fluoranthene (BkFA)	207-08-9														
Chrysene (CHR)	218-01-9														

Dibenzo(a,h)anthracene (DBAhA)	53-70-3														
<b>Quinoline</b>															
Quinoline	91-22-5	≤50 ppm	DIN 54231:2005			X	X								
<b>Solvents</b>															
N-methyl-2-pyrrolidone (NMP)	872-50-4	≤3000 ppm	DIN CEN ISO/TS 16189:2013						X <sup>(12)</sup>	X <sup>(12)</sup>			X <sup>(12)</sup>	X <sup>(12)</sup>	
N,N-dimethylacetamide (DMAC)	127-19-5														
N,N-dimethylformamide (DMFa)	68-12-2														
<b>Volatile organic compounds (VOCs)</b>															
Benzene	71-43-2	≤5 ppm	VOC screening: GC/MS headspace 45 minutes at 120°C						X				X	X	X

<sup>(1)</sup> If another test method is used, its limit of detection (LOD) for specified substance should be not less than LOD of proposed test method (and should be provided on report)

<sup>(2)</sup> In jackets, coats or upholstery the relevant concentration shall be 300 ppm during the period between 1 November 2020 and 1 November 2023. The concentration 75 ppm shall apply thereafter

<sup>(3)</sup> In any post assemblies which are inserted into pierced ears and other pierced parts of the human body

<sup>(4)</sup> In articles intended to come into direct and prolonged contact with the skin

<sup>(5)</sup> If with antibacterial function and/or coated and/or painted and/or pigment treated

<sup>(6)</sup> Of one or a combination of PFOA-related substances

<sup>(7)</sup> In semi-finished products or parts of thereof (by weight)

<sup>(8)</sup> Textiles or other coated materials (of the coated material)

<sup>(9)</sup> If fluorinated finish (water repellent) applied

<sup>(10)</sup> Individually or in combination with other phthalates mentioned in RSL or in other entries of REACH Annex XVII that are classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 in any of the hazard classes carcinogenicity, germ cell mutagenicity or reproductive toxicity, category 1A or 1B

<sup>(11)</sup> In clothing, related accessory, footwear, textile other than clothing or footwear that come into contact with human skin to an extent similar to clothing

<sup>(12)</sup> For PU-based materials