

Appendix 2

Lists of substances included in consultation with comments from Swerea IVF in the right columns.

The tables below describe the substances included in the EU commission's regulation proposal (yellow). In addition, textile relevance, test methods and comments on the substance are described in table 2-4 (blue).

Instruction on how to read the tables:

The first five columns include information from the EU commission's lists for the consultation. In column 6, the substances from the consultation lists have been matched against the reference "Swedish Chemicals Agency: Chemicals in textiles – Risks to human health and the environment, Report No 6/14". If a substance is included in the report and is classified as CMR, it is indicated in the column with the letters H (High relevance), M (Medium relevance) and L (Low relevance). Substances with no indication of textile relevance (blank) were not included in the evaluation in report 6/14 and most of these substances have no relevance to textiles. In column 8, Swerea IVF has commented the substance, for instance by indicating if it is a process chemical or if it has been classified since the report was published. In column 7, recommended test methods are obtained from Swerea IVF's Chemicals guide unless other is stated.

Table 1. Classified dyes and carcinogenic amines.

Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride	548-62-9	Arylamine salts	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	H	EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Dyestuff Basic Violet 3
4-chloro-o-toluidine//Benzenamine, 4-chloro-2-methyl-	95-69-2	Arylamines having carcinogenic properties / MAK III, category 1 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)//Arylamines	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical.

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
2,2'-dichloro-4,4'-methylenedianiline//4,4'-methylene bis(2-chloroaniline)	101-14-4	Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)//Arylamines	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical.
2,4,5-trimethylaniline//Benzenamine, 2,4,5-trimethyl-	137-17-7	Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)//Arylamines	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical.
3,3'-dimethyl-4,4'-diaminodiphenylmethane//4,4'-methylenedi-o-toluidine	838-88-0	Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)//Arylamines	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical.
4,4'-diaminodiphenylmethane//4,4'-methylenedianiline	101-77-9	Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)//Arylamines	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical.

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
4,4'-thiodianiline//Benzenamine, 4,4'-thiobis-	139-65-1	Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)//Arylamines	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
[1,1'-Biphenyl]-4-amine//4-aminobiphenyl	92-67-1	Arylamines//Arylamines having carcinogenic properties / MAK III, category 1 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
2-naphthylamine	91-59-8	Arylamines//Arylamines having carcinogenic properties / MAK III, category 1 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-/3,3'-dimethylbenzidine	119-93-7	Arylamines//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
4,4'-oxydianiline	101-80-4	Arylamines//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
4-aminoazobenzene	60-09-3	Arylamines//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
6-methoxy-m-toluidine//p-cresidine	120-71-8	Arylamines//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
Benzenamine, 2-methyl-4-[(2-methylphenyl)azo]-//oaminoazotoluene	97-56-3	Arylamines//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
o-toluidine	95-53-4	Arylamines//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-//3,3'-dichlorobenzidine	91-94-1	Arylamines//Carcinogenic aromatic amines (EC 2014)//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)		EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Not included in the supportive document (KemI report 6/14).

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
1,3-Benzenediamine, 4-methoxy-/2,4-diaminoanisole	615-05-4	Arylamines//Carcinogenic aromatic amines (EC 2014)//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (Keml report 6/14) indicated as process related chemical
2,4-diaminotoluene//2,4-Toluylendiamine//4-methyl-m-phenylenediamine	95-80-7	Arylamines//Carcinogenic aromatic amines (EC 2014)//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (Keml report 6/14) indicated as process related chemical
4-chloroaniline//p-Chloroaniline	106-47-8	Arylamines//Carcinogenic aromatic amines (EC 2014)//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (Keml report 6/14) indicated as process related chemical
o-anisidine	90-04-0	Arylamines//Carcinogenic aromatic amines (EC 2014)//Arylamines having carcinogenic properties / MAK III, category 2 (Oekotex 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (Keml report 6/14) indicated as process related chemical
[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-/3,3'-dimethoxybenzidine//Azoic Diazo Component 48	119-90-4	Arylamines//Carcinogenic aromatic amines (EC2014)//Arylamines having carcinogenic properties/ MAK III, category 2 (Oekotex 2014)//Colorants that can cleave in carcinogenic amines (Bluesign 2013)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (Keml report 6/14) indicated as process related chemical

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
[1,1'-Biphenyl]-4,4'-diamine//Azoic DiazoComponent 112//Benzidine	92-87-5	Arylamines//Colorants that can cleave in carcinogenic amines (Bluesign 2013)//Arylamines having carcinogenic properties / MAK III, category 1 (Oekotex 2014)//Carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L	EN 14362-1, -3 for textile and leather Detection limit: 20 mg/kg (per each of the arylamine breakdown products)	Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
6-hydroxy-1-(3-isopropoxypropyl)-4-methyl-2-oxo-5-[4-(phenylazo)phenylazo]-1,2-dihydro-3-pyridinecarbonitrile	85136-74-9	Azo-compounds	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	H	EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Dyestuff - Disperse orange 149
1-Naphthalenesulfonic acid, 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis[4-amino-, disodium salt//Direct Red 28	573-58-0	Carcinogenic dyes (Oekotex 2014)//Colorants with carcinogenic potential (Bluesign 2013)//Direct dyes may cleave to carcinogenic aromatic amines (EC 2014)//Dyes that are carcinogenic, mutagenic or toxic to reproduction (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	H	EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Dyestuff - Direct red 28

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
2,7-Naphthalenedisulfonic acid, 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis[5-amino-4-hydroxy-, tetrasodium salt//Direct Blue 6	2602-46-2	Carcinogenic dyes (Oekotex 2014)//Colorants with carcinogenic potential (Bluesign 2013)//Direct dyes may cleave to carcinogenic aromatic amines (EC 2014)//Dyes that are carcinogenic, mutagenic or toxic to reproduction (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	H	EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Dyestuff – Direct Blue 6
2,7-Naphthalenedisulfonic acid, 4-amino-3-[[4'-[(2,4-diaminophenyl)azo]]1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)-, disodium salt//Direct Black 38	1937-37-7	Carcinogenic dyes (Oekotex 2014)//Colorants with carcinogenic potential (Bluesign 2013)//Direct dyes may cleave to carcinogenic aromatic amines (EC 2014)//Dyes that are carcinogenic, mutagenic or toxic to reproduction (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	H	EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Dyestuff – Direct Black 38
1,4,5,8-tetraaminoanthraquinone//Disperse Blue 1	2475-45-8	Carcinogenic dyes (Oekotex 2014)//Colorants with carcinogenic potential (Bluesign 2013)//Dyes that are carcinogenic, mutagenic or toxic to reproduction (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)		EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Dyestuff – Disperse Blue 1 Not included in the supportive document (Keml report 6/14). Available in the Chemicals group guide and database
Basic Red 9//Benzenamine, 4-[(4-aminophenyl)(4-imino-2,5-cycloheptadien-1-ylidene)methyl]-, monohydrochloride	569-61-9	Carcinogenic dyes (Oekotex 2014)//Colorants with carcinogenic potential (Bluesign 2013)//Dyes that are carcinogenic, mutagenic or toxic to reproduction (EC 2014)//Other	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	H	EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Dyestuff – Basic red 9

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
4-chloro-o-toluidinium chloride	3165-93-3	Colorants that can cleave in carcinogenic amines (Bluesign 2013)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L		This substance (4-chloro-o-toluidine chloride) is a precursor to azo dyes. Might be found as a degradation product in textiles.
lead chromate molybdate sulfate red	12656-85-8	Lead compounds//Colorants with carcinogenic potential (Bluesign 2013)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	M	No standardised test method for textile available. ISO 17072-1 (extractable content in leather) ISO 17072-2 (total content in leather) Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES. Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	This pigment is mainly used for plastics. Pigment red 104.
lead sulfochromate yellow	1344-37-2	Lead compounds//Colorants with carcinogenic potential (Bluesign 2013)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	M	No standardised test method for textile available. ISO 17072-1 (extractable content in leather) ISO 17072-2 (total content in leather) Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES. Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	This pigment is mainly used for plastics. Pigment yellow 34

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
Cuprate(2-), [5-[[4'-[[2,6-dihydroxy-3-[[2-hydroxy-5-sulphophenyl]azo]phenyl]azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxybenzoato(4-)-, disodium//Direct Brown 95	16071-86-6	Other//Colorants that can cleave in carcinogenic amines (Bluesign 2013)//Disperse dyes may cleave to carcinogenic aromatic amines (EC 2014)	Related to dyes, pigments, colorants	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	H	EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Dyestuff – Direct Brown 95
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	Arylamines	Intermediate of dyes and pigments	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	M	EN ISO 17234 for azo colorants in leather Detection limit: 20 mg/kg Extractable dyestuffs will be tested by EN ISO 16373	Synthetic precursor to pigment/dye
2-Naphthylammoniumacetate	553-00-4	Arylamine salts	NA	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L		Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
4-methoxy-m-phenylenediammonium sulphate	39156-41-7	Arylamine salts	NA	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L		Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
2,4,5-trimethylaniline hydrochloride	21436-97-5	Arylamine salts; aniline salts	NA	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L		Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical
4,4'-bis(dimethylamino)benzophenone	90-94-8	Arylamines	NA	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L		Synthetic precursor to pigment/dye, in supportive document (KemI report 6/14) indicated as process related chemical

Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment (Swerea IVF)
azobenzene	103-33-3	Azo-compounds	NA	30 mg/kg (0,003% by weight) (entry 43 of Annex XVII of REACH)	L		The substance is mainly used as a pesticide or for production of other process chemicals.

Table 2. Other substances.

Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
formaldehyde	50-00-0	Aldehydes	Several processes: after treatment of substantive dyeing, hardening of casein fibres, as a wool protection agent, anti mould and above all as a cross linking agent in resin finishing. Solvents, pesticides, easy-care.	50 mg/kg (0,005% by weight)		EN ISO 141 84-1(textiles) ISO 17226 (leather) Test method specified in Japan law 112 Detection limit: 16 mg/kg	Has been re-classified as carcinogen 1B (Included in Kemi report 6/14 as carcinogen category 2). Classified as process chemical, but often found in end products.
diarsenic trioxide	1327-53-3	Arsenic compounds	NA	50 mg/kg (0,005% by weight)	L	DIN EN ISO 105-E04 (2013) (acid sweat solution) // ISO 17294-2 (2003) or DIN EN ISO 11885 (2009)	Process chemical
Lead hydrogen arsenate	7784-40-9	Arsenic compounds; Lead compounds	NA	50 mg/kg (0,005% by weight)		DIN EN ISO 105-E04 (2013) (acid sweat solution) // ISO 17294-2 (2003) or DIN EN ISO 11885 (2009)	

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Beryllium	7440-41-7	Beryllium and beryllium compounds	NA	50 mg/kg (0,005% by weight)			
beryllium oxide	1304-56-9	Beryllium and beryllium compounds	NA	50 mg/kg (0,005% by weight)			
boric acid	10043-35-3	Boron compounds	NA	50 mg/kg (0,005% by weight)		Test equipment: 1) AAS. 2) ICP-MS and ICP-OES Detection limit: 1) 1000 µg/kg as Boron. 2) 100 µg/kg as Boron	Included in SWEREA IVF's Chemical guide
diboron trioxide; boric oxide	1303-86-2	Boron compounds	NA	50 mg/kg (0,005% by weight)		Indirect testing via Boron // ICP-OES or ICP-MS (Bluesign)	Found in Bluesign
disodium tetraborate pentahydrate; borax pentahydrate	1330-43-4	Boron compounds	NA	50 mg/kg (0,005% by weight)		Test equipment: 1) AAS. 2) ICP-MS and ICP-OES Detection limit: 1) 1000 µg/kg as Boron. 2) 100 µg/kg as Boron	Included in SWEREA IVF's Chemical guide
Perboric acid, sodium salt	11138-47-9	Boron compounds	NA	50 mg/kg (0,005% by weight)		Test equipment: 1) AAS. 2) ICP-MS and ICP-OES Detection limit: 1) 1000 µg/kg as Boron. 2) 100 µg/kg as Boron	Included in SWEREA IVF's Chemical guide
Cadmium sulphate	10124-36-4	Cadmium compounds	NA	50 mg/kg (0,005% by weight)	L	No standardised test method available. Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	Process chemical

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
cadmium//cadmium (pyrophoric)	7440-43-9	Cadmium compounds	Related to dyes, pigments, colorants	50 mg/kg (0,005% by weight)	L	No standardised test method available. Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	Process chemical
cadmium chloride	10108-64-2	Cadmium compounds	NA	50 mg/kg (0,005% by weight)	L	No standardised test method available. Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	Process chemical
cadmium oxide//cadmium oxide (non-pyrophoric)	1306-19-0	Cadmium compounds	NA	50 mg/kg (0,005% by weight)	L	No standardised test method available. Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	Process chemical
cadmium sulphide	1306-23-6	Cadmium compounds	NA	50 mg/kg (0,005% by weight)	M	No standardised test method available. Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	Effect chemical. Dyestuff, pigment, stabilizer. Can be found in PVC. Included in candidate list and Reach, Annex XVII.
a,a,a,4-tetrachlorotoluene	5216-25-1	Chlorinated aromatic Hydrocarbons	Carrier	50 mg/kg (0,005% by weight)	L	DIN 54232 (2010) (Bluesign)	
a,a,a-trichlorotoluene	98-07-7	Chlorinated aromatic Hydrocarbons	Carrier	50 mg/kg (0,005% by weight)	L	DIN 54232 (2010) (Bluesign)	Process chemical
a-chlorotoluene	100-44-7	Chlorinated aromatic hydrocarbons	NA	50 mg/kg (0,005% by weight)	L	Extraction with DCM or Headspace GC-MS (Bluesign)	Process chemical

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Hexachlorobenzene	118-74-1	Chlorinated aromatic Hydrocarbons	Pesticides, carriers	50 mg/kg (0,005% by weight)	L	DIN 54232 (2010) (Bluesign)	Process chemical
ammonium dichromate	7789-09-5	Chromium compounds	Mordant for dyes	50 mg/kg (0,005% by weight)	L	XRF for first screening. AAS, ICP-MS, ICP-OES	Effect chemical: pigment. Used for polyamide, silk and wool. Included in candidate list and Reach, Annex XIV.
Calcium chromate	13765-19-0	Chromium compounds	NA	50 mg/kg (0,005% by weight)	L		Process chemical
chromium (VI) trioxide	1333-82-0	Chromium compounds	NA	50 mg/kg (0,005% by weight)		XRF for first screening. AAS, ICP-MS, ICP-OES	Effect chemical: anticorrosive treatment of steel. Can be related to buttons, zippers etc.
Chromyl dichloride	14977-61-8	Chromium compounds	NA	50 mg/kg (0,005% by weight)	L		Process chemical
dichromium tris(chromate); chromium III chromate; chromic chromate	24613-89-6	Chromium compounds	NA	50 mg/kg (0,005% by weight)			
sodium chromate	7775-11-3	Chromium compounds	NA	50 mg/kg (0,005% by weight)	M	DIN 54231, ISO 16373-2:2014	Effect chemical: pigment. Used for leather, silk and wool. Included in candidate list and in Reach, annex XIV.
sodium dichromate	10588-01-9	Chromium compounds	NA	50 mg/kg (0,005% by weight)	M	Instrumental methodology: UV/VIS, spectrophotometer ISO 17075 (leather)	Effect chemical: pigment. Used for leather, polyamide, silk and wool. Oxidation agent. Fixing chemical. Used for finishing of direct dyes to improve their wash fastness. Tanning with basic chromium salts is the most widely used method where chromium VI (6 +) may occur as an impurity. Included in candidate list and Reach, annex XVII.

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
strontium chromate	7789-06-2	Chromium compounds	NA	50 mg/kg (0,005% by weight)			
potassium chromate	7789-00-6	Chromium compounds	NA	50 mg/kg (0,005% by weight)	L	XRF for first screening. AAS, ICP-MS, ICP-OES XRF screening for chrome, ISO 17075 for leather	Effect chemical: pigment. Used for leather, silk and wool. Included in candidate list and Reach, Annex XIV.
potassium dichromate	7778-50-9	Chromium compounds	NA	50 mg/kg (0,005% by weight)	M	XRF for first screening. AAS, ICP-MS, ICP-OES	Effect chemical: pigment. Used for leather, silk and wool. Included in candidate list and Reach, Annex XIV
cobalt acetate	71-48-7	Cobalt compounds	NA	50 mg/kg (0,005% by weight)			
cobalt carbonate	513-79-1	Cobalt compounds	NA	50 mg/kg (0,005% by weight)			
cobalt dichloride	7646-79-9	Cobalt compounds	NA	50 mg/kg (0,005% by weight)	L		Process chemical
cobalt nitrate	10141-05-6	Cobalt compounds	NA	50 mg/kg (0,005% by weight)			
cobalt sulfate	10124-43-3	Cobalt compounds	NA	50 mg/kg (0,005% by weight)			
1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione; TGIC	2451-62-9	Epoxide compounds	NA	50 mg/kg (0,005% by weight)			
1-chloro-2,3-epoxypropane	106-89-8	Epoxide compounds	Monomers	50 mg/kg (0,005% by weight)	L	CEN/TS 13130-20 (2005) (Bluesign)	Process chemical

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
2,2'-bioxirane	1464-53-5	Epoxide compounds	NA	50 mg/kg (0,005% by weight)	L		Process chemical
2,3-epoxypropyl phenyl ether	122-60-1	Epoxide compounds	NA	50 mg/kg (0,005% by weight)	L		Process chemical
ethylene oxide; oxirane	75-21-8	Epoxide compounds	Monomers, Pesticides	50 mg/kg (0,005% by weight)		Headspace GC-MS (Bluesign)	Process chemical: Effect chemical precursor and monomer.
formamide	75-12-7	Formamides	NA	50 mg/kg (0,005% by weight)		Extraction with MeOH* // GC-MS *cut the sample into small pieces (2x2mm) (Bluesign)	Effect chemical: plasticizer. Found in Bluesign
tris(2-chloroethyl) phosphate	115-96-8	Formamides	Flame-retardant	50 mg/kg (0,005% by weight)	M	No standardised test method available. Test equipment: GC-MS, LC-MS, GC-ECD Detection limit: There is no standard international detection limit as yet. For LC-MS 1 mg/kg can be expected.	Found in Bluesign. Effect chemical: flame retardant.
bis(2-methoxyethyl) ether	111-96-6	Glymes	NA	50 mg/kg (0,005% by weight)		Textile: Extraction with MeOH // GC-MS (Bluesign)	Found in Bluesign
quinoline	91-22-5	Heterocyclic aromatic compounds	NA	50 mg/kg (0,005% by weight)		Extraction with Toluene // GCMS (Bluesign)	Found in Bluesign
hydrazine	302-01-2	Hydrazine compounds	NA	50 mg/kg (0,005% by weight)	M	GC-MS, LC-MS	Process chemical: solvent used in production of polymers. Included in candidate list and Reach, Annex XVII.

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Hydrazobenzene	122-66-7		NA	50 mg/kg (0,005% by weight)	L		Process chemical
Phenylhydrazine	100-63-0		NA	50 mg/kg (0,005% by weight)	L		Process chemical
Hydrocarbons, C4-12, naphtha-cracking, hydrotreated	92045-61-9	Hydrocarbons	NA	50 mg/kg (0,005% by weight)			
Hydrocarbons, C5-rich, dicyclopentadiene-contg.	102110-15-6	Hydrocarbons	NA	50 mg/kg (0,005% by weight)			
lead 2,4,6-trinitro-m-phenylene dioxide; lead 2,4,6-trinitroresorcin oxide; lead styphnate	15245-44-0	Lead compounds	NA	50 mg/kg (0,005% by weight)		No standardised test method for textile available. ISO 17072-1 (extractable content in leather) ISO 17072-2 (total content in leather) Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES. Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	
lead di(acetate)	301-04-2	Lead compounds	NA	50 mg/kg (0,005% by weight)	L	No standardised test method for textile available. ISO 17072-1 (extractable content in leather) ISO 17072-2 (total content in leather) Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES. Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	Effect chemical: pigment. Included in candidate list.

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
lead diazide; lead azide	13424-46-9	Lead compounds	NA	50 mg/kg (0,005% by weight)		No standardised test method for textile available. ISO 17072-1 (extractable content in leather) ISO 17072-2 (total content in leather) Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES. Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	
Chromic acid, lead(2+) salt (1:1)	7758-97-6	Lead compounds; Chromium compounds	Related to dyes, pigments, colorants	50 mg/kg (0,005% by weight)	M	No standardised test method for textile available. ISO 17072-1 (extractable content in leather) ISO 17072-2 (total content in leather) Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES. Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 1 µg/kg	Effect chemical: pigment. Included in candidate list, Reach Annex XIV and XVII.
mercury	7439-97-6	Mercury compounds	Pesticides, dyes, colourants	50 mg/kg (0,005% by weight)		Test equipment: 1) XRF. 2) AAS. 3) ICP-MS and ICP-OES Detection limit: 1) 50 mg/kg. 2) 100 µg/kg. 3) 10 µg/kg	Process chemical: used as antifouling agent, catalyst and biocide.
Millerite	1314-04-1	Nickel compounds	NA	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related
nickel bis(dihydrogen phosphate)	18718-11-1	Nickel compounds	NA	50 mg/kg (0,005% by weight)			

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
nickel bis(sulfamidate); nickel sulfamate	13770-89-3	Nickel compounds	NA	50 mg/kg (0,005% by weight)			
nickel di(acetate)	373-02-4	Nickel compounds	NA	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related
nickel dichloride	7718-54-9	Nickel compounds	NA	50 mg/kg (0,005% by weight)			
nickel difluoride	10028-18-9	Nickel compounds	NA	50 mg/kg (0,005% by weight)			
nickel dinitrate	13138-45-9	Nickel compounds	NA	50 mg/kg (0,005% by weight)			
Nickel monoxide	1313-99-1	Nickel compounds	NA	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related
nickel sulphate	7786-81-4	Nickel compounds	Alloys. Related to dyes, pigments, colorants.	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related
nickel sulphide	16812-54-7	Nickel compounds	NA	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related
2,4 - Dinitrotoluene (2,4-DNT)	121-14-2	NitroAromatic hydrocarbons	NA	50 mg/kg (0,005% by weight)	L	Extraction with Toluene //GC-MS (Bluesign)	In supportive document (Keml report 6/14) indicated as process related
4-Nitrobiphenyl (4-Nitrodiphenyl)	92-93-3	NitroAromatic hydrocarbons	NA	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related
Dimethylnitrosoamine	62-75-9	Nitrosamines	Pesticides	50 mg/kg (0,005% by weight)	L	EN 12868 (1999) (Bluesign)	In supportive document (Keml report 6/14) indicated as process related.

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
1,2-dibromo-3-chloropropane	96-12-8	Organic bromine compounds	Pesticides	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related.
1,2-dibromoethane	106-93-4	Organic bromine compounds	Pesticides	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related.
1-bromopropane; n-propyl bromide	106-94-5	Organic bromine compounds	Pesticides	50 mg/kg (0,005% by weight)			
bromoethylene	593-60-2	Organic bromine compounds	Pesticides	50 mg/kg (0,005% by weight)	M	GC-MS, LC-MC or GC-ECD	Effect chemical: flame retardant.
1,2,3-trichloropropane	96-18-4	Organic chlorine compounds, saturated	Solvents	50 mg/kg (0,005% by weight)	L	No standardised test method available. Test equipment: GC-MS, GC-ECD. Detection limit: There is no standard international detection limit as yet. For GC-MS 0.1 mg/kg.	In supportive document (Keml report 6/14) indicated as process related.
1,2-dichloroethane	107-06-2	Organic chlorine compounds, saturated	Solvents	50 mg/kg (0,005% by weight)	L	Headspace GC-MS (Bluesign)	In supportive document (Keml report 6/14) indicated as process related.
2-chlorobuta-1,3-diene	126-99-8	Organic chlorine compounds, unsaturated	Monomers	50 mg/kg (0,005% by weight)	L	§64 LFGB BVL L 00.00-4 (Bluesign)	In supportive document (Keml report 6/14) indicated as process related.
chloroethylene	75-01-4	Organic chlorine compounds, unsaturated	Monomers	50 mg/kg (0,005% by weight)	L	ISO 6401 (2008) (Bluesign)	In supportive document (Keml report 6/14) indicated as process related.

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
trichloroethylene	79-01-6	Organic chlorine compounds, unsaturated	Solvents	50 mg/kg (0,005% by weight)	M	Manufacturers are required to follow the "VOC Directive", 1999/13/EC. Test method: No standardised test method available. Test equipment: GC-MS, GC-ECD. Detection limit: There is no standard international detection limit as yet. For GC-MS 0.1 mg/kg.	Process related solvent. Included in candidate list and Reach, Annex XIV.
captafol (ISO) 1,2,3,6-tetrahydro-N-(1,1,2,2-tetrachloroethylthio)phthalimide	2425-06-1	Organic chlorine compounds, unsaturated, isoindole-imides	Pesticides	50 mg/kg (0,005% by weight)	M	GC-MS, LC-MS	Process chemical: used as pesticide in fiber production.
Alkanes, C12-26-branched and linear	90622-53-0	Organic compounds, saturated	NA	50 mg/kg (0,005% by weight)	L		In supportive document (Keml report 6/14) indicated as process related.
acrylamide	79-06-1	Organic compounds, unsaturated	Monomers	50 mg/kg (0,005% by weight)	L	Extraction with MeOH // HPLC (Bluesign)	In supportive document (Keml report 6/14) indicated as process related.
acrylonitrile	107-13-1	Organic compounds, unsaturated	Monomers	50 mg/kg (0,005% by weight)	L	\$64 LFGB BVL L 00.00-4 (Bluesign)	In supportive document (Keml report 6/14) indicated as process related.
buta-1,3-diene	106-99-0	Organic compounds, unsaturated	Monomers	50 mg/kg (0,005% by weight)	L	\$64 LFGB BVL L 00.00-4 (Bluesign)	In supportive document (Keml report 6/14) indicated as process related.
isoprene (stabilised); 2-methyl-1,3-butadiene	78-79-5	Organic compounds, unsaturated	NA	50 mg/kg (0,005% by weight)			

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
aziridine	151-56-4	Other	Intermediate for fire-resistant and crease-proofing	50 mg/kg (0,005% by weight)	L	Headspace GC-MS	In supportive document (Keml report 6/14) indicated as process related.
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters	71888-89-6	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)	H	EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC. Included in candidate list.
benzyl butyl phthalate	85-68-7	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)	H	EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC. Included in candidate list, Reach Annex XIV, Annex XVII.
bis(2-ethylhexyl) phthalate	117-81-7	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)	H	EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC. Included in candidate list, Reach Annex XIV, Annex XVII.
Bis(2-methoxyethyl) phthalate	117-82-8	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)	H	EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC and acetate. Included in candidate list.
dibutyl phthalate; DBP	84-74-2	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)	M	EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC. Included in candidate list, Reach Annex XIV, Annex XVII.
diisobutyl phthalate	84-69-5	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)	H	EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC. Included in candidate list, Reach Annex XIV.
diisopentylphthalate	605-50-5	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)		EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC. Included in candidate list.
Di-n-hexyl phthalate (DnHP)	84-75-3	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)	H	EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC. Included in candidate list, Reach, Annex XVII.
Dipentyl phthalate (DPP)	131-18-0	Phthalates	Plasticizers	50 mg/kg (0,005% by weight)	H	EN-ISO 14389. Test equipment: GC-MS, LC-MS Detection limit: 100 mg/kg	Effect chemical: plasticizer in PVC. Included in candidate list.

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Substance Name	CAS No.	Chemical groups	Functional Groups	Concentration limits	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Dimethylformamide (DMF) ¹	68-12-2	Polar aprotic solvents	Solvents, auxiliaries	50 mg/kg (0,005% by weight)		No standardised test method available for textiles. Test equipment: GC-MS	Indicated as process chemical in Kemi report 6/14. Has been harmonized classified as toxic for reproduction since then.
N,N-dimethylacetamide (DMAC) ²	127-19-5	Polar aprotic solvents	Solvents	50 mg/kg (0,005% by weight)		No standardised test method available for textiles. Test equipment: GC-MS, LC-MS	Process chemical: solvent. Included in candidate list.
N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone (NMP) ³	872-50-4	Polar aprotic solvents	Solvents, auxiliaries	50 mg/kg (0,005% by weight)		No standardised test method available for textiles. Test equipment: GC-MS, LC-MS	Process chemical: solvent. Included in candidate list, Reach, Annex XVII.
ethylene thiourea; imidazolidine-2-thione; 2-imidazoline-2-thiol	96-45-7	Thiourea compounds	NA	50 mg/kg (0,005% by weight)			Process chemical: catalyst in production of polymers. Included in candidate list.
dibutyltin dichloride; (DBTC)	683-18-1	Tin-organic compounds	NA	50 mg/kg (0,005% by weight)	H	No standardised test method for textile available.	Relevant for instance for PU coating and PVC. Can occur both as effect (stabilizer) and process chemical (catalyst). Included in candidate list.
phenolphthalein	77-09-8	Triarylmethyl dyes	NA	50 mg/kg (0,005% by weight)	L		Process chemical

¹ See 3.2.25 for more information.

² See 3.2.25 for more information

³ See 3.2.25 for more information

Table 3. Petroelum and coal stream substances.

Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Distillates (coal tar), heavy oils	90640-86-1	Anthracene oils	NA			
Aromatic hydrocarbons, C6-10, C8-rich	90989-41-6	Aromatic hydrocarbons	NA			
Aromatic hydrocarbons, C8	90989-38-1	Aromatic hydrocarbons	NA	L		Process chemical
Aromatic hydrocarbons, C9-12, benzene distn.	92062-36-7	Aromatic hydrocarbons	NA	L		Process chemical
Benzene	71-43-2	Aromatic hydrocarbons	NA	L		Process chemical
Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	Coal derivates	NA	L		Process chemical
anthracene oil, anthracene paste, distn. lights	91995-17-4	Coal derivates	NA	L		Process chemical
Anthracene oil, anthracene-low	90640-82-7	Coal derivates	NA	L		Process chemical
Aromatic hydrocarbons, C6-8, naphtha-raffinate pyrolyzate-derived	68475-70-7	Petroleum derivates	NA	L		Process chemical
Aromatic hydrocarbons, C7-12, C8-rich	93571-75-6	Petroleum derivates	NA	L		Process chemical
Aromatic hydrocarbons, C8, catalytic reforming-derived	91995-18-5	Petroleum derivates	NA	L		Process chemical
butane	106-97-8	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), acid-treated light paraffinic	64742-21-8	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), C6-rich	93165-19-6	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), catalytic reformed depentanizer	68475-79-6	Petroleum derivates	NA	L		Process chemical

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Distillates (petroleum), clay-treated heavy naphthenic	64742-44-5	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), cracked steam-cracked petroleum distillates	68477-38-3	Petroleum derivates	NA			
Distillates (petroleum), dewaxed light paraffinic, hydrotreated	91995-40-3	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), heat-soaked steam-cracked naphtha, C5-rich	91995-41-4	Petroleum derivates	NA			
Distillates (petroleum), heavy hydrocracked	64741-76-0	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), heavy steam-cracked	101631-14-5	Petroleum derivates	NA			
Distillates (petroleum), hydrodesulfurized middle	64742-80-9	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), hydrotreated light naphthenic	64742-53-6	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), hydrotreated middle	64742-46-7	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), light distillate hydrotreating process, low-boiling	68410-97-9	Petroleum derivates	NA	L		Process chemical
Distillates (petroleum), light steam-cracked naphtha	68475-80-9	Petroleum derivates	NA			

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Distillates (petroleum), light straight-run gasoline fractionation stabilizer overheads	68921-08-4	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), naphtha steam cracking-derived, hydrotreated light arom.	91995-50-5	Petroleum derivatives	NA			
Distillates (petroleum), polymd. steam-cracked petroleum distillates, C5-12 fraction	68477-50-9	Petroleum derivatives	NA			
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), solvent-refined heavy naphthenic	64741-96-4	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), solvent-refined hydrotreated heavy, hydrogenated	94733-08-1	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), solvent-refined light naphthenic	64741-97-5	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), solvent-refined light paraffinic	64741-89-5	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), steam-cracked, C5-12 fraction	68477-53-2	Petroleum derivatives	NA			
Distillates (petroleum), straight-run light	68410-05-9	Petroleum derivatives	NA	L		Process chemical
Distillates (petroleum), sweetened middle	64741-86-2	Petroleum derivatives	NA			
Extracts (petroleum), catalytic reformed light naphtha solvent	91995-68-5	Petroleum derivatives	NA	L		Process chemical

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Extracts (petroleum), heavy paraffinic distillate solvent	64742-04-7	Petroleum derivatives	NA	L		Process chemical
Extracts (petroleum), solvent-refined heavy paraffinic distillate solvent	68783-04-0	Petroleum derivatives	NA	L		Process chemical
Foots oil (petroleum)	64742-67-2	Petroleum derivatives	NA	L		Process chemical
Foots oil (petroleum), clay-treated	93924-32-4	Petroleum derivatives	NA	L		Process chemical
Foots oil (petroleum), hydrotreated	92045-12-0	Petroleum derivatives	NA	L		Process chemical
Gas oils (petroleum), hydrodesulfurized	64742-79-6	Petroleum derivatives	NA	L		Process chemical
Gas oils (petroleum), steam-cracked	68527-18-4	Petroleum derivatives	NA			
Gas oils, paraffinic	93924-33-5	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C ₅ =5, C ₅ -6-rich	68476-50-6	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C ₁₇ -30, hydrotreated distillates, distn. lights	97862-82-3	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C ₃ -11, catalytic cracker distillates	68476-46-0	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C ₄ -11, naphtha-cracking, arom.-free	92045-63-1	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C ₄ -6, depentanizer lights, arom. hydrotreater	91995-38-9	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C ₅ -11, nonaroms.-rich, reforming light fraction	93572-36-2	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C ₅ -rich	68476-55-1	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C ₆ -7, naphtha-cracking, solvent-refined	92045-64-2	Petroleum derivatives	NA	L		Process chemical

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Hydrocarbons, C6-rich, hydrotreated light naphtha distillates, solvent-refined	101316-67-0	Petroleum derivatives	NA	L		Process chemical
Hydrocarbons, C7-12, C>9-arom.-rich, reforming heavy fraction	93572-35-1	Petroleum derivatives	NA	L		Process chemical
isobutane	75-28-5	Petroleum derivatives	NA	L		Process chemical
Lubricating oils	74869-22-0	Petroleum derivatives	NA	L		Process chemical
Lubricating oils (petroleum), base oils, paraffinic	93572-43-1	Petroleum derivatives	NA	L		Process chemical
Lubricating oils (petroleum), C>25, solvent-extd., deasphalted, dewaxed, hydrogenated	101316-69-2	Petroleum derivatives	NA	L		Process chemical
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0	Petroleum derivatives	NA	L		Process chemical
Lubricating oils (petroleum), C18-40, solvent-dewaxed hydrocracked distillate-based	94733-15-0	Petroleum derivatives	NA	L		Process chemical
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	72623-87-1	Petroleum derivatives	NA	L		Process chemical
Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based, high-viscosity	72623-85-9	Petroleum derivatives	NA	L		Process chemical
Lubricating oils (petroleum), C24-50, solvent-extd., dewaxed, hydrogenated	101316-72-7	Petroleum derivatives	NA	L		Process chemical
Naphtha	8030-30-6	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), arom	68603-08-7	Petroleum derivatives	NA	L		Process chemical

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Naphtha (petroleum), catalytic dewaxed	64742-66-1	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), catalytic reformed	68955-35-1	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), catalytic reformed light, arom.-free fraction	85116-59-2	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), full-range alkylate	64741-64-6	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), full-range alkylate, butane-contg.	68527-27-5	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), full-range coker	68513-02-0	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), full-range reformed	68919-37-9	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), full-range straight-run	64741-42-0	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), heavy catalytic cracked	64741-54-4	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), heavy catalytic cracked, sweetened	92045-50-6	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), heavy catalytic reformed	64741-68-0	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), heavy hydrocracked	64741-78-2	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), heavy straight-run	64741-41-9	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), heavy thermal cracked	64741-83-9	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), hydrosulfurized full-range	92045-52-8	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), hydrosulfurized full-range coker	101316-76-1	Petroleum derivatives	NA	L		Process chemical

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Naphtha (petroleum), hydrodesulfurized heavy	64742-82-1	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), hydrodesulfurized light	64742-73-0	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), hydrodesulfurized light, dearomatized	92045-53-9	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), hydrotreated heavy	64742-48-9	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), hydrotreated light	64742-49-0	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), hydrotreated light steam-cracked	92045-57-3	Petroleum derivatives	NA			
Naphtha (petroleum), isomerization	64741-70-4	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), isomerization, C6-fraction	92045-58-4	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light alkylate	64741-66-8	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light catalytic cracked	64741-55-5	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light catalytic cracked sweetened	92045-59-5	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light catalytic reformed	64741-63-5	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light catalytic reformed, arom.-free	68513-03-1	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light hydrocracked	64741-69-1	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light steam-cracked	64742-83-2	Petroleum derivatives	NA			
Naphtha (petroleum), light steam-cracked arom.	68527-23-1	Petroleum derivatives	NA			
Naphtha (petroleum), light steam-cracked, debenzenized	68527-26-4	Petroleum derivatives	NA			

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Naphtha (petroleum), light straight-run	64741-46-4	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light thermal cracked	64741-74-8	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light, C5-rich, sweetened	92045-60-8	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), light, sweetened	68783-66-4	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), solvent-refined heavy	64741-92-0	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), solvent-refined light	64741-84-0	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), steam-cracked middle arom.	68516-20-1	Petroleum derivatives	NA			
Naphtha (petroleum), sweetened	64741-87-3	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), sweetened light	101795-01-1	Petroleum derivatives	NA	L		Process chemical
Naphtha (petroleum), unsweetened	68783-12-0	Petroleum derivatives	NA	L		Process chemical
Naphthenic oils (petroleum), catalytic dewaxed heavy	64742-68-3	Petroleum derivatives	NA	L		Process chemical
Paraffin oils (petroleum), catalytic dewaxed heavy	64742-70-7	Petroleum derivatives	NA	L		Process chemical
Paraffin oils (petroleum), catalytic dewaxed light	64742-71-8	Petroleum derivatives	NA	L		Process chemical
Petrolatum	8009-03-8	Petroleum derivatives	NA	L		Process chemical
Petrolatum (petroleum), clay-treated	100684-33-1	Petroleum derivatives	NA	L		Process chemical
Petrolatum (petroleum), hydrotreated	92045-77-7	Petroleum derivatives	NA	L		Process chemical
Petrolatum (petroleum), oxidized	64743-01-7	Petroleum derivatives	NA	L		Process chemical

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Residual oils (petroleum), catalytic dewaxed	91770-57-9	Petroleum derivates	NA	L		Process chemical
Residual oils (petroleum), hydrotreated	64742-57-0	Petroleum derivates	NA	L		Process chemical
Residual oils (petroleum), hydrotreated solvent dewaxed	90669-74-2	Petroleum derivates	NA	L		Process chemical
Residual oils (petroleum), solvent deasphalted	64741-95-3	Petroleum derivates	NA	L		Process chemical
Residual oils (petroleum), solvent-dewaxed	64742-62-7	Petroleum derivates	NA	L		Process chemical
Residual oils (petroleum), solvent-refined	64742-01-4	Petroleum derivates	NA	L		Process chemical
Residues (petroleum), steam-cracked	64742-90-1	Petroleum derivates	NA			
Residues (petroleum), steam-cracked light	68513-69-9	Petroleum derivates	NA			
Residues (petroleum), steam-cracked light, arom.	102110-55-4	Petroleum derivates	NA			
Residues, steam cracked, thermally treated	98219-64-8	Petroleum derivates	NA			
Slack wax (petroleum)	64742-61-6	Petroleum derivates	NA	L		Process chemical
Slack wax (petroleum), clay-treated	90669-78-6	Petroleum derivates	NA	L		Process chemical
Slack wax (petroleum), hydrotreated	92062-09-4	Petroleum derivates	NA	L		Process chemical
Solvent naphtha (petroleum), light aliph.	64742-89-8	Petroleum derivates	NA	L		Process chemical
Solvent naphtha (petroleum), light arom.	64742-95-6	Petroleum derivates	NA	L		Process chemical
Creosote oil, acenaphthene fraction	90640-84-9	Coal derivates	NA	L		Process chemical
Extract residues (coal), light oil alk., acid ext., indene fraction	101316-62-5	Coal derivates	NA			

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Substance Name	CAS No.	Chemical groups	Functional groups	Report 2014 textile relevance (High, Medium, Low)	Recommended test method	Comment
Pitch, coal tar, high-temp., heat-treated	121575-60-8	Coal derivates	NA			
Solvent naphtha (coal)	65996-79-4	Coal derivates	NA			
Solvent naphtha (coal), xylene-styrene cut	85536-20-5	Coal derivates	NA	L		Process chemical
Tar acids, methylphenol fraction	84989-04-8	Coal derivates	NA			
Tar acids, xlenol fraction	84989-06-0	Coal derivates	NA			
Benz[a]anthracene	56-55-3	Polyaromatic Hydrocarbons (PAHs)	NA	L	ISO 21461 (NMR) ZEK 01.4-08 Detection limit: 0.2 mg/kg	Process chemical
Benz[e]acephenanthrylene	205-99-2	Polyaromatic Hydrocarbons (PAHs)	NA	L	ISO 21461 (NMR) ZEK 01.4-08 Detection limit: 0.2 mg/kg	Process chemical
Benzo[a]pyrene	50-32-8	Polyaromatic Hydrocarbons (PAHs)	NA	L	ISO 21461 (NMR) ZEK 01.4-08 Detection limit: 0.2 mg/kg	Process chemical
Benzo[e]pyrene	192-97-2	Polyaromatic Hydrocarbons (PAHs)	NA	L	ISO 21461 (NMR) ZEK 01.4-08 Detection limit: 0.2 mg/kg	Process chemical
Benzo[j]fluoranthene	205-82-3	Polyaromatic Hydrocarbons (PAHs)	NA	L	ISO 21461 (NMR) ZEK 01.4-08 Detection limit: 0.2 mg/kg	Process chemical
Benzo[k]fluoranthene	207-08-9	Polyaromatic Hydrocarbons (PAHs)	NA	L	ISO 21461 (NMR) ZEK 01.4-08 Detection limit: 0.2 mg/kg	Process chemical
Chrysene	218-01-9	Polyaromatic Hydrocarbons (PAHs)	NA	L	ISO 21461 (NMR) ZEK 01.4-08 Detection limit: 0.2 mg/kg	Process chemical
Dibenz[a,h]anthracene	53-70-3	Polyaromatic Hydrocarbons (PAHs)	NA	L	ISO 21461 (NMR) ZEK 01.4-08 Detection limit: 0.2 mg/kg	Process chemical