

Borealis Banned Substances List

1. Scope

Borealis is a chemical manufacturer committed to the Responsible Care Global Charter. The Company therefore bans certain substances from use in its production processes and products, when these substances are of concern for human health or the environment. Borealis also applies a precautionary approach to certain substances that are still being assessed by regulatory authorities, due to the substances' potential health or environmental risks. Borealis will regularly review its Banned Substances List, in light of the conclusions of risk assessments and classifications of chemicals.

Table 1 lists banned chemical substances, which Borealis does not intentionally use in its production processes or intentionally include in unreacted form in the products it manufactures.

The Banned Substances List is based on Borealis' review of substances that can be used in its base chemicals or polyolefins specific production processes and products. It is not a comprehensive list of other hazardous or potentially hazardous substances that are irrelevant for Borealis' processes or products.

The ban does not apply when a chemical substance occurs in the form of impurities in very low concentrations, when it is handled in small quantities by trained staff at laboratories, or when it is used in certain maintenance processes under strictly controlled conditions.

2. Borealis Banned Substances List – (Table 1)

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
Acrylamides	Acrylamide	79-06-1	Carc.1B, Mut.1B	Annex XVII, SVHC
	N-(hydroxymethyl)acrylamide	924-42-5	Carc. 1B, Mut 1B	SVHC
Alkylphenols and their derivatives	4-heptylphenol, branched and linear	Several	ED	SVHC
	Octylphenols	Several	potential PBT/vPvB, potential ED	----
	Nonylphenols	Several	CMR, Aq.Acute, Aq.Chron., ED	Annex XIV, Annex XVII
	Octylphenoethoxylates	Several	potential PBT/vPvB, potential ED	----
	Nonylphenoethoxylates	Several	CMR, Aq.Acute, Aq.Chron., ED	Annex XIV, Annex XVII
	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	26523-78-4 106599-06-8 3050-88-2 31631-13-7 ...	ED	SVHC
	p-(1,1-dimethylpropyl)phenol	80-46-6	ED	SVHC
	2,4,6-tris(tert-butyl) phenol (2,4,6-TTBP)	732-26-3	PBT	TSCA Section 6(h)
	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	Several	ED	SVHC
	Phenol, dodecyl-, branched	121158-58-5	Repr. 1B, ED	SVHC
	Phenol, (tetrapropenyl) derivatives	74499-35-7	Repr. 1B, ED	SVHC
	Phenol, 4-dodecyl, branched	210555-94-5	Repr. 1B, ED	SVHC
	4-isododecylphenol	27459-10-5	Repr. 1B, ED	SVHC
Phenol, tetrapropylene-	57427-55-1	Repr. 1B, ED	SVHC	
Phenol, 4-isododecyl-	27147-75-7	Repr. 1B, ED	SVHC	
Aniline-Formaldehyde-Polymer	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	Carc.1B	Annex XVII, Annex XIV, SVHC
Aromatic amines	biphenyl-4-ylamine	92-67-1	Carc.1A	Annex XVII

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
	benzidine	92-87-5	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII
	4-chloro-o-toluidine	95-69-2	Carc. 1B	Annex XVII
	2-naphthylamine	91-59-8	Carc.1A, Aq.Chron.2	Annex XVII
	o-aminoazotoluene	97-56-3	Carc. 1B	SVHC
	5-nitro-o-toluidine	99-55-8	Carc. 2	Annex XVII
	4-chloroaniline	106-47-8	Carc. 1B	Annex XVII
	4-methoxy-m-phenylenediamine	615-05-4	Carc. 1B	Annex XVII
	4,4'-methylenedianiline	101-77-9	Carc.1B, Aq.Chron.2	Annex XVII, Annex XIV, SVHC
	3,3'-dichlorobenzidine	91-94-1	Carc. 1B Aq.Acute1, Aq.Chron.1	Annex XVII
	3,3'-dimethoxybenzidine	119-90-4	Carc. 1B	Annex XVII
	3,3'-dimethylbenzidine	119-93-7	Carc.1B, Aq.Chron.2	Annex XVII
	4,4'-methylenedi-o-toluidine	838-88-0	Carc. 1B Aq.Acute1, Aq.Chron.1	Annex XVII
	6-methoxy-m-toluidine p-cresidine	120-71-8	Carc. 1B	Annex XVII
	4,4'-methylene-bis-(2-chloro-aniline)	101-14-4	Carc. 1B Aq.Acute1, Aq.Chron.1	Annex XVII
	4,4'-oxydianiline	101-80-4	Carc.1B, Mut.1B	Annex XVII
	4,4'-thiodianiline	139-65-1	Carc.1B, Aq.Chron.2	Annex XVII
	o-toluidine	95-53-4	Carc. 1B	Annex XVII
	4-methyl-m-phenylenediamine	95-80-7	Mut. 2 Carc. 1B	Annex XVII SVHC
	2,4,5-trimethylaniline	137-17-7	Carc.1B, Aq.Chron.2	Annex XVII
	o-anisidine	90-04-0	Mut. 2 Carc. 1B	Annex XVII
	4-amino azobenzene	60-09-3	Carc. 1B Aq.Acute1, Aq.Chron.1	Annex XVII SVHC
Arsenic / arsenic compounds	Arsenic	7440-38-2	Aq.Acute1, Aq.Chron.1	Annex XVII
	Arsenic acid	7778-39-4	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
	Calcium arsenate	7778-44-1	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
	Diarsenic pentaoxide	1303-28-2	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, SVHC
	Diarsenic trioxide	1327-53-3	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, SVHC
	Lead hydrogen arsenate	7784-40-9	Carc.1A, Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Triethyl arsenate	15606-95-8	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
	Trilead diarsenate	3687-31-8	Carc.1A, Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
Artificial musks	Musk ketone	81-14-1	Carc.2, Aq.Acute1, Aq.Chron.1	1223/2009
	Musk xylene	81-15-2	Carc.2, Aq.Acute1, Aq.Chron.1	1223/2009, Annex XIV, SVHC
	Musk ambrette	83-66-9	potential vPvB	1223/2009
	Musk tibetene	145-39-1	potential vPvB	1223/2009
	Polycyclic musks	Several	potential PBT/vPvB, ED	-----
Asbestos	All	Several	CMR	Annex XVII
Azocolorants	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	Carc. 1B	SVHC
	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	Carc. 1B	SVHC
Benzene-1,2,4-tricarboxylic acid 1,2-anhydride	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride	552-30-7	Resp, Sens.	SVHC
Benzotriazole based UV stabilisers	2-benzotriazol-2-yl-4,6-di-tert-butylphenol	3846-71-7	PBT; vPvB	Annex XIV, SVHC
	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol	25973-55-1	PBT; vPvB	Annex XIV, SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol	36437-37-3	vPvB	Annex XIV, SVHC
	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol	3864-99-1	vPvB	Annex XIV, SVHC
2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone		119313-12-1	Repr. 1B	SVHC
3-Benzylidene camphor (3-BC)	3-Benzylidene camphor (3-BC); 1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	15087-24-8	ED	SVHC
Beryllium / beryllium compounds	Beryllium	7440-41-7	Carc.1A	Annex XVII
	Beryllium oxide	1304-56-9	Carc.1A	Annex XVII
Bis(2-methoxyethyl) ether	Bis(2-methoxyethyl) ether	111-96-6	Repr. 1B	Annex XVII, Annex XIV, SVHC
Bisphenols	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	Repr. 1B	SVHC
	4,4'-(1-methylpropylidene)bisphenol, Bisphenol B	77-40-7	ED	SVHC
Brominated organic compounds	2,2-bis(bromomethyl)propane-1,3-diol (BMP)	3296-90-0	Carc. 1B	SVHC
	1-Bromopropane	106-94-5	Repr. 1B	Annex XIV, SVHC
	3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA)	1522-92-5	Carc. 1B	SVHC
	Decabromo-1,1'-biphenyl	13654-09-6	PBT, CMR, potential ED	Annex XVII, RoHS
	2,3-dibromo-1-propanol (2,3-DBPA)	96-13-9	Carc. 1B	SVHC
	2,2-dimethylpropan-1-ol, tribromo derivative (TBNPA)	36483-57-5	Carc. 1B	SVHC
	Diphenylether, tetrabromo derivative	Several	POP	POP
	Diphenylether, pentabromo derivative	Several	PBT/vPvB, Aq.Acute1, Aq.Chron.1	RoHS, POP
	Diphenylether, hexabromo derivative	Several	POP	POP
	Diphenylether, heptabromo derivative	Several	POP	POP
	Diphenylether, octabromo derivative	Several	PBT, Repr.1B	Annex XVII, RoHS

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
	Diphenylether, nonabromo derivative	Several	potential PBT/vPvB,	RoHS
	Diphenylether, decabromo derivative	1163-19-5	potential PBT/vPvB,	RoHS, SVHC
	Hexabromobiphenyl (HBB)	36355-01-8	PBT, CMR, potential ED	Annex XVII, RoHS, POP
	1,2,5,6,9,10-Hexabromocyclodecane	3194-55-6	potential PBT	PRIO, SVHC, Annex XIV
	Hexabromocyclododecane	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	PBT	PRIO, SVHC
	Octabromobiphenyl mixture tetrabromo(tetrabromophenyl)b enzene	27858-07-7	PBT, CMR, potential ED	Annex XVII, RoHS
	Tetra-bromo-bisphenol -A, TBBPA	21850-44-2	Evaluations ongoing	----
Chlorinated organic compounds	Aldrin	309-00-2	Carc.2, Aq.Acute1, Aq.Chron.1	POP
	Alkanes, C10-13, chloro (Short-chain chlorinated paraffins)	85535-84-8	Carc.2, Aq.Acute1, Aq.Chron.1, PBT	Annex XVII, SVHC, POP
	Alkanes, C14-17, chloro	85535-85-9	PBT	SVHC
	Alkanes, C14-16, chloro	1372804-76-6	PBT	SVHC
	Chlordane	57-74-9	POP	POP
	Chlordecone	143-50-0	POP	POP
	Chloroform	67-66-3	Carc.2, Repr.2	Annex XVII
	DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane)	50-29-3	POP	POP
	1,2-Dichloroethane	107-06-2	Carc.1B	Annex XVII, Annex XIV, SVHC
	1,1-Dichloroethene	75-35-4	Carc.2	Annex XVII
	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, SVHC
	1,3-Dichloro-2-propanol	96-23-1	Carc.1B	Annex XVII, GADSL
	Dieldrin	60-57-1	POP	POP
	di-, tri- and tetrachlorotetradecane	several	PBT	SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
	Endosulfan	115-29-7 959-98-8 33213-65-9	POP	POP
	Endrin	72-20-8	POP	POP
	Heptachlor	76-44-8	POP	POP
	Hexachlorobenzene	118-74-1	POP	POP
	Hexachlorobutadiene	87-68-3	POP, PBT	POP, TSCA Section 6(h)
	Hexachlorocyclohexanes, including lindane	58-89-9 319-84-6 319-85-7 608-73-1	POP	POP
	Mirex	2385-85-5	POP	POP
	Monomethyl dichlorodiphenyl methane (Ugilec 121 or Ugilec 21)	unknown	Aq.Acute1, Aq.Chron.1	Annex XVII
	Pentachlorobenzene	608-93-5	POP	POP
	Pentachloroethane	76-01-7	Carc.2	Annex XVII
	Pentachlorothiophenol (PCTP)	133-49-3	PBT	TSCA Section 6(h)
	Polychlorinated biphenyls (PCB)	1336-36-3 and others	Aq.Acute1, Aq.Chron.1, PBT/vPvB	Annex XVII, POP
	Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)	Several	POP	Prop 65, POP
	Polychlorinated naphthalenes	several	POP	POP
	Polychlorinated terphenyls	61788-33-8	potential PBT/vPvB	Annex XVII
	1,1,1,2-Tetrachloroethane	630-20-6		Annex XVII
	1,1,2,2-Tetrachloroethane	79-34-5		Annex XVII
	Tetradecane, chloro derivs.	198840-65-2	PBT	SVHC
	Toxaphene	8001-35-2		POP
	Trichlorobenzene	108-70-3, 87-61-6, 120-82-1	PBT like substance (equivalent level of concern)	Annex XVII, SVHC
	1,1,2-Trichloroethane	79-00-5	Carc.2	Annex XVII
	Trichloroethylene	79-01-6	Carc.1B	Annex XVII, Annex XIV, SVHC
	1,2,3-Trichloropropane	96-18-4	Carc.1B, Repr.1B	Annex XVII, SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
Cobalt compounds	Cobalt(II)carbonate	513-79-1	Carc.1B, Repr.1B	Annex XVII, SVHC
	Cobalt(II)diacetate	71-48-7	Carc.1B, Repr.1B	Annex XVII, SVHC
	Cobalt dichloride	7646-79-9	Carc.1B, Repr.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
	Cobalt(II)dinitrate	10141-05-6	Carc.1B, Repr.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
	Cobalt(II)sulfate	10124-43-3	Carc.1B, Repr.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
Cyclododecane	Cyclododecane	294-62-2	PBT	
Diboron trioxide	Diboron trioxide	1303-86-2	Repr. 1B	SVHC
1,2-Diethoxyethane	1,2-Diethoxyethane	629-14-1	Repr. 1A	SVHC
Diethyl- and dimethyl sulphates	Diethyl sulphate	64-67-5	Carc. 1B Muta. 1B	SVHC
	Dimethyl sulphate	77-78-1	Carc. 1B Muta. 2	SVHC
N,N-Dimethylacetamide	N,N-Dimethylacetamide	127-19-5	Repr.1B	Annex XVII, SVHC
N,N-Dimethylformamide	N,N-Dimethylformamide	68-12-2	Repr.1B	SVHC
Dimethyl fumarate	Dimethyl fumarate (DMF)	624-49-7	A	2009/251/EC
2,4-Dinitrotoluene		121-14-2	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, SVHC
Dinoseb	(6-sec-butyl-2,4-dinitrophenol)	88-85-7	Repr. 1B Aq.Acute1, Aq.Chron.1	SVHC
1,4-Dioxane	1,4-Dioxane	123-91-1	Carc. 1B ELoC HH, ELoC Env	SVHC
2-Ethoxyethanol	2-Ethoxyethanol	110-80-5	Repr.1B	Annex XVII, Toys, SVHC
2-Ethoxyethyl acetate	2-Ethoxyethyl acetate	111-15-9	Repr.1B	Annex XVII, Toys, SVHC
3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine		143860-04-2	Repr.1B	SVHC
Ethylenediamine	Ethylenediamine	107-15-3	Resp. Sens.	SVHC
Formamide	Formamide	75-12-7	Repr. 1B	SVHC
Glutaral	Glutaral	111-30-8	Resp. Sens.	SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
Glycol ethers	2-methoxyethyl acetate	110-49-6	Repr. 1B	SVHC
Heavy metals and their compounds (Cd, Hg, Pb, Cr(VI))	Cadmium carbonate	513-78-0	Carc.1B Aq.Acute1 Aq. Chron. 1	Annex XVII, RoHS, PPW, ELV, Toys
	Cadmium chloride	10108-64-2	Carc.1B Muta.1B Repr.B Aq.Acute1 Aq. Chron. 1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Cadmium fluoride	7790-79-6	Carc. 1B	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Cadmium hydroxide	21041-95-2	Carc.1B Aq.Acute1 Aq. Chron. 1	Annex XVII, RoHS, PPW, ELV, Toys
	Cadmium nitrate	10325-94-7	Carc.1B Muta.1B Repr.B Aq.Acute1 Aq. Chron. 1	Annex XVII, RoHS, PPW, ELV, Toys
	Cadmium sulphate	10124-36-4 31119-53-6	Carc. 1B	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Cadmium sulphide	1306-23-6	Carc. 1B	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Pyrochlore, antimony lead yellow	8012-00-8	Toxic for reproduction	SVHC
	Dichromium tris(chromate)	24613-89-6	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, RoHS, PPW, ELV, Toys
	Lead(II) bis(methanesulfonate)	17570-76-2	Repr. 1A	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Lead chromate	7758-97-6	Carc.1B, Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, Annex XIV, SVHC
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	Carc.1B, Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, Annex XIV, SVHC	

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
	Lead di(acetate)	301-04-2	Repr. 1A	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Lead diazide, Lead azide	13424-46-9	Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Lead dipicrate	6477-64-1	Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Lead hydrogen arsenate	7784-40-9	Carc.1A, Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	Carc.1B, Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, Annex XIV, SVHC
	Lead styphnate	15245-44-0	Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Pentazinc chromate octahydroxide	49663-84-5	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, RoHS, PPW, ELV, Toys, SVHC
	Potassium hydroxyl-octaoxidizincatedichromate	11103-86-9	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, RoHS, PPW, ELV, Toys, SVHC
	Strontium chromate	7789-06-2	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, RoHS, PPW, ELV, Toys, SVHC
	Tetraethyllead	78-00-2	Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, RoHS, PPW, ELV, Toys, SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
Hexahydromethylphthalic anhydrides	Hexahydromethylphthalic anhydride	25550-51-0,	Equivalent level of concern	SVHC
	Hexahydro-4-methylphthalic anhydride	19438-60-9,		
	Hexahydro-1-methylphthalic anhydride	48122-14-1,		
	Hexahydro-3-methylphthalic anhydride	57110-29-9		
Imidazolidine-2-thione (2-imidazoline-2-thiol)		96-45-7	Repr. 1B	SVHC
2-Methoxyaniline	2-Methoxyaniline; o-Anisidine	90-04-0	Carc. 1B	Annex XVII, SVHC
Methoxyacetic acid	Methoxyacetic acid	625-45-6	Repr. 1B	SVHC
2-Methoxyethanol	2-Methoxyethanol	109-86-4	Repr.1B	SVHC
N-methylacetamide	N-methylacetamide	79-16-3	Repr. 1B	SVHC
4,4'-methylenedi-otoluidine		838-88-0	Carc. 1B	SVHC
2-methylimidazole		693-98-1	Repr. 1B	SVHC
2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one		71868-10-5	Repr. 1B	SVHC
Michler's base and certain pigments if containing it > 0,1%	N,N,N',N'-tetramethyl-4,4'-methylenedianiline	101-61-1	Carc.1B, Aq.Acute1, Aq.Chron.1	SVHC
	α,α-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	6786-83-0	Carc.1B, Aq.Acute1, Aq.Chron.1	SVHC
	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol	561-41-1	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XIV, SVHC
	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)	548-62-9	Carc.1B, Aq.Acute1, Aq.Chron.1	SVHC
	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylenecyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)	2580-56-5	Carc.1B, Aq.Acute1, Aq.Chron.1	SVHC
	4,4'-bis(dimethylamino)benzophenone	90-94-8	Carc. 1B Muta. 2	SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
Michler's ketone and certain pigments if containing it > 0,1%	α,α -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	6786-83-0	Carc. 1B Muta. 2	SVHC
	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol	561-41-1	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XIV, SVHC
	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)	548-62-9	Carc. 1B Muta. 2	SVHC
	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylenecyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)	2580-56-5	Carc. 1B Muta. 2	SVHC
Monomethyl dibromodiphenyl methane (DBBT)	Monomethyl dibromodiphenyl methane (DBBT)	99688-47-8	Aq.Acute1, Aq.Chron.1	Annex XVII
Nickel	Nickel	7440-02-0	Carc.2	Annex XVII
4-Nitrobiphenyl		92-93-3	Carc.1B, Aq.Chron.2	Annex XVII
Organostannic compounds	Dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4	Repr.1B	SVHC
	Dibutyltin dichloride (DBTC)	683-18-1	Repr. 1B Aq.Acute1, Aq.Chron.1	SVHC
	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate	15571-58-1	Repr. 1B	Annex XIV, SVHC
	Tributyltin	688-73-3	potential PBT/vPvB	Annex XVII
	Bis(tributyltin)oxide	56-35-9	PBT	SVHC
	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	-	Repr. 1B	Annex XIV, SVHC
	Triphenyltin compounds	Several	potential PBT/vPvB	----
orthoboric acid, sodium salt	Boric acid (H3BO3), sodium salt (1:1)	14890-53-0	Repr. 1B	SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
	boric acid (H ₃ BO ₃), sodium salt, hydrate	25747-83-5	Repr. 1B	SVHC
	Boric acid, sodium salt	1333-73-9	Repr. 1B	SVHC
	Orthoboric acid, sodium salt	13840-56-7	Repr. 1B	SVHC
	Trisodium orthoborate	14312-40-4	Repr. 1B	SVHC
	Boric acid (H ₃ BO ₃), disodium salt	22454-04-2	Repr. 1B	SVHC
o-Toluidine		95-53-4	Carcinogenic	SVHC
p-Cresidine	6-methoxy-m-toluidine	120-71-8	Carcinogenic	SVHC
Parabens	Butyl 4-hydroxybenzoate	94-26-8	ED	SVHC
PFAS (per- and polyfluoroalkyl substances)	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	Repr 2 PBT	SVHC
	Henicosafuoroundecanoic acid	2058-94-8	vPvB	SVHC
	Heptacosafuorotetradecanoic acid	376-06-7	vPvB	SVHC
	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	335-76-2 3830-45-3 3108-42-7	Repr 1B	SVHC
	Pentacosafuorotridecanoic acid	72629-94-8	vPvB	SVHC
	Perfluorobutane sulfonic acid (PFBS) and its salts	Several	Equilant level of concern	SVHC
	Perfluorohexane-1-sulphonic acid and its salts	Several	vPvB	SVHC
	Perfluorononan-1-oic acid (2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptadecafluorononanoic acid and its sodium and ammonium salts	375-95-1 21049-39-8 4149-60-4	Repr 1B PBT	SVHC
	Perfluorooctane sulfonic acid and its derivatives (PFOS)	Several	PBT	Annex XVII, POP
	Perfluorooctanoic acid (PFOA)	335-67-1	Repr 1B PBT	SVHC
	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	Several	Equilant level of concern	SVHC
Tricosafuorododecanoic acid	307-55-1	vPvB	SVHC	
Phenolphthalein	Phenolphthalein	77-09-8	Carc.1B	Annex XVII, SVHC
Phthalates and their anhydrides	Benzylbutylphthalate (BBP)	85-68-7	Repr.1B, ED, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters	68515-51-5 68648-93-1	Repr. 1B	Annex XIV, Annex XVII, SVHC
	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	Repr.1B	Annex XIV, Annex XVII, SVHC
	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	Repr.1B	Annex XIV, Annex XVII, SVHC
	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	Repr.1B	Annex XIV, Annex XVII, SVHC
	1,2-Benzenedicarboxylic acid, dipentyl ester, branched and linear	84777-06-0	Repr.1B	Annex XIV, Annex XVII, SVHC
	Bis(2-methoxyethyl) phthalate	117-82-8	Repr.1B	Annex XIV, Annex XVII, SVHC
	Dibutylphthalate (DBP)	84-74-2	Repr.1B, ED, Aq.Acute1	Annex XVII, Annex XIV, SVHC
	Dicyclohexyl phthalate (DCHP)	84-61-7	Repr.1B	SVHC
	Dihexyl phthalate	84-75-3	Repr.1B	Annex XIV, SVHC
	Di-,isononyl'phthalate (DINP)	28553-12-0 68515-48-0	potential ED, potential CMR	Annex XVII
	Diisohexyl phthalate	71850-09-4	Repr.1B	SVHC
	Di-n-octylphthalate (DNOP)	117-84-0	potential ED, potential CMR	Annex XVII
	Dipentyl phthalate (DPP)	131-18-0	Repr. 1B Aq.Acute 1	Annex XIV, SVHC
	Diisopentyl phthalate	605-50-5	Repr.1B	Annex XIV, SVHC
	Diundecyl phthalate, DuDP, branched and linear	3648-20-2	potential ED	
	N-pentyl-isopentylphthalate	776297-69-9	Repr.1B	Annex XIV, SVHC
Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde	Formaldehyde, reaction products with branched and linear heptylphenol, carbon disulfide and hydrazine	93925-00-9	ED env,	Annex XIV, SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
and 4-heptylphenol, branched and linear (RP-HP) with ≥0.1% w/w 4-heptylphenol, branched and linear (4-HPbl)	Formaldehyde, reaction products with phenol heptyl derivs. and 1,3,4-thiadiazolidine-2,5-dithione	1471311-26-8	ED env,	Annex XIV, SVHC
Sodium perborate; perboric acid, sodium salt	Sodium perborate; perboric acid, sodium salt	15120-21-5 11138-47-9	Repr. 1B	Annex XIV, SVHC
Sodium peroxometaborate	Sodium peroxometaborate	7632-04-4	Repr. 1B	Annex XIV, SVHC
2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers	(2R)-3-(4-tert-butylphenyl)-2-methylpropanal	75166-31-3	Repr. 1B	SVHC
	2-(4-tert-butylbenzyl)propionaldehyde	80-54-6	Repr. 1B	SVHC
	(2S)-3-(4-tert-butylphenyl)-2-methylpropanal	75166-30-2	Repr. 1B	SVHC
Tetraboron disodium heptaoxide, hydrate	Tetraboron disodium heptaoxide, hydrate	12267-73-1	Repr.1B	SVHC
4-(1,1,3,3-tetramethylbutyl)phenol and it's ethoxylated compounds	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	ED Aq.Acute1, Aq.Chron.1	Annex XIV, SVHC
Triclosan		3380-34-5	Aq.Acute1, Aq.Chron.1	----
(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC)	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one	36861-47-9	ED	SVHC
	(3E)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	1782069-81-1	ED	SVHC
	(1R,3E,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	95342-41-9	ED	SVHC
	(1S,3E,4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	852541-30-1	ED	SVHC
	(1R,3Z,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	852541-21-0	ED	SVHC
	(1R,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	741687-98-9	ED	SVHC
	(1S,3Z,4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	852541-25-4	ED	SVHC

Substance group	Substance name ¹	CAS no. ²	Hazard ³	Regulation ⁴
Tris(2-chloroethyl) phosphate		115-96-8	Repr.1B, Aq.Chron.2	Annex XIV, SVHC
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)		59653-74-6	Muta. 1B	SVHC
tris(2-methoxyethoxy)vinylsilane		1067-53-4	Repr. 1B	SVHC
1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)		2451-62-9	Muta. 1B	SVHC
Trixylyl phosphate		25155-23-1	Rep. 1B	Annex XIV, SVHC
Vinyl chloride		75-01-4	Carc.1A	Annex XVII
Vinylidene chloride		75-35-4	Carc.2	Annex XVII
1-vinylimidazole		1072-63-5	Repr.1B	SVHC

3. Explanation of footnotes

- 1) Only the substances explicitly listed in Table 1 are covered by this standard.
- 2) CAS no. = Chemical Abstract Service registry number
- 3) Hazards related to the chemical substance
A = allergenic, **Aq.Acute*** = hazardous to the aquatic environment: acute hazard, category, **Aq.Chron.*** = hazardous to the aquatic environment: chronic hazard, category, **Carc.*** = carcinogenicity category, **CMR** = carcinogenic, mutagenic, toxic to reproduction, **ED** = endocrine disruptor, **ELoC HH** = Equivalent level of concern having probable serious effects to human health, **ELoC Env** = Equivalent level of concern having probable serious effects to the environment, **IARC** = International Agency for Research on Cancer, **Mut.*** = germ cell mutagenicity, category, **PBT/vPvB** = persistent, bio-accumulative and toxic / very persistent and very bio-accumulative, **Repr.*** = reproductive toxicity category,
* Classification according to Annex VI, Regulation 1272/2008/EC
- 4) Important regulations or standards which ban or restrict the use of the relevant substance in the US and EU (not intended to be an exhaustive list of all applicable regulations and standards)
1223/2009 = REGULATION (EC) No 1223/2009 on cosmetic products
1333/2008/EC = Regulation (EC) 1333/2008 on food additives other than colours and sweeteners
(EU) 2011/10 = Regulation (EU) 2011/10 plastic materials and articles intended to come into contact with foodstuffs
2009/251/EC = Commission Decision 2009/251/EC - requiring Member States to ensure that products containing the biocide dimethyl fumarate are not placed or made available on the market
Annex XIV = Annex XIV "List of substances subject to authorisation" of REACH (Regulation (EC) No 1907/2006) as amended.
Annex XVII = Annex XVII "Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles" of REACH (Regulation (EC) No 1907/2006) as amended. Supersedes and replaces Directive 76/769/EEC of 01 June 2009.
ELV = Directive 2000/53/EC – End life of vehicles
GADSL = Global Automotive Declarable Substance List
POP = Regulation (EC) No 850/2004 – EU implementation of Stockholm Convention on persistent organic pollutants
PPW = Directive 94/62/EC – Packaging and packaging waste
PRIO = PRIO database of Swedish Chemicals Agency (KEMI)
Prop 65 = Proposition 65 of the State of California and subsequent amendments – Chemicals known to the state to cause cancer or reproductive toxicity
RoHS = Directive 2011/65/EC – Restriction of certain hazardous substances in electrical and electronic equipment
SVHC = Substances of very high concern proposed for inclusion in or already included in the REACH candidate list for authorisation, or included in Annex XIV of the Regulation (EC) No 1907/2006 – Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as amended.
TSCA Section 6(h) = Persistent, Bioaccumulative, and Toxic (PBT) Chemicals under US Toxic Substances Control Act, Section 6(h)
Toys = Directive 2009/48/EC on the safety of toys

4. Updates

- Edition 1: This Black and Grey List has been issued on 17 November 2009 and replaces the document “Borealis Banned Substances (Black List)”, Ed. 8
- Edition 2: This Black and Grey List has been updated on 4 January 2011.
- Edition 3: This Black and Grey List has been updated on 1 July 2011.
- Edition 4: This Black and Grey List has been updated on 24 January 2012. Substance entries added or changed are highlighted by grey background colour.
- Edition 5: This Black and Grey List has been updated on 9 July 2012. Substance entries added or changed are highlighted by grey background colour.
- Edition 6: This Black and Grey List has been updated on 9 July 2013. Substance entries added or changed are highlighted by grey background colour.
- Edition 7: This Black and Grey List has been updated on 26 February 2014. Substance entries added or changed are highlighted by grey background colour.
- Edition 8: This Black and Grey List has been updated on 1 August 2014. Substance entries added or changed are highlighted by grey background colour.
- Edition 9: The scope of the Borealis Banned Substances List has been changed. It has been issued on 06 December 2016.
- Edition 10: This Banned Substances List has been updated on 24 November 2017. Substance entries added or changed are highlighted by grey background colour.
- Edition 11: This Banned Substances List has been updated on 19 December 2018. Substance entries added or changed are highlighted by grey background colour.
- Edition 12: This Banned Substances List has been updated on 20 December 2019. Substance entries added or changed are highlighted by grey background colour. The group of polycyclic aromatic hydrocarbons (PAH) has been taken off the list because their impurity status in some of our heavy cracker streams has been revised due to a change of concept regarding UVCBs (substances of very complex and variable/partly undefined composition) in the ECHA [PetCo working group](#).
- Edition 13: This Banned Substances List has been updated on 21 December 2020. Substance entries added or changed are highlighted by grey background colour.
- Edition 14: This Banned Substances List has been updated on 16 June 2021. The substances Dibutyltin didodecanoate / Dibutyltin dilaurate (DBTL), CAS 77-58-7, and Di-,isodecyl'phthalate (DIDP), CAS 26761-40-0 or CAS 68515-49-1, had to be removed from this list due to recent acquisitions. The Borealis Banned Substances List will be up-dated as soon as a viable solution for these substances is found also in these production sites.
- Edition 15: This Banned Substances List has been updated on 21 December 2021. Substance entries added or changed are highlighted by grey background colour.
- Edition 16: This Banned Substances List has been updated on 12 December 2022. Substance entries added or changed are highlighted by grey background colour.