

Borealis Banned and Restricted Substances (Black and Grey List)

1. Scope

As a manufacturer, committed to the Responsible Care Global Charter, Borealis is banning or restricting the use of certain substances in its production processes and products that are dangerous for human health or the environment. Borealis has also applied a precautionary approach to certain substances due to the potential health or environmental risks they may present and that are still being assessed by regulatory authorities. Borealis will regularly review these lists of Borealis Banned and Restricted Substances in light of the conclusions of risk-assessments and classifications of chemicals.

Table 1 lists banned chemical substances, which are not intentionally used in Borealis production processes or which are not intentionally included in products manufactured by Borealis in unreacted form (the “Black List”).

Table 2 lists substances that are subject to substitution plans in Borealis. They will be gradually phased out in Borealis production processes and in Borealis end products once technically and economically viable alternatives become available. Products containing chemical substances included in this “Grey List” are kept under surveillance and active work is performed to find less hazardous alternatives and to implement those.

The black and grey list is based on a review of substances that are relevant or can be used in Borealis base chemicals or polyolefins specific production processes and products. It does not constitute a comprehensive list of other hazardous or potentially hazardous substances that are irrelevant for or of no use in Borealis processes or products.

The ban or restriction 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 used in certain maintenance processes under strictly controlled conditions.

In addition to the Table 1 Black List, Borealis does not intentionally use in its production processes and products substances that are restricted under the following EU Regulations:

- **EU Regulation 1005/2009/EC** on substances that deplete the ozone layer
- **EU Regulation (EC) No 850/2004** on persistent organic pollutants and amending Directive 79/117/EC (Stockholm convention)

2. List of Borealis Banned Substances – “Black List” (Table 1)

Substance group ¹	Substance name ²	CAS no. ³	Hazard ⁴	Regulation ⁵
Acrylamide	Acrylamide	79-06-1	Carc.1B, Mut.1B	SVHC
Aniline-Formaldehyde-Polymer	Formaldehyde, oligomeric reaction products with aniline	25214-70-4	Carc.1B	Annex XVII, SVHC
Aromatic amines (restricted in Regulation 1907/2006/EC, Annex XVII)	2-Naphthylamine	91-59-8	Carc.1A, Aq.Chron.2	Annex XVII
	Benzidine	92-87-5	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII
	4-Nitrobiphenyl	92-93-3	Carc.1B, Aq.Chron.2	Annex XVII
	Biphenyl-4-ylamine	92-67-1	Carc.1A	Annex XVII
	4,4'- Diaminodiphenylmethane	101-77-9	Carc.1B, Aq.Chron.2	Annex XVII, Annex XIV, 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, SVHC
	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, SVHC
	Diarsenic trioxide	1327-53-3	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, 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	76/768/EEC
	Musk xylene	81-15-2	Carc.2, Aq.Acute1, Aq.Chron.1	76/768/EEC, Annex XIV, SVHC

Substance group ¹	Substance name ²	CAS no. ³	Hazard ⁴	Regulation ⁵
	Musk ambrette	83-66-9	potential vPvB	76/768/EEC
	Musk tibetene	145-39-1	potential vPvB	76/768/EEC
	Polycyclic musks	Several	potential PBT/vPvB, ED	-----
Asbestos	All	Several	CMR	Annex XVII
Azocolorants (restricted in Regulation 1907/2006/EC, Annex XVII)		Several	CMR, Aq. Chron.	Annex XVII
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, SVHC
Boric acid	Boric acid	10043-35-3, 11113-50-1	Repr.1A	SVHC
Chlorinated hydrocarbons	Alkanes, C10-13, chloro (Short-chain chlorinated paraffins)	85535-84-8	Carc.2, Aq.Acute1, Aq.Chron.1, PBT	Annex XVII, SVHC
	Alkanes, C14-17, chloro (Medium-chain chlorinated paraffins)	85535-85-9	Aq.Acute1, Aq.Chron.1	----
	Monomethyl tetrachlorodiphenyl methane (Ugilec 141)	76253-60-6	Aq.Acute1, Aq.Chron.1	Annex XVII
	Monomethyl dichlorodiphenyl methane (Ugilec 121 or Ugilec 21)	unknown	Aq.Acute1, Aq.Chron.1	Annex XVII
	Trichlorobenzene	108-70-3, 87-61-6, 120-82-1	PBT like substance (equivalent level of concern)	Annex XVII, SVHC
	Trichloroethylene	79-01-6	Carc.1B	Annex XVII, SVHC
	1,2,3-Trichloropropane	96-18-4	Carc.1B, Repr.1B	Annex XVII, SVHC
Cobalt(II)carbonate	Cobalt(II)carbonate	513-79-1	Carc.1B, Repr.1B	Annex XVII, SVHC
Cobalt(II)diacetate	Cobalt(II)diacetate	71-48-7	Carc.1B, Repr.1B	Annex XVII, SVHC
Cobalt dichloride	Cobalt dichloride	7646-79-9	Carc.1B, Repr.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
Cobalt(II)dinitrate	Cobalt(II)dinitrate	10141-05-6	Carc.1B, Repr.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC

Substance group ¹	Substance name ²	CAS no. ³	Hazard ⁴	Regulation ⁵
Cobalt(II)sulfate	Cobalt(II)sulfate	10124-43-3	Carc.1B, Repr.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
Cyclododecane	Cyclododecane	294-62-2	PBT	
Dibutyltin (DBT) compounds	Dibutyltin didodecanoate / Dibutyltindilaurate (DBTL)	77-58-7	Repr.1B, Potential PBT/vPvB	2009/425/EC
1,2-Dichloroethane	1,2-Dichloroethane	107-06-2	Carc.1B	Annex XVII, SVHC
2,2'-dichloro-4,4'-methylenedianiline	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
1,3-Dichloro-2-propanol		96-23-1	Carc.1B	Annex XVII, GADSL
N,N-Dimethylacetamide	N,N-Dimethylacetamide	127-19-5	Repr.1B	Annex XVII, SVHC
Dimethylfumarate	Dimethylfumarate (DMF)	624-49-7	A	2009/251/EC
2,4-Dinitrotoluene		121-14-2	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC
Dioxins and Furans	Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF)	Several	POP	Prop 65, Stockholm convention
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
Heavy metals and their compounds (Cd, Hg, Pb, Cr(VI) ⁶)	All	Several	CMR, Aq.Acute, Aq.Chron., ...	Annex XVII, RoHS, PPW, ELV, Toys
	Dichromium tris(chromate)	24613-89-6	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys
	Lead chromate	7758-97-6	Carc.1B, Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, 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, SVHC
	Lead diazide, Lead azide	13424-46-9	Repr.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC

Substance group ¹	Substance name ²	CAS no. ³	Hazard ⁴	Regulation ⁵
	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, 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, RoHS, PPW, ELV, Toys, SVHC
	Potassium hydroxyl- octaoxodizincatedichromate	11103-86-9	Carc.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Sodium dichromate	7789-12-0, 10588-01-9	Carc.1B, Mut.1B, Repr.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
	Strontium chromate	7789-06-2	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys, SVHC
Hexabromo- cycloalkanes	1,2,5,6,9,10- Hexabromocyclodecane	3194-55-6	potential PBT	PRIO, SVHC, Annex XIV
	Hexabromocyclododecane	25637-99-4	PBT	PRIO, SVHC
2-Methoxyaniline	2-Methoxyaniline; o-Anisidine	90-04-0	Carc. 1B	Annex XVII, SVHC
2-Methoxyethanol	2-Methoxyethanol	109-86-4	Repr.1B	SVHC
Monomethyl dibromodiphenyl methane (DBBT)	Monomethyl dibromodiphenyl methane (DBBT)	99688-47-8	Aq.Acute1, Aq.Chron.1	Annex XVII
N-methyl-2-pyrrolidone ⁷	N-methyl-2-pyrrolidone (1-methyl-2-pyrrolidone)	872-50-4	Repr. 1B	Annex XVII, SVHC
Nickel and Nickel compounds ⁸	Nickel	7440-02-0	Carc.2	Annex XVII
	Nickel monoxide ⁹	1313-99-1	Carc.1A	Annex XVII

Substance group ¹	Substance name ²	CAS no. ³	Hazard ⁴	Regulation ⁵
Octyl- and Nonylphenols and their derivatives	Octylphenols	Several	potential PBT/vPvB, potential ED	----
	Nonylphenols	Several	CMR, Aq.Acute, Aq.Chron., ED	Annex XVII
	Octylphenoethoxylates	Several	potential PBT/vPvB, potential ED	----
	Nonylphenoethoxylates ¹⁰	Several	CMR, Aq.Acute, Aq.Chron., ED	Annex XVII
	Tris-(nonylphenyl)-phosphite, TNPP ¹⁰	26523-78-4	May contain residual nonylphenol	----
PFOS and PFOA	Perfluorooctane sulfonate (PFOS)	Several	PBT, potential POP	Annex XVII
	Perfluorooctanic acid (PFOA)	68141-02-6	potential PBT, potential CMR	----
Phenolphthalein	Phenolphthalein	77-09-8	Carc.1B	Annex XVII, SVHC
Phthalates	Benzylbutylphthalate (BBP)	85-68-7	Repr.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, Annex XIV, SVHC
	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	Repr.1B	Annex XVII, SVHC
	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	Repr.1B	Annex XVII, SVHC
	Bis(2-methoxyethyl) phthalate	117-82-8	Repr.1B	Annex XVII, SVHC
	Dibutylphthalate (DBP)	84-74-2	Repr.1B, Aq.Acute1	Annex XVII, Annex XIV, SVHC
	Di-2-ethyl hexyl phthalate (DEHP) ¹¹	117-81-7	Repr.1B	Annex XVII, Annex XIV, SVHC
	Diethyl phthalate (DEP) ¹¹	84-66-2	potential ED, potential CMR	----
	Diisobutylphthalate (DIBP) ¹¹	84-69-5	Repr.1B	Annex XVII, SVHC
	Di-,isononyl'phthalate (DINP)	28553-12-0 68515-48-0	potential ED, potential CMR	Annex XVII
	Di-,isodecyl'phthalate (DIDP)	26761-40-0 68515-49-1	potential ED, potential CMR	Annex XVII

Substance group ¹	Substance name ²	CAS no. ³	Hazard ⁴	Regulation ⁵
	Di-n-octylphthalate (DNOP)	117-84-0	potential ED, potential CMR	Annex XVII
Polybrominated biphenyls, PBB	Decabromo-1,1'-biphenyl	13654-09-6	PBT, CMR, potential ED	Annex XVII, RoHS
	Octabromobiphenyl mixture tetrabromo(tetrabromophenyl)benzene	27858-07-7	PBT, CMR, potential ED	Annex XVII, RoHS
	Hexabromobiphenyl (HBB)	36355-01-8	PBT, CMR, potential ED	Annex XVII, RoHS
Polybrominated diphenylether (PBDE)	Diphenylether, pentabromo derivative	32534-81-9	PBT/vPvB, Aq.Acute1, Aq.Chron.1	RoHS
	Diphenylether, octabromo derivative	32536-52-0	PBT, Repr.1B	Annex XVII, RoHS
	Diphenylether, nonabromo derivative	63936-56-1	potential PBT/vPvB,	RoHS
	Diphenylether, decabromo derivative	1163-19-5	potential PBT/vPvB,	RoHS
Polychlorinated Biphenyls		1336-36-3	Aq.Acute1, Aq.Chron.1, PBT/vPvB, POP	Annex XVII
Polychlorinated Terphenyls		61788-33-8	potential PBT/vPvB	Annex XVII
Polycyclic aromatic hydrocarbons (PAH)	Anthracene and anthracene oils	Several	PBT	SVHC
	Coal tar pitch, high temperature	65996-93-2	PBT, Carc.1B	SVHC
	Others	Several	CMR, POP	Partly Annex XVII or Stockholm convention
Radioactive substances		Several	R	----
Silica, crystalline - in free form	Cristobalite	14464-46-1	CMR (IARC class 1)	----
	Quartz	14808-60-7	CMR (IARC class 1)	----
	Tripoli	1317-95-9	CMR (IARC class 1)	----
	Tridymite	15468-32-3	CMR (IARC class 1)	----
Tetraboron disodium heptaoxide, hydrate	Tetraboron disodium heptaoxide, hydrate	12267-73-1	Repr.1B	SVHC
Tetra-bromo-bisphenol - A, TBBPA		21850-44-2	Evaluations ongoing	----

Substance group ¹	Substance name ²	CAS no. ³	Hazard ⁴	Regulation ⁵
4-(1,1,3,3-tetramethylbutyl)phenol	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	ED Aq.Acute1, Aq.Chron.1	SVHC
Triclosan		3380-34-5	Aq.Acute1, Aq.Chron.1	----
Tris(2-chloroethyl) phosphate		115-96-8	Repr.1B, Aq.Chron.2	SVHC
Tri-substituted organostannic compounds	Tributyltin	688-73-3	potential PBT/vPvB	Annex XVII
	Bis(tributyltin)oxide	56-35-9	PBT	SVHC
	Triphenyltin compounds	Several	potential PBT/vPvB	----
Vinyl chloride		75-01-4	Carc.1A	Annex XVII
Vinylidene chloride		75-35-4	Carc.2	Annex XVII

3. List of Borealis Restricted Substances – “Grey List” (Table 2)

Substance group ¹²	Substance name	CAS no. ³	Hazard ⁴	Regulation ⁵	Current use
Alkyltin compounds	dioctyltin didodecanoate / Dioctyltin dilaurate	3648-18-8	Repr.2 Potential PBT/vPvB,	2009/425/EC	In catalyst masterbatches
Aluminosilicate refractory ceramic fibres	Aluminosilicate refractory ceramic fibres	Index number 650-017-00-8	Carc.1B	Annex XVII, SVHC	Thermal insulation of piping and vessels in plants
Antimony and antimony compounds	Antimony trioxide	1309-64-4	Carc.2	GADSL (D), Prop 65	Flame retardant in some specific grades
Brominated flame retardants	1,3,5-tris(2,3-dibromopropyl)-2,4,6(1H,3H,5H)-trione-1,3,5-triazine	52434-90-9	Potential PBT/vPvB, potential CMR, potential ED	----	Flame retardant in some specific grades
	1,1'-(ethane-1,2-diyl)bis[pentabromo benzene]	84852-53-9	Potentially persistent, potential CMR	----	Flame retardant in some specific grades
Butylated hydroxyanisole	Butylated hydroxyanisole (BHA)	25013-16-5	potential CMR, potential ED	Prop 65, 2002/72/EC, 95/2/EC	Stabiliser in one purchased raw material in some specific grades
Butylated hydroxytoluene ¹³	Butylated hydroxytoluene (BHT)	128-37-0	Aq.Acute1, Aq.Chron.1	----	Stabiliser in some polyolefin products
Chromium VI ¹⁴	Chromium(VI) compound	Several	CMR cat.1A, Aq.Acute1, Aq.Chron.1	Annex XVII, RoHS, PPW, ELV, Toys	catalysts – used in closed systems
Disodium tetraborate, anhydrous	Disodium tetraborate, anhydrous	1330-43-4 1303-96-4 12179-04-3	Repr.1B	SVHC	Process chemical
Hydrazine	Hydrazine	7803-57-8, 302-01-2	Carc.1B, Aq.Acute1, Aq.Chron.1	Annex XVII, SVHC	Corrosion inhibitor in steam generation – used in closed system
Nickel and Nickel compounds ¹⁵	Nickel monoxide	1313-99-1	Carc.1A	Annex XVII	Hydrogenation catalyst in petrochemical and ammonia processes; used in closed system and recycled
Octyl- and Nonylphenols and their derivatives	Nonylphenoethoxylates	9016-45-9	CMR, Aq.Acute, Aq.Chron., ED	Annex XVII	Stabiliser in two additives used in a few polypropylene products

Substance group ¹²	Substance name	CAS no. ³	Hazard ⁴	Regulation ⁵	Current use
	Tris-(nonylphenyl)-phosphite, TNPP	26523-78-4	May contain residual nonylphenol	----	Stabiliser in an additive used in a few polyethylene products
Perfluorinated chemicals	perfluoro-1,3-dimethyl-cyclohexane (PFC)	335-27-3	Persistent	----	Solvent used in closed system < 1 ppm total fluorine in product
	1,1,2,2-Tetrahydroperfluoro alkyl Acrylate	several	Persistent	----	Solvent used in closed system < 1 ppm total fluorine in product
Phthalates ¹⁶	DEHP (di-2-ethyl hexyl phthalate)	117-81-7	Repr.1B	Annex XVII SVHC	PP Catalysts used in closed system < 1ppm in product
	DEP (diethyl phthalate)	84-66-2	potential ED, potential CMR	----	PP catalysts used in closed system < 1ppm in product
	DIBP (Diisobutyl phthalate)	84-69-5	Repr.1B	SVHC	PP catalysts used in closed system < 1ppm in product
Zirconia aluminosilicate refractory ceramic fibres	Zirconia aluminosilicate refractory ceramic fibres	Index number 650-017-00-8	Carc.1B	Annex XVII, SVHC	Thermal insulation of piping and vessels in plants

4. Explanation of footnotes

- 1) Unless stated otherwise all substances that fall into the substance group are covered by Table 1.
- 2) The substances listed in Table 1 are examples for the substance group, not all the concerned substances are explicitly listed.
- 3) CAS no. = Chemical Abstract Service registry number
- 4) 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, **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, **POP** = persistent organic pollutant, **R*** = radioactive, **Repr.*** = reproductive toxicity category,

* Classification according to Annex VI, Regulation 1272/2008/EC

- 5) 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)

76/768/EEC = Directive 76/768/EEC as amended – cosmetic products

95/2/EC = Directive 95/2/EC – on food additives other than colours and sweeteners

2002/72/EC = Directive 2002/72/EC – 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 dimethylfumarate 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

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 2002/95/EC – Restriction of certain hazardous substances in electrical and electronic equipment

Stockholm convention = Regulation (EC) No 850/2004 – persistent organic pollutants and amending Directive 79/117/EC

SVHC = Substances of very high concern proposed for inclusion to 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.

Toys = Directive 2009/48/EC on the safety of toys

- 6) Cr(VI) can be present in catalysts used during certain closed process steps as an intermediate. Cr(VI) is not contained in the end product above 1 ppm.
- 7) *N*-methyl-2-pyrrolidone may be used as an emergency chemical to stop polymerisation in a reactor.
- 8) Rutile pigments containing nickel are not subject to this standard
- 9) In certain closed processes nickel monoxide is used as a catalyst. Nickel monoxide is not contained in end products above 1 ppm.
- 10) Used as stabilisers in additives purchased by Borealis (see grey list – Table 2).
- 11) Excluded from the Black List is the use of small quantities of phthalates contained in catalysts. Phthalates are not contained in end products above 1 ppm.
- 12) All substances that fall into the substance group are covered by the grey list unless they are already covered by the black list (Table 1).
- 13) Applications of butylated hydroxytoluene in closed systems for industrial use only are not in scope of the black and grey list.
- 14) Only the application of Cr(VI) compounds as a catalyst is covered by the grey list, all other applications of Cr(VI) compounds are covered by the black list. Chromium has the oxidation state of VI only intermediately as the catalyst is activated.
- 15) Only the application of nickel as a catalyst is covered by the grey list, all other applications of nickel compounds are covered by the black list.
- 16) Only the application of the listed phthalates in catalysts is covered by the grey list, all other applications of phthalates are covered by the black list.

5. 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 up-dated on 04 January 2011.

Edition 3: This Black and Grey List has been up-dated on 01 July 2011.

Edition 4: This Black and Grey List has been up-dated on 24 January 2012. Substance entries added or changed are highlighted by grey background colour.