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Certificate of EU REACH Compliance

We hereby certify that any products do not contain substances from the "Candidate List of Substances of Very High Concern for Authorization" of REACH Regulation in thresholds exceeding 0.1% by weight (except for exempted products by the EU RoHS Directive).

Candidate List of Substances of Very High Concern (Oct. 28, 2008)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-------------------------|--|
| 1 | Lead hydrogen arsenate | 232-064-2 | 7784-40-9 |
| 2 | Benzyl butyl phthalate (BBP) | 201-622-7 | 85-68-7 |
| 3 | 4,4'- Diaminodiphenylmethane (MDA) | 202-974-4 | 101-77-9 |
| 4 | Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) | 287-476-5 | 85535-84-8 |
| 5 | Anthracene | 204-371-1 | 120-12-7 |
| 6 | Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: (α -HBCDD, β -HBCDD, γ -HBCDD) | 247-148-4 and 221-695-9 | 25637-99-4, 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8) |
| 7 | Bis (2-ethylhexyl) phthalate (DEHP) | 204-211-0 | 117-81-7 |
| 8 | Bis (tributyltin) oxide (TBTO) | 200-268-0 | 56-35-9 |
| 9 | 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene) | 201-329-4 | 81-15-2 |
| 10 | Diarsenic trioxide | 215-481-4 | 1327-53-3 |
| 11 | Triethyl arsenate | 427-700-2 | 15606-95-8 |
| 12 | Diarsenic pentaoxide | 215-116-9 | 1303-28-2 |
| 13 | Sodium dichromate | 234-190-3 | 7789-12-0, 10588-01-9 |
| 14 | Dibutyl phthalate (DBP) | 201-557-4 | 84-74-2 |
| 15 | Cobalt dichloride | 231-589-4 | 7646-79-9 |

Candidate List of Substances of Very High Concern (Jan. 13, 2010)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|------------|
| 16 | Lead sulfochromate yellow (C.I. Pigment Yellow 34) | 215-693-7 | 1344-37-2 |
| 17 | Lead chromate molybdate sulphate red (C.I. Pigment Red 104) | 235-759-9 | 12656-85-8 |
| 18 | 2,4-Dinitrotoluene | 204-450-0 | 121-14-2 |
| 19 | Anthracene oil | 292-602-7 | 90640-80-5 |
| 20 | Anthracene oil, anthracene paste, anthracene fraction | 295-275-9 | 91995-15-2 |
| 21 | Anthracene oil, anthracene-low | 292-604-8 | 90640-82-7 |
| 22 | Diisobutyl phthalate | 201-553-2 | 84-69-5 |
| 23 | Tris (2-chloroethyl) phosphate | 204-118-5 | 115-96-8 |
| 24 | Lead chromate | 231-846-0 | 7758-97-6 |
| 25 | Anthracene oil, anthracene paste | 292-603-2 | 90640-81-6 |
| 26 | Pitch, coal tar, high temp. | 266-028-2 | 65996-93-2 |
| 27 | Anthracene oil, anthracene paste, distn. lights | 295-278-5 | 91995-17-4 |

Candidate List of Substances of Very High Concern (Mar. 30, 2010)

| No. | Substance Name | EC No. | CAS No. |
|-----|----------------|-----------|---------|
| 28 | Acrylamide | 201-173-7 | 79-06-1 |

Candidate List of Substances of Very High Concern (June 18, 2010)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|----------------------------------|
| 29 | Trichloroethylene | 201-167-4 | 79-01-6 |
| 30 | Potassium dichromate | 231-906-6 | 7778-50-9 |
| 31 | Tetraboron disodium heptaoxide, hydrate | 235-541-3 | 12267-73-1 |
| 32 | Boric acid Boric acid, crude natural EC No.:234-343-4 CAS No.:11113-50-1 Boric acid. EC No.:233-139-2 CAS No.:10043-35-3 | - | - |
| 33 | Ammonium dichromate | 232-143-1 | 7789-09-5 |
| 34 | Sodium chromate | 231-889-5 | 7775-11-3 |
| 35 | Disodium tetraborate, anhydrous | 215-540-4 | 1303-96-4, 1330-43-4, 12179-04-3 |
| 36 | Potassium chromate | 232-140-5 | 7789-00-6 |

Candidate List of Substances of Very High Concern (Dec. 15, 2010)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|----------------------|-----------------------|
| 37 | Cobalt (II) diacetate | 200-755-8 | 71-48-7 |
| 38 | 2-Ethoxyethanol | 203-804-1 | 110-80-5 |
| 39 | Cobalt (II) sulphate | 233-334-2 | 10124-43-3 |
| 40 | Acids generated from chromium trioxide and their oligomers. Oligomers of chromic acid and dichromic acid EC No.: - CAS No.: - Dichromic acid EC No.:236-881-5 CAS No.:13530-68-2 Chromic acid EC No.:231-801-5 CAS No.:7738-94-5 | 231-801-5, 236-881-5 | 7738-94-5, 13530-68-2 |
| 41 | 2-Methoxyethanol | 203-713-7 | 109-86-4 |
| 42 | Chromium trioxide | 215-607-8 | 1333-82-0 |
| 43 | Cobalt (II) carbonate | 208-169-4 | 513-79-1 |
| 44 | Cobalt (II) dinitrate | 233-402-1 | 10141-05-6 |

Candidate List of Substances of Very High Concern (June 20, 2011)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|---------------------|
| 45 | 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich | 276-158-1 | 71888-89-6 |
| 46 | Strontium chromate | 232-142-6 | 7789-06-2 |
| 47 | 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters | 271-084-6 | 68515-42-4 |
| 48 | 1-Methyl-2-pyrrolidone | 212-828-1 | 872-50-4 |
| 49 | 1,2,3-Trichloropropane | 202-486-1 | 96-18-4 |
| 50 | 2-Ethoxyethyl acetate | 203-839-2 | 111-15-9 |
| 51 | Hydrazine | 206-114-9 | 302-01-2, 7803-57-8 |

Candidate List of Substances of Very High Concern (Dec. 19, 2011)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|------------|
| 52 | Phenolphthalein | 201-004-7 | 77-09-8 |
| 53 | N,N-dimethylacetamide | 204-826-4 | 127-19-5 |
| 54 | 4-(1,1,3,3-tetramethylbutyl)phenol | 205-426-2 | 140-66-9 |
| 55 | Lead diazide, Lead azide | 236-542-1 | 13424-46-9 |
| 56 | Lead dipicrate | 229-335-2 | 6477-64-1 |
| 57 | 1,2-dichloroethane | 203-458-1 | 107-06-2 |
| 58 | Calcium arsenate | 231-904-5 | 7778-44-1 |
| 59 | Dichromium tris(chromate) | 246-356-2 | 24613-89-6 |
| 60 | 2-Methoxyaniline; o-Anisidine | 201-963-1 | 90-04-0 |
| 61 | Pentazinc chromate octahydroxide | 256-418-0 | 49663-84-5 |
| 62 | Zirconia Aluminosilicate Refractory Ceramic Fibres | | |
| 63 | Arsenic acid | 231-901-9 | 7778-39-4 |
| 64 | Potassium hydroxyoctaoxodizincatedichromate | 234-329-8 | 11103-86-9 |
| 65 | Formaldehyde, oligomeric reaction products with aniline | 500-036-1 | 25214-70-4 |

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|------------|
| 66 | Lead styphnate | 239-290-0 | 15245-44-0 |
| 67 | Bis(2-methoxyethyl) phthalate | 204-212-6 | 117-82-8 |
| 68 | Trilead diarsenate | 222-979-5 | 3687-31-8 |
| 69 | Aluminosilicate Refractory Ceramic Fibres | | |
| 70 | Bis(2-methoxyethyl) ether | 203-924-4 | 111-96-6 |
| 71 | 2,2'-dichloro-4,4'-methylenedianiline | 202-918-9 | 101-14-4 |

Candidate List of Substances of Very High Concern (June 18, 2012)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|------------|
| 72 | α , α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino) naphthalene-1-methanol (C.I. Solvent Blue 4) | 229-851-8 | 6786-83-0 |
| 73 | 1,3,5-tris[(2S and2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β -TGIC) | 423-400-0 | 59653-74-6 |
| 74 | N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base) | 202-959-2 | 101-61-1 |
| 75 | Diboron trioxide | 215-125-8 | 1303-86-2 |
| 76 | 1,2-bis(2-methoxyethoxy)ethane(TEGDME; triglyme) | 203-977-3 | 112-49-2 |
| 77 | Formamide | 200-842-0 | 75-12-7 |
| 78 | 4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol | 209-218-2 | 561-41-1 |
| 79 | Lead(II) bis(methanesulfonate) | 401-750-5 | 17570-76-2 |
| 80 | [4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) | 208-953-6 | 548-62-9 |
| 81 | 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) | 203-794-9 | 110-71-4 |
| 82 | [4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26) | 219-943-6 | 2580-56-5 |
| 83 | 1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC) | 219-514-3 | 2451-62-9 |
| 84 | 4,4'-bis(dimethylamino) benzophenone (Michler's ketone) | 202-027-5 | 90-94-8 |

Candidate List of Substances of Very High Concern (Dec. 19, 2012)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|-------------|
| 85 | Hexahydromethylphthalic anhydride Hexahydro-1-methylphthalic anhydride EC No.: 256-356-4 CAS No.: 48122-14-1 Hexahydromethylphthalic anhydride EC No.: 247-094-1 CAS No.: 25550-51-0 Hexahydro-3-methylphthalic anhydride EC No.: 260-566-1 CAS No.: 57110-29-9 Hexahydro-4-methylphthalic anhydride EC No.: 243-072-0 CAS No.: 19438-60-9 | - | - |
| 86 | 6-methoxy-m-toluidine (p-cresidine) | 204-419-1 | 120-71-8 |
| 87 | Cyclohexane-1, 2-dicarboxylic anhydride Cyclohexane-1,2-dicarboxylic anhydride EC No.: 201-604-9 CAS No.: 85-42-7 cis-cyclohexane-1,2-dicarboxylic anhydride EC No.: 236-086-3 CAS No.: 13149-00-3 trans-cyclohexane-1,2-dicarboxylic anhydride EC No.: 238-009-9 CAS No.: 14166-21-3 | - | - |
| 88 | Pyrochlore, antimony lead yellow | 232-382-1 | 8012-00-8 |
| 89 | Henicosafuoroundecanoic acid | 218-165-4 | 2058-94-8 |
| 90 | 4-Aminoazobenzene | 200-453-6 | 60-09-3 |
| 91 | Silicic acid, lead salt | 234-363-3 | 11120-22-2 |
| 92 | Lead titanium zirconium oxide | 235-727-4 | 12626-81-2 |
| 93 | Lead monoxide (lead oxide) | 215-267-0 | 1317-36-8 |
| 94 | o-Toluidine | 202-429-0 | 95-53-4 |
| 95 | 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine | 421-150-7 | 143860-04-2 |
| 96 | Dibutyltin dichloride (DBTC) | 211-670-0 | 683-18-1 |
| 97 | Lead bis (tetrafluoroborate) | 237-486-0 | 13814-96-5 |
| 98 | Lead dinitrate | 233-245-9 | 10099-74-8 |
| 99 | Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped | 272-271-5 | 68784-75-8 |

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|-------------|
| 100 | Trilead bis (carbonate) dihydroxide | 215-290-6 | 1319-46-6 |
| 101 | 4-4'-methylenedi-o-toluidine | 212-658-8 | 838-88-0 |
| 102 | Diethyl sulphate | 200-589-6 | 64-67-5 |
| 103 | Dimethyl sulphate | 201-058-1 | 77-78-1 |
| 104 | N,N-dimethylformamide | 200-679-5 | 68-12-2 |
| 105 | 4-(1,1,3,3-tetramethylbutyl) phenol, ethoxylated Poly(oxy-1,2-ethanediyl), α-[(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy- EC No.: - CAS No.:9036-19-5 Polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenyl ether EC No.: - CAS No.:9002-93-1 20-[4-(1,1,3,3-tetramethylbutyl)phenoxy]-3,6,9,12,15,18-hexaoxaicosan-1-ol EC No.:219-682-8 CAS No.:2497-59-8 2-[4-(1,1,3,3-tetramethylbutyl)phenoxy]ethanol EC No.: - CAS No.:2315-67-5 | - | - |
| 106 | 4-Nonylphenol, branched and linear p-(1,1-dimethylheptyl)phenol EC No.: 250-339-5 CAS No.: 30784-30-6 p-(1,1-dimethylheptyl)phenol EC No.: 241-427-4 CAS No.: 17404-66-9 p-nonylphenol EC No.: - CAS No.: 104-40-5 4-(1-ethyl-1-methylhexyl)phenol EC No.: 257-907-1 CAS No.: 52427-13-1 p-isononylphenol EC No.: 247-770-6 CAS No.: 26543-97-5 4-(1-ethyl-1,3-dimethylpentyl)phenol EC No.: - CAS No.: 186825-36-5 4-(1-ethyl-1,4-dimethylpentyl)phenol EC No.: - CAS No.: 142731-63-3 Phenol, 4-nonyl-, branched EC No.: 284-325-5 CAS No.: 84852-15-3 4-(3-ethylheptan-2-yl)phenol EC No.: - CAS No.: 186825-39-8 Nonylphenol EC No.: 246-672-0 CAS No.: 25154-52-3 Isononylphenol EC No.: 234-284-4 CAS No.: 11066-49-2 4-(1,1,5-Trimethylhexyl)phenol EC No.: - CAS No.: 521947-27-3 Phenol, nonyl-, branched EC No.: 291-844-0 CAS No.: 90481-04-2 | - | - |
| 107 | Furan | 203-727-3 | 110-00-9 |
| 108 | Lead oxide sulfate | 234-853-7 | 12036-76-9 |
| 109 | Lead titanium trioxide | 235-038-9 | 12060-00-3 |
| 110 | Bis (pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE) | 214-604-9 | 1163-19-5 |
| 111 | Dinoseb (6-sec-butyl-2,4-dinitrophenol) | 201-861-7 | 88-85-7 |
| 112 | 1,2-Diethoxyethane | 211-076-1 | 629-14-1 |
| 113 | N-methylacetamide | 201-182-6 | 79-16-3 |
| 114 | Tetralead trioxide sulphate | 235-380-9 | 12202-17-4 |
| 115 | Acetic acid, lead salt, basic | 257-175-3 | 51404-69-4 |
| 116 | [Phthalato(2-)] dioxotrilead | 273-688-5 | 69011-06-9 |
| 117 | Tetraethyllead | 201-075-4 | 78-00-2 |
| 118 | N-pentyl-isopentylphthalate | - | 776297-69-9 |
| 119 | Pentalead tetraoxide sulphate | 235-067-7 | 12065-90-6 |
| 120 | Heptacosafuorotetradecanoic acid | 206-803-4 | 376-06-7 |
| 121 | Tricosafuorododecanoic acid | 206-203-2 | 307-55-1 |
| 122 | 1-bromopropane (n-propyl bromide) | 203-445-0 | 106-94-5 |
| 123 | Dioxobis (stearato) trilead | 235-702-8 | 12578-12-0 |
| 124 | Pentacosafuorotridecanoic acid | 276-745-2 | 72629-94-8 |
| 125 | Methoxyacetic acid | 210-894-6 | 625-45-6 |
| 126 | Methyloxirane (propylene oxide) | 200-879-2 | 75-56-9 |
| 127 | Trilead dioxide phosphonate | 235-252-2 | 12141-20-7 |
| 128 | o-aminoazotoluene | 202-519-2 | 97-56-3 |
| 129 | 4-methyl-m-phenylenediamine (toluene-2,4-diamine) | 202-453-1 | 95-80-7 |
| 130 | Diisopentyl phthalate | 210-088-4 | 605-50-5 |
| 131 | 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear | 284-032-2 | 84777-06-0 |
| 132 | Biphenyl-4-ylamine | 202-177-1 | 92-67-1 |
| 133 | Fatty acids, C16-18, lead salts | 292-966-7 | 91031-62-8 |

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|------------|
| 134 | Orange lead (lead tetroxide) | 215-235-6 | 1314-41-6 |
| 135 | 4-4'-oxydianiline and its salts | 202-977-0 | 101-80-4 |
| 136 | Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) | 204-650-8 | 123-77-3 |
| 137 | Sulfurous acid, lead salt, dibasic | 263-467-1 | 62229-08-7 |
| 138 | Lead cyanamidate | 244-073-9 | 20837-86-9 |

Candidate List of Substances of Very High Concern (June 20, 2013)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|-----------|
| 139 | Cadmium | 231-152-8 | 7440-43-9 |
| 140 | Ammonium pentadecafluorooctanoate (APFO) | 223-320-4 | 3825-26-1 |
| 141 | Pentadecafluorooctanoic acid (PFOA) | 206-397-9 | 335-67-1 |
| 142 | Dipentyl phthalate (DPP) | 205-017-9 | 131-18-0 |
| 143 | 4-Nonylphenol, branched and linear, ethoxylated | | |
| 144 | Cadmium oxide | 215-146-2 | 1306-19-0 |

Candidate List of Substances of Very High Concern (December 16, 2013)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|------------|
| 145 | Cadmium sulphide | 215-147-8 | 1306-23-6 |
| 146 | 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) | 217-710-3 | 1937-37-7 |
| 147 | Dihexyl phthalate | 201-559-5 | 84-75-3 |
| 148 | Imidazolidine-2-thione; (2-imidazoline-2-thiol) | 202-506-9 | 96-45-7 |
| 149 | Trixylyl phosphate | 246-677-8 | 25155-23-1 |
| 150 | Disodium 3,3'-[[1,1'-biphenyl]-4, 4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28) | 209-358-4 | 573-58-0 |
| 151 | Lead di (acetate) | 206-104-4 | 301-04-2 |

Candidate List of Substances of Very High Concern (June 16, 2014)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|----------------------|------------|
| 152 | 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear | 271-093-5 | 68515-50-4 |
| 153 | Cadmium chloride | 233-296-7 | 10108-64-2 |
| 154 | Sodium perborate; perboric acid, sodium salt | 239-172-9; 234-390-0 | - |
| 155 | Sodium peroxometaborate | 231-556-4 | 7632-04-4 |

Candidate List of Substances of Very High Concern (December 17, 2014)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|------------------------|
| 156 | Cadmium fluoride | 232-222-0 | 7790-79-6 |
| 157 | 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) | - | - |
| 158 | 2-ethylhexyl 10-ethyl-4, 4-dioctyl-7-oxo-8-oxa-3, 5-dithia-4-stannatetradecanoate (DOTE) | 239-622-4 | 15571-58-1 |
| 159 | 2-benzotriazol-2-yl-4, 6-di-tert-butylphenol (UV-320) | 223-346-6 | 3846-71-7 |
| 160 | Cadmium sulphate | 233-331-6 | 10124-36-4, 31119-53-6 |
| 161 | 2-(2H-benzotriazol-2-yl)-4, 6-ditertpentylphenol (UV-328) | 247-384-8 | 25973-55-1 |

Candidate List of Substances of Very High Concern (June 15, 2015)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|------------------------|--------------------------|
| 162 | 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5) | 271-094-0 272-013-1 | 68515-51-5 68648-93-1 |
| 163 | 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane[1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane[2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof] | - | - |

Candidate List of Substances of Very High Concern (December 17, 2015)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|---------------------------------|
| 164 | 1,3-propanesultone | 214-317-9 | 1120-71-4 |
| 165 | 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327) | 223-383-8 | 3864-99-1 |
| 166 | 2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350) | 253-037-1 | 36437-37-3 |
| 167 | Nitrobenzene | 202-716-0 | 98-95-3 |
| 168 | Perfluorononan-1-oic-acid and its sodium and ammonium salts | 206-801-3 | 375-95-1, 21049-39-8, 4149-60-4 |

Candidate List of Substances of Very High Concern (June 20, 2016)

| No. | Substance Name | EC No. | CAS No. |
|-----|--------------------|-----------|---------|
| 169 | Benzo[def]chrysene | 200-028-5 | 50-32-8 |

Candidate List of Substances of Very High Concern (January 12, 2017)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------------------------|------------------------------------|
| 170 | 4,4'-isopropylidenediphenol (bisphenol A; BPA) | 201-245-8 | 80-05-7 |
| 171 | Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts | 206-400-3 - 221-470-5 | 335-76-2 3830-45-3 3108-42-7 |
| 172 | p-(1,1-dimethylpropyl)phenol | 201-280-9 | 80-46-6 |
| 173 | 4-heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof] | - | - |

Candidate List of Substances of Very High Concern (July 7, 2017)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|--------|---------|
| 174 | Perfluorohexane-1-sulphonic acid and its salts | - | - |

Candidate List of Substances of Very High Concern (January 15, 2018)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|------------------------|
| 175 | Benz[a]anthracene | 200-280-6 | 56-55-3, 1718-53-2 |
| 176 | Cadmium carbonate | 208-168-9 | 513-78-0 |
| 177 | Cadmium hydroxide | 244-168-5 | 21041-95-2 |
| 178 | Cadmium nitrate | 223-710-6 | 10022-68-1, 10325-94-7 |
| 179 | Chrysene | 205-923-4 | 218-01-9, 1719-03-5 |
| 180 | Dodecachloropentacyclo[12.2.1.9.02,13.05,10]octadeca-7,15-diene ("Declorane Plus" TM) covering any of its individual anti- and syn-isomers or any combination thereof | - | - |
| 181 | Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear (4-HPbl) | - | - |

Candidate List of Substances of Very High Concern (June 27, 2018)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|------------|
| 182 | Benzene-1,2,4-tricarboxylic acid 1,2 anhydride | 209-008-0 | 552-30-7 |
| 183 | Benzo[ghi]perylene | 205-883-8 | 191-24-2 |
| 184 | Decamethylcyclopentasiloxane | 208-764-9 | 541-02-6 |
| 185 | Dicyclohexyl phthalate | 201-545-9 | 84-61-7 |
| 186 | Disodium octaborate | 234-541-0 | 12008-41-2 |
| 187 | Docecamethylcyclohexasiloxane | 208-762-8 | 540-97-6 |
| 188 | Ethylenediamine | 203-468-6 | 107-15-3 |
| 189 | Lead | 231-100-4 | 7439-92-1 |
| 190 | Octamethylcyclotetrasiloxane | 209-136-7 | 556-67-2 |
| 191 | Terphenyl, hydrogenated | 262-967-7 | 61788-32-7 |

Candidate List of Substances of Very High Concern (January 15, 2019)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|------------------------|
| 192 | 1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one 3-benzylidene camphor; 3-BC | 239-139-9 | 15087-24-8 |
| 193 | 2,2-bis(4'-hydroxyphenyl)-4-methylpentane | 401-720-1 | 6807-17-6 |
| 194 | Benzo[k]fluoranthene | 205-916-6 | 207-08-9 |
| 195 | Fluoranthene | 205-912-4 | 26-44-0; 93951-69-0 |
| 196 | Phenanthrene | 201-581-5 | 85-01-8 |
| 197 | Pyrene | 204-927-3 | 129-00-0; 1718-52-1 |

Candidate List of Substances of Very High Concern (July 16, 2019)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|----------|
| 198 | 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionic acid, its salts and its acyl halides Covering any of their individual isomers and combinations thereof | - | - |
| 199 | 2-methoxyethyl acetate | 203-772-9 | 110-49-6 |
| 200 | 4-tert-butylphenol | 202-679-0 | 98-54-4 |
| 201 | Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP) | - | - |

Candidate List of Substances of Very High Concern (Jan 16, 2020)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|-------------|
| 202 | Perfluorobutane sulfonic acid (PFBS) and its salts | - | - |
| 203 | Diisohexyl phthalate | 276-090-2 | 71850-09-4 |
| 204 | 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one | 400-600-6 | 71868-10-5 |
| 205 | 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone | 404-360-3 | 119313-12-1 |

Candidate List of Substances of Very High Concern (June 25, 2020)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|------------|
| 206 | Dibutylbis(pentane-2,4-dionato-o,o')tin | 245-152-0 | 22673-19-4 |
| 207 | Butyl 4-hydroxybenzoate | 202-318-7 | 94-26-8 |
| 208 | 2-methylimidazole | 211-765-7 | 693-98-1 |
| 209 | 1-vinylimidazole | 214-012-0 | 1072-63-5 |

Candidate List of Substances of Very High Concern (January 19, 2021)

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|----------|
| 210 | Diocetyl tin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. Wherein C12 is the predominant carbon number of the fatty acyloxy moiety Diocetyl tin dilaurate EC No.:222-883-3 CAS No.:3648-18-8 Diocetyl tin dilaurate; stannane, dioctyl-, bis(coco acyloxy) derivs. EC No.: - CAS No.: - Stannane, dioctyl-, bis (coco acyloxy) derivs. EC No.:293-901-5 CAS No.:91648-39-4 | - | - |
| 211 | Bis(2-(2-methoxyethoxy)ethyl)ether | 205-594-7 | 143-24-8 |

Candidate List of Substances of Very High Concern (July 8, 2021)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|--------|---------|
| 212 | Phenol, alkylation products (mainly in para position) with C12-rich branched alkyl chains from oligomerisation, covering any individual isomers and/or combinations thereof (PDDP) | | |
| | Phenol, 4-dodecyl, branched EC No.:310-154-3 CAS No.:121158-58-5 | | |
| | Phenol, (tetrapropenyl) derivatives EC No.: - CAS No.:74499-35-7 | - | - |
| | Phenol, 4-dodecyl, branched EC No.: - CAS No.:210555-94-5 | | |
| | 4-isododecylphenol EC No.: - CAS No.:27459-10-5 | | |
| | Phenol, tetrapropylene- EC No.: - CAS No.:57427-55-1 | | |
| 213 | Phenol, 4-isododecyl- EC No.: - CAS No.:27147-75-7 | | |
| | orthoboric acid, sodium salt | | |
| | boric acid (H3BO3), sodium salt, hydrate EC No.: - CAS No.:25747-83-5 | | |
| | Boric acid (H3BO3), disodium salt EC No.: - CAS No.:22454-04-2 | | |
| | Trisodium orthoborate EC No.:238-253-6 CAS No.:14312-40-4 | - | - |
| | Boric acid, sodium salt EC No.:215-604-1 CAS No.:1333-73-9 | | |
| 214 | Orthoboric acid, sodium salt EC No.:237-560-2 CAS No.:13840-56-7 | | |
| | Boric acid (H3BO3), sodium salt (1:1) EC No.: - CAS No.:14890-53-0 | | |

Candidate List of Substances of Very High Concern (July 8, 2021)

| No. | Substance Name | EC No. | CAS No. |
|-----|--|-----------|----------|
| 214 | Medium-chain chlorinated paraffins (MCCP) | | |
| | Alkanes, C14-16, chloro EC No.: - CAS No.:1372804-76-6 | | |
| | Alkanes, C14-17, chloro EC No.:287-477-0 CAS No.:85535-85-9 | - | - |
| | di-, tri- and tetrachlorotetradecane EC No.:950-299-5 CAS No.: - | | |
| 215 | glutaral | 203-856-5 | 111-30-8 |
| 216 | 4,4'-(1-methylpropylidene)bisphenol | 201-025-1 | 77-40-7 |
| 217 | 2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers | | |
| | (2R)-3-(4-tert-butylphenyl)-2-methylpropanal EC No.: - CAS No.:75166-31-3 | - | - |
| | 2-(4-tert-butylbenzyl)propionaldehyde EC No.: - CAS No.:80-54-6 | | |
| | (2S)-3-(4-tert-butylphenyl)-2-methylpropanal EC No.: - CAS No.:75166-30-2 | | |

| No. | Substance Name | EC No. | CAS No. |
|-----|---|-----------|----------|
| 218 | 2,2-bis(bromomethyl)propane-1,3-diol (BMP); 2,2-dimethylpropan-1-ol, tribromo derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA); 2,3-dibromo-1-propanol (2,3-DBPA) | - | - |
| | 2,2-dimethylpropan-1-ol, tribromo derivative (TBNPA) EC No.:253-057-0 CAS No.:36483-57-5 | | |
| | 3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA) EC No.: CAS No.:1522-92-5 | | |
| | 2,2-bis(bromomethyl)propane-1,3-diol (BMP) EC No.:221-967-7 CAS No.:3296-90-0 | | |
| 219 | 1,4-dioxane | 204-661-8 | 123-99-1 |

Candidate List of Substances of Very High Concern (January 17, 2022)

| No. | Substance Name | EC No. | CAS No. |
|---|--|-----------|-------------|
| 220 | tris(2-methoxyethoxy)vinylsilane | 213-934-0 | 1067-53-4 |
| 221 | S-(tricyclo(5.2.1.0'2,6)deca-3-en-8(or 9)-yl O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate | 401-850-9 | 255881-94-8 |
| 222 | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol | 204-327-1 | 119-47-1 |
| 223 | (±)-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) | - | - |
| | (3E)-1,7,7-trimethyl-3-(4'-methylbenzylidene)bicyclo[2.2.1]heptan-2-one EC No.: CAS No.:1782069-81-1 | | |
| | (1R,3E,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one EC No.: CAS No.:95342-41-9 | | |
| | (1S,3Z,4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one EC No.: CAS No.:852541-25-4 | | |
| | (±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one EC No.:253-242-6 CAS No.:36861-47-9 | | |
| | (1R,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one EC No.: CAS No.:741687-98-9 | | |
| | (1R,3E,4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one EC No.: CAS No.:852541-30-1 | | |
| (1R,3Z,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one EC No.: CAS No.:852541-21-0 | | | |

as of February 2022

Candidate List of Substances of Very High Concern (June 10, 2022)

| No. | Substance Name | EC No. | CAS No. |
|-----|-----------------------------|-----------|----------|
| 224 | N-(Hydroxymethyl)acrylamide | 213-103-2 | 924-42-5 |

as of July 2022

A list of all Substances of Very High Concern is available here:

<https://echa.europa.eu/candidate-list-table>

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