

MEMORANDUM

January 25, 2017

Subject: REACH Substances of Very High Concern

Opto 22 hereby confirms that products produced at our manufacturing facilities in Temecula, California, do not contain any Substances of Very High Concern (SVHC) as defined by Article 57 or any substances listed in Article 67 of EC No 1907/2006, the European Union regulation concerning the Registration, Evaluation, Authorisation and restriction of CHemicals (REACH). The substances (a total of 173) are listed below. Effective January 12, 2017.

If you have any questions regarding this confirmation, please contact Opto 22.

*Mark Engman,
President and CEO
Opto 22*

SVHC List per European Regulation No. 1907/2006 (REACH)		
Substance Name	EC Number	CAS Number
4,4'-isopropylidenediphenol Bisphenol A; BPA	201-245-8	80-05-7
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	-	-
Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts Decanoic acid, nonadecafluoro-, sodium salt EC no.: - CAS no.: 3830-45-3 Ammonium nonadecafluorodecanoate EC no.: 221-470-5 CAS no.: 3108-42-7 Nonadecafluorodecanoic acid EC no.: 206-400-3 CAS no.: 335-76-2	-	-
p-(1,1-dimethylpropyl)phenol	201-280-9	80-46-6
Benzo[def]chrysene (Benzo[a]pyrene)	200-028-5	50-32-8
1,3-propanesultone	214-317-9	1120-71-4
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	223-383-8	3864-99-1

2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	253-037-1	36437-37-3
Nitrobenzene	202-716-0	98-95-3
Perfluorononan-1-oic-acid and its sodium and ammonium salts Perfluorononan-1-oic-acid EC no.: 206-801-3 CAS no.: 375-95-1 Sodium salts of perfluorononan-1-oic-acid EC no.: - CAS no.: -, 21049-39-8 Ammonium salts of perfluorononan-1-oic-acid EC no.: - CAS no.: -, 4149-60-4	-	-
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (EC No. 201-559-5) 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters EC no.: 272-013-1 CAS no.: 68648-93-1 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters EC no.: 271-094-0 CAS no.: 68515-51-5	-	-
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 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane EC no.: - CAS no.: - 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane EC no.: - CAS no.: -	-	-
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	247-384-8	25973-55-1
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	223-346-6	3846-71-7
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	239-622-4	15571-58-1
Cadmium fluoride	232-222-0	7790-79-6
Cadmium sulphate	233-331-6	10124-36-4, 31119-53-6
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)	-	-
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	271-093-5	68515-50-4
Cadmium chloride	233-296-7	10108-64-2
Sodium perborate, perboric acid, sodium salt	-	-

Perboric acid, sodium salt EC no.: 234-390-0 CAS no.: 11138-47-9		
Sodium perborate EC no.: 239-172-9 CAS no.: 15120-21-5		
Sodium peroxometaborate	231-556-4	7632-04-4
Cadmium sulphide	215-147-8	1306-23-6
Dihexyl phthalate	201-559-5	84-75-3
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
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
Imidazolidine-2-thione (2-imidazoline-2-thiol)	202-506-9	96-45-7
Lead di(acetate)	206-104-4	301-04-2
Trixylyl phosphate	246-677-8	25155-23-1
4-Nonylphenol, branched and linear, ethoxylated substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof	-	-
Ammonium pentadecafluorooctanoate (APFO)	223-320-4	3825-26-1
Cadmium	231-152-8	7440-43-9
Cadmium oxide	215-146-2	1306-19-0
Dipentyl phthalate (DPP)	205-017-9	131-18-0
Pentadecafluorooctanoic acid (PFOA)	206-397-9	335-67-1
1,2-Benzenedicarboxylic acid, dipentyl ester, branched and linear	284-032-2	84777-06-0
1,2-diethoxyethane	211-076-1	629-14-1
1-bromopropane (n-propyl bromide)	203-445-0	106-94-5
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2
4,4'-methylenedi-o-toluidine	212-658-8	838-88-0
4,4'-oxydianiline and its salts	-	-
4,4'-oxydianiline EC no.: 202-977-0 CAS no.:101-80-4		
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated covering well-defined substances and UVCB substances, polymers and homologues	-	-
4-aminoazobenzene	200-453-6	60-09-3
4-methyl-m-phenylenediamine (toluene-2,4-diamine)	202-453-1	95-80-7
4-Nonylphenol, branched and linear substances with a linear and/or branched alkyl chain with a carbon number of 9	-	-

covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof		
6-methoxy-m-toluidine (p-cresidine)	204-419-1	120-71-8
[Phthalato(2-)]dioxotrilead	273-688-5	69011-06-9
Acetic acid, lead salt, basic	257-175-3	51404-69-4
Biphenyl-4-ylamine	202-177-1	92-67-1
Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE)	214-604-9	1163-19-5
Cyclohexane-1,2-dicarboxylic anhydride all possible combinations of the cis- and trans-isomers 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 Cyclohexane-1,2-dicarboxylic anhydride EC no.: 201-604-9 CAS no.: 85-42-7	-	-
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA)	204-650-8	123-77-3
Dibutyltin dichloride (DBTC)	211-670-0	683-18-1
Diethyl sulphate	200-589-6	64-67-5
Diisopentyl phthalate	210-088-4	605-50-5
Dimethyl sulphate	201-058-1	77-78-1
Dinoseb (6-sec-butyl-2,4-dinitrophenol)	201-861-7	88-85-7
Dioxobis(stearato)trilead	235-702-8	12578-12-0
Fatty acids, C16-18, lead salts	292-966-7	91031-62-8
Furan	203-727-3	110-00-9
Henicosafuoroundecanoic acid	218-165-4	2058-94-8
Heptacosafuorotetradecanoic acid	206-803-4	376-06-7
Hexahydromethylphthalic anhydride including cis- and trans- stereo isomeric forms and all possible combinations of the isomers 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-4-methylphthalic anhydride EC no.: 243-072-0 CAS no.: 19438-60-9 Hexahydro-3-methylphthalic anhydride EC no.: 260-566-1 CAS no.: 57110-29-9	-	-
Lead bis(tetrafluoroborate)	237-486-0	13814-96-5
Lead cyanamidate	244-073-9	20837-86-9
Lead dinitrate	233-245-9	10099-74-8
Lead monoxide (lead oxide)	215-267-0	1317-36-8

Lead oxide sulfate	234-853-7	12036-76-9
Lead titanium trioxide	235-038-9	12060-00-3
Lead titanium zirconium oxide	235-727-4	12626-81-2
Methoxyacetic acid	210-894-6	625-45-6
Methyloxirane (Propylene oxide)	200-879-2	75-56-9
N,N-dimethylformamide	200-679-5	68-12-2
N-methylacetamide	201-182-6	79-16-3
N-pentyl-isopentylphthalate	-	776297-69-9
o-aminoazotoluene	202-591-2	97-56-3
o-toluidine	202-429-0	95-53-4
Orange lead (lead tetroxide)	215-235-6	1314-41-6
Pentacosafuorotridecanoic acid	276-745-2	72629-94-8
Pentalead tetraoxide sulphate	235-067-7	12065-90-6
Pyrochlore, antimony lead yellow	232-382-1	8012-00-8
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Silicic acid (H₂Si₂O₅), barium salt (1:1), lead-doped with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD), the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008	272-271-5	68784-75-8
Silicic acid, lead salt	234-363-3	11120-22-2
Sulfurous acid, lead salt, dibasic	263-467-1	62229-08-7
Tetraethyllead	201-075-4	78-00-2
Tetralead trioxide sulphate	235-380-9	12202-17-4
Tricosafuorododecanoic acid	206-203-2	307-55-1
Trilead bis(carbonate) dihydroxide	215-290-6	1319-46-6
Trilead dioxide phosphonate	235-252-2	12141-20-7
1,2-bis(2-methoxyethoxy)ethane (TEGDME, triglyme)	203-977-3	112-49-2
1,2-dimethoxyethane, ethylene glycol dimethyl ether (EGDME)	203-794-9	110-71-4
1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	219-514-3	2451-62-9
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)	423-400-0	59653-74-6
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4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)	209-218-2	561-41-1
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	202-027-5	90-94-8

[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)	208-953-6	548-62-9
[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)	219-943-6	2580-56-5
Diboron trioxide	215-125-8	1303-86-2
Formamide	200-842-0	75-12-7
Lead(II) bis(methanesulfonate) -	401-750-5	17570-76-2
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	202-959-2	101-61-1
α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)	229-851-8	6786-83-0
1,2-dichloroethane	203-458-1	107-06-2
2,2'-dichloro-4,4'-methylenedianiline	202-918-9	101-14-4
2-Methoxyaniline, o-Anisidine	201-963-1	90-04-0
4-(1,1,3,3-tetramethylbutyl)phenol	205-426-2	140-66-9
Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide (Na ₂ O+K ₂ O+CaO+MgO+BaO) content less or equal to 18% by weight	-	-
Arsenic acid	231-901-9	7778-39-4
Bis(2-methoxyethyl) ether	203-924-4	111-96-6
Bis(2-methoxyethyl) phthalate	204-212-6	117-82-8
Calcium arsenate	231-904-5	7778-44-1
Dichromium tris(chromate)	246-356-2	24613-89-6
Formaldehyde, oligomeric reaction products with aniline	500-036-1	25214-70-4

Lead diazide, Lead azide	236-542-1	13424-46-9
Lead dipicrate	229-335-2	6477-64-1
Lead styphnate	239-290-0	15245-44-0
N,N-dimethylacetamide	204-826-4	127-19-5
Pentazinc chromate octahydroxide	256-418-0	49663-84-5
Phenolphthalein	201-004-7	77-09-8
Potassium hydroxyoctaoxodizincatedichromate	234-329-8	11103-86-9
Trilead diarsenate	222-979-5	3687-31-8
Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na ₂ O+K ₂ O+CaO+MgO+BaO) content less or equal to 18% by weight	-	-
1,2,3-trichloropropane	202-486-1	96-18-4
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	276-158-1	71888-89-6
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	271-084-6	68515-42-4
1-Methyl-2-pyrrolidone (NMP)	212-828-1	872-50-4
2-ethoxyethyl acetate	203-839-2	111-15-9
Hydrazine	206-114-9	302-01-2, 7803-57-8
Strontium chromate	232-142-6	7789-06-2
2-ethoxyethanol	203-804-1	110-80-5
2-methoxyethanol	203-713-7	109-86-4
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.: 7738-94-5 Chromic acid EC no.: 231-801-5 CAS no.: 13530-68-2	-	-
Chromium trioxide	215-607-8	1333-82-0
Cobalt(II) carbonate	208-169-4	513-79-1
Cobalt(II) diacetate	200-755-8	71-48-7
Cobalt(II) dinitrate	233-402-1	10141-05-6

Cobalt(II) sulphate	233-334-2	10124-43-3
Ammonium dichromate	232-143-1	7789-09-5
Boric acid EC No. 233-139-2 and EC No. 234-343-4 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	-	-
Disodium tetraborate, anhydrous	215-540-4	12179-04-3, 1303-96-4, 1330-43-4
Potassium chromate	232-140-5	7789-00-6
Potassium dichromate	231-906-6	7778-50-9
Sodium chromate	231-889-5	7775-11-3
Tetraboron disodium heptaoxide, hydrate	235-541-3	12267-73-1
Trichloroethylene	201-167-4	79-01-6
Acrylamide	201-173-7	79-06-1
2,4-dinitrotoluene	204-450-0	121-14-2
Anthracene oil -	292-602-7	90640-80-5
Anthracene oil, anthracene paste -	292-603-2	90640-81-6
Anthracene oil, anthracene paste, anthracene fraction -	295-275-9	91995-15-2
Anthracene oil, anthracene paste, distn. lights -	295-278-5	91995-17-4
Anthracene oil, anthracene-low -	292-604-8	90640-82-7
Diisobutyl phthalate	201-553-2	84-69-5
Lead chromate	231-846-0	7758-97-6
Lead chromate molybdate sulphate red (C.I. Pigment Red 104) -	235-759-9	12656-85-8
Lead sulfochromate yellow (C.I. Pigment Yellow 34) -	215-693-7	1344-37-2
Pitch, coal tar, high-temp. -	266-028-2	65996-93-2
Tris(2-chloroethyl) phosphate	204-118-5	115-96-8
4,4'- Diaminodiphenylmethane (MDA)	202-974-4	101-77-9
5-tert-butyl-2,4,6-trinitro-m-xylene (Musk xylene)	201-329-4	81-15-2
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	287-476-5	85535-84-8

Anthracene	204-371-1	120-12-7
Benzyl butyl phthalate (BBP)	201-622-7	85-68-7
Bis (2-ethylhexyl)phthalate (DEHP)	204-211-0	117-81-7
Bis(tributyltin) oxide (TBTO)	200-268-0	56-35-9
Cobalt dichloride	231-589-4	7646-79-9
Diarsenic pentaoxide	215-116-9	1303-28-2
Diarsenic trioxide	215-481-4	1327-53-3
Dibutyl phthalate (DBP)	201-557-4	84-74-2
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified gamma-hexabromocyclododecane EC no.: - CAS no.: 134237-52-8 beta-hexabromocyclododecane EC no.: - CAS no.:134237-51-7 Hexabromocyclododecane EC no.: 247-148-4 CAS no.:25637-99-4 1,2,5,6,9,10-hexabromocyclododecane EC no.: 221-695-9 CAS no.: 3194-55-6 alpha-hexabromocyclododecane EC no.: - CAS no.:134237-50-6	-	-
Lead hydrogen arsenate	232-064-2	7784-40-9
Sodium dichromate	234-190-3	10588-01-9, 7789-12-0
Triethyl arsenate	427-700-2	15606-95-8
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