

## REACH Certificate of Compliance

Carclo Optics fully supports and hereby certifies complete conformance to the requirements of REACH's 213 SVHC (Substances of Very High Concern), the European Community Regulation standard about chemicals and their safe use (EC 1907/2006), which is a new law entered into force on 07th July 2007 that will be phased in until 2018.

Carclo Optics is committed to providing safe products, consistent with the improvement and protection of human health and the environment, through the better and earlier identification of the intrinsic properties of chemical substances.

Carclo Optics currently conforms up to 19<sup>th</sup> January 2021, Amendment Y, and will continue to conform to the requirements of REACH as new amendments are released: Specifically, the below listed chemical substances are not present in our products for quantities totalling over one tonne per producer a year and are not present above a concentration of 0.1% by weight.

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
1	Anthracene	120-12-7	■		28 October 2008
2	4,4'-Diaminodiphenylmethane (MDA)	101-77-9	■		28 October 2008
3	Benzyl butyl phthalate (BBP)	85-68-7	■		28 October 2008
4	Bis(2-ethyl(hexyl)pphtalate)(DEHP)	117-81-7	■		28 October 2008
5	Dibutyl phthalate (DBP)	84-74-2	■		28 October 2008
6	Cobalt dichloride	7646-79-9	■		28 October 2008
7	Sodium dichromate	7789-12-0; 10588-01-9	■		28 October 2008
8	Lead hydrogen arsenate	7784-40-9	■		28 October 2008
9	Diarsenic pentaoxide	1303-28-2	■		28 October 2008
10	Triethyl arsenate	15606-95-8	■		28 October 2008
11	Diarsenic trioxide	1327-53-3	■		28 October 2008
12	5-tert-butyl-2,4,6-trinitro-m-xylene (Musk xylene)	81-15-2	■		28 October 2008
13	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: gamma-hexabromocyclododecane beta-hexabromocyclododecane 1,2,5,6,9,10-hexabromocyclododecane Hexabromocyclododecane alpha-hexabromocyclododecane	134237-52-8; 134237-51-7; 3194-55-6; 25637-99-4; 134237-50-6;	■		28 October 2008
14	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	■		28 October 2008
15	Bis(tributyltin)oxide (TBTO)	56-35-9	■		28 October 2008

Carclo Optics defines “**REACH Compliant**” to mean that banned substances are not intentionally added during the manufacturing process and have upper concentrations within REACH acceptable limits.

This status is based on Carclo Optics understanding of REACH and Carclo Optics knowledge of the materials that goes into its products as of the date of 1<sup>st</sup> June 2007 disclosure of REACH compliance.

### **Amendment A**

In a press release dated 7<sup>th</sup> December 2009, the European Chemicals Agency (ECHA) announced 12 new substances identified as potential Substances of Very High Concern (SVHC). As of January 2010, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
16	Anthracene Oil	90640-80-5	■		13 January 2010
17	Anthracene Oil, Anthracene Paste Distn. Lights	91995-17-4	■		13 January 2010
18	Anthracene oil, Anthracene paste, Anthracene fraction	91995-15-2	■		13 January 2010
19	Anthracene oil, anthracene-low	90640-82-7	■		13 January 2010
20	Anthracene oil, Anthracene paste	90640-81-6	■		13 January 2010
21	Diisobutyl phthalate	84-69-5	■		13 January 2010
22	Lead chromate	7758-97-6	■		13 January 2010
23	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8	■		13 January 2010
24	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	■		13 January 2010
25	Tris(2-chloroethyl)phosphate	115-96-8	■		13 January 2010
26	Pitch, Coal Tar, high temperature	65996-93-2	■		13 January 2010
27	2,4-Dinitrotoluene	121-14-2	■		13 January 2010

This updated status is based on Carclo Optics understanding of REACH and Carclo Optics knowledge of the 12 new substances that go into its products as of the date of 1<sup>st</sup> January 2010 disclosure of REACH compliance.

### **Amendment B**

In a press release dated 30<sup>th</sup> March 2010, the European Chemicals Agency (ECHA) announced 1 new substance identified as potential Substances of Very High Concern (SVHC). As of March 2010 this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
28	Acrylamide	79-06-1	■		30 March 2010

This updated status is based on Carclo Optics understanding of REACH and Carclo Optics knowledge of the 1 new substance that go into its products as of the date of 30<sup>th</sup> March 2010 disclosure of REACH compliance.

### **Amendment C**

In a press release dated 18<sup>th</sup> June 2010, the European Chemicals Agency (ECHA) announced 8 new substances identified as potential Substances of Very High Concern (SVHC). As of June 2010, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
29	Ammonium dichromate	7789-09-5	■		18 June 2010
30	Boric acid Boric acid, crude natural Boric acid	11113-50-1; 10043-35-3	■		18 June 2010
31	Disodium tetraborate, anhydrous	1303-96-4; 1330-43-4; 12179-04-3	■		18 June 2010
32	Potassium chromate	7789-00-6	■		18 June 2010
33	Potassium dichromate	7778-50-9	■		18 June 2010
34	Sodium chromate	7775-11-3	■		18 June 2010
35	Tetraboron disodium heptaoxide, hydrate	12267-73-1	■		18 June 2010

36	Trichloroethylene	79-01-6	■		18 June 2010
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This updated status is based on Carclo Optics understanding of REACH and Carclo Optics knowledge of the 8 new substances that go into its products as of the date of 18<sup>th</sup> June 2010 disclosure of REACH compliance.

#### **Amendment D**

In a press release dated 15<sup>th</sup> December 2010, the European Chemicals Agency (ECHA) announced 8 new substances identified as potential Substances of Very High Concern (SVHC). As of December 2010, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
37	2-Ethoxyethanol	110-80-5	■		15 December 2010
38	2-Methoxyethanol	109-86-4	■		15 December 2010
39	Acids generated from chromium trioxide and their oligomers. Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic and dichromic acid	7738-94-5; 13530-68-2	■		15 December 2010
40	Chromium trioxide	1333-82-0	■		15 December 2010
41	Cobalt(II) carbonate	513-79-1	■		15 December 2010
42	Cobalt(II) diacetate	71-48-7	■		15 December 2010
43	Cobalt(II) dinitrate	10141-05-6	■		15 December 2010
44	Cobalt(II) sulphate	10124-43-3	■		15 December 2010

This updated status is based on Carclo Optics understanding of REACH and Carclo Optics knowledge of the 8 new substances that go into its products as of the date of 15<sup>th</sup> December 2010 disclosure of REACH compliance.

#### **Amendment E**

In a press release dated 20<sup>th</sup> June 2011, the European Chemicals Agency (ECHA) announced 7 new substances identified as potential Substances of Very High Concern (SVHC). As of June 2011, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
45	2-Ethoxyethyl acetate	111-15-9	■		20 June 2011
46	Strontium chromate	7789-06-2	■		20 June 2011
47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	■		20 June 2011
48	Hydrazine	302-01-2; 7803-57-8	■		20 June 2011
49	1-Methyl-2-pyrrolidone (NMP)	872-50-4	■		20 June 2011
50	1,2,3-Trichloropropane	96-18-4	■		20 June 2011
51	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	■		20 June 2011

This updated status is based on Carclo Optics understanding of REACH and Carclo Optics knowledge of the 7 new substances that go into its products as of the date of 20<sup>th</sup> June 2011 disclosure of REACH compliance.

## Amendment F

In December 2011, the European Chemicals Agency (ECHA) announced 20 new substances identified as potential Substances of Very High Concern (SVHC). As of 19<sup>th</sup> December 2011, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
52	Potassium hydroxyoctaoxodizincatedi-chromate	11103-86-9	■		19 December 2011
53	Pentazinc chromate octahydroxide	49663-84-5	■		19 December 2011
54	Aluminosilicate Refractory Ceramic Fibers are fibers 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, labeling and packaging of substances and mixtures, and fulfill the three following conditions: a) oxides of aluminum and silicon are the main components present (in the fibers) within variable concentration ranges b) fibers have length weighted geometric errors of 6 or less micrometers (µm) c) alkaline oxide and alkali earth oxide (Na <sub>2</sub> O+K <sub>2</sub> O+CaO+MgO+BaO) content less or equal to 18% by weight (RCF)	-	■		19 December 2011
55	Zirconia Aluminosilicate Refractory Ceramic Fibers are 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, labeling and packaging of substances and mixtures, and fulfill the three following conditions: a) oxides of aluminum, silicon and zirconium are the main components present (in the fibers) within variable concentration ranges b) fibers have length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometers (µm). c) alkaline oxide and alkali earth oxide (na <sub>2</sub> O+K <sub>2</sub> O+CaO+MgO+BaO) content less or equal to 18% by weight. (Zr-RCF)	-	■		19 December 2011
56	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	■		19 December 2011
57	Bis(2-methoxyethyl) phthalate	117-82-8	■		19 December 2011
58	2-Methoxyaniline; o-Anisidine	90-04-0	■		19 December 2011
59	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	■		19 December 2011
60	1,2-Dichloroethane	107-06-2	■		19 December 2011
61	Bis(2-methoxyethyl) ether	111-96-6	■		19 December 2011
62	Arsenic acid	7778-39-4	■		19 December 2011
63	Calcium arsenate	7778-44-1	■		19 December 2011
64	Trilead diarsenate	3687-31-8	■		19 December 2011
65	N,N-dimethylacetamide (DMAC) N,N- (DMAC)	127-19-5	■		19 December 2011
66	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	■		19 December 2011
67	Dichromium tris (chromate)	24613-89-6	■		19 December 2011
68	Phenolphthalein	77-09-8	■		19 December 2011
69	Lead diazide, Lead azide	13424-46-9	■		19 December 2011
70	Lead styphnate	15245-44-0	■		19 December 2011
71	Lead dipicrate	6477-64-1	■		19 December 2011

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 20 new substances that go into its products as of the date of 19 December 2011 disclosure of REACH compliance.

### **Amendment G**

In June 2012, the European Chemicals Agency (ECHA) announced 13 new substances identified as potential Substances of Very High Concern (SVHC). As of 18<sup>th</sup> June 2012, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
72	$\alpha,\alpha$ -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	■		18 June 2012
73	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	■		18 June 2012
74	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3 H,5H)-trione ( $\beta$ -TGIC)	59653-74-6	■		18 June 2012
75	Diboron trioxide	1303-86-2	■		18 June 2012
76	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	■		18 June 2012
77	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	561-41-1	■		18 June 2012
78	Lead(II) bis(methanesulfonate)	17570-76-2	■		18 June 2012
79	Formamide	75-12-7	■		18 June 2012
80	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	■		18 June 2012
81	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	■		18 June 2012
82	[4-[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	■		18 June 2012
83	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	■		18 June 2012
84	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	■		18 June 2012

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 13 new substances that go into its products as of the date of 18 June 2012 disclosure of REACH compliance.

### **Amendment H**

In December 2012, the European Chemicals Agency (ECHA) announced 54 new substances identified as potential Substances of Very High Concern (SVHC). As of 19<sup>th</sup> December 2012, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
85	4-aminoazobenzene	60-09-03			
86	Pyrochlore, antimony lead yellow	8012-00-8	■		19 December 2012
87	6-methoxy-m-toluidine (p-cresidine)	120-71-8	■		19 December 2012
88	Henicosfluoroundecanoic acid	2058-94-8	■		19 December 2012
89	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	25550-51-0; 19438-60-9; 48122-14-1; 57110-29-9	■		19 December 2012
90	Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]	85-42-7; 13149-00-3; 14166-21-3	■		19 December 2012
91	Dibutyltin dichloride (DBTC)	683-18-1	■		19 December 2012
92	Lead bis(tetrafluoroborate)	13814-96-5	■		19 December 2012
93	Lead dinitrate	10099-74-8	■		19 December 2012
94	Silicic acid, lead salt	11120-22-2	■		19 December 2012
95	Lead titanium zirconium oxide	12626-81-2	■		19 December 2012
96	Lead monoxide (lead oxide)	1317-36-8	■		19 December 2012
97	o-Toluidine	95-53-4	■		19 December 2012
98	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	■		19 December 2012
99	Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), 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 082-001-006 in regulation (EC) No 1272/2008]	68784-75-8	■		19 December 2012
100	Trilead bis(carbonate)dihydroxide	1319-46-6	■		19 December 2012
101	Furan	110-00-9	■		19 December 2012
102	N,N-dimethylformamide	68-12-2	■		19 December 2012
103	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated covering well-defined substances and UVCB substances, polymers and homologues 2-{2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethoxy}ethanol; 20-[4-(1,1,3,3-tetramethylbutyl)phenoxy]-3,6,9,12,15,18-hexaoxaicosan-1-ol; 2-[[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethanol; 2-[[[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethan-1-ol	2315-61-9 2497-59-8 9002-93-1 2315-67-5	■		19 December 2012
104	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	104-40-5 17404-66-9 26543-97-5 142731-63-3	■		19 December 2012

	p-nonylphenol; p-(1-methyloctyl)phenol; p-isononylphenol; 4-(1-Ethyl-1,4-Dimethylpentyl)Phenol; 4-(1-Ethyl-1,3-Dimethylpentyl)Phenol; 4-(1-ethyl-1-methylhexyl)phenol; p-(1,1-dimethylheptyl)phenol; Phenol, 4-nonyl-, branched; 4-(3-ethylheptan-2-yl)phenol; Nonylphenol; Phenol, nonyl-, branched; 4-(1,1,5-Trimethylhexyl)phenol; Isononylphenol	186825-36-5 52427-13-1 30784-30-6 84852-15-3 186825-39-8 25154-52-3 90481-04-2 521947-27-3 11066-49-2			
105	4,4'-methylenedi-o-toluidine	838-88-0	■		19 December 2012
106	Diethyl sulphate	64-67-5	■		19 December 2012
107	Dimethyl sulphate	77-78-1	■		19 December 2012
108	Lead oxide sulfate	12036-76-9	■		19 December 2012
109	Lead titanium trioxide	12060-00-3	■		19 December 2012
110	Acetic acid, lead salt, basic	51404-69-4	■		19 December 2012
111	[Phthalato(2-)]dioxotrilead	69011-06-9	■		19 December 2012
112	Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE)	1163-19-5	■		19 December 2012
113	N-methylacetamide	79-16-3	■		19 December 2012
114	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	■		19 December 2012
115	1,2-Diethoxyethane	629-14-1	■		19 December 2012
116	Tetralead trioxide sulphate	12202-17-4	■		19 December 2012
117	n-pentyl-isopentylphthalate	776297-69-9	■		19 December 2012
118	Dioxobis(stearato)trilead	12578-12-0	■		19 December 2012
119	Tetraethyllead	78-00-2	■		19 December 2012
120	Pentalead tetraoxide sulphate	12065-90-6	■		19 December 2012
121	Pentacosaflluorotridecanoic acid	72629-94-8	■		19 December 2012
122	Tricosaflluorododecanoic acid	307-55-1	■		19 December 2012
123	Heptacosaflluorotetradecanoic acid	376-06-7	■		19 December 2012
124	1-bromopropane (n-propyl bromide)	106-94-5	■		19 December 2012
125	Methoxyacetic acid	625-45-6	■		19 December 2012
126	Methyloxirane (Propylene oxide)	75-56-9	■		19 December 2012
127	Trilead dioxide phosphonate	12141-20-7	■		19 December 2012
128	o-aminoazotoluene	97-56-3	■		19 December 2012
129	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	■		19 December 2012
130	4,4'-oxydianiline and its salts	101-80-4	■		19 December 2012
131	Orange lead (lead tetroxide)	1314-41-6	■		19 December 2012
132	Biphenyl-4-ylamine	92-67-1	■		19 December 2012
133	Diisopentyl phthalate	605-50-5	■		19 December 2012
134	Fatty acids, C16-18, lead salts	91031-62-8	■		19 December 2012
135	Diazene-1,2-dicarboxamide (C,C'- azodi(formamide)) (ADCA)	123-77-3	■		19 December 2012
136	4-methyl-m-phenyldiamine (toluene- 2,4diamine)	95-80-7	■		19 December 2012
137	Sulfurous acid, lead salt, dibasic	62229-08-7	■		19 December 2012
138	Lead cyanamidate	20837-86-9	■		19 December 2012

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 54 new substances that go into its products as of the date of 16 December 2012 disclosure of REACH compliance.

### Amendment I

On 19<sup>th</sup> June 2013, the European Chemicals Agency (ECHA) announced 6 new substances identified as potential Substances of Very High Concern (SVHC). As of 19<sup>th</sup> June 2013, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
139	Cadmium	7440-43-9	■		20 June 2013
140	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	■		20 June 2013
141	Pentadecafluorooctanoic acid (PFOA)	335-67-1	■		20 June 2013
142	Dipentyl phthalate (DPP)	131-18-0	■		20 June 2013
143	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  26-(4-nonylphenoxy)-3,6,9,12,15,18,21,24-Octaoxahexacosan-1-ol; 2-[2-(4-nonylphenoxy)ethoxy]ethanol; Nonylphenol, branched, ethoxylated; 4-Nonylphenol, ethoxylated; Nonylphenol, ethoxylated; Nonylphenol, ethoxylated (6,5-EO) (9016-45-9); Nonylphenol, ethoxylated (15-EO) (9016-45-9); Nonylphenol, ethoxylated (10-EO) (9016-45-9); Nonylphenol, ethoxylated (8-EO) (9016-45-9); 2-[2-[2-[2-(4-nonylphenoxy)ethoxy]ethoxy]ethoxy]ethanol; 20-(4-nonylphenoxy)-3,6,9,12,15,18-hexaoxaicosan-1-ol; Nonylphenol, branched, ethoxylated (CAS# 68412-54-4); Nonylphenol, ethoxylated (EO = 4); Nonylphenol, ethoxylated (polymer); 2-[2-[4-(3,6-dimethylheptan-3-yl)phenoxy]ethoxy]ethanol; 2-[4-(3,6-dimethylheptan-3-yl)phenoxy]ethanol; Nonylphenolpolyglycoether; Nonylphenol, ethoxylated (EO = 10); Isononylphenol, ethoxylated; 4-Nonylphenol, branched, ethoxylated 1 - 2.5 moles ethoxylated; 26-(nonylphenoxy)-3,6,9,12,15,18,21,24-octaoxahexacosan-1-ol; Poly(oxy-1,2-ethanediyl), a-(nonylphenyl)-w-hydroxy- (CAS 9016-45-9)	14409-72-4 20427-84-3 68412-54-4 26027-38-3 9016-45-9 7311-27-5 27942-27-4 1119449-38-5 1119449-37-4 37205-87-1 127087-87-0 26571-11-9 9016-45-9	■		20 June 2013
144	Cadmium oxide	1306-19-0	■		20 June 2013

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 6 new substances that go into its products as of the date of 20 June 2013 disclosure of REACH compliance.



### **Amendment J**

On 10<sup>th</sup> December 2013, the European Chemicals Agency (ECHA) announced 7 new substances identified as potential Substances of Very High Concern (SVHC). As of 16<sup>th</sup> December 2013, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
145	Cadmium sulphide	1306-23-6	■		16 December 2013
146	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	■		16 December 2013
147	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	■		16 December 2013
148	Dihexyl phthalate	84-75-3	■		16 December 2013
149	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	■		16 December 2013
150	Lead di(acetate)	301-04-2	■		16 December 2013
151	Trixylyl phosphate	25155-23-1	■		16 December 2013

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 7 new substances that go into its products as of the date of 16 December 2013 disclosure of REACH compliance.

### **Amendment K**

On 6<sup>th</sup> June 2013, the European Chemicals Agency (ECHA) announced 4 new substances identified as potential Substances of Very High Concern (SVHC). As of 6<sup>th</sup> June 2013, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
152	Cadmium chloride	10108-64-2	■		16 June 2014
153	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	■		16 June 2014
154	Sodium peroxometaborate	7632-04-4	■		16 June 2014
155	Sodium perborate; perboric acid, sodium salt	11138-47-9; 15120-21-5	■		16 June 2014

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 4 new substances that go into its products as of the date of 16 June 2014 disclosure of REACH compliance.

### **Amendment L**

On 17<sup>th</sup> December 2014, the European Chemicals Agency (ECHA) announced 6 new substances identified as potential Substances of Very High Concern (SVHC). As of 17<sup>th</sup> December 2014, these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
156	Cadmium sulphate	10124-36-4; 31119-53-6	■		17 December 2014
157	Cadmium fluoride	7790-79-6	■		17 December 2014
158	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	■		17 December 2014

159	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)	-	■		17 December 2014
160	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	■		17 December 2014
161	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	■		17 December 2014

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 6 new substances that go into its products as of the date of 17 December 2014 disclosure of REACH compliance.

### **Amendment M**

On 15<sup>th</sup> June 2015, the European Chemicals Agency (ECHA) announced 2 new substances identified as potential Substances of Very High Concern (SVHC). As of 17<sup>th</sup> December 2014 these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
162	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; 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl ester	68648-93-1; 68515-51-5	■		15 June 2015
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 1,3-Dioxane, 2-(2,4-dimethyl-3-cyclohexene-1-yl)-5-methyl-5-(1-methylpropyl)-; 2-(2,4-Dimethylcyclohex-3-ene-1-yl)-5-methyl-(1-methylpropyl)-1,3-dioxane; Reaction mass of 5-[(2R)-butan-2-yl]-2-[(1R,2R)-2,4-dimethylcyclohex-3-en-1-yl]-5-methyl-1,3-dioxane and 5-[(2R)-butan-2-yl]-2-[(1R,2S)-2,4-dimethylcyclohex-3-en-1-yl]-5-methyl-1,3-dioxane and 5-[(2R)-butan-2-yl]-2-[(1S,2R)-2,4-dimethylcyclohex-3-en-1-yl]-5-methyl-1,3-dioxane and 5-[(2R)-butan-2-yl]-2-[(1S,2S)-2,4-dimethylcyclohex-3-en-1-yl]-5-methyl-1,3-dioxane and 5-[(2S)-butan-2-yl]-2-[(1S,2R)-2,4-dimethylcyclohex-3-en-1-yl]-5-methyl-1,3-dioxane and 5-[(2S)-butan-2-yl]-2-[(1S,2S)-2,4-dimethylcyclohex-3-en-1-yl]-5-methyl-1,3-dioxane;	117933-89-8; 117933-89-8	■		15 June 2015

	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane; 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane				
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This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 2 new substances that go into its products as of the date of 15 June 2015 disclosure of REACH compliance.

### **Amendment N**

On 22<sup>nd</sup> January 2016, the European Chemicals Agency (ECHA) announced 5 new substances identified as potential Substances of Very High Concern (SVHC). As of 17<sup>th</sup> December 2015 these substances were formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
164	1,3-propanesultone	1120-71-4	■		17 December 2015
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	■		17 December 2015
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl-phenol (UV-350)	36437-37-3	■		17 December 2015
167	Nitrobenzene	98-95-3	■		17 December 2015
168	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1; 21049-39-8; 4149-60-4	■		17 December 2015

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 5 new substances that go into its products as of the date of 22<sup>nd</sup> January 2016 disclosure of REACH compliance.

### **Amendment O**

On 20<sup>th</sup> June 2016, the European Chemicals Agency (ECHA) announced 1 new substance identified as potential Substances of Very High Concern (SVHC). As of 11<sup>th</sup> July 2016, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
169	Benzo[def]chrysene (Benzo[a]phenol)	50-32-8	■		20 June 2016

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 1 new substance that go into its products as of the date of 20<sup>th</sup> June 2016 disclosure of REACH compliance.

### **Amendment P**

On 12<sup>th</sup> January 2017, the European Chemicals Agency (ECHA) announced 4 new substances identified as potential Substances of Very High Concern (SVHC). As of 13<sup>th</sup> January 2017, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
170	p-(1,1-dimethylpropyl)phenol	80-46-6	■		12 January 2017
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3830-45-3; 335-76-2;	■		12 January 2017

	Decanoic acid, nonadecafluoro-, sodium salt; Nonadecafluorodecanoic acid; Ammonium nonadecafluorodecanoate	3108-42-7			
172	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 Phenol, heptyl derivs.; 4-heptylphenol	72624-02-3; 1987-50-4	■		12 January 2017
173	4,4'-isopropylidenediphenol	80-05-7	■		12 January 2017

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 4 new substances that go into its products as of the date of 13<sup>th</sup> January 2017 disclosure of REACH compliance.

#### **Amendment Q**

On 07<sup>th</sup> July 2017, the European Chemicals Agency (ECHA) announced 1 new substance identified as potential Substances of Very High Concern (SVHC). As of 11<sup>th</sup> July 2016, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
174	Perfluorohexane-1-sulphonic acid and its salts PFHxS Perfluorohexane-1-sulphonic acid; Ammonium perfluorohexane-1-sulphonate; Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1); Potassium perfluorohexane-1-sulphonate	355-46-4; 68259-08-5; 70225-16-0; 3871-99-6	■		07 July 2017

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 1 new substance that go into its products as of the date of 07<sup>th</sup> July 2017 disclosure of REACH compliance.

#### **Amendment R**

On 15<sup>th</sup> January 2018, the European Chemicals Agency (ECHA) announced 6 new substances identified as potential Substances of Very High Concern (SVHC). As of 15<sup>th</sup> January 2018, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
175	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) Reaction product of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and phenol, heptyl derivs.; Formaldehyde, reaction products with branched and linear heptylphenol, carbon disulfide and hydrazine	93925-00-9	■		15 January 2018

176	Chrysene	218-01-9;	■		15 January 2018
177	Cadmium nitrate	10325-94-7	■		15 January 2018
178	Cadmium hydroxide	21041-95-2	■		15 January 2018
179	Cadmium carbonate	513-78-0	■		15 January 2018
180	Benz[a]anthracene	56-55-3;	■		15 January 2018

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 6 new substances that go into its products as of the date of 15th January 2018 disclosure of REACH compliance.

### **Amendment S**

On 15<sup>th</sup> January 2018, the European Chemicals Agency (ECHA) announced 1 new substance identified as potential Substances of Very High Concern (SVHC). As of 15th January 2018, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
181	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus" <sup>TM</sup> ) covering any of its individual anti- and syn-isomers or any combination thereof rel-(1R,4S,4aS,6aR,7R,10S,10aS,12aR)-1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-1,4:7,10-dimethanodibenzo[a,e]cyclooctene; 1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene; rel-(1R,4S,4aS,6aS,7S,10R,10aR,12aR)-1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-1,4:7,10-dimethanodibenzo[a,e]cyclooctene	13560-89-9	■		15 January 2018

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 1 new substance that go into its products as of the date of 15th January 2018 disclosure of REACH compliance.

### **Amendment T**

On 15<sup>th</sup> January 2018, the European Chemicals Agency (ECHA) announced 10 new substances identified as potential Substances of Very High Concern (SVHC). As of 15th January 2018, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
182	Terphenyl, hydrogenated	61788-32-7	■		27 June 2018
183	Octamethylcyclotetrasiloxane	556-67-2	■		27 June 2018
184	Lead	7439-92-1	■		27 June 2018
185	Ethylenediamine	107-15-3	■		27 June 2018
186	Dodecamethylcyclohexasiloxane	540-97-6	■		27 June 2018
187	Disodium octaborate	12008-41-2	■		27 June 2018
188	Dicyclohexyl phthalate	84-61-7	■		27 June 2018

189	Decamethylcyclopentasiloxane	541-02-6	■		27 June 2018
190	Benzo[ghi]perylene	191-24-2	■		27 June 2018
192	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride	552-30-7	■		27 June 2018

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 10 new substances that go into its products as of the date of 28 June 2018 disclosure of REACH compliance.

### **Amendment U**

On 15<sup>th</sup> January 2018, the European Chemicals Agency (ECHA) announced 6 new substances identified as potential Substances of Very High Concern (SVHC). As of 15th January 2018, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
193	Pyrene	129-00-0;	■		15 January 2019
194	Phenanthrene	85-01-8	■		15 January 2019
195	Fluoranthene	206-44-0:	■		15 January 2019
196	Benzo[k]fluoranthene	207-08-9	■		15 January 2019
197	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	■		15 January 2019
198	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one 3-benzylidene camphor; 3-BC	15087-24-8			15 January 2019

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 6 new substances that go into its products as of the date of 16 January 2019 disclosure of REACH compliance.

### **Amendment V**

On 15<sup>th</sup> January 2018, the European Chemicals Agency (ECHA) announced 4 new substances identified as potential Substances of Very High Concern (SVHC). As of 16th July 2019, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
199	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides covering any of their individual isomers and combinations thereof 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid Potassium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionate; 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionyl fluoride; Ammonium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoate	13252-13-6; 67118-55-2; 2062-98-8; 62037-80-3	■		16 July 2019
200	2-methoxyethyl acetate	110-49-6	■		16 July 2019
201	4-tert-butylphenol	98-54-4	■		16 July 2019
202	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP) Tris(nonylphenyl) phosphite tris(4-nonylphenyl, branched) phosphite Phenol, 4-nonyl-, phosphite (3:1)	26523-78-4; 3050-88-2	■		16 July 2019

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 4 new substances that go into its products as of the date of 16 January 2019 disclosure of REACH compliance

### **Amendment W**

On 16<sup>th</sup> January 2020, the European Chemicals Agency (ECHA) announced 4 new substances identified as potential Substances of Very High Concern (SVHC). As of 16 January 2020, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
203	Perfluorobutane sulfonic acid (PFBS) and its salts: N,N,N-triethylethanaminium 1,1,2,2,3,3,4,4,4-nonafluorobutane-1-sulfonate Magnesium perfluorobutane sulfonate; PFBS 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, lithium salt (1:1) Morpholinium perfluorobutane sulfonate; PFBS Ammonium 1,1,2,2,3,3,4,4,4-nonafluorobutane-1-sulphonate Sulfonium, dimethylphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid(1:1) Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid(1:1) Potassium 1,1,2,2,3,3,4,4,4-nonafluorobutane-1-sulphonate tetrabutyl-phosphonium nonafluoro-butane-1-sulfonate	25628-08-4; 507453-86-3; 131651-65-5; 503155-89-3; 68259-10-9; 220133-51-7; 144317-44-2; 29420-49-3; 220689-12-3	■		16 January 2020
204	Diisohexyl phthalate	71850-09-4	■		16 January 2020
205	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	71868-10-5	■		16 January 2020
206	2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	119313-12-1	■		16 January 2020

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 4 new substances that go into its products as of the date of 16 January 2020 disclosure of REACH compliance

### **Amendment X**

On 25<sup>th</sup> June 2020, the European Chemicals Agency (ECHA) announced 4 new substances identified as potential Substances of Very High Concern (SVHC). As of 26 June 2020, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
207	1-vinylimidazole	1072-63-5	■		25 June 2020
208	2-methylimidazole	693-98-1	■		25 June 2020
209	butyl 4-hydroxybenzoate	94-26-8	■		25 June 2020
210	Dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4	■		25 June 2020

This updated status is based on Carclo Optics' understanding of REACH and Carclo Optics' knowledge of the 4 new substances that go into its products as of the date of 26 June 2020 disclosure of REACH compliance

**Amendment Y**

On 19<sup>th</sup> January 2021, the European Chemicals Agency (ECHA) announced 3 new substances identified as potential Substances of Very High Concern (SVHC). As of 19<sup>th</sup> January 2021, this substance was formally added to the Candidate List, as per list below: -

No.	Substance Name	CAS NO.	Not Used	Used	Date of Inclusion
211	Dioctyltin dilaurate	3648-18-8	■		19 January 2021
212	Stannane, dioctyl-, bis(coco acyloxy) derivs.	91648-39-4	■		19 January 2021
213	Bis(2-(2-methoxyethoxy)ethyl)ether	143-24-8	■		19 January 2021

For and on behalf of  
**Carclo Optics Limited.**

Signature:




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Hollie Evans • Quality Manager

Revised: 26<sup>th</sup> January 2021

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