



Subject: REACH Compliance Statement

All parts listed below are compliant with REGULATION (EC) No 1907/2006 (REACH).

Part Numbers:

CTS Part Number	Part Description
TFNC26 Series	Tuning Fork Crystal
TFNC38 Series	Tuning Fork Crystal
TFPM Series	Tuning Fork Crystal
TFPMN Series	Tuning Fork Crystal

CTS certifies that the above part number(s) do not contain the following materials (REACH SVHC Declaration with respect to 15 January 2018 ECHA Candidate List <http://echa.europa.eu/candidate-list-table>), the Annex XIV (Authorisation List) & Annex XVII (Restriction List).

#	Substance Name	CAS #	SVHC Published Date
1	Anthracene	120-12-7	2008-10-28
2	4,4'- Diaminodiphenylmethane	101-77-9	2008-10-28
3	Dibutyl phthalate	84-74-2	2008-10-28
4	Cobalt dichloride	7646-79-9	2008-10-28
5	Diarsenic pentaoxide	1303-28-2	2008-10-28
6	Diarsenic trioxide	1327-53-3	2008-10-28
7	Sodium dichromate, dihydrate	10588-01-9	2008-10-28
8	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	2008-10-28
9	Bis (2-ethyl(hexyl)phthalate) (DEHP)	117-81-7	2008-10-28

10	Hexabromocyclododecane (HBCDD)	3194-55-6	2008-10-28
11	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	2008-10-28
12	Bis(tributyltin) oxide,hexabutyldistannoxane	56-35-9	2008-10-28
13	Lead hydrogen arsenate	7784-40-9	2008-10-28
14	Triethyl arsenate	15606-95-8	2008-10-28
15	Benzyl butyl phthalate	85-68-7	2008-10-28
16	2,4-Dinitrotoluene	121-14-2	2010-1-13
17	Anthracene oil	90640-80-5	2010-1-13
18	Anthracene oil, anthracene paste	90640-81-6	2010-1-13
19	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	2010-1-13
20	Anthracene oil, anthracene paste,distn. lights	91995-17-4	2010-1-13
21	Anthracene oil, anthracene-low	90640-82-7	2010-1-13
22	Diisobutyl phthalate	84-69-5	2010-1-13
23	Lead chromate	7758-97-6	2010-1-13
24	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	2010-1-13
25	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	2010-1-13
26	Pitch, coal tar, high temp.	65996-93-2	2010-1-13
27	Tris(2-chloroethyl)phosphate	115-96-8	2010-1-13
28	Acrylamide	79-06-1	2010-3-30
29	Trichloroethylene	79-01-6	2010-6-18
30	Boric acid	10043-35-3	2010-6-18
31	Disodium tetraborate, anhydrous	1330-43-4	2010-6-18
32	Tetraboron disodium heptaoxide, hydrate	12267-73-1	2010-6-18
33	Sodium chromate	7775-11-3	2010-6-18
34	Potassium chromate	7789-00-6	2010-6-18
35	Ammonium dichromate	7789-09-5	2010-6-18
36	Potassium dichromate	7778-50-9	2010-6-18
37	2-Ethoxyethanol	110-80-5	2010-12-15

38	2-Methoxyethanol	109-86-4	2010-12-15
39	Chromic acid	7738-94-5	2010-12-15
40	Chromium trioxide	1333-82-0	2010-12-15
41	Cobalt(II) carbonate	513-79-1	2010-12-15
42	Cobalt(II) diacetate	71-48-7	2010-12-15
43	Cobalt(II) dinitrate	10141-05-6	2010-12-15
44	Cobalt(II) sulphate	10124-43-3	2010-12-15
45	1,2,3-Trichloropropane	96-18-4	2011-6-20
46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	2011-6-20
47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkylesters	68515-42-4	2011-6-20
48	1-Methyl-2-pyrrolidone	872-50-4	2011-6-20
49	2-Ethoxyethyl acetate	111-15-9	2011-6-20
50	Hydrazine	302-01-2, 7803-57-8	2011-6-20
51	Strontium chromate	7789-06-2	2011-6-20
52	Dichromium tris(chromate)	24613-89-6	2011-12-19
53	Potassium hydroxyoctaoxodizincatedi-chromate	11103-86-9	2011-12-19
54	Pentazinc chromate octahydroxide	49663-84-5	2011-12-19
55	Aluminosilicate Refractory Ceramic Fibres (RCF)	-	2011-12-19
56	Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF)	-	2011-12-19
57	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	2011-12-19
58	Bis(2-methoxyethyl) phthalate	117-82-8	2011-12-19
59	2-Methoxyaniline; o-Anisidine	90-04-0	2011-12-19
60	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	2011-12-19
61	1,2-Dichloroethane	107-06-2	2011-12-19
62	Bis(2-methoxyethyl) ether	111-96-6	2011-12-19
63	Arsenic acid	7778-39-4	2011-12-19

64	Calcium arsenate	7778-44-1	2011-12-19
65	Trilead diarsenate	3687-31-8	2011-12-19
66	N,N-dimethylacetamide (DMAC)	127-19-5	2011-12-19
67	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	2011-12-19
68	Phenolphthalein	77-09-8	2011-12-19
69	Lead azide Lead diazide	13424-46-9	2011-12-19
70	Lead styphnate	15245-44-0	2011-12-19
71	Lead dipicrate	6477-64-1	2011-12-19
72	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)]	6786-83-0	2012-6-18
73	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	2012-6-18
74	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β -TGIC)	59653-74-6	2012-6-18
75	Diboron trioxide 1	1303-86-2	2012-6-18
76	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	2012-6-18
77	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)]	561-41-1	2012-6-18
78	Lead(II) bis(methanesulfonate)	17570-76-2	2012-6-18
79	Formamide	75-12-7	2012-6-18
80	[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)]	548-62-9	2012-6-18
81	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	2012-6-18
82	[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)]	2580-56-5	2012-6-18

83	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	2012-6-18
84	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	2012-6-18
85	Pyrochlore, antimony lead yellow	8012-00-8	2012-12-19
86	6-methoxy-m-toluidine (p-cresidine)	120-71-8	2012-12-19
87	Henicosaflluoroundecanoic acid	2058-94-8	2012-12-19
88	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4]	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	2012-12-19
89	Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3]	85-42-7, 13149-00-3, 14166-21-3	2012-12-19
90	Dibutyltin dichloride (DBTC)	683-18-1	2012-12-19
91	Lead bis(tetrafluoroborate)	13814-96-5	2012-12-19
92	Lead dinitrate	10099-74-8	2012-12-19
93	Silicic acid, lead salt	11120-22-2	2012-12-19
94	4-Aminoazobenzene	60-09-3	2012-12-19
95	Lead titanium zirconium oxide	12626-81-2	2012-12-19
96	Lead monoxide (lead oxide) 1	1317-36-8	2012-12-19
97	o-Toluidine	95-53-4	2012-12-19
98	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	2012-12-19
99	Silicic acid (H ₂ SiO ₅), barium salt (1:1), lead-doped	68784-75-8	2012-12-19
100	Trilead bis(carbonate)dihydroxide	1319-46-6	2012-12-19
101	Furan	110-00-9	2012-12-19
102	N,N-dimethylformamide	68-12-2	2012-12-19
103	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	2012-12-19
104	4-Nonylphenol, branched and linear	-	2012-12-19
105	4,4'-methylenedi-o-toluidine	838-88-0	2012-12-19
106	Diethyl sulphate	64-67-5	2012-12-19
107	Dimethyl sulphate	77-78-1	2012-12-19
108	Lead oxide sulfate	12036-76-9	2012-12-19

109	Lead titanium trioxide	12060-00-3	2012-12-19
110	Acetic acid, lead salt, basic	51404-69-4	2012-12-19
111	[Phthalato(2-)]dioxotrilead	69011-06-9	2012-12-19
112	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	2012-12-19
113	N-methylacetamide	79-16-3	2012-12-19
114	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	2012-12-19
115	1,2-Diethoxyethane	629-14-1	2012-12-19
116	Tetralead trioxide sulphate	12202-17-4	2012-12-19
117	N-pentyl-isopentylphthalate	776297-69-9	2012-12-19
118	Dioxobis(stearato)trilead	12578-12-0	2012-12-19
119	Tetraethyllead	78-00-2	2012-12-19
120	Pentalead tetraoxide sulphate	12065-90-6	2012-12-19
121	Pentacosafuorotridecanoic acid	72629-94-8	2012-12-19
122	Tricosafuorododecanoic acid	307-55-1	2012-12-19
123	Heptacosafuorotetradecanoic acid	376-06-7	2012-12-19
124	1-bromopropane (n-propyl bromide)	106-94-5	2012-12-19
125	Methoxyacetic acid	625-45-6	2012-12-19
126	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	2012-12-19
127	Methyloxirane (Propylene oxide)	75-56-9	2012-12-19
128	Trilead dioxide phosphonate	12141-20-7	2012-12-19
129	o-aminoazotoluene	97-56-3	2012-12-19
130	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	2012-12-19
131	4,4'-oxydianiline and its salts	101-80-4	2012-12-19
132	Orange lead (lead tetroxide)	1314-41-6	2012-12-19
133	Biphenyl-4-ylamine	92-67-1	2012-12-19
134	Diisopentylphthalate	605-50-5	2012-12-19
135	Fatty acids, C16-18, lead salts	91031-62-8	2012-12-19
136	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	2012-12-19

137	Sulfurous acid, lead salt, dibasic	62229-08-7	2012-12-19
138	Lead cyanamidate	20837-86-9	2012-12-19
139	Cadmium	7440-43-9	2013-6-20
140	Cadmium oxide	1306-19-0	2013-6-20
141	Dipentyl phthalate (DPP)	131-18-0	2013-6-20
142	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]	-	2013-6-20
143	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	2013-6-20
144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	2013-6-20
145	Cadmium sulphide	1306-23-6	2013-12-16
146	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	2013-12-16
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	2013-12-16
148	Dihexyl phthalate	84-75-3	2013-12-16
149	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	2013-12-16
150	Lead di(acetate)	301-04-2	2013-12-16
151	Trixylyl phosphate	25155-23-1	2013-12-16
152	Cadmium chloride	10108-64-2	2014-06-16
153	Sodium peroxometaborate	7632-04-4	2014-06-16
154	Sodium perborate; perboric acid, sodium salt	-	2014-06-16
155	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	2014-06-16
156	Cadmium sulphate	10124-36-4, 31119-53-6	2014-12-17
157	Cadmium fluoride	7790-79-6	2014-12-17
158	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	2014-12-17

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)	-	2014-12-17
160	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	2014-12-17
161	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	2014-12-17
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)	68515-51-5, 68648-93-1	2015-06-15
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]	-	2015-06-15
164	Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1, 21049-39-8, 4149-60-4	2015-12-17
165	Nitrobenzene	98-95-3	2015-12-17
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	2015-12-17
167	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	2015-12-17
168	1,3-propanesultone	1120-71-4	2015-12-17
169	Benzo[def]chrysene	50-32-8	2016-06-20
170	p-(1,1-dimethylpropyl)phenol	80-46-6	2017-01-12
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	335-76-2, 3108-42-7, 3830-45-3	2017-01-12
172	4-Heptylphenol, branched and linear	-	2017-01-12
173	4,4'-isopropylidenediphenol	80-05-7	2017-01-12
174	Perfluorohexane-1-sulphonic acid and its salts	-	2017-07-07

175	Benz[a]anthracene	56-55-3, 1718-53-2	2018-01-15
176	Cadmium carbonate	513-78-0	2018-01-15
177	Cadmium hydroxide	21041-95-2	2018-01-15
178	Cadmium nitrate	10022-68-1, 10325-94-7	2018-01-15
179	Chrysene	218-01-9, 1719-03-5	2018-01-15
180	Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadec a-7, 15-diene ("Dechlorane Plus" TM)	-	2018-01-15
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP)	-	2018-01-15

¹Articles manufactured within the semiconductor industry may include Boron or Lead containing glass. In some cases, Di-boron Trioxide and Lead Oxide may have been declared as a substance exceeding 0.1% by weight within various electronic glass or parts containing glass.

Under the REACH Regulation, glass is classified as an UVCB (unknown or variable composition, complex reaction products or biological material) containing the elements silica, calcium, sodium, potassium, magnesium, etc... These raw materials are used to manufacture glass and react to create a new chemical substance, totally different from the starting materials. In other words, the Lead and Boron substances are chemically combined in a ceramic or glass matrix and present no hazard to humans or the environment under normal handling and use.

As such, there are no obligations under the EU REACH regulation of communication to customers and notification to ECHA for articles containing glass.

CTS confirm that materials declaration data provided for the products mentioned is accurate to the best of our knowledge.

Signature: _____

Date: July 30, 2018

Name: Daniel Oh

Title: Product Engineer