



Compliance Statement of “REACH”

The European Chemical Agency (ECHA) has published the SVHC Candidate List. Once a substance is added to the Candidate List, REACH imposes immediate obligations on manufacturers and importers to declare the substances if present. Article 33(1) of the REACH Regulation states that manufacturers and importers of articles (products) are required to notify their customers of the presence of any Substances of Very High Concern (SVHC) in their products exceeding 0.1% by weight and provide instructions on safe use of the product.

Products manufactured by Won-Top Electronics Co., Ltd. **do NOT** contain substances listed below in concentrations greater than 0.1% by weight per article.

First “15 SVHC” added to Candidate List (Published on 28th Oct, 2008)

Substance Name	EC #	CAS #	Restriction Threshold
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	287-476-5	85535-84-8	1000 ppm
Anthracene	204-371-1	120-12-7	1000 ppm
Benzyl butyl phthalate	201-622-7	85-68-7	1000 ppm
Bis (2-ethyl(hexyl)phthalate) (DEHP)	204-211-0	117-81-7	1000 ppm
Bis (tributyltin) oxide	200-268-0	56-35-9	1000 ppm
Cobalt dichloride	231-589-4	7646-79-9	1000 ppm
4,4 – Diaminodiphenylmethane	202-974-4	101-77-9	1000 ppm
Diarsenic pentaoxide	215-116-9	1303-28-2	1000 ppm
Diarsenic trioxide	215-481-4	1327-53-3	1000 ppm
Dibutyl phthalate	201-557-4	84-74-2	1000 ppm
Hexabromocyclododecane (HBCDD)	247-148-4	25637-99-4	1000 ppm
Lead hydrogen arsenate	232-064-2	7784-40-9	1000 ppm
Sodium dichromate	234-190-3	10588-01-9	1000 ppm
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	201-329-4	81-15-2	1000 ppm
Triethyl arsenate	427-700-2	15606-95-8	1000 ppm

Second “12 SVHC” added to Candidate List (Published on 13th Jan, 2010)

Substance Name	EC #	CAS #	Restriction Threshold
Anthracene oil	292-602-7	90640-80-5	1000 ppm
Anthracene oil, anthracene paste, distn. lights	295-278-5	91995-17-4	1000 ppm
Anthracene oil, anthracene paste,anthracene fraction	295-275-9	91995-15-2	1000 ppm
Anthracene oil, anthracene-low	292-604-8	90640-82-7	1000 ppm

Anthracene oil, anthracene paste	292-603-2	90640-81-6	1000 ppm
Pitch, coal tar, high temp	266-028-2	65996-93-2	1000 ppm
Aluminosilicate Refractory Ceramic Fibres (<i>Remark i</i>)	/	/	1000 ppm
Zirconia Aluminosilicate, Refractory Ceramic Fibres (<i>Remark ii</i>)	/	/	1000 ppm
2,4-Dinitrotoluene	204-450-0	121-14-2	1000 ppm
Diisobutyl phthalate	201-553-2	84-69-5	1000 ppm
Lead chromate	231-846-0	7758-97-6	1000 ppm
Lead chromate molybdatesulphate red (C.I. Pigment Red104)	235-759-9	12656-85-8	1000 ppm
Lead sulfochromate yellow (C.I.Pigment Yellow 34)	215-693-7	1344-37-2	1000 ppm
Tris (2-chloroethyl) phosphate	204-118-5	115-96-8	1000 ppm

Third "1 SVHC" added to Candidate List (Published on 30th Mar, 2010)

Substance Name	EC #	CAS #	Restriction Threshold
Acrylamide	201-173-7	79-06-1	1000 ppm

Fourth "8 SVHC" added to Candidate List (Published on 18th Jun, 2010)

Substance Name	EC #	CAS #	Restriction Threshold
Trichloroethylene	201-167-4	79-01-6	1000 ppm
Boric acid	233-139-2/ 234-343-4	10043-35-3/11113-50-1	1000 ppm
Disodium tetraborate, anhydrous	215-540-4	1303-96-4/ 1330-43-4/ 12179-04-3	1000 ppm
Tetraboron disodium heptaoxide, hydrate	235-541-3	12267-73-1	1000 ppm
Sodium chromate	231-889-5	11/3/7775	1000 ppm
Potassium chromate	232-140-5	7789-00-6	1000 ppm
Ammonium dichromate	232-143-1	9/5/7789	1000 ppm
Potassium dichromate	231-906-6	7778-50-9	1000 ppm

Fifth "8 SVHC" added to Candidate List (Published on 15th Dec, 2010)

Substance Name	EC #	CAS #	Restriction Threshold
2-Ethoxyethanol	203-804-1	110-80-5	1000 ppm
2-Methoxyethanol	203-713-7	109-86-4	1000 ppm
Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid	231-801-5 -- 236-881-5	7738-94-5 -- 13530-68-2	1000 ppm
Chromium trioxide	215-607-8	1333-82-0	1000 ppm
Cobalt (II) carbonate	208-169-4	513-79-1	1000 ppm
Cobalt (II) diacetate	200-755-8	71-48-7	1000 ppm
Cobalt (II) dinitrate	233-402-1	10141-05-6	1000 ppm
Cobalt (II) sulphate	233-334-2	10124-43-3	1000 ppm

Sixth “7 SVHC” added to Candidate List (Published on 20th Jun, 2011)

Substance Name	EC #	CAS #	Restriction Threshold
1,2,3-Trichloropropane	202-486-1	96-18-4	1000 ppm
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	276-158-1	71888-89-6	1000 ppm
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	271-084-6	68515-42-4	1000 ppm
1-Methyl-2-pyrrolidone	212-828-1	872-50-4	1000 ppm
2-Ethoxyethyl acetate	203-839-2	111-15-9	1000 ppm
Hydrazine	206-114-9	302-01-2	1000 ppm
Strontium chromate	232-142-6	7789-06-2	1000 ppm

Seventh “20 SVHC” added to Candidate List (Published on 19th Dec, 2011)

Substance Name	EC #	CAS #	Restriction Threshold
4-(1,1,3,3-tetramethylbutyl)phenol	205-426-2	140-66-9	1000 ppm
N,N-dimethylacetamide	204-826-4	127-19-5	1000 ppm
Phenolphthalein	201-004-7	77-09-8	1000 ppm
Lead diazide, Lead azide	236-542-1	13424-46-9	1000 ppm
Lead dipicrate	229-335-2	6477-64-1	1000 ppm
1,2-dichloroethane	203-458-1	107-06-2	1000 ppm
Calcium arsenate	231-904-5	7778-44-1	1000 ppm
Dichromium tris(chromate)	246-356-2	24613-89-6	1000 ppm
2-Methoxyaniline; o-Anisidine	201-963-1	90-04-0	1000 ppm
Pentazinc chromate octahydroxide	256-418-0	49663-84-5	1000 ppm
Arsenic acid	231-901-9	7778-39-4	1000 ppm
Potassium hydroxyoctaoxodizincatedichromate	234-329-8	11103-86-9	1000 ppm
Formaldehyde, oligomeric reaction products with aniline	500-036-1	25214-70-4	1000 ppm
Lead styphnate	239-290-0	15245-44-0	1000 ppm
Trilead diarsenate	222-979-5	3687-31-8	1000 ppm
Zirconia Aluminosilicate Refractory Ceramic Fibres	--	--	1000 ppm
Bis(2-methoxyethyl) phthalate	204-212-6	117-82-8	1000 ppm
Aluminosilicate Refractory Ceramic Fibres	--	--	1000 ppm
Bis(2-methoxyethyl) ether	203-924-4	111-96-6	1000 ppm
2,2'-dichloro-4,4'-methylenedianiline	202-918-9	101-14-4	1000 ppm

Eighth “13 SVHC” added to Candidate List (Published on 18th Jun, 2012)

Substance Name	EC #	CAS #	Restriction Threshold
α,α -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [<i>with</i> $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	229-851-8	6786-83-0	1000 ppm

N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	202-959-2	101-61-1	1000 ppm
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	1000 ppm
Diboron trioxide	215-125-8	1303-86-2	1000 ppm
1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	203-977-3	112-49-2	1000 ppm
4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [<i>with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)</i>]	209-218-2	561-41-1	1000 ppm
Lead(II) bis(methanesulfonate)	401-750-5	17570-76-2	1000 ppm
Formamide	200-842-0	75-12-7	1000 ppm
[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [<i>with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)</i>]	208-953-6	548-62-9	1000 ppm
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	203-794-9	110-71-4	1000 ppm
[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [<i>with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)</i>]	219-943-6	2580-56-5	1000 ppm
1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	219-514-3	2451-62-9	1000 ppm
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	202-027-5	90-94-8	1000 ppm

Ninth "54 SVHC" added to Candidate List (Published on 19th Dec, 2012)

Substance Name	EC #	CAS #	Restriction Threshold
Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [<i>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</i>]	247-094-1, 243-072-0, 256-356-4, 260-566-1	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	1000 ppm
6-methoxy-m-toluidine (p-cresidine)	204-419-1	120-71-8	1000 ppm
Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [<i>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</i>]	201-604-9, 236-086-3, 238-009-9	85-42-7, 13149-00-3, 14166-21-3	1000 ppm
Pyrochlore, antimony lead yellow	232-382-1	8012-00-8	1000 ppm
Henicosfluoroundecanoic acid	218-165-4	2058-94-8	1000 ppm
4-Aminoazobenzene	200-453-6	-	1000 ppm
Silicic acid, lead salt	234-363-3	11120-22-2	1000 ppm
Lead titanium zirconium oxide	235-727-4	12626-81-2	1000 ppm
Lead monoxide (lead oxide)	215-267-0	1317-36-8	1000 ppm
o-Toluidine	202-429-0	95-53-4	1000 ppm
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2	1000 ppm
Dibutyltin dichloride (DBTC)	211-670-0	683-18-1	1000 ppm
Lead bis(tetrafluoroborate)	237-486-0	13814-96-5	1000 ppm

Lead dinitrate	233-245-9	10099-74-8	1000 ppm
Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped	272-271-5	68784-75-8	1000 ppm
Trilead bis(carbonate)dihydroxide	215-290-6	1319-46-6	1000 ppm
4,4'-methylenedi-o-toluidine	212-658-8	838-88-0	1000 ppm
Diethyl sulphate	200-589-6	64-67-5	1000 ppm
Dimethyl sulphate	201-058-1	77-78-1	1000 ppm
N,N-dimethylformamide	200-679-5	-	1000 ppm
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [<i>covering well-defined substances and UVCB substances, polymers and homologues</i>]	-	-	1000 ppm
4-Nonylphenol, branched and linear [<i>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</i>]	-	-	1000 ppm
Furan	203-727-3	110-00-9	1000 ppm
Lead oxide sulfate	234-853-7	12036-76-9	1000 ppm
Lead titanium trioxide	235-038-9	12060-00-3	1000 ppm
Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	214-604-9	1163-19-5	1000 ppm
Dinoseb (6-sec-butyl-2,4-dinitrophenol)	201-861-7	88-85-7	1000 ppm
1,2-Diethoxyethane	211-076-1	629-14-1	1000 ppm
N-methylacetamide	201-182-6	79-16-3	1000 ppm
Tetralead trioxide sulphate	235-380-9	12202-17-4	1000 ppm
Acetic acid, lead salt, basic	257-175-3	51404-69-4	1000 ppm
[Phthalato(2-)]dioxotrilead	273-688-5	69011-06-9	1000 ppm
Tetraethyllead	201-075-4	78-00-2	1000 ppm
N-pentyl-isopentylphthalate	-	776297-69-9	1000 ppm
Pentalead tetraoxide sulphate	235-067-7	12065-90-6	1000 ppm
Heptacosafuorotetradecanoic acid	206-803-4	376-06-7	1000 ppm
Tricosafuorododecanoic acid	206-203-2	307-55-1	1000 ppm
1-bromopropane (n-propyl bromide)	203-445-0	106-94-5	1000 ppm
Dioxobis(stearato)trilead	235-702-8	12578-12-0	1000 ppm
Pentacosafuorotridecanoic acid	276-745-2	72629-94-8	1000 ppm
Methoxyacetic acid	210-894-6	625-45-6	1000 ppm
Methyloxirane (Propylene oxide)	200-879-2	75-56-9	1000 ppm
Trilead dioxide phosphonate	235-252-2	12141-20-7	1000 ppm
o-aminoazotoluene	202-591-2	97-56-3	1000 ppm
4-methyl-m-phenylenediamine (toluene-2,4-diamine)	202-453-1	95-80-7	1000 ppm
Diisopentylphthalate	210-088-4	605-50-5	1000 ppm
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	284-032-2	84777-06-0	1000 ppm
Biphenyl-4-ylamine	202-177-1	92-67-1	1000 ppm
Fatty acids, C16-18, lead salts	292-966-7	91031-62-8	1000 ppm
Orange lead (lead tetroxide)	215-235-6	1314-41-6	1000 ppm

4,4'-oxydianiline and its salts	202-977-0	101-80-4	1000 ppm
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	204-650-8	123-77-3	1000 ppm
Sulfurous acid, lead salt, dibasic	263-467-1	62229-08-7	1000 ppm
Lead cyanamidate	244-073-9	20837-86-9	1000 ppm

Tenth "6 SVHC" added to Candidate List (Published on 20th Jun, 2013)

Substance Name	EC #	CAS #	Restriction Threshold
Cadmium	231-152-8	7440-43-9	1000 ppm
Ammonium pentadecafluorooctanoate (APFO)	223-320-4	3825-26-1	1000 ppm
Pentadecafluorooctanoic acid (PFOA)	206-397-9	335-67-1	1000 ppm
Dipentyl phthalate (DPP)	205-017-9	131-18-0	1000 ppm
4-Nonylphenol, branched and linear, ethoxylated [<i>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</i>]	-	-	1000 ppm
Cadmium oxide	215-146-2	1306-19-0	1000 ppm

Eleventh "7 SVHC" added to Candidate List (Published on 16th Dec, 2013)

Substance Name	EC #	CAS #	Restriction Threshold
Cadmium sulphide	215-147-8	1306-23-6	1000 ppm
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	1000 ppm
Dihexyl phthalate	201-559-5	84-75-3	1000 ppm
Imidazolidine-2-thione; (2-imidazoline-2-thiol)	202-506-9	96-45-7	1000 ppm
Trixylyl phosphate	246-677-8	25155-23-1	1000 ppm
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	1000 ppm
Lead di(acetate)	206-104-4	301-04-2	1000 ppm

Twelfth "4 SVHC" added to Candidate List (Published on 16th Jun, 2014)

Substance Name	EC #	CAS #	Restriction Threshold
1,2-Benzenedicarboxylic acid, dihexylester, branched and linear	271-093-5	68515-50-4	1000 ppm
Cadmium chloride	233-296-7	10108-64-2	1000 ppm
Sodium perborate,perboric acid, sodium salt	239-172-9	-	1000 ppm
Sodium peroxometaborate	231-556-4	7632-04-4	1000 ppm

Thirteenth “6 SVHC” added to Candidate List (Published on 17th Dec, 2014)

Substance Name	EC #	CAS #	Restriction Threshold
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	247-384-8	25973-55-1	1000 ppm
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	223-346-6	3846-71-7	1000 ppm
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	239-622-4	15571-58-1	1000 ppm
Cadmium fluoride	232-222-0	7790-79-6	1000 ppm
Cadmium sulphate	233-331-6	10124-36-4	1000 ppm
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)	-	-	1000 ppm

Fourteenth “2 SVHC” added to Candidate List (Published on 15th June, 2015)

Substance Name	EC #	CAS #	Restriction Threshold
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	68515-51-5	1000 ppm
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]	-	-	1000 ppm

Fifteenth “5 SVHC” added to Candidate List (Published on 17th December, 2015)

Substance Name	EC #	CAS #	Restriction Threshold
1,3-propanesultone	214-317-9	1120-71-4	1000 ppm
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	223-383-8	3864-99-1	1000 ppm
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	253-037-1	36437-37-3	1000 ppm
Nitrobenzene	202-716-0	98-95-3	1000 ppm
Perfluorononan-1-oic-acid and its sodium and ammonium salts	206-801-3	375-95-1 21049-39-8 4149-60-4	1000 ppm

Sixteenth “1 SVHC” added to Candidate List (Published on 20th June, 2016)

Substance Name	EC #	CAS #	Restriction Threshold
Benzo[def]chrysene	200-028-5	50-32-8	1000 ppm

Seventeenth “4 SVHC” added to Candidate List (Published on 12th January, 2017)

Substance Name	EC #	CAS #	Restriction Threshold
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4,4'-isopropylidenediphenol	201-245-8	80-05-7	1000 ppm
4-heptylphenol, branched and linear	-	-	1000 ppm
Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	-	-	1000 ppm
p-(1,1-dimethylpropyl)phenol	201-280-9	80-46-6	1000 ppm

Remark :

- i. Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008, and fulfil the two following conditions:
 - a) Al_2O_3 and SiO_2 are present within the following concentration ranges:
 Al_2O_3 : 43.5 – 47 % w/w, and SiO_2 : 49.5 – 53.5 % w/w, or
 Al_2O_3 : 45.5 – 50.5 %w/w, and SiO_2 : 48.5 – 54 % w/w,
 - b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometers (μm)
- ii. Zirconia Aluminosilicate, Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008, and fulfil the two following conditions:
 - a) Al_2O_3 , SiO_2 and ZrO_2 are present within the following concentration ranges:
 Al_2O_3 : 35 – 36 % w/w, and SiO_2 : 47.5 – 50 % w/w, and ZrO_2 : 15 - 17 % w/w,
 - b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometers (μm).

Won-Top Electronics Co., Ltd (WTE) has checked all information carefully and believes it to be correct and accurate. However, WTE cannot assume any responsibility for inaccuracies. Furthermore, this information does not give the purchaser of semiconductor devices any license under patent rights to manufacturer. WTE reserves the right to change any or all information herein without further notice.

WARNING: DO NOT USE IN LIFE SUPPORT EQUIPMENT. WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

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