



EU REACH SVHC Statement

Date: March 21, 2018

Dear Valued Customer:

European Union's (EU) REACH Regulation 1907/2006 (Registration, Evaluation, Authorization, and Restriction of Chemicals) has entered into force since June 1, 2007 and had been implemented step by step starting from June 1, 2008. As of January 16th, 2018, the Candidate List of "Substances of Very High Concern" (SVHC), included 181 substances as shown on the following pages.

To the best of our knowledge, Thin Film Technology Corp product(s), as sold, do not contain any of the substances listed in the tables on the following pages.

Products Covered:

Product Type:	Series (first 2-4 digits of the MPN part numbers):
Chip Resistor	ACR, AF, AS, CR, CRA, CRT, HCR, MCR, NCR, PCR, RN73, RR, TF, TFA, TFAS, TFG, TFH, TFHP, TFM, TFS, TFV, UCR, WTR, TFEL, TFUV, TFP, TFHV, TFGL, MF,
Chip Power Resistors	CPA1206, CPA2512
Chip Attenuator	PAT, ATT, ATV, HPA, RAT
Chip Capacitor and Cap Networks	CAA, CAC, CAL, CGL, CLP, CRF, CST, CNM
Resistor Networks	RA, RM, RN, SRN, TCA, TRA, TRN, TWA
Power Splitters	PS-GT2, PS-T2
Electrical Filters	FBB, FBP, FLP, FHP, FL
Signal Integrity Products	EF, XO
Current Sense Resistors	CPA, CPB, CPC, CPG, CPP, CPT, EL, KL, LPC, LRN, MPA, MPC, MPM, PRL, QRL, RL, WEL, WKL, WMP, WPA, WRL

For more detailed information regarding the REACH regulation, visit the ECHA website:

http://echa.europa.eu/home_en.asp

Sincerely,

A handwritten signature in blue ink that reads 'Fred Olinger'.

Fred Olinger
Environmental Compliance Coordinator

Disclaimer:

Thin Film Technology Corp. has not conducted any independent research, testing or evaluation to confirm the accuracy or completeness of this information. Substance usage is based upon information gathered from Material Safety Data Sheets of our suppliers. Thin Film Technology Corp. has furnished this information in good faith at your request and cannot attest or certify to the accuracy or, completeness or uses to which such information may be put. No representation, warranty or guarantee, express or implied, is made with respect to such information or data and Thin Film Technology Corp., its employees, officers, directors, affiliates, successors and assigns assume no liability whatsoever for any damages, direct or indirect, known or unknown, resulting from misuse of, errors in or omissions from this information. This information is offered solely for your information and consideration and any user of the information assumes all responsibility and risk for use of or reliance upon such information. By its acceptance of this information, your Company, its affiliates, successors and assigns hereby forever waive any claims, known or unknown, against Thin Film Technology



Substance of Very High Concern (SVHC) List

Name	CAS #	Date of Inclusion
4,4'- Diaminodiphenylmethane	101-77-9	28-Oct-2008
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	28-Oct-2008
Alkanes, C10-13,chloro (Short Chain Chlorinated paraffins)	85535-84-8	28-Oct-2008
Anthracene	120-12-7	28-Oct-2008
benzylbutylphthalate	85-68-7	28-Oct-2008
bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	28-Oct-2008
bis(tributyltin) oxide	56-35-9	28-Oct-2008
cobalt dichloride	7646-79-9	28-Oct-2008 20-Jun-2011
diarsenic pentaoxide	1303-28-2	28-Oct-2008
diarsenic trioxide	1327-53-3	28-Oct-2008
dibutylphthalate	84-74-2	28-Oct-2008
Hexabromocyclododecane (HBCDD)	25637-99-4, 3194-55-6, 134237-50-6, 134237-51-7, 134237-52-8	28-Oct-2008
lead hydrogen arsenate	7784-40-9	28-Oct-2008
sodium dichromate, dihydrate	10588-01-9, 7789-12-0	28-Oct-2008
triethyl arsenate	15606-95-8	28-Oct-2008
2,4-Dinitrotoluene	121-14-2	13-Jan-2010
Aluminosilicate Refractory Ceramic Fibres (fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008 of the European Parliament)	Extracted from index 650-017- 00-8	13-Jan-2010
Anthracene oil	90640-80-5	13-Jan-2010
Anthracene oil, anthracene-low	90640-82-7	13-Jan-2010
Anthracene oil, anthracene paste	90640-81-6	13-Jan-2010
Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	13-Jan-2010
Anthracene oil, anthracene paste, distn. lights	91995-17-4	13-Jan-2010
Diisobutyl phthalate	84-69-5	13-Jan-2010
Lead chromate	7758-97-6	13-Jan-2010
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	13-Jan-2010
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	13-Jan-2010
Pitch, coal tar, high temp.	65996-93-2	13-Jan-2010
Tris(2-chloroethyl)phosphate	115-96-8	13-Jan-2010
Zirconia Aluminosilicate Refractory Ceramic Fibres (fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008 of the European Parliament)	Extracted from index 650-017- 00-8	13-Jan-2010
Acrylamide	79-06-1	30-Mar-2010



Substance of Very High Concern (SVHC) List

Name	CAS #	Date of Inclusion
Sodium chromate	7775-11-3	18-Jun-2010
Potassium chromate	7789-00-6	18-Jun-2010
Ammonium dichromate	7789-09-5	18-Jun-2010
Potassium dichromate	7778-50-9	18-Jun-2010
Tetraboron disodium heptaoxide, hydrate	12267-73-1	18-Jun-2010
Disodium tetraborate, anhydrous	1330-43-4	18-Jun-2010
Boric acid	10043-35-3 11113-50-1	18-Jun-2010
Trichloroethylene	79-01-6	18-Jun-2010
Cobalt (di)acetate	71-48-7	15-Dec-2010
Cobalt (II) carbonate	513-79-1	15-Dec-2010
Cobalt dinitrate	10141-05-6	15-Dec-2010
Cobalt (II) sulphate	10124-43-3	15-Dec-2010
2-Ethoxyethanol	110-80-5	15-Dec-2010
2-Methoxyethanol	109-86-4	15-Dec-2010
Chromium trioxide	1333-82-0	15-Dec-2010
Acids generated from chromium trioxide and their oligomers proposed by Germany for their CMR properties, a group containing :- chromic acid dichromic acid oligomers of chromic acid and dichromic acid (CAS not assigned yet)	7738-94-5 13530-68-2	15-Dec-2010
2-ethoxyethyl acetate	111-15-9	20-Jun-2011
Strontium chromate	7789-06-2	20-Jun-2011
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	20-Jun-2011
Hydrazine CAS	7803-57-8 302-01-2	20-Jun-2011
1-methyl-2-pyrrolidone	872-50-4	20-Jun-2011
1,2,3-trichloropropane	202-486-1	20-Jun-2011
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	20-Jun-2011
Dichromium tris(chromate)	24613-89-6	19-Dec-2011
Potassium hydroxyoctaoxodizincatedi-chromate	11103-86-9	19-Dec-2011
Pentazinc chromate octahydroxide	49663-84-5	19-Dec-2011
Aluminosilicate Refractory Ceramic Fibres (RCF)	—	19-Dec-2011
Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF)	—	19-Dec-2011
Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	19-Dec-2011



Substance of Very High Concern (SVHC) List

Name	CAS #	Date of Inclusion
Bis(2-methoxyethyl) phthalate	117-82-8	19-Dec-2011
2-Methoxyaniline; o-Anisidine	90-04-0	19-Dec-2011
4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	19-Dec-2011
1,2-Dichloroethane	107-06-2	19-Dec-2011
Bis(2-methoxyethyl) ether	111-96-6	19-Dec-2011
Arsenic acid	7778-39-4	19-Dec-2011
Calcium arsenate	7778-44-1	19-Dec-2011
Trilead diarsenate	3687-31-8	19-Dec-2011
N,N-dimethylacetamide (DMAC)	127-19-5	19-Dec-2011
2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	19-Dec-2011
Phenolphthalein	77-09-8	19-Dec-2011
Lead azide Lead diazide	13424-46-9	19-Dec-2011
Lead styphnate	15245-44-0	19-Dec-2011
Lead dipicrate	6477-64-1	19-Dec-2011
[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	18-Jun-2012
a,a-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	18-Jun-2012
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	18-Jun-2012
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	18-Jun-2012
Diboron trioxide	1303-86-2	18-Jun-2012
1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	18-Jun-2012
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	18-Jun-2012
Lead(II) bis(methanesulfonate)	17570-76-2	18-Jun-2012
Formamide	75-12-7	18-Jun-2012
[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	18-Jun-2012
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	18-Jun-2012
1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	18-Jun-2012
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	18-Jun-2012
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-Dec-2012



Substance of Very High Concern (SVHC) List

Name	CAS #	Date of Inclusion
6-methoxy-m-toluidine (p-cresidine)	120-71-8	19-Dec-2012
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>	85-42-7 13149-00-3 14166-21-3	19-Dec-2012
Pyrochlore, antimony lead yellow	8012-00-8	19-Dec-2012
Henicosfluoroundecanoic acid	2058-94-8	19-Dec-2012
4-Aminoazobenzene	60-09-3	19-Dec-2012
Silicic acid, lead salt	11120-22-2	19-Dec-2012
Lead titanium zirconium oxide	12626-81-2	19-Dec-2012
Lead monoxide (lead oxide)	1317-36-8	19-Dec-2012
o-Toluidine	95-53-4	19-Dec-2012
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	19-Dec-2012
Dibutyltin dichloride (DBTC)	683-18-1	19-Dec-2012
Lead bis(tetrafluoroborate)	13814-96-5	19-Dec-2012
Lead dinitrate	10099-74-8	19-Dec-2012
Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped <i>[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]</i>	68784-75-8	19-Dec-2012
Trilead bis(carbonate)dihydroxide	1319-46-6	19-Dec-2012
4,4'-methylenedi-o-toluidine	838-88-0	19-Dec-2012
Diethyl sulphate	77-78-1	19-Dec-2012
N,N-dimethylformamide	68-12-2	19-Dec-2012
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated <i>[covering well-defined substances and UVCB substances, polymers and homologues]</i>	—	19-Dec-2012
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>	—	19-Dec-2012
Furan	110-00-9	19-Dec-2012
Lead oxide sulfate	12036-76-9	19-Dec-2012
Lead titanium trioxide	12060-00-3	19-Dec-2012
Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	19-Dec-2012
Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	19-Dec-2012
1,2-Diethoxyethane	629-14-1	19-Dec-2012
N-methylacetamide	79-16-3	19-Dec-2012
Tetralead trioxide sulphate	12202-17-4	19-Dec-2012
Acetic acid, lead salt, basic	51404-69-4	19-Dec-2012
[Phthalato(2-)]dioxotrilead	69011-06-9	19-Dec-2012



Substance of Very High Concern (SVHC) List

Name	CAS #	Date of Inclusion
Tetraethyllead	78-00-2	19-Dec-2012
N-pentyl-isopentylphthalate	776297-69-9	19-Dec-2012
Pentalead tetraoxide sulphate	12065-90-6	19-Dec-2012
Heptacosafuorotetradecanoic acid	376-06-7	19-Dec-2012
Tricosafuorododecanoic acid	307-55-1	19-Dec-2012
1-bromopropane (n-propyl bromide)	106-94-5	19-Dec-2012
Dioxobis(stearato)trilead	12578-12-0	19-Dec-2012
Pentacosafuorotridecanoic acid	72629-94-8	19-Dec-2012
Methoxyacetic acid	625-45-6	19-Dec-2012
Methyloxirane (Propylene oxide)	75-56-9	19-Dec-2012
Trilead dioxide phosphonate	12141-20-7	19-Dec-2012
o-aminoazotoluene	97-56-3	19-Dec-2012
4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	19-Dec-2012
Diisopentylphthalate	605-50-5	19-Dec-2012
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	19-Dec-2012
Biphenyl-4-ylamine	92-67-1	19-Dec-2012
Fatty acids, C16-18, lead salts	91031-62-8	19-Dec-2012
Orange lead (lead tetroxide)	1314-41-6	19-Dec-2012
4,4'-oxydianiline and its salts	101-80-4	19-Dec-2012
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	19-Dec-2012
Sulfurous acid, lead salt, dibasic	62229-08-7	19-Dec-2012
Lead cyanamidate	20837-86-9	19-Dec-2012
Cadmium	7440-43-9	20-Jun-2013
Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	20-Jun-2013
Pentadecafluorooctanoic acid (PFOA)	335-67-1	20-Jun-2013
Dipentyl phthalate (DPP)	131-18-0	20-Jun-2013
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>	—	20-Jun-2013
Cadmium oxide	1306-19-0	20-Jun-2013
Cadmium sulphide	1306-23-6	16-Dec-2013
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-Dec-2013
Dihexyl phthalate	84-75-3	16-Dec-2013
Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	16-Dec-2013
Trixylyl phosphate	25155-23-1	16-Dec-2013
Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	16-Dec-2013
Lead di(acetate)	301-04-2	16-Dec-2013



Substance of Very High Concern (SVHC) List

Name	CAS #	Date of Inclusion
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	16-Jun-2014
Sodium perborate; perboric acid, sodium salt	—	16-Jun-2014
Sodium peroxometaborate	7632-04-4	16-Jun-2014
Cadmium chloride	10108-64-2	16-Jun-2014
Cadmium sulphate	10124-36-4 31119-53-6	17-Dec-2014
Cadmium fluoride	7790-79-6	17-Dec-2014
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	17-Dec-2014
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-Dec-2014
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	17-Dec-2014
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	17-Dec-2014
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	17-Dec-2014 28-Oct-2008
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1	15-Jun-2015
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]	—	15-Jun-2015
Perfluorononan-1-oic-acid and its sodium and ammonium salts	—	17-Dec-2015
Nitrobenzene	202-716-0	17-Dec-2015
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	253-037-1	17-Dec-2015
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	223-383-8	17-Dec-2015
1,3-propanesultone	214-317-9	17-Dec-2015
Benzo[def]chrysene	50-32-8	20-Jun-2016
p-(1,1-dimethylpropyl)phenol	80-46-6	12-Jan-2017
Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	—	12-Jan-2017
4-heptylphenol, branched and linear	—	12-Jan-2017
4,4'-isopropylidenediphenol	80-05-7	12-Jan-2017
Perfluorohexane-1-sulphonic acid and its salts	—	07-Jul-2017
Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) <i>with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear (4-HPbl)</i>	—	15-Jan-2018
Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus™") <i>covering any of its individual anti- and syn-isomers or any combination thereof</i>	—	15-Jan-2018
Chrysene	218-01-9 1719-03-5	15-Jan-2018



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Name	CAS #	Date of Inclusion
Cadmium nitrate	10022-68-1 10325-94-7	15-Jan-2018
Cadmium hydroxide	21041-95-2	15-Jan-2018
Cadmium carbonate	513-78-0	15-Jan-2018
Benz[a]anthracene	56-55-3 1718-53-2	15-Jan-2018