

3 March 2020

Dear Valued Customer

**Broadcom Inc.
Product Material Declaration**

The following products are EU REACH-SVHC Compliance:

Summary of Broadcom REACH-SVHC Compliance Products (3 March 2020)

Broadcom p/n	Product Description
AFBR-89CxxZ-xxx	QSFP28 4x25G MM
AFBR-89FxxZ-xxx	QSFP28 4x28G MM

The components of the part numbers identified above and manufactured by Broadcom are in compliance with REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), in particular, to Annex XIV which restricts the use of certain Substances of Very High Concern (SVHC). We further declare that these products do not contain any substances in the conditions of restriction per Annex XVII.

We confirm the following regulated substances listed in the "Candidate List" of SVHC (205 as of 16 Jan 2020) are not intentionally added or knowingly present in our semiconductor products exceeding 0.1% by weight:

SVHC Substances	CAS Number	EINECS Number
Anthracene	120-12-7	204-371-1
4,4'- Diaminodiphenylmethane	101-77-9	202-974-4
Dibutyl phthalate (DBP)	84-74-2	201-557-4
Cobalt dichloride	7646-79-9	231-589-4
Diarsenic pentaoxide	1303-28-2	215-116-9
Diarsenic trioxide	1327-53-3	215-481-4
Sodium dichromate dehydrate	7789-12-0	234-190-3
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4
Bis (2-ethyl(hexyl)phthalate) (DEHP)	117-81-7	204-211-0
Hexabromocyclododecane (HBCDD)	25637-99-4	247-148-4;
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5
Bis(tributyltin) oxide (TBTO)	56-35-9	200-268-0
Lead hydrogen arsenate	7784-40-9	232-064-2
Triethyl arsenate	15606-95-8	201-622-7
Benzyl butyl phthalate (BBP)	85-68-7	427-700-2
2,4-Dinitrotoluene	121-14-2	204-450-0
Anthracene oil	90640-80-5	292-602-7
Anthracene oil, anthracene paste, distn. Lights	91995-17-4	295-278-5
Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	295-275-9
Anthracene oil, anthracene-low	90640-82-7	292-604-8

SVHC Substances	CAS Number	EINECS Number
Anthracene oil, anthracene paste	90640-81-6	292-603-2
Diisobutyl phthalate	84-69-5	201-553-2
Aluminosilicate, Refractory Ceramic Fibres	-	(650-017-00-8*)
Zirconia Aluminosilicate, Refractory Ceramic Fibres	-	(650-017-00-8*)
Lead chromate	7758-97-6	231-846-0
Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8	235-759-9
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	215-693-7
Tris(2-chloroethyl)phosphate	115-96-8	204-118-5
Coal tar pitch, high temperature	65996-93-2	266-028-2
Acrylamide	79-06-1	201-173-7
Trichloroethylene	79-01-6	201-167-4
Boric acid	10043-35-3; 11113-50-1	233-139-2; 234-343-4
Disodium tetraborate, anhydrous	1303-96-4; 1330-43-4; 12179-04-3	215-540-4
Tetraboron disodium heptaoxide, hydrate	12267-73-1	235-541-3
Sodium chromate	7775-11-3	231-889-5
Potassium chromate	7789-00-6	232-140-5
Ammonium dichromate	7789-09-5	232-143-1
Potassium dichromate	7778-50-9	231-906-6
Cobalt(II) sulphate	10124-43-3	233-334-2
Cobalt(II) dinitrate	10141-05-6	233-402-1
Cobalt(II) carbonate	513-79-1	208-169-4
Cobalt(II) diacetate	71-48-7	200-755-8
2-Methoxyethanol	109-86-4	203-713-7
2-Ethoxyethanol	110-80-5	203-804-1
Chromium trioxide	1333-82-0	215-607-8
Chromic acid, Dichromic acid	7738-94-5, -, 13530-68-2	236-881-5, -, 231-801-5
2-ethoxyethylacetate	111-15-9	9203-839-2,
Strontium Chromate	232-142-6	7789-06-2
Hydrazine	302-01-2, 7803-57-8	206-114-9
1-methyl-2-pyrrolidone	872-50-4	212-828-1
1,2,3-trichloropropane	96-18-4	202-486-1
1,2-Benzenedicarboxylic, diC6-8-branched and alkyl esters, C7-rich (DIHP)	71888-89-6	276-158-1
1,2-benzenedicarboxylic, diC7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	271-084-6
Zirconia Aluminosilicate Refractory Ceramic Fibres	-	-
Calcium arsenate	7778-44-1	231-904-5
Bis(2-methoxyethyl) ether	111-96-6	203-924-4

SVHC Substances	CAS Number	EINECS Number
Aluminosilicate Refractory Ceramic Fibres	-	-
Potassium hydroxyoctaoxodizincatedichromate	11103-86-9	234-329-8
Lead dipicrate	6477-64-1	229-335-2
N,N-dimethylacetamide (DMAC)	127-19-5	204-826-4
Arsenic acid	7778-39-4	231-901-9
2-Methoxyaniline, 0-Anisidine	90-04-0	201-963-1
Trilead diarsenate	3687-31-8	222-979-5
1,2-dichloroethane	107-06-2	203-458-1
Pentazinc chromate octahydroxide	49663-84-5	256-418-0
4-(1,1,3,3-tetramethylbutyl)phenol(4-tert-Octylphenol)	140-66-9	205-426-2
Formaldehyde, oligomeric reaction products with aniline	25214-70-4	500-036-1
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	204-212-6
Lead diazide, Lead azide	13424-46-9	236-542-1
Lead styphnate	15245-44-0	239-290-0
2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	202-918-9
Phenolphthalein	77-09-8	201-004-7
Dichromium tris(chromate)	24613-89-6	246-356-2
[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)	548-62-9	208-953-6
a'-a'-Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	6786-83-0	229-851-8
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	202-959-2

SVHC Substances	CAS Number	EINECS Number
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (I ² -TGIC)	59653-74-6	423-400-0
Diboron trioxide	1303-86-2	215-125-8
1,2-bis(2-methoxyethoxy)ethane (TEGDME triglme)	112-49-2	203-977-3
4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol	561-41-1	209-218-2
Lead(II) bis(methanesulfonate)	17570-76-2	401-750-5
Formamide	75-12-7	200-842-0
4-4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)	2580-56-5	219-943-6
1,2-dimethoxyethane ethylene glycol dimethyl ether (EGDME)	110-71-4	203-794-9
1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	219-514-3
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	202-027-5
Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	214-604-9
Pentacosafuorotridecanoic acid	72629-94-8	276-745-2
Tricosafuorododecanoic acid	307-55-1	206-203-2
Henicosafuoroundecanoic acid	2058-94-8	218-165-4
Heptacosafuorotetradecanoic acid	376-06-7	206-803-4
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	204-650-8
Cyclohexane-1,2-dicarboxylic anhydride; cis-cyclohexane-1,2-dicarboxylic anhydride; trans-cyclohexane-1,2-dicarboxylic anhydride	85-42-7, 13149-00-3, 14166-21-3	201-604-9, 236-086-3, 238-009-9
Hexahydromethylphthalic anhydride , Hexahydro-4-methylphthalic anhydride , Hexahydro-1-methylphthalic anhydride , Hexahydro-3-methylphthalic anhydride.	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	247-094-1, 243-072-0, 256-356-4, 260-566-1
4-Nonylphenol, branched and linear	-	-
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	-	-

SVHC Substances	CAS Number	EINECS Number
Methoxyacetic acid	625-45-6	210-894-6
N,N-dimethylformamide	68-12-2	200-679-5
Dibutyltin dichloride (DBTC)	683-18-1	211-670-0
Lead monoxide (Lead oxide)	1317-36-8	215-267-0
Orange lead (Lead tetroxide)	1314-41-6	215-235-6
Lead bis(tetrafluoroborate)	13814-96-5	237-486-0
Trilead bis(carbonate) dihydroxide	1319-46-6	215-290-6
Lead titanium trioxide	12060-00-3	235-038-9
Lead titanium zirconium oxide	12626-81-2	235-727-4
Silicic acid, lead salt	11120-22-2	234-363-3
Silicic acid (H ₂ SiO ₅), barium salt (1:1), lead-doped	68784-75-8	272-271-5
1-bromopropane (n-propyl bromide)	106-94-5	203-445-0
Methyloxirane (Propylene oxide)	75-56-9	200-879-2
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	284-032-2
Diisopentylphthalate (DIPP)	605-50-5	210-088-4
N-pentyl-isopentylphthalate	776297-69-9	-
1,2-diethoxyethane	629-14-1	211-076-1
Acetic acid, lead salt, basic	51404-69-4	257-175-3
Lead oxide sulfate	12036-76-9	234-853-7
[Phthalato(2-)]dioxotrilead	69011-06-9	273-688-5
Dioxobis(stearato)trilead	12578-12-0	235-702-8
Fatty acids, C16-18, lead salts	91031-62-8	292-966-7
Lead cyanamate	20837-86-9	244-073-9
Lead dinitrate	10099-74-8	233-245-9
Pentalead tetraoxide sulphate	12065-90-6	235-067-7
Pyrochlore, antimony lead yellow	8012-00-8	232-382-1
Sulfurous acid, lead salt, dibasic	62229-08-7	263-467-1
Tetraethyllead	78-00-2	201-075-4
Tetralead trioxide sulphate	12202-17-4	235-380-9
Trilead dioxide phosphonate	12141-20-7	235-252-2
Furan	110-00-9	203-727-3
Diethyl sulphate	64-67-5	200-589-6
Dimethyl sulphate	77-78-1	201-058-1
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	421-150-7
Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	201-861-7
4,4'-methylenedi-o-toluidine	838-88-0	212-658-8
4,4'-oxydianiline and its salts	101-80-4	202-977-0
4-aminoazobenzene	60-09-3	200-453-6
4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	202-453-1
6-methoxy-m-toluidine (p-cresidine)	120-71-8	204-419-1

SVHC Substances	CAS Number	EINECS Number
Biphenyl-4-ylamine	92-67-1	202-177-1
<i>o</i> -aminoazotoluene [(4- <i>o</i> -tolylazo- <i>o</i> -toluidine)]	97-56-3	202-591-2
<i>o</i> -toluidine	95-53-4	202-429-0
N-methylacetamide	79-16-3	201-182-6
Cadmium	7440-43-9	231-152-8
Cadmium Oxide	1306-19-0	215-146-2
Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	223-320-4
Pentadecafluorooctanoic acid (PFOA)	335-67-1	206-397-9
Dipentyl phthalate (DPP)	131-18-0	205-017-9
-Nonylphenol, branched and linear, ethoxylated	-	-
Calcium Sulphide	1306-23-6	215-147-8
Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	209-358-4
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	217-710-3
Diethyl phthalate	84-75-3	201-559-5
Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	202-506-9
Lead di(acetate)	301-04-2	206-104-4
Triethyl phosphate	25155-23-1	246-677-8
Cadmium chloride	10108-64-2	233-296-7
1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	68515-50-4	271-093-5
Sodium peroxometaborate	7632-04-4	231-556-4
Sodium perborate; perboric acid, sodium salt	-	239-172-9; 234-390-0
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	247-384-8
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	223-346-6
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)	-	-
Cadmium fluoride	7790-79-6	232-222-0
Cadmium sulphate	10124-36-4, 31119-53-6	233-331-6
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	239-622-4
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of diethyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1	271-094-0 272-013-1
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]		
Nitrobenzene	98-95-3	202-716-0
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	223-383-8
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	253-037-1
1,3-propanesultone	1120-71-4	214-317-9
Perfluorononan-1-oic-acid	375-95-1	206-801-3
Sodium salts of perfluorononan-1-oic-acid and ammonium salts of perfluorononan-1-oic-acid	-, 21049-39-8 -, 4149-60-4	
Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	200-028-5
4,4'-isopropylidenediphenol (bisphenol A; BPA)	80-05-7	201-245-8
Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	335-76-2 3830-45-3 3108-42-7	206-400-3 - 221-470-5
p-(1,1-dimethylpropyl)phenol	80-46-6	201-280-9
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]	-	-
Perfluorohexane-1-sulfonic acid and its salts (PFHxS)	-	-
Benz[a]anthracene	56-55-3, 1718-53-2	200-280-6
Cadmium carbonate	513-78-0	208-168-9
Cadmium hydroxide	21041-95-2	244-168-5
Cadmium nitrate	10022-68-1, 10325-94-7	233-710-6
Chrysene	218-01-9, 1719-03-5	205-923-4
Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) covering any of its individual anti- and syn-isomers or any combination thereof	-	-
Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) with ≥0.1% w/w 4-heptylphenol, branched and linear (4-HPbl)	-	-
Octamethylcyclotetrasiloxane (D4)	556-67-2	209-136-7
Decamethylcyclopentasiloxane (D5)	541-02-6	208-764-9
Dodecamethylcyclohexasiloxane (D6)	540-97-6	208-762-8
Lead	7439-92-1	231-100-4
Disodium octaborate	12008-41-2	234-541-0
Benzo[ghi]perylene	191-24-2	205-883-8

Terphenyl hydrogenated	61788-32-7	262-967-7
Ethylenediamine (EDA)	107-15-3	203-468-6
Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA)	552-30-7	209-008-0
Dicyclohexyl phthalate (DCHP)	84-61-7	201-545-9
2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6	401-720-1
Benzo[k]fluoranthene	207-08-9	205-916-6
Fluoranthene	206-44-0	205-912-4
Phenanthrene	85-01-8	201-581-5
Pyrene	129-00-0	204-927-3
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	15087-24-8	239-139-9
2-methoxyethyl acetate	110-49-6	203-772-9
Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	-	-
2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	-	-
4-tert-butylphenol	98-54-4	202-679-0
Diisohexyl phthalate	276-090-2	71850-09-4
2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	404-360-3	119313-12-1
2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	400-600-6	71868-10-5
Perfluorobutane sulfonic acid (PFBS) and its salts	-	-

For product availability and compliance information, please contact Broadcom distributors or Broadcom Sales & Marketing. For product technical information (termination finish, temperature profile, product substance content etc.) via rohs.enquiry-spg@broadcom.com.



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