

Diodes Incorporated RoHS & REACH Compliance

Re: End of Vehicle Life Directive (EVL) 2000/53/EC and Annex II (EVL II) 2000/53/EC
 Restrictions of Hazardous Substances Directive (RoHS) 2002/95/EC (repealed as from 3 January 2013 but listed here for completeness) & 2011/65/EU (RoHS II)
 Waste Electrical and Electronic Equipment (WEEE)
 REACH (EC) No 1907/2006 (REACH 161) December 2014
 Japanese Legislation (Various)
 China RoHS
 California Proposition 65 December 2014
 IEC 62474 (Replaces JIG 101)
 Montreal Protocol
 Stockholm Convention (POP Regulation) (EC Regulation 850/2004)
 Canadian Regulation SOR/2014-254 Products containing Mercury Regulation

Diodes Incorporated and its subsidiaries, Diodes Zetex Semiconductors Limited, Diodes FabTech, PAM & BCD has reviewed its manufacturing process and materials along with those of our contractors and suppliers against the above.

We hereby declare that all of our products comply fully with the above and do not contain any of the following substances except as CURRENTLY exempted by ELV II and RoHS II or as impurities:

Restricted Substances	RoHS maximum permitted level
Cadmium and cadmium compounds	100ppm (0.01%)
Hexavalent chromium compounds (Chromium VI compounds)	1,000ppm (0.1%)
Lead and lead compounds	1,000ppm (0.1%)
Mercury and mercury compounds	1,000ppm (0.1%)
Polybrominated biphenyls (PBB)	1,000ppm (0.1%)
Polybrominated diphenyl ethers (PBDE)	1,000ppm (0.1%)

Asbestos
 Azo compounds (Azocolourants and Azodyes)
 Cadmium and cadmium compounds
 Certain Shortchain Chlorinated Paraffins
 Chlorinated organic compounds
 Dimethyl fumarate
 Formaldehyde
 Hexavalent chromium compounds (Chromium VI compounds)
 Lead and lead compounds
 Mercury and mercury compounds
 Organic tin compounds
 Ozone Depleting Substances - Class I (CFCs, HBFCs, etc.)
 Ozone Depleting Substances - Class II (HCFCs)
 Perfluorooctane Sulphonate (PFOS)
 Polybrominated biphenyls (PBB)
 Polybrominated diphenyl ethers (PBDE) including **DecaBDE**
 Polychlorinated Biphenyls (PCBs)
 Polychlorinated Naphthalenes (> 3 chlorine atoms)
 Polychlorinated Terphenyls (PCTs)
 Radioactive Substances
 Red Phosphorous
 Tributyl Tin (TBT) and Triphenyl Tin (TPT), Dibutyltin (DBT) compounds, Dioctyltin (DOT) compounds
 Tributyl Tin Oxide (TBTO)

Our products have never contained PFOS or DecaBDE compounds and no exemptions for these have ever been taken.

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REACH Substances of Very High Concern (SVHCs) No SVHCs are present in all product versions.^{1,2}

Substance Name	EC Number	CAS Number	Date
4,4'- Diaminodiphenylmethane (MDA)	202-974-4	101-77-9	2008.10
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	201-329-4	81-15-2	2008.10
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	287-476-5	85535-84-8	2008.10
Anthracene	204-371-1	120-12-7	2008.10
Benzyl butyl phthalate (BBP)	201-622-7	85-68-7	2008.10
Bis(2-ethylhexyl) phthalate (DEHP)	204-211-0	117-81-7	2008.10 2014.12
Bis(tributyltin)oxide (TBTO)	200-268-0	56-35-9	2008.10
Cobalt dichloride	231-589-4	7646-79-9	2008.10 2011.06
Diarsenic pentoxide	215-116-9	1303-28-2	2008.10
Diarsenic trioxide	215-481-4	1327-53-3	2008.10
Dibutyl phthalate (DBP)	201-557-4	84-74-2	2008.10
Sodium dichromate	234-190-3	7789-12-0, 10588-01-9	2008.10
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane	247-148-4, 221-695-9	25637-99-4, 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8)	2008.10
Lead hydrogen arsenate	232-064-2	7784-40-9	2008.10
Triethyl arsenate	427-700-2	15606-95-8	2008.10
2,4-Dinitrotoluene	204-450-0	121-14-2	2010.01
Anthracene oil	292-602-7	90640-80-5	2010.01
Anthracene oil, anthracene paste	292-603-2	90640-81-6	2010.01
Anthracene oil, anthracene paste, anthracene fraction	295-275-9	91995-15-2	2010.01
Anthracene oil, anthracene paste, distn. lights	295-278-5	91995-17-4	2010.01
Anthracene oil, anthracene-low	292-604-8	90640-82-7	2010.01
Diisobutyl phthalate	201-553-2	84-69-5	2010.01
Aluminosilicate Refractory Ceramic Fibres are fibres 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, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide (Na ₂ O+K ₂ O+CaO+MgO+BaO) content less or equal to 18% by weight	-	-	2011.12
Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres 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, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na ₂ O+K ₂ O+CaO+MgO+BaO) content less or equal to 18% by weight			2011.12
Acrylamide	201-173-7	79-06-1	2010.01
Lead chromate	231-846-0	7758-97-6	2010.01
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	235-759-9	12656-85-8	2010.01
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	215-693-7	1344-37-2	2010.01
Pitch, coal tar, high temp.	266-028-2	65996-93-2	2010.01
Tris(2-chloroethyl)phosphate	204-118-5	115-96-8	2010.01
Ammonium dichromate	232-143-1	7789-09-05	2010.06
Boric acid	233-139-2, 234-343-4	10043-35-3, 11113-50-1	2010.06
Disodium tetraborate, anhydrous	215-540-4	1303-96-4, 1330-43-4, 12179-04-3	2010.06
Potassium chromate	232-140-5	7789-00-6	2010.06
Potassium dichromate	231-906-6	7778-50-9	2010.06
Sodium chromate	231-889-5	7775-11-3	2010.06

REACH Substances of Very High Concern (SVHCs) No SVHCs are present in all product versions. ^{1,2}			
Substance Name	EC Number	CAS Number	Date
Tetraboron disodium heptaoxide, hydrate	235-541-3	12267-73-1	2010.06
Trichloroethylene	201-167-4	79-01-6	2010.06
2-Ethoxyethanol	203-804-1	110-80-5	2010.12
2-Methoxyethanol	203-713-7	109-86-4	2010.12
Acids generated from chromium trioxide and their oligomers. Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.	231-801-5, 236-881-5	7738-94-5, 13530-68-2	2010.12
Chromium trioxide	215-607-8	1333-82-0	2010.12
Cobalt(II) carbonate	208-169-4	513-79-1	2010.12
Cobalt(II) diacetate	200-755-8	71-48-7	2010.12
Cobalt(II) dinitrate	233-402-1	10141-05-6	2010.12
Cobalt(II) sulphate	233-334-2	10124-43-3	2010.12
1,2,3-Trichloropropane	202-486-1	96-18-4	2011.06
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	276-158-1	71888-89-6	2011.06
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	271-084-6	68515-42-4	2011.06
1-Methyl-2-pyrrolidone	212-828-1	872-50-4	2011.06
2-Ethoxyethyl acetate	203-839-2	111-15-9	2011.06
Hydrazine	206-114-9	302-01-2, 7803-57-8	2011.06
Strontium chromate	232-142-6	7789-06-2	2011.06
1,2-dichloroethane	203-458-1	107-06-2	2011.12
2,2'-dichloro-4,4'-methylenedianiline	202-918-9	101-14-4	2011.12
2-Methoxyaniline; o-Anisidine	201-963-1	90-04-0	2011.12
4-(1,1,3,3-tetramethylbutyl)phenol	205-426-2	140-66-9	2011.12
Arsenic acid	231-901-9	7778-39-4	2011.12
Bis(2-methoxyethyl) ether	203-924-4	111-96-6	2011.12
Bis(2-methoxyethyl) phthalate	204-212-6	117-82-8	2011.12
Calcium arsenate	231-904-5	7778-44-1	2011.12
Dichromium tris(chromate)	246-356-2	24613-89-6	2011.12
Formaldehyde, oligomeric reaction products with aniline	500-036-1	25214-70-4	2011.12
Lead diazide, Lead azide	236-542-1	13424-46-9	2011.12
Lead dipicrate	229-335-2	6477-64-1	2011.12
Lead styphnate	239-290-0	15245-44-0	2011.12
N,N-dimethylacetamide	204-826-4	127-19-5	2011.12
Pentazinc chromate octahydroxide	256-418-0	49663-84-5	2011.12
Phenolphthalein	201-004-7	77-09-8	2011.12
Potassium hydroxyoctaoxodizincatedichromate	234-329-8	11103-86-9	2011.12
Trilead diarsenate	222-979-5	3687-31-8	2011.12
[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)]	219-943-6	2580-56-5	2012.06
[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)]	208-953-6	548-62-9	2012.06
1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	203-977-3	112-49-2	2012.06
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	203-794-9	110-71-4	2012.06
1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	219-514-3	2451-62-9	2012.06
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	2012.06
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)]	209-218-2	561-41-1	2012.06
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	202-027-5	90-94-8	2012.06
Diboron trioxide	215-125-8	1303-86-2	2012.06
Formamide	200-842-0	75-12-7	2012.06
Lead(II) bis(methanesulfonate)	401-750-5	17570-76-2	2012.06
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	202-959-2	101-61-1	2012.06
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)]	229-851-8	6786-83-0	2012.06
[Phthalato(2-)]dioxotrilead	273-688-5	69011-06-9	2012.12
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	284-032-2	84777-06-0	2012.12

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Substance Name	EC Number	CAS Number	Date
1,2-Diethoxyethane	211-076-1	629-14-1	2012.12
1-bromopropane (n-propyl bromide)	203-445-0	106-94-5	2012.12
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2	2012.12
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	-	-	2012.12
4,4'-methylenedi-o-toluidine	212-658-8	838-88-0	2012.12
4,4'-oxydianiline and its salts	202-977-0	101-80-4	2012.12
4-Aminoazobenzene	200-453-6	60-09-3	2012.12
4-methyl-m-phenylenediamine (toluene-2,4-diamine)	202-453-1	95-80-7	2012.12
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]	-	-	2012.12
6-methoxy-m-toluidine (p-cresidine)	204-419-1	120-71-8	2012.12
Acetic acid, lead salt, basic	257-175-3	51404-69-4	2012.12
Biphenyl-4-ylamine	202-177-1	92-67-1	2012.12
Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	214-604-9	1163-19-5	2012.12
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]	201-604-9, 236-086-3, 238-009-9	85-42-7, 13149-00-3, 14166-21-3	2012.12
Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	204-650-8	123-77-3	2012.12
Dibutyltin dichloride (DBTC)	211-670-0	683-18-1	2012.12
Diethyl sulphate	200-589-6	64-67-5	2012.12
Diisopentylphthalate	210-088-4	605-50-5	2012.12
Dimethyl sulphate	201-058-1	77-78-1	2012.12
Dinoseb (6-sec-butyl-2,4-dinitrophenol)	201-861-7	88-85-7	2012.12
Dioxobis(stearato)trilead	235-702-8	12578-12-0	2012.12
Fatty acids, C16-18, lead salts	292-966-7	91031-62-8	2012.12
Furan	203-727-3	110-00-9	2012.12
Henicosafuoroundecanoic acid	218-165-4	2058-94-8	2012.12
Heptacosafuorotetradecanoic acid	206-803-4	376-06-7	2012.12
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]	247-094-1, 243-072-0, 256-356-4, 260-566-1	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	2012.12
Lead bis(tetrafluoroborate)	237-486-0	13814-96-5	2012.12
Lead cyanamidate	244-073-9	20837-86-9	2012.12
Lead dinitrate	233-245-9	10099-74-8	2012.12
Lead monoxide (lead oxide)	215-267-0	1317-36-8	2012.12
Lead oxide sulfate	234-853-7	12036-76-9	2012.12
Lead titanium trioxide	235-038-9	12060-00-3	2012.12
Lead titanium zirconium oxide	235-727-4	12626-81-2	2012.12
Methoxyacetic acid	210-894-6	625-45-6	2012.12
Methyloxirane (Propylene oxide)	200-879-2	75-56-9	2012.12
N,N-dimethylformamide	200-679-5	68-12-2	2012.12
N-methylacetamide	201-182-6	79-16-3	2012.12
N-pentyl-isopentylphthalate	-	776297-69-9	2012.12
o-aminoazotoluene	202-591-2	97-56-3	2012.12
Orange lead (lead tetroxide)	215-235-6	1314-41-6	2012.12
o-Toluidine	202-429-0	95-53-4	2012.12
Pentacosafuorotridecanoic acid	276-745-2	72629-94-8	2012.12
Pentalead tetraoxide sulphate	235-067-7	12065-90-6	2012.12
Pyrochlore, antimony lead yellow	232-382-1	8012-00-8	2012.12
Silicic acid (H ₂ Si ₂ O ₅), 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 082-001-00-6 in Regulation (EC) No 1272/2008]	272-271-5	68784-75-8	2012.12
Silicic acid, lead salt	234-363-3	11120-22-2	2012.12
Sulfurous acid, lead salt, dibasic	263-467-1	62229-08-7	2012.12
Tetraethyllead	201-075-4	78-00-2	2012.12
Tetralead trioxide sulphate	235-380-9	12202-17-4	2012.12
Tricosafuorododecanoic acid	206-203-2	307-55-1	2012.12

REACH Substances of Very High Concern (SVHCs) No SVHCs are present in all product versions. ^{1 2}			
Substance Name	EC Number	CAS Number	Date
Trilead bis(carbonate)dihydroxide	215-290-6	1319-46-6	2012.12
Trilead dioxide phosphonate	235-252-2	12141-20-7	2012.12
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]	-	-	2013.06
Ammonium pentadecafluorooctanoate (APFO)	223-320-4	3825-26-1	2013.06
Cadmium	231-152-8	7440-43-9	2013.06
Cadmium oxide	215-146-2	1306-19-0	2013.06
Dipentyl phthalate (DPP)	205-017-9	131-18-0	2013.06
Pentadecafluorooctanoic acid (PFOA)	206-397-9	335-67-1	2013.06
Cadmium sulphide	215-147-8	1306-23-6	2013.12
Dihexyl phthalate	201-559-5	84-75-3	2013.12
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	2013.12
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	2013.12
Imidazolidine-2-thione; (2-imidazoline-2-thiol)	202-506-9	96-45-7	2013.12
Lead di(acetate)	206-104-4	301-04-2	2013.12
Trixylyl phosphate	246-677-8	25155-23-1	2013.12
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	271-093-5	68515-50-4	2014.06
Cadmium chloride	233-296-7	10108-64-2	2014.06
Sodium perborate; perboric acid, sodium salt	239-172-9, 234-390-0	-	2014.06
Sodium peroxometaborate	231-556-4	7632-4-4	2014.06
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	247-384-8	25973-55-1	2014.12
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	223-346-6	3846-71-7	2014.12
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	239-622-4	15571-58-1	2014.12
Cadmium fluoride	232-222-0	7790-79-6	2014.12
Cadmium sulphate	233-331-6	10124-36-4, 31119-53-6	2014.12
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

¹ Trace quantities of SVHCs may be present but are below the reporting threshold.

² Lead Monoxide

EU Decision number ED/169/2012 dated 19 December 2012 added Lead Monoxide (EC number 215-267-0, CAS number 1317-36-8) to REACH Annex XIV as a substance of very high concern (SVHC). Certain Diodes Incorporated products contain glass with lead (Lead Monoxide) as a substance exceeding 0.1% by weight is present within the die glass passivation and/or glass encapsulation.

Under the REACH regulation, glass is classified as a UVCB substance (a substance of unknown or variable composition, complex reaction products or biological material) containing such elements as silicon, calcium, sodium, potassium, magnesium bonded together by oxygen; these elements are bonded into a non-crystalline molecular structure with completely different properties to the starting raw materials. Glass is not a mixture of compounds such as SiO₂, Na₂O, CaO, B₂O₃, PbO, etc. and since glass itself is not considered hazardous and is not included in the SVHC list, there are no obligations to communicate information according to Article 33 of the REACH regulation concerning SVHC in articles and related to lead monoxide in glass.

REACH ANNEX XVII All products versions do not contain/use these substances in restricted applications

Entry No.	Substance name	CAS number	EC Number
1	Polychlorinated terphenyls (PCT)		
2	Chloro-1-ethylene (monomer vinyl chloride)	75-01-4	200-831-0
4	Tris (2,3 dibromopropyl) phosphate	126-72-7	204-799-9
5	Benzene	71-43-2	200-753-7
6a	Crocidolite	12001-28-4	
6b	Amosite	12172-73-5	
6c	Anthophyllite	77536-67-5	
6d	Actinolite	77536-66-4	
6e	Tremolite	77536-68-6	
6f	Chrysotile	12001-29-5 132207-32-0	
7	Tris(aziridinyl)phosphin oxide	5455-55-1	
8	Polybromobiphenyls; Polybrominatedbiphenyls (PBB)	59536-65-1	
9a	Soap bark powder (Quillaja saponaria) and its derivatives containing saponines		
9b	Powder of the roots of Helleborus viridis and Helleborus niger		
9c	Powder of the roots of Veratrum album and Veratrum nigrum		
9f	Wood powder		
9d	Benzidine and/or its derivatives	92-87-5	202-199-1
9e	o-Nitrobenzaldehyde	552-89-6	209-025-3
10a	Ammonium sulphide	12135-76-1	235-223-4
10b	Ammonium hydrogen sulphide	12124-99-1	235-184-3
10c	Ammonium polysulphide	9080-17-5	232-989-1
11a	Volatile esters of bromoacetic acids: Methyl bromoacetate	96-32-2	202-499-2
11b	Ethyl bromoacetate	105-36-2	203-290-9
11c	Propyl bromoacetate	35223-80-4	
11d	Butyl bromoacetate		
12	2-Naphthylamine and its salts	91-59-8	202-080-4
13	Benzidine and/or its derivatives	92-87-5	202-199-1
14	4-Nitrobiphenyl	92-93-3	202-204-7
15	4-Aminobiphenyl xenylamine and its salt	92-67-1	202-177-1
16a	Lead Carbonates: Neutral anhydrous carbonate (PbCO ₃)	598-63-0	209-943-4
16b	Lead Carbonates: Trilead-bis(carbonate)-dihydroxide 2PbCO ₃ -Pb(OH) ₂	1319-46-6	215-290-6
17a	Lead Sulphates: PbSO ₄	7446-14-2	231-198-9
17b	Lead Sulphates: Pb _x SO ₄	15739-80-7	239-831-0
18	Mercury and its compounds	Various	Various
19	Arsenic compounds	Various	
20	Organo stannic compounds	Various	Various
21	Di-μ-oxo-di-n-butylstannio hydroxyborane dibutyltin hydrogen borate C ₈ H ₁₉ BO ₃ Sn (DBB)	75113-37-0	401-040-5
22	Pentachlorophenol and its salts and esters	87-86-5	201-778-6
23	Cadmium and its compounds	7440-43-9	231-152-8
24	Monomethyl — tetrachlorodiphenyl methane Trade name: Ugilec 141	76253-60-6	278-404-3
25	Monomethyl-dichloro-diphenyl methane Trade name: Ugilec 121, Ugilec 21;		
26	Monomethyl-dibromo-diphenyl methane bromobenzyl bromotoluene, mixture of isomers Trade name: DBBT	99688-47-8	402-210-1
27	Nickel	7440-02-0	231-111-4
31a	Creosote; wash oil	8001-58-9	232-287-5
31b	Creosote oil; wash oil	61789-28-4	263-047-8
31c	distillates (coal tar), naphthalene oils; naphthalene oil	84650-04-4	283-484-8
31d	Creosote oil, acenaphthene fraction; wash oil	90640-84-9	292-605-3
31e	distillates (coal tar), upper; heavy anthracene oil	65996-91-0	266-026-1
31f	anthracene oil	90640-80-5	292-602-7
31g	Tar acids, coal, crude; crude phenols	65996-85-2	266-019-3
31h	Creosote, wood	8021-39-4	232-419-1
31i	Low temperature tar oil, alkaline; extract residues (coal), low temperature coal tar alkaline	122384-78-5	310-191-5
32	Chloroform	67-66-3	200-663-8
34	1,1,2 Trichloroethane	79-00-5	201-166-9
35	1,1,2,2 Tetrachloroethane	79-34-5	201-197-8
36	1,1,1,2 Tetrachloroethane	630-20-6	211-135-1
37	Pentachloroethane	76-01-7	200-925-1
38	1,1 Dichloroethylene	75-35-4	200-864-0
41	Hexachloroethane	67-72-1	200-6664
42	Alkanes, C10-C13, chloro (short-chain chlorinated paraffins) (SCCPs)	85535-84-8	287-476-5
43	Azocolourants & Azo Dyes	Various	405-665-4

REACH ANNEX XVII All products versions do not contain/use these substances in restricted applications

<u>Entry No.</u>	<u>Substance name</u>	<u>CAS number</u>	<u>EC Number</u>
45	Diphenylether, octabromo derivative C ₁₂ H ₂ Br ₈ O	32536-52-0	251-087-9
46a	Nonylphenol C ₆ H ₄ (OH)C ₉ H ₁₉		
46b	Nonylphenol ethoxylate (C ₂ H ₄ O) _n C ₁₅ H ₂₄ O		
47	Chromium VI compounds	Various	Various
48	Toluene	108-88-3	203-625-9
49	Trichlorobenzene	120-82-1	204-428-0
50a	Polycyclic-aromatic hydrocarbons (PAH): 1. Benzo(a)pyrene (BaP) 2. Benzo(e)pyrene (BeP) 3. Benzo(a)anthracene (BaA) 4. Chrysen (CHR) 5. Benzo(b)fluoranthene (BbFA) 6. Benzo(j)fluoranthene (BjFA) 7. Benzo(k)fluoranthene (BkFA) 8. Dibenzo(a, h)anthracene (DBA _h A)	50-32-8	
50b		192-97-2	
50c		56-55-3	
50d		218-01-9	
50e		205-99-2	
50f		205-82-3	
50g		207-08-9	
50h		53-70-3	
51a	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	204-211-0
51b	Dibutyl phthalate (DBP)	84-74-2	201-557-4
51c	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7
52a	di-'isononyl' phthalate (DINP)	28553-12-0 68515-48-0	249-079-5 271-090-9
52b	di-'isodecyl' phthalate (DIDP)	28553-12-0 68515-48-0 26761-40-0 68515-49-1 117-84-0	247-977-1 271-091-4 204-214-7
52c	di-n-octyl phthalate (DNOP)	28553-12-0 68515-48-0 26761-40-0 68515-49-1 117-84-0	249-079-5 271-090-9 247-977-1 271-091-4 204-214-7
54	2-(2-methoxyethoxy)ethanol (DEGME)	111-77-3	203-906-6
55	2-(2-butoxyethoxy)ethanol (DEGBE)	112-34-5	203-961-6
56	Methylenediphenyl diisocyanate (MDI)	26447-40-5	247-714-0
56a	4,4'-Methylenediphenyl diisocyanate	101-68-8	202-966-0
56b	2,4'-Methylenediphenyl diisocyanate	5873-54-1	227-534-9
56c	2,2'-Methylenediphenyl diisocyanate	2536-05-2	219-799-4
57	Cyclohexane	110-82-7	203-806-2
58	Ammonium nitrate (AN)	6484-52-2	229-347-8
59	Dichloromethane	75-09-2	200-838-9
60	Acrylamide	79-06-1	201-173-7
61	Dimethylfumarate (DMF)	624-49-7	210-849-0
62a	Phenylmercury acetate	62-38-4	200-532-5
62b	Phenylmercury propionate	103-27-5	203-094-3
62c	Phenylmercury 2-ethylhexanoate	13302-00-6	236-326-7
62d	Phenylmercury octanoate	13864-38-5	
62e	Phenylmercury neodecanoate	26545-49-3	247-783-7
63	Lead and its compounds	7439-92-1	231-100-4
64	1,4-Dichlorobenzene (p-dichlorobenzene)	106-46-7	203-400-5

GADSL: (Global Automotive Declarable Substance List) Update 1 August 2014

Diodes Incorporated's products may contain permutations of the following substances:

Arsenic:	Is used as a dopant in the "chip" or "die".
Antimony Trioxide:	Is used as a part of the flame retardant system in non-green product.
Copper*:	Some products use copper in the leadframe alloy, some others have a copper-plated Alloy 42 leadframe. Copper is increasingly being used internally in product to form connections between the die and the leadframe.
Cobalt*:	Some products contain Cobalt in the Alloy 42 leadframe alloy.
Nickel:	Some products contain Nickel in the leadframe alloy or leadframe under plating; some have nickel in the die metallisation. All usage is wholly contained within the device.
Lead:	Some products have a high temperature solder die attach >85% lead, some have lead in the die passivation or the glass encapsulation; others have lead in the copper leadframe alloy. All of these applications are exempted from RoHS.
Silica, crystalline	CAS 14808-60-7 Some products contain this substance in the encapsulation (molding compound).

*These substances are not used in GADSL-listed applications, but are included for completeness.

Rare Earth Metals:

Our products do not contain: Scandium, Yttrium, Lanthanum, Cerium, Praseodymium, Neodymium, Promethium, Samarium, Europium, Gadolinium, Terbium, Dysprosium, Holmium, Erbium, Thulium, Ytterbium, Ruthenium.

U.S. Department of Labor Federal Standard 29 – CFR Part 1910.1000 and other Substances:

Our products do not contain the following substances (in addition to those stated above):

<u>Substance name</u>	<u>CAS Number</u>
4-Nitrobiphenyl	92-93-3
alpha-Naphthylamine	134-32-7
methyl chloromethyl ether	107-30-2
3,3'-Dichlorobenzidine (and its salts)	91-94-1
bis-Chloromethyl ether	542-88-1
beta-Naphthylamine	91-59-8
Benzidine	92-87-5
4-Aminodiphenyl	92-67-1
Ethyleneimine	151-56-4
beta-Propiolactone	57-57-8
2-Acetylaminofluorene	53-96-3
4-Dimethylaminoazo-benzene	60-11-7
N-Nitrosodimethylamine	62-75-9.

Japanese Laws:

No. 117, 1973, as last amended by Law No.49, 2003. Our products do not contain:

- N,N'> -ditoryl-para-phenylenediamine>
- N-tolyl-N'> -xylyl-para-phenylenediamine
- N> '> -dixyl-paraphenylenediamine (CAS # 15017-02-4)

No. 32 of September 30, 1972 and Ministry of Health, Labour and Welfare Ordinance No. 47 of March 30, 2007 from the Japan International Center for Occupational Safety and Health. Our products do not contain:

- Mirex > -> CAS # 2385-85-5
- Benzidine and its salts CAS numbers 531-85-1, 92-87-5, 531-86-2
- Benzene paste (benzene 5% or more)

No. 138 of 1970, Water Pollution Control Law, Latest Amendment by Law No. 75 of 1995. Our products do not contain:

- Cyanogen compounds

California Proposition 65 (December 26, 2014)

Certain Diodes Inc. products contain lead and/or nickel. These are wholly contained within the devices. All products not defined as "green" contain Antimony Trioxide.

“Green” or “Halogen-free” products are defined as:

1. RoHS and REACH Compliant
2. Bromine <900ppm, Chlorine <900ppm, Bromine+Chlorine <1500ppm, Antimony Compounds <1000ppm.

JEDEC/ECA Halogen-Free Standard JS709A Diodes Incorporated “Green” / “Halogen-free” product meet these requirements.

Montreal Protocol Diodes Incorporated products do not contain any of the listed substances.

Stockholm Convention (POP Regulation) (EC Regulation 850/2004) Diodes Incorporated products do not contain any of the listed substances.

* **The following applicable exemptions are currently outlined in EVL II and RoHS II:**

- 7a Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead) (Some Diodes Inc. products use this type of solder internally for die attach purposes)
- 7c-I Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.
Some Diodes Inc. products use glass passivation at the die level and/or glass packages which contain Lead

RoHS exemptions are to be reviewed and may be subject to change at least every four years. Renewal of Exemptions is expected where no viable alternative material is available.

IEC 62474 (Replaces JIG 101)

Validity: 24 September 2014 update.

Certain Diodes Inc. products contain lead and use the exemptions stated above.

Products not defined as “Green” or “halogen-free” contain brominated flame retardants (other than PBBs, PBDEs, or HBCDD) and Antimony Trioxide.

Nickel used within certain products. This usage does not come into contact with skin in normal usage.

Our products do not contain any Beryllium or Beryllium compounds.

Our products may contain traces of any substance not purposely added and below reporting or detection levels.



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Date: 1 April 2015