



RAF ELECTRONIC  
HARDWARE

a Division of **MW Industries, Inc.**

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### **CERTIFICATE OF COMPLIANCE**

As a producer of articles, RAF Electronic Hardware is required to provide notification to our customers if our products contain any of the Substances of Very High Concern (SVHC)\* in a concentration greater than 0.1% by weight. As of Jan. 15, 2019, the products manufactured by RAF Electronic Hardware *will only be REACH compliant per customers request.*

#### **Jan. 15, 2019 Candidate List Substances**

<b>CAS No.</b>	<b>EC Number</b>	<b>Chemical Name</b>
101-77-9	202-974-4	4,4'- Diaminodiphenylmethane
117-81-7	204-211-0	Bis (2-ethyl(hexyl)phthalate) (DEHP)
120-12-7	204-371-1	Anthracene
1303-28-2	215-116-9	Diarsenic pentaoxide
1327-53-3	215-481-4	Diarsenic trioxide
15606-95-8	427-700-2	Triethyl arsenate
25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)	247-148-4 and 221-695-9	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ – HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD)
56-35-9	200-268-0	Bis(tributyltin)oxide; Tributyltin oxide
7646-79-9	231-589-4	Cobalt dichloride
7784-40-9	232-064-2	Lead hydrogen arsenate
7789-12-0 10588-01-9	234-190-3	Sodium dichromate
81-15-2	201-329-4	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)
84-74-2	201-557-4	Dibutyl phthalate
85535-84-8	287-476-5	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)
85-68-7	201-622-7	Benzyl butyl phthalate
90640-80-5	292-602-7	Anthracene oil
91995-17-4	295-278-5	Anthracene oil, anthracene paste, distn. Lights
91995-15-2	295-275-9	Anthracene oil, anthracene paste, anthracene fraction
90640-82-7	292-604-8	Anthracene oil, anthracene-low

90640-81-6	292-603-2	Anthracene oil, anthracene paste
65996-93-2	266-028-2	Coal tar pitch, high temperature
	650-017-00-8	Aluminosilicate, Refractory Ceramic Fibres
	650-017-00-8	Zirconia Aluminosilicate, Refractory Ceramic Fibres
121-14-2	204-450-0	2,4-Dinitrotoluene
84-69-5	201-553-2	Diisobutyl phthalate
<b>CAS No.</b>	<b>EC Number</b>	<b>Chemical Name</b>
7758-97-6	231-846-0	Lead chromate
12656-85-8	235-759-9	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)
1344-37-2	215-693-7	Lead sulfochromate yellow (C.I. Pigment Yellow 34)
115-96-8	204-118-5	Tris(2-chloroethyl)phosphate
79-06-1	201-173-7	Acrylamide
79-01-6	201-167-4	Trichloroethylene
10043-35-3	233-139-2	Boric Acid
1303-96-4	215-540-4	Disodium tetraborate, anhydrous
12267-73-1	235-541-3	Tetraboron disodium heptaoxide, hydrate
7778-50-9	231-906-6	Potassium dichromate
2151163	232-143-1	Ammonium dicromate
7789-00-6	232-140-5	Potassium chromate
2146108	231-889-5	Sodium chromate
10124-43-3	233-334-2	Cobalt(II) sulphate
10141-05-6	233-402-1	Cobalt(II) dinitrate
513-79-1	208169-4	Cobalt(II) carbonate
71-48-7	200-755-8	Cobalt(II) diacetate
109-86-4	203-713-7	2-Methoxyethanol
110-80-5	203-804-1	2-Ethoxyethanol
1333-82-0	215-607-8	Chromium trioxide
7738-94-5	231-801-5	Acids generated from chromium trioxide and their oligomers
13530-68-2	236-881-5	Groups containing:
Not yet assigned	Not yet assigned	Chromic acid
		Dichromic acid
		Oligomers of chromic acid and dichromic acid
111-15-9	203-839-2	2-ethoxyethyl acetate
7789-06-2	232-142-6	Strontium chromate
68515-42-4	271-084-6	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)
302-01-2	206-114-9	Hydrazine
7803-57-8		
872-50-4	212-828-1	1-methyl-2-pyrrolidone
96-18-4	202-486-1	1,2,3-trichloropropane
71888-89-6	276-158-1	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)
7646-79-9	231-589-4	Cobalt dichloride
24613-89-6	246-356-2	Dichromium tris(chromate)
11103-86-9	234-329-8	Potassium hydroxyoctaoxidizincatedi-chromate
49663-84-5	256-418-0	Pentazinc chromate octahydroxide

25214-70-4	500-036-1	Formaldehyde, oligomeric reaction products with aniline(technical MDA)
117-82-8	204-212-6	Bis(2-methoxyethyl) phthalate
90-04-0	201-963-1	2-Methoxyaniline; o-Anisidine
140-66-9	205-426-2	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)
107-06-2	203-458-1	1,2-Dichloroethane
111-96-6	203-924-4	Bis(2-methoxyethyl) ether
7778-39-4	231-901-9	Arsenic acid
7778-44-1	231-904-5	Calcium arsenate
3687-31-8	222-979-5	Trilead diarsenate
127-19-5	204-826-4	N,N-dimethylacetamide (DMAC)
101-14-4	202-918-9	2,2'-dichloro-4,4'-methylenedianiline (MOCA)
CAS No.	EC Number	Chemical Name
77-09-8	201-004-7	Phenolphthalein
13424-46-9	236-542-1	Lead azide Lead diazide
15245-44-0	239-290-0	Lead styphnate
6477-64-1	229-335-2	Lead dipicrate
6786-83-0	229-851-8	$\alpha,\alpha$ -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
101-61-1	202-959-2	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)
59653-74-6	423-400-0	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione ( $\beta$ -TGIC)
1303-86-2	215-125-8	Diboron trioxide
112-49-2	203-977-3	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)
561-41-1	209-218-2	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
17570-76-2	401-750-5	Lead(II) bis(methanesulfonate)
75-12-7	200-842-0	Formamide
548-62-9	208-953-6	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
110-71-4	203-794-9	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)
2580-56-5	219-943-6	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]
2451-62-9	219-514-3	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)
90-94-8	202-027-5	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)
1163-19-5	214-604-9	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)
72629-94-8	276-745-2	Pentacosafuorotridecanoic acid
307-55-1	206-203-2	Tricosafuorododecanoic acid
2058-94-8	218-165-4	Henicosafuoroundecanoic acid
376-06-7	206-803-4	Heptacosafuorotetradecanoic acid
123-77-3	204-650-8	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))
85-42-7, 13149-00-3, 14166-21-3	201-604-9, 236-086-3, 238-009-9	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>
25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	247-094-1, 243-072-0, 256-356-4, 260-566-1	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>
		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> 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated <i>[covering well-defined substances and UVCB substances, polymers and homologues]</i>
625-45-6	210-894-6	Methoxyacetic acid
68-12-2	200-679-5	N,N-dimethylformamide
683-18-1	211-670-0	Dibutyltin dichloride (DBTC)
1317-36-8	215-267-0	Lead monoxide (Lead oxide)
215-235-6	1314-41-6	Orange lead (Lead tetroxide)
13814-96-5	237-486-0	Lead bis(tetrafluoroborate)
1319-46-6	215-290-6	Trilead bis(carbonate)dihydroxide
12060-00-3	235-038-9	Lead titanium trioxide
12626-81-2	235-727-4	Lead titanium zirconium oxide
11120-22-2	234-363-3	Silicic acid, lead salt
68784-75-8	272-271-5	Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), 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>
106-94-5	203-445-0	1-bromopropane (n-propyl bromide)
75-56-9	200-879-2	Methyloxirane (Propylene oxide)
84777-06-0	284-032-2	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear
605-50-5	210-088-4	Diisopentylphthalate (DIPP)
776297-69-9		N-pentyl-isopentylphthalate
629-14-1	211-076-1	1,2-diethoxyethane
51404-69-4	257-175-3	Acetic acid, lead salt, basic
12036-76-9	234-853-7	Lead oxide sulfate
69011-06-9	273-688-5	[Phthalato(2-)]dioxotrilead
12578-12-0	235-702-8	Dioxobis(stearato)trilead
91031-62-8	292-966-7	Fatty acids, C16-18, lead salts
20837-86-9	244-073-9	Lead cyanamidate
10099-74-8	233-245-9	Lead dinitrate
12065-90-6	235-067-7	Pentalead tetraoxide sulphate
8012-00-8	232-382-1	Pyrochlore, antimony lead yellow

62229-08-7	263-467-1	Sulfurous acid, lead salt, dibasic
78-00-2	201-075-4	Tetraethyllead
12202-17-4	235-380-9	Tetralead trioxide sulphate
12141-20-7	235-252-2	Trilead dioxide phosphonate
110-00-9	203-727-3	Furan
64-67-5	200-589-6	Diethyl sulphate
77-78-1	201-058-1	Dimethyl sulphate
143860-04-2	421-150-7	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine
88-85-7	201-861-7	Dinoseb (6-sec-butyl-2,4-dinitrophenol)
838-88-0	212-658-8	4,4'-methylenedi- <i>o</i> -toluidine
101-80-4	202-977-0	4,4'-oxydianiline and its salts
60-09-3	200-453-6	4-aminoazobenzene
95-80-7	202-453-1	4-methyl- <i>m</i> -phenylenediamine (toluene-2,4-diamine)
120-71-8	204-419-1	6-methoxy- <i>m</i> -toluidine (p-cresidine)
92-67-1	202-177-1	Biphenyl-4-ylamine
97-56-3	202-591-2	<i>o</i> -aminoazotoluene [(4- <i>o</i> -tolylazo- <i>o</i> -toluidine)]
95-53-4	202-429-0	<i>o</i> -toluidine
79-16-3	201-182-6	<i>N</i> -methylacetamide
7440-43-9	231-152-8	Cadmium (found in certain parts with a cad finish (-1, -2, or -3) only)
CAS No.	EC Number	Chemical Name
1306-19-0	215-146-2	Cadmium Oxide
3825-26-1	223-320-4	Ammonium Pentadecafluorooctanoic Acid (APFO)
335-67-1	206-397-9	Pentadecafluorooctanoic Acid (PFOA)
131-18-0	205-017-9	Dipentyl Phthalate (DPP)
		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]
1306-23-6	215-147-8	Cadmium sulphide
1937-37-7	217-710-3	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)
84-75-3	201-559-5	Dihexyl phthalate
96-45-7	202-506-9	Imidazolidine-2-thione; (2-imidazoline-2-thiol)
25155-23-1	246-677-8	Trixylyl phosphate
573-58-0	209-358-4	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)
301-04-2	206-104-4	Lead di(acetate)
68515-50-4	271-093-5	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear
	239-172-9; 234-390-0	Sodium perborate; perboric acid, sodium salt
7632-04-4	231-556-4	Sodium peroxometaborate
10108-64-2	233-296-7	Cadmium chloride
117-81-7	204-211-0	Bis(2-ethylhexyl) phthalate (DEHP)
3846-71-7	223-346-6	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)

15571-58-1	239-622-4	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)
		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)
25973-55-1	247-384-8	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)
7790-79-6	232-222-0	Cadmium fluoride
10124-36-4,31119-53-6	233-331-6	Cadmium sulphate
68515-51-5 68648-93-1	271-094-0 272-013-1	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)
		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]
98-95-3	202-716-0	Nitrobenzene
3864-99-1	223-383-8	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)
36437-37-3	253-037-1	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)
1120-71-4	214-317-9	1,3-propanesultone
375-95-1 21049-39-8 4149-60-4	206-801-3	Perfluorononan-1-oic-acid and its sodium and ammonium saltspropanesultone
50-32-8	200-028-5	Benzo[def]chrysene (Benzo[a]pyrene)
80-05-7	201-245-8	4,4'-isopropylidenediphenol (bisphenol A)
<b>CAS No.</b>	<b>EC Number</b>	<b>Chemical Name</b>
		4-Heptylphenol, branched and linear (4-HPbl) [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]
80-46-6	201-280-9	p-(1,1-dimethylpropyl) phenol (PTAP)
3108-42-7, 335-76-2, 3830-45-3	206-400-3	Nonadecafluorodecanoic acid (perfluorinated chemical PFDA) and its sodium and ammonium salts
	200-280-6	Perfluorohexane-1-sulphonic acid and its salts
56-55-3, 1718-53-2	200-280-6	Benz[a]anthracene
513-78-0	208-168-9	Cadmium carbonate
21041-95-2	244-168-5	Cadmium hydroxide
10022-68-1, 10325-94-7	233-710-6	Cadmium nitrate
218-01-9, 1719-03-5	205-923-4	Chrysene
		Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus" <sup>™</sup> )
		Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP)
84-61-7	201-545-9	Dicyclohexyl phthalate (DCHP)
552-30-7	209-008-0	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride)(TMA)

191-24-2	205-883-8	Benzo[ghi]perylene
541-02-6	208-764-9	Decamethylcyclopentasiloxane
12008-41-2	234-541-0	Disodium Octaborate
107-15-3	203-468-6	Ethylenediamine
556-67-2	209-136-7	Octamethylcyclotetrasiloxane
61788-32-7	262-967-7	Terphenyl, hydrogenated
7439-92-1	231-100-4	Lead (-27 plate, All Brass, 2011R Aluminum, 12L14 Steel & Copper Beryllium parts)

239-139-9	15087-24-8	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one
401-720-1	6807-17-6	2,2-bis(4'-hydroxyphenyl)-4 methylpentane
205-912-6	207-08-9	Benzo[k] fluranthene
206-912-4	206-44-0;93951-69-0	Fluoranthene
201-581-5	85-01-8	Phenanthrene
204-927-3	129-00-0; 1718-52-1	Pyrene



**Mark Ignace**  
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