



< KUBOTA Group Green Procurement Guidelines Appendix >

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# Substances of Concern List

July 2014

KUBOTA Corporation

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## Introduction

This document is for providing information related to "3. Substances of Concern" of "Eco-friendliness standards for products" specified in "KUBOTA Group Green Procurement Guidelines" revised on July 2014.

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## Disclaimer

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Note : We do not recommend to print "Reference List of Substances to be Prohibited, Restricted and Controlled" (see page 17) from the viewpoint of the paper use reduction.

## The main revised part of July 2014

Table Number	Revision
Attached Table I-B : ELV Exemptions List	Amended as Commission Regulation 2013/86/EU of 22 May 2013.
Reference List of Substances to be Prohibited, Restricted and Controlled	Amended as the revised related rules and JAMP Declarable Substances Reference List.

Table 1 : Substances to be Prohibited

Following substances should not be contained in the products nor used in the production process.

The content as impurities should be less than 0.1 percent by weight per homogeneous material.

No.	CAS Number	Substance Name	Synonym	Major Regulatory Control
1-1	12185-10-3	Yellow phosphorus matches	Tetraphosphorus	*A, *B
1-2	92-87-5	Benzidine and its salts	4,4'-Diamino-1,1'-biphenyl	*A
1-3	92-67-1	4-aminodiphenyl and its salts		*A
1-4	92-93-3	4-nitrodiphenyl and its salts		*A
1-5	1332-21-4 JAMP-SN0056	Asbestos (Asbestos fiber [group],Asbestos mineral [group])		*A *C *D
1-6	12001-28-4 132207-33-1	Crocidolite		We prohibit the use of asbestos regardless of the concentrations, regardless of the laws or regulations or others.
1-7	12172-73-5	Amosite		
1-8	77536-67-5 17068-78-9	Anthophyllite		
1-9	77536-66-4 13768-00-8 12172-67-7	Actinolite		
1-10	77536-68-6 14567-73-8	Tremolite		
1-11	12001-29-5 132207-32-0	Chrysotile		
1-12	542-88-1	Bis (chloromethyl) ether	Oxybis(chloromethane)	*A
1-13	91-59-8	Beta-naphthylamine and its salts	2-Naphthylamine	*A
1-14	71-43-2	Gum containing benzene, in which the volume of contained benzene exceeds 5 % of the solvent (including diluents) of the said gum		*A
1-15	1336-36-3	Polychlorinated biphenyls	Polychlorobiphenyl, PCB, PCBS	*C, *E
1-16	70776-03-3	Polychlorinated naphthalenes (limited to those containing three or more chlorine atoms)		*E
1-17	118-74-1	Hexachlorobenzene	HCB, Perchlorobenzene	*E
1-18	309-00-2	Aldrin		*E
1-19	60-57-1	Dieldrin		*E
1-20	72-20-8	Endrin		*E
1-21	50-29-3	DDT		*E
1-22	57-74-9	Chlordane		*E
1-23	76-44-8	Heptachlor		*E
1-24	56-35-9	Bis(tributyltin) oxide		*E, *C, *D, REACH SVHC
1-25	620-91-7	N,N'-Ditolyl-p-phenylenediamine, N-tolyl-N'-xylyl-p-phenylenediamine, or N,N'-dixylyl-p-phenylenediamine		*E
1-26	732-26-3	2,4,6-Tri- tert-butylphenol		*E
1-27	8001-35-2	Polychloro-2,2-dimethyl-3-methylidenebicyclo[2.2.1]heptane	Toxaphene	*E
1-28	2385-85-5	Dodecachloropentacyclo [5.3.0.0.2.6.0.3.9.0.4.8] decane	Mirex	*E
1-29	115-32-2	2,2,2- Trichloro-1,1- bis(4-chlorophenyl) ethanol	Kelthane, Dicofol	*E
1-30	87-68-3	Hexachlorobuta-1,3-diene		*E
1-31	3846-71-7	Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)-		*E
1-32	1763-23-1	Perfluoro(octane-1-sulfonic acid) or its salts	PFOS	*D, *E
1-33	307-35-7	Perfluoro(octane-1-sulfonyl) fluoride	PFOSF	*E
1-34	608-93-5	Pentachlorobenzene		*E
1-35	319-84-6	r-1,c-2,t-3,c-4,t-5,t-6-Hexachlorocyclohexane	alpha-Hexachlorocyclohexane	*E
1-36	319-85-7	r-1,t-2,c-3,t-4,c-5,t-6-Hexachlorocyclohexane	beta-Hexachlorocyclohexane	*E
1-37	319-86-8	r-1,c-2,t-3,c-4,c-5,t-6-Hexachlorocyclohexane	gamma-Hexachlorocyclohexane, Lindane	*E
1-38	143-50-0	Decachloropentacyclo[5.3.0.0(2,6).0(3,9).0(4,8)]decan-5-one	Chlordecone	*E
1-39	36355-01-8	Hexabromobiphenyl		*D, *E, RoHS
1-40	40088-47-9	Tetrabromo(phenoxybenzene)	Tetrabromodiphenyl ether	*E, RoHS
1-41	32534-81-9	Pentabromo(phenoxybenzene)	Pentabromodiphenyl ether	*D, *E, RoHS
1-42	31153-30-7	Hexabromo(phenoxybenzene)	Hexabromodiphenyl ether	*E, RoHS
1-43	68928-80-3	Heptabromo(phenoxybenzene)	Heptabromodiphenyl ether	*E, RoHS
1-44	152-16-9	Octamethyl pyrophosphoramide	Schradan	*F
1-45		Preparations containing Octamethyl pyrophosphoramide		*F

Table 1 : Substances to be Prohibited

Following substances should not be contained in the products nor used in the production process.

The content as impurities should be less than 0.1 percent by weight per homogeneous material.

No.	CAS Number	Substance Name	Synonym	Major Regulatory Control
1-46		Tetraalkyl lead	Tetramix	*C, *F
1-47	1762-26-1	Ethyltrimethyl lead		*C, *F
1-48	1762-27-2	Diethyldimethyl lead		*C, *F
1-49	1762-28-3	Triethylmethyl lead		*C, *F
1-50	75-74-1	Tetramethyl lead		*C, *F
1-51	78-00-2	Tetraethyl lead		*C, *F
1-52		Preparations containing Tetraalkyl lead		*C, *F
1-53	56-38-2	Diethyl paranitrophenyl thiophosphate	O,O-Diethyl-O-(p-nitrophenyl) phosphorothioate, Parathion	*F
1-54		Preparations containing Diethyl paranitrophenyl thiophosphate		*F
1-55	8022-00-2	Dimethylethylmercaptoethyl thiophosphate	Demeton-methyl	*F
1-56		Preparations containing Dimethylethylmercaptoethyl thiophosphate		*F
1-57	13171-21-6	Dimethyl-(diethylamido-1-chlorocrotonyl)-phosphate	Phosphamidon	*F
1-58		Preparations containing Dimethyl-(diethylamido-1-chlorocrotonyl)-phosphate		*F
1-59	298-00-0	Dimethyl paranitrophenyl thiophosphate	Parathion-methyl	*F
1-60		Preparations containing Dimethyl paranitrophenyl thiophosphate		*F
1-61	107-49-3	Tetraethyl pyrophosphate	TEPP	*F
1-62		Preparations containing Tetraethyl pyrophosphate		*F
1-63	144-49-0	Monofluoro acetate	Fluoroacetic acid	*F
1-64		Preparations containing Monofluoro acetate and its salts		*F
1-65	640-19-7	Fluoroacetamide	Monofluoroacetamide	*F
1-66	62-74-8	Monofluoro acetates	Sodium fluoroacetate	*F
1-67		Preparations containing Monofluoroacetamide		*F
1-68	20859-73-8	Aluminium phosphide		*C, *F
1-69		Preparations containing Aluminium phosphide and its degradation accelerator		*F
1-70	75-69-4	Trichlorofluoromethane	CFC-11	*C, *G(A-I)
1-71	75-71-8	Dichlorodifluoromethane	CFC-12	*C, *G(A-I)
1-72	26523-64-8	Trichlorotrifluoroethane	CFC-113	*C, *G(A-I)
1-73	76-13-1	1,1,2 Trichloro-1,2,2 trifluoroethane		*C, *G(A-I)
1-74	354-58-5	1,1,1 Trichlorotrifluoroethane		*C, *G(A-I)
1-75	1320-37-2	Dichlorotetrafluoroethane	CFC-114	*C, *G(A-I)
1-76	76-14-2	1,2 Dichloro-1,1,2,2tetrafluoroethane		*C, *G(A-I)
1-77	374-07-2	1,1 Dichloro-1,2,2,2tetrafluoroethane		*C, *G(A-I)
1-78	76-15-3	chloropentafluoroethane	CFC-115	*C, *G(A-I)
1-79	353-59-3	Bromochlorodifluoromethane	Halone-1211	*C, *G(A-II)
1-80	75-63-8	Bromotrifluoromethane	Halone-1301	*C, *G(A-II)
1-81	25497-30-7	Dibromotetrafluoroethane	Halone-2402	*C, *G(A-II)
1-82	124-73-2	1,2-dibromotetrafluoroethane		*C, *G(A-II)
1-83	27336-23-8	1,1-dibromotetrafluoroethane	1,1-Dibromo-1,2,2,2-tetrafluoroethane	*C, *G(A-II)
1-84	75-72-9	Chlorotrifluoromethane	CFC-13	*C, *G(B-I)
1-85	354-56-3	Pentachlorofluoroethane	CFC-111	*G(B-I)
1-86	28605-74-5	Tetrachlorodifluoroethane	CFC-112	*C, *G(B-I)
1-87	76-11-9	1,1,1,2-Tetrachloro-2,2,difluoroethane		*C, *G(B-I)
1-88	76-12-0	1,1,2,2-Tetrachloro-1,2,difluoroethane		*C, *G(B-I)
1-89	422-78-6	Heptachlorofluoropropane	CFC-211	*G(B-I)
1-90	3182-26-1	Hexachlorodifluoropropane	CFC-212	*G(B-I)
1-91	134237-31-3	Pentachlorotrifluoropropane	CFC-213	*G(B-I)
1-92	2354-06-5	1,1,1,3,3-Pentachloro-2,2,3-trifluoropropane	CFC-213	*G(B-I)
1-93	29255-31-0	Tetrachlorotetrafluoropropane	CFC-214	*G(B-I)
1-94	2268-46-4	1,1,1,3-Tetrachlorotetrafluoropropane		*G(B-I)
1-95	—	Trichloropentafluoropropane	CFC-215	*G(B-I)
1-96	1599-41-3	1,2,2-Trichloropentafluoropropane		*G(B-I)
1-97	4259-43-2	1,1,1-Trichloropentafluoropropane		*G(B-I)
1-98	42560-98-5	Dichlorohexafluoropropane	CFC-216	*G(B-I)
1-99	661-97-2	1,2-Dichloro -1,1,2,3,3,3-hexafluoropropane	CFC-216	*G(B-I)
1-100	422-86-6	Monochloroheptafluoropropane	CFC-217	*G(B-I)
1-101	76-18-6	2-Chloroheptafluoropropane		*G(B-I)
1-102	56-23-5	Carbon tetrachloride	Tetrachloromethane	*C, *G(B-II)
1-103	71-55-6	1,1,1-trichloroethane	Methyl chloroform	*C, *G(B-III)
1-104	1868-53-7	Dibromofluoromethane		*G(C-II)

Table 1 : Substances to be Prohibited

Following substances should not be contained in the products nor used in the production process.

The content as impurities should be less than 0.1 percent by weight per homogeneous material.

No.	CAS Number	Substance Name	Synonym	Major Regulatory Control
1-105	1511-62-2	Bromodifluoromethane	HBFC-22B1	*G(C-II)
1-106	373-52-4	Bromofluoromethane		*G(C-II)
1-107		Tetrabromofluoromethane		*G(C-II)
1-108		Tribromofluoromethane		*G(C-II)
1-109		Dibromofluoromethane		*G(C-II)
1-110		Bromotetrafluoroethane		*G(C-II)
1-111	124-72-1	2-Bromo-1,1,1,2-tetrafluoroethane		*G(C-II)
1-112		Tribromofluoroethane		*G(C-II)
1-113		Dibromofluoroethane		*G(C-II)
1-114		Bromotrifluoroethane		*G(C-II)
1-115	421-06-7	2-Bromo-1,1,1,-trifluoroethane		*G(C-II)
1-116		Dibromofluoroethane		*G(C-II)
1-117	358-97-4	1,2-Dibromo-1-fluoroethane		*G(C-II)
1-118		Bromodifluoroethane		*G(C-II)
1-119	359-07-9	2-Bromo-1,1-difluoroethane		*G(C-II)
1-120		Bromofluoroethane		*G(C-II)
1-121	762-49-2	1-Bromo-2-fluoroethane		*G(C-II)
1-122		Hexabromofluoropropane		*G(C-II)
1-123		Pentabromodifluoropropane		*G(C-II)
1-124		Tetrabromotrifluoropropane		*G(C-II)
1-125		Tribromotetrafluoropropane		*G(C-II)
1-126		Dibromopentafluoropropane		*G(C-II)
1-127		Bromohexafluoropropane		*G(C-II)
1-128	2252-78-0	1-Bromo-1,1,2,3,3,3,-hexafluoropropane		*G(C-II)
1-129		Pentabromofluoropropane		*G(C-II)
1-130		Tetrabromodifluoropropane		*G(C-II)
1-131		Tribromotrifluoropropane		*G(C-II)
1-132		Dibromotetrafluoropropane		*G(C-II)
1-133		Bromopentafluoropropane		*G(C-II)
1-134		Tetrabromofluoropropane		*G(C-II)
1-135		Tribromodifluoropropane		*G(C-II)
1-136		Dibromotrifluoropropane		*G(C-II)
1-137		Bromotetrafluoropropane		*G(C-II)
1-138		Tribromofluoropropane		*G(C-II)
1-139		Dibromodifluoropropane		*G(C-II)
1-140		Bromotrifluoropropane		*G(C-II)
1-141		Dibromofluoropropane		*G(C-II)
1-142		Bromodifluoropropane		*G(C-II)
1-143		Bromofluoropropane		*G(C-II)
1-144	74-97-5	Bromochloromethane		*G(C-III)
1-145	74-83-9	Methyl bromide	Bromomethane	*G(E-I)
1-146	308068-56-6	Carbon nanotube		

\*A: The Industrial Safety and Health Act of Japan: Substances Subject to Prohibition of Manufacturing

\*B: Poisonous and Deleterious Substances Control Law of Japan: Poisonous Substances

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion

\*C: of Improvements to the Management Thereof of Japan (PRTR Law): Specific Class I Designated Chemical Substance

\*D: EU Regulation-REACH (EC) No 1907/2006: ANNEX X VII Substances subject to restriction

\*E: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. of Japan : Class I Specified Chemical Substances

\*F: Poisonous and Deleterious Substances Control Law of Japan: Specified Poisonous Substances

Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other

\*G: Measures: Specified Substances (Montreal Protocol Annex A Group I , II , Annex B Group I , II , III, Annex C Group II , III, Annex E Group I )

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

No.	CAS Number	Substance Name	Specified Conditions or Applications	Major Regulatory Control
2-1	-	<b>Cadmium and its compounds</b>	<ul style="list-style-type: none"> <li>Should not be contained intentionally or as impurities in concentrations greater than 0.01% by weight per homogeneous material.</li> <li>Should not be contained in batteries in concentrations greater than 0.002% by weight.</li> <li>However, the following applications are excluded.                             <ol style="list-style-type: none"> <li>RoHS and ELV Exemptions (see Attached Table I-A•B)</li> <li>The applications in which KUBOTA Group admits to contain:                                     <ul style="list-style-type: none"> <li>At present, there are no available substitutional technologies or products.</li> <li>The materials KUBOTA Group specified.</li> </ul> </li> </ol> </li> </ul>	RoHS, ELV, Battery Directive, REACH Annex X VII, PRTR Law Specific Class I
(Example Substances)	7440-43-9	Cadmium		
	1306-19-0	Cadmium oxide		
	1306-23-6	Cadmium sulphide		
	10108-64-2	Cadmium chloride		
	513-78-0	Cadmium carbonate		
	506-82-1	Dimethylcadmium		
	10124-36-4	Cadmium sulphate		
2-2	-	<b>Hexavalent chromium compounds</b>	<ul style="list-style-type: none"> <li>Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material.</li> <li>Should not be contained in cement in concentrations greater than 0.0002%.</li> <li>However, the following applications are excluded.                             <ol style="list-style-type: none"> <li>RoHS and ELV Exemptions (see Attached Table I-A•B)</li> <li>The applications in which KUBOTA Group admits to contain:                                     <ul style="list-style-type: none"> <li>At present, there are no available substitutional technologies or products.</li> <li>The materials KUBOTA Group specified.</li> </ul> </li> </ol> </li> </ul>	RoHS, ELV, REACH Annex X VII, PRTR Law Specific Class I
(Example Substances)	1333-82-0	Chromium (VI), oxide		
	1333-82-0	Chromium (VI), trioxide		
	7775-11-3	Sodium chromate		
	10588-01-9	Sodium dichromate, anhydrate		
	7789-12-0	Sodium dichromate, dihydrate		
	7789-00-6	Potassium chromate(VI)		
	7789-09-5	Ammonium dichromate		
	7778-50-9	Potassium dichromate		
	7758-97-6	Lead(II) chromate		
	12656-85-8	Lead chromate molybdate sulfate Pigment Red 104		
1344-37-2	Pigment Yellow 34			
2-3	-	<b>Lead and its compounds</b>	<ul style="list-style-type: none"> <li>Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material.</li> <li>However, the following applications are excluded.                             <ol style="list-style-type: none"> <li>RoHS and ELV Exemptions (see Attached Table I-A•B)</li> <li>The applications in which KUBOTA Group admits to contain:                                     <ul style="list-style-type: none"> <li>At present, there are no available substitutional technologies or products.</li> <li>The materials KUBOTA Group specified.</li> </ul> </li> </ol> </li> </ul>	RoHS, ELV, PRTR Law Specific Class I
(Example Substances)	7439-92-1	Lead		
	7446-14-2	Lead(II) sulphate		
	598-63-0	Lead carbonate		
	1319-46-6			
	15739-80-7	Lead sulphate		
	7446-27-7	Trilead bis(orthophosphate)		
	12069-00-0	Lead selenide		
	12060-00-3	Lead(II) titanate		
	1072-35-1	Lead(II) stearate		
	1314-41-6	Lead(II, IV) oxide		
	7784-40-9	Lead hydrogen arsenate		
	7758-97-6	Lead(II) chromate		
	12656-85-8	Lead chromate molybdate sulfate Pigment Red 104		
1344-37-2	Pigment Yellow 34			
2-4	-	<b>Mercury and its compounds</b>	<ul style="list-style-type: none"> <li>Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material.</li> <li>Should not be contained in batteries in concentrations greater than 0.005% by weight except in bottom cells with a mercury content of no more than 2%.</li> <li>However, the following applications are excluded.                             <ol style="list-style-type: none"> <li>RoHS and ELV Exemptions (see Attached Table I-A•B)</li> </ol> </li> </ul>	RoHS, ELV, Battery Directive, REACH Annex X VII, PRTR Law Specific Class I
(Example Substances)	33631-63-9	Mercuric chloride (II)		
	7487-94-7	Mercury dichloride		
	7783-35-9	Mercury sulphate		
	10045-94-0	Mercury (II) nitrate		
	21908-53-2	Mercury (II) oxide		

Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

No.	CAS Number	Substance Name	Specified Conditions or Applications	Major Regulatory Control
	102-98-7	Dihydrogen orthoborato(3-)-O]phenylmercurate(2-)	② The applications in which KUBOTA Group admits to contain: • At present, there are no available substitutional technologies or products. • The materials KUBOTA Group specified.	
	1344-48-5	Mercury(II) sulfide		
2-5	59536-65-1	<b>Polybromobiphenyls (PBBs)</b> (Hexabromobiphenyl should be probobited.)	• Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material. • However, the following applications are excluded.  ① The applications in which KUBOTA Group admits to contain: • At present, there are no available substitutional technologies or products.	RoHS REACH Annex X VII
(Example Substances)	40088-45-7	Tetrabromobiphenyl		
	56307-79-0	Pentabromobiphenyl		
	35194-78-6	Heptabromobiphenyl		
	62188-13-9	Octabromobiphenyl		
	133654-09-6	Decabromobiphenyl		
2-6	-	<b>Polybromo diphenyl ethers (PBDEs)</b> (Tetrabromo diphenyl ether, Pentabromo diphenyl ether, Hexabromo diphenyl ether and Heptabromo diphenyl ether should be prohibited.)	• Should not be contained intentionally or as impurities in concentrations greater than 0.1% by weight per homogeneous material. • However, the following applications are excluded.  ① The applications in which KUBOTA Group admits to contain: • At present, there are no available substitutional technologies or products	RoHS, REACH Annex X VII
(Example Substances)	32536-52-0	Octabromodiphenyl ether		
	1163-19-5	Decabromodiphenyl ether		
2-7	-	<b>HCFCs</b>	• Should not be used in products intentionally as a refrigerant gas and a heat insulator.	Law Concerning the Protection of the Ozone Layer Montreal Protocol Annex C Group I
(Example Substances)	75-43-4	Dichlorofluoromethane	HCFC-21	
	75-45-6	Chlorodifluoromethane	HCFC-22	
	593-70-4	Chlorofluoromethane	HCFC-31	
	134237-32-4	Tetrachlorofluoroethane	HCFC-121	
	354-11-0	1,1,1,2-Tetrachloro-2-fluoroethane		
	354-14-3	1,1,2,2-Tetracloro-1-fluoroethane		
	—	Trichlorodifluoroethane	HCFC-122	
	354-15-4	Ethane, 1,2-difluoro-1,1,2-trichloro-		
	134237-33-5	Dichlorotrifluoroethane		
	306-83-2	2,2-Dichloro-1,1,1-trifluoroethane	HCFC-123	
	354-23-4	1,2-Dichloro-1,1,2-trifluoroethane		
	34077-87-7	Dichlorotrifluoroethane		
	63938-10-3	Chlorotetrafluoroethane		
	354-25-6	1-Chloro-1,1,2,2-tetrafluoroethane		
	2837-89-0	2-Chloro-1,1,1,2-tetrafluoroethane	HCFC-124	
	134237-34-6	Trichlorofluoroethane	HCFC-131	
	811-95-0	1,1,1-Trichloro-2-fluoroethane		
	27154-33-2	Trichlorofluoroethane		
	25915-78-0	Dichlorodifluoroethane	HCFC-132	
	1330-45-6	Chlorotrifluoroethane	HCFC-133	
	75-88-7	2-Chloro-1,1,1-trifluoroethane		
	25167-88-8	Dichlorofluoroethane	HCFC-141	
	430-57-9	1,2-Dichloro-1-fluoroethane		
	1717-00-6	1,1-Dichloro-1-fluoroethane	HCFC-141b	
	25497-29-4	Chlorodifluoroethane	HCFC-142	
	75-68-3	1-Chloro-1,1-difluoroethane	HCFC-142b	
	338-64-7	Ethane, 1-chloro-1,2-difluoro-		



Table 2 : Substances to be Restricted

Following substances should not be contained in the products nor used in the production process under the conditions or applications.

No.	CAS Number	Substance Name	Specified Conditions or Applications	Major Regulatory Control
	110587-14-9	Chlorofluoroethane	HCFC-151	
	134237-35-7	Hexachlorofluoropropane	HCFC-221	
	134237-36-8	Pentachlorodifluoropropane	HCFC-222	
	134237-37-9	Tetrachlorotrifluoropropane	HCFC-223	
	127564-91-4	Trichlorotetrafluoropropane	HCFC-224	
	134237-38-0	Trichlorotetrafluoropropane		
	127564-92-5	Dichloropentafluoropropane	HCFC-225	
	422-44-6	1,2-Dichloro-1,1,2,3,3-pentafluoropropane		
	422-56-0	3,3-Dichloro-1,1,1,2,2-pentafluoropropane	HCFC-225ca	
	507-55-1	1,3-Dichloro-1,1,2,2,3-pentafluoropropane	HCFC-225cb	
	13474-88-9	1,1-Dichloro-1,2,2,3,3-pentafluoropropane		
	128903-21-9	2,2-Dichloro-1,1,1,3,3-pentafluoropropane		
	134308-72-8	Chlorohexafluoropropane	HCFC-226	
	422-55-9	1-Chloro-1,1,2,2,3,3-hexafluoropropane		
	422-57-1	3-Chloro-1,1,1,2,2,3-hexafluoropropane		
	134190-48-0	Pentachlorofluoropropane	HCFC-231	
	127564-82-3	Tetrachlorodifluoropropane	HCFC-232	
	134237-39-1	Tetrachlorodifluoropropane		
	134237-40-4	Trichlorotrifluoropropane	HCFC-233	
	127564-83-4	Dichlorotetrafluoropropane	HCFC-234	
	134237-41-5	Chloropentafluoropropane	HCFC-235	
	134190-49-1	Tetrachlorofluoropropane	HCFC-241	
	127564-90-3	Trichlorodifluoropropane	HCFC-242	
	134237-42-6	Trichlorodifluoropropane		
	134237-43-7	Dichlorotrifluoropropane	HCFC-243	
	134190-50-4	Chlorotetrafluoropropane	HCFC-244	
	134190-51-5	Trichlorofluoropropane	HCFC-251	
	818-99-5	1,1,3-Trichloro-1-fluoropropane		
	134190-52-6	Dichlorodifluoropropane	HCFC-252	
	134237-44-8	Chlorotrifluoropropane	HCFC-253	
	134237-45-9	Dichlorofluoropropane	HCFC-261	
	7799-56-6	1,1-Dichloro-1-fluoropropane		
	134190-53-7	Chlorodifluoropropane	HCFC-262	
	102738-79-4	2-Chloro-1,3-difluoropropane		
	134190-54-8	Chlorofluoropropane	HCFC-271	



Attached Table I-A : RoHS Exemptions List  
(Commission Directive 2014/14/EU of 9 January 2014)

Exemption		Scope and dates of applicability
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	
1(a)	For general lighting purposes < 30 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011 until 31 December 2012; 2,5 mg shall be used per burner after 31 December 2012
1(b)	For general lighting purposes $\geq$ 30 W and < 50 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011
1(c)	For general lighting purposes $\geq$ 50 W and < 150 W: 5 mg	
1(d)	For general lighting purposes $\geq$ 150 W: 15 mg	
1(e)	For general lighting purposes with circular or square structural shape and tube diameter $\leq$ 17 mm	No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011
1(f)	For special purposes: 5 mg	
1(g)	For general lighting purposes with lifetime 20000 hrs over < 30 W: 3.5 mg	Expires on 31 December 2017
2(a)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):	
2(a)(1)	Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 5 mg	Expires on 31 December 2011; 4 mg may be used per lamp after 31 December 2011
2(a)(2)	Tri-band phosphor with normal lifetime and a tube diameter $\geq$ 9 mm and $\leq$ 17 mm (e.g. T5): 5 mg	Expires on 31 December 2011; 3 mg may be used per lamp after 31 December 2011
2(a)(3)	Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and $\leq$ 28 mm (e.g. T8): 5 mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg	Expires on 31 December 2012; 3,5 mg may be used per lamp after 31 December 2012
2(a)(5)	Tri-band phosphor with long lifetime ( $\geq$ 25000 h): 8 mg	Expires on 31 December 2011; 5 mg may be used per lamp after 31 December 2011
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b)(1)	Linear halophosphate lamps with tube > 28 mm (e.g. T10 and T12): 10 mg	Expires on 13 April 2012
2(b)(2)	Non-linear halophosphate lamps (all diameters): 15 mg	Expires on 13 April 2016
2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):	
3(a)	Short length ( $\leq$ 500 mm)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011

Attached Table I-A : RoHS Exemptions List  
(Commission Directive 2014/14/EU of 9 January 2014)

Exemption		Scope and dates of applicability
3(b)	Medium length (> 500 mm and ≤ 1500 mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011
3(c)	Long length (> 1500 mm)	No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011
4(a)	Mercury in other low pressure discharge lamps (per lamp)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
4(b)	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60:	
4(b)-I	P ≤ 155 W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(b)-II	155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(b)-III	P > 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):	
4(c)-I	P ≤ 155 W	No limitation of use until 31 December 2011; 25 mg may be used per burner after 31 December 2011
4(c)-II	155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(c)-III	P > 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e)	Mercury in metal halide lamps (MH)	
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	
5(a)	Lead in glass of cathode ray tubes	
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight	
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	
6(c)	Copper alloy containing up to 4 % lead by weight	
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	

Attached Table I-A : RoHS Exemptions List  
(Commission Directive 2014/14/EU of 9 January 2014)

Exemption		Scope and dates of applicability
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound	
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors being	
8(a)	Cadmium and its compounds in one shot pellet type thermal cut-offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012
8(b)	Cadmium and its compounds in electrical contacts	
9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
11(a)	Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
11(b)	Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12	Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(a)	Lead in white glasses used for optical applications	
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	
14	Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight	Expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	
16	Lead in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(a)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba) 2 MgSi 2 O 7 :Pb)	Expires on 1 January 2011

Attached Table I-A : RoHS Exemptions List  
(Commission Directive 2014/14/EU of 9 January 2014)

Exemption		Scope and dates of applicability
18(b)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi 2 O 5 :Pb)	
19	Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact energy saving lamps (ESL)	Expires on 1 June 2011
20	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)	Expires on 1 June 2011
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
26	Lead oxide in the glass envelope of black light blue lamps	Expires on 1 June 2011
27	Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers	Expired on 24 September 2010
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC	
30	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more	
31	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
34	Lead in cermet-based trimmer potentiometer elements	
36	Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display	Expired on 1 July 2010
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39	Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm <sup>2</sup> of light-emitting area) for use in solid state illumination or display systems	Expires on 1 July 2014
40	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013

Attached Table I-B : ELV Exemptions List  
(Commission Decision 2013/28/EU of 17 May 2013, Annex)

Sub-stance	No.	Materials and components	Scope and expiry date of the exemption	To be labelled or made identifiable in accordance with Article 4(2)(b)(iv)
Lead as an alloying element	1(a)	Steel for machining purposes and galvanised steel containing up to 0,35 % lead by weight		
	1(b)	Continuously galvanised steel sheet containing up to 0,35 % lead by weight	Vehicles type approved before 1 January 2016 and spare parts for these vehicles	
	2(a)	Aluminium for machining purposes with a lead content up to 2 % by weight	As spare parts for vehicles put on the market before 1 July 2005	
	2(b)	Aluminium with a lead content up to 1,5 % by weight	As spare parts for vehicles put on the market before 1 July 2008	
	2(c)	Aluminium with a lead content up to 0,4 % by weight	(2)	
	3	Copper alloy containing up to 4 % lead by weight	(2)	
	4(a)	Bearing shells and bushes	As spare parts for vehicles put on the market before 1 July 2008	
	4(b)	Bearing shells and bushes in engines, transmissions and air conditioning compressors	1 July 2011 and after that date as spare parts for vehicles put on the market before 1 July 2011	
Lead and lead compounds in components	5	Batteries	(2)	X
	6	Vibration dampers	Vehicles type approved before 1 January 2016 and spare parts for these vehicles	X
	7(a)	Vulcanising agents and stabilisers for elastomers in brake hoses, fuel hoses, air ventilation hoses, elastomer/metal parts in the chassis applications, and engine mountings	As spare parts for vehicles put on the market before 1 July 2005	
	7(b)	Vulcanising agents and stabilisers for elastomers in brake hoses, fuel hoses, air ventilation hoses, elastomer/metal parts in the chassis applications, and engine mountings containing up to 0,5 % lead by weight	As spare parts for vehicles put on the market before 1 July 2006	
	7(c)	Bonding agents for elastomers in powertrain applications containing up to 0,5 % lead by weight	As spare parts for vehicles put on the market before 1 July 2009	
	8(a)	Lead in solders to attach electrical and electronic components to electronic circuit boards and lead in finishes on terminations of components other than electrolyte aluminium capacitors, on component pins and on electronic circuit boards	Vehicles type approved before 1 January 2016 and spare parts for these vehicles	X(1)
	8(b)	Lead in solders in electrical applications other than soldering on electronic circuit boards or on glass	Vehicles type approved before 1 January 2011 and spare parts for these vehicles	X(1)
	8(c)	Lead in finishes on terminals of electrolyte aluminium capacitors	Vehicles type approved before 1 January 2013 and spare parts for these vehicles	X(1)

Attached Table I-B : ELV Exemptions List  
 (Commission Decision 2013/28/EU of 17 May 2013, Annex)

Sub-stance	No.	Materials and components	Scope and expiry date of the exemption	To be labelled or made identifiable in accordance with Article 4(2)(b)(iv)
Lead and lead compounds in components	8(d)	Lead used in soldering on glass in mass airflow sensors	Vehicles type approved before 1 January 2015 and spare parts of such vehicles	X(1)
	8(e)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	(3)(To be reviewed in 2014)	X(1)
	8(f)	Lead in compliant pin connector systems	(3)(To be reviewed in 2014)	X(1)
	8(g)	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	(3)(To be reviewed in 2014)	X(1)
	8(h)	Lead in solder to attach heat spreaders to the heat sink in power semiconductor assemblies with a chip size of at least 1 cm <sup>2</sup> of projection area and a nominal current density of at least 1 A/mm <sup>2</sup> of silicon chip area	(3)(To be reviewed in 2014)	X(1)
	8(i)	Lead in solders in electrical glazing applications on glass except for soldering in laminated glazing	Vehicles type approved before 1 January 2016 and spare parts for these vehicles (4)	X(1)
	8(j)	Lead in solders for soldering in laminated glazing	(3)(To be reviewed in 2014)	X(1)
	9	Valve seats	As spare parts for engine types developed before 1 July 2003	
	10(a)	Electrical components which contain lead in a glass or ceramic matrix compound except glass in bulbs and glaze of spark plugs		X(4)(for components other than piezo in
	10(b)	Lead in PZT based dielectric ceramic materials of capacitors being part of integrated circuits or discrete semiconductors		
	10(c)	Lead in dielectric ceramic materials of capacitors with a rated voltage of less than 125 V AC or 250 V DC	Vehicles type approved before 1 January 2016 and spare parts for these vehicles	
	10(d)	Lead in the dielectric ceramic materials of capacitors compensating the temperature-related deviations of sensors in ultrasonic sonar systems	(3)	
11	Pyrotechnic initiators	Vehicles type-approved before 1 July 2006 and spare parts for these vehicles		
12	Lead-containing thermoelectric materials in automotive electrical applications to reduce CO <sub>2</sub> emissions by recuperation of exhaust heat	Vehicles type approved before 1 January 2019 and spare parts for these vehicles	X	

Attached Table I-B : ELV Exemptions List  
(Commission Decision 2013/28/EU of 17 May 2013, Annex)

Sub-stance	No.	Materials and components	Scope and expiry date of the exemption	To be labelled or made identifiable in accordance with Article 4(2)(b)(iv)
Hexa-valent chrom-ium	13(a)	Corrosion preventive coatings	As spare parts for vehicles put on the market before 1 July 2007	
	13(b)	Corrosion preventive coatings related to bolt and nut assemblies for chassis applications	As spare parts for vehicles put on the market before 1 July 2008	
	14	As an anti-corrosion agent of the carbon steel cooling system in absorption refrigerators in motorcaravans up to 0,75 weight -% in the cooling solution except where the use of other cooling technologies is practicable (i.e. available on the market for the application in motor caravans) and does not lead to negative environmental, health and/or consumer safety impacts		X
Mercury	15(a)	Discharge lamps for headlight application	Vehicles type approved before 1 July 2012 and spare parts for these vehicles	X
	15(b)	Fluorescent tubes used in instrument panel displays	Vehicles type approved before 1 July 2012 and spare parts for these vehicles	X
Cad-mium	16	Batteries for electrical vehicles	As spare parts for vehicles put on the market before 31 December 2008	

- (1) Dismantling if, in correlation with entry 10(a), an average threshold of 60 grams per vehicle is exceeded. For the application of this clause electronic devices not installed by the manufacturer on the production line shall not be taken into account.
- (2) This exemption shall be reviewed in 2015.
- (3) This exemption shall be reviewed in 2014.
- (4) Dismantling if, in correlation with entries 8(a) to 8(j), an average threshold of 60 grams per vehicle is exceeded. For the application of this clause electronic devices not installed by the manufacturer on the production line shall not be taken into account.

Notes:

A maximum concentration value up to 0,1 % by weight and in homogeneous material, for lead, hexavalent chromium and mercury and up to 0,01 % by weight in homogeneous material for cadmium shall be tolerated.

The reuse of parts of vehicles which were already on the market at the date of expiry of an exemption shall be allowed without limitation since it is not covered by Article 4(2)(a).

Spare parts put on the market after 1 July 2003 which are used for vehicles put on the market before 1 July 2003 shall be exempted from the provisions of Article 4(2)(a) (\*).

(\* ) This clause shall not apply to wheel balance weights, carbon brushes for electric motors and brake linings.'



Table 3 : Substances to be Controlled

Substances specified by the regulatory control etc. of Table 3 except substances listed in Table 1 and Table 2 should be recognized their presence in the products or use in the production process.

No.	Name of the regulatory control etc.
3-1	PRTR Law: Specific Class I Designated Chemical Substance
3-2	PRTR Law: Class I Designated Chemical Substance
3-3	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. of Japan (Chemical Substances Control Law): Class II Specified Chemical Substances
3-4	Poisonous and Deleterious Substances Control Law of Japan: Poisonous Substances
3-5	EU REACH: Substances in the Candidate List for Authorization (SVHC) and Substances in the Authorization List (Annex XIV)
3-6	EU REACH: Restricted Substances (Annex XVII)
3-7	EU CLP: Annex VI CMR Cat. 1, 2
3-8	GADSL *1
3-9	JAMP Declarable Substances List *2

\*1 GADSL: Global Automotive Declarable Substance List

It is a declarable substance list which Global Automotive Stakeholder Group (GASG) provides as a standard for automobile industry to exchange information regarding the material and substance composition of automotive parts.

\*2 JAMP Declarable Substances List is a list which JAMP (Joint Article Management Promotion-consortium) provides as a cross-industrial standard to exchange chemical information.