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Appendix 1. Ozone depleting substances

Rev.1
2017.12.26

Montreal Protocol							
Class	Annex	Group	Sample substances			Chemical formula	Sample CAS No
I	A	I	CFC [Chlorofluorocarbon]	CFC-11	Trichlorofluoromethane	CFCl ₃	75-69-4
				CFC-12	Dichlorodifluoromethane	CF ₂ Cl ₂	75-71-8
				CFC-113	Trichlorotrifluoroethane (CFC-113) 1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)(CAS No 76-13-1) 1,1,1-Trichloro-2,2,2-trifluoroethane (CFC-113a)(CAS No 354-58-5)	C ₂ F ₃ Cl ₃	26523-64-8 354-58-5 76-13-1
				CFC-114	Dichlorotetrafluoroethane (CFC-114) 1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)(CAS No 76-14-2) 1,1-Dichloro-1,2,2,2-tetrafluoroethane (CFC-114a)(CAS No 374-07-2)	C ₂ F ₄ Cl ₂	1320-37-2 374-07-2 76-14-2
				CFC-115	Chloropentafluoroethane (CFC-115) 1-Chloro-1,1,2,2,2-pentafluoroethane (CFC-115)	C ₂ F ₅ Cl	76-15-3
I	A	II	Halon	Halon-1211	Bromochlorodifluoromethane	CF ₂ BrCl	353-59-3
				Halon-1301	Bromotrifluoromethane	CF ₃ Br	75-63-8
				Halon-2402	Dibromotetrafluoroethane		124-73-2
					1,2-Dibromo-1,1,2,2-tetrafluoroethane (CAS No 124-73-2) 2,2-Dibromo-1,1,1,2-tetrafluoroethane (CAS No 27336-23-8)	C ₂ F ₄ Br ₂	25497-30-7 27336-23-8
I	B	I	Other completely halogenated CFC	CFC-13	Chlorotrifluoromethane	CF ₃ Cl	75-72-9
				CFC-111	Pentachlorofluoroethane (CFC-111) 1,1,1,2,2-Pentachloro-2-fluoroethane 1,1,2,2,2-Pentachloro-1-fluoroethane	C ₂ FCl ₅	354-56-3 954-56-3 29756-45-4
				CFC-112	Tetrachlorodifluoroethane (CFC-112) 1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112) 1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a) 1,2,2,2-Tetrachloro-1,1-difluoroethane (CFC-112a)	C ₂ F ₂ Cl ₄	76-11-9 76-12-0
				CFC-211	Heptachlorofluoropropane (CFC-211) 1,1,1,2,2,3,3-Heptachloro-3-fluoropropane (CFC-211aa) 1,1,1,2,3,3,3-Heptachloro-2-fluoropropane (CFC-211ba)	C ₃ FCl ₇	422-78-6 422-81-1 135401-87-5
				CFC-212	Hexachlorodifluoropropane (CFC-212) 1,1,1,3,3,3-Hexachloro-2,2-difluoropropane (HCFC-212)	C ₃ F ₂ Cl ₆	134452-44-1 3182-26-1
				CFC-213	Pentachlorotrifluoropropane (CFC-213) 1,1,1,3,3-Pentachloro-2,2,3-trifluoropropane (HCFC-213)	C ₃ F ₃ Cl ₅	134237-31-3 2354-06-5
				CFC-214	Tetrachlorotetrafluoropropane (CFC-214) 1,2,2,3-Tetrachloro-1,1,3,3-tetrafluoropropane (CFC-214aa) 1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214cb)	C ₃ F ₄ Cl ₄	2268-46-4 29255-31-0 677-68-9
				CFC-215	Trichloropentafluoropropane (CFC-215) 1,2,2-Trichloro-1,1,3,3,3-pentafluoropropane (CFC-215aa) 1,2,3-Trichloro-1,1,2,3,3-pentafluoropropane (CFC-215ba) 1,1,2-Trichloro-1,2,3,3,3-pentafluoropropane (CFC-215bb) 1,1,3-Trichloro-1,2,2,3,3-pentafluoropropane (CFC-215ca) 1,1,1-Trichloro-2,2,3,3,3-pentafluoropropane (CFC-215cb)	C ₃ F ₅ Cl ₃	1599-41-3 1652-81-9 4259-43-2 76-17-5 812-30-6
				CFC-216	Dichlorohexafluoropropane	C ₃ F ₆ Cl ₂	661-97-2 662-01-1
				CFC-217	Chloroheptafluoropropane (CFC-217) 2-Chloro-1,1,1,2,3,3,3-heptafluoropropane (CFC-217ba) 1-Chloro-1,1,2,2,3,3,3-heptafluoropropane (CFC-217ca)	C ₃ F ₇ Cl	422-86-6 76-18-6
I	B	II	—	CFC-10	Carbon tetrachloride	CCl ₄	56-23-5
I	B	III	—	—	1,1,1-Trichloroethane (1,1,2-Trichloroethane is excepted)	C ₂ H ₃ Cl ₃	71-55-6
I	C	III	—	Halon-1011	Bromochloromethane	CH ₂ BrCl	74-97-5
I	E	I	—	Halon-1001	Methyl bromide Bromomethane	CH ₃ Br	74-83-9
I	C	II	HBFC [Hydrobromofluorocarbon]	Halon-1102	Dibromofluoromethane (HBFC-21 B2)	CHFBr ₂	1868-53-7
				Halon-1201	Bromodifluoromethane (HBFC-22 B1)	CHF ₂ Br	1511-62-2
				Halon-1101	Bromofluoromethane (HBFC-31 B1)	CH ₂ FBr	373-52-4
				Halon-2104	Tetrabromofluoroethane (HBFC-121 B4)	C ₂ HFBr ₄	306-80-9 353-93-5
				Halon-2203	Tribromodifluoroethane (HBFC-122 B3) 1,1,2-Tribromo-1,2-difluoroethane (CAS No 353-97-9) 1,2,2-Tribromo-1,1-difluoroethane (CAS No 677-34-9)	C ₂ HF ₂ Br ₃	353-97-9 677-34-9 7304-53-2
				Halon-2302	Dibromotrifluoroethane (HBFC-123 B2) 1,2-Dibromo-1,1,2-trifluoroethane	C ₂ HF ₃ Br ₂	354-04-1
				Halon-2401	Bromotetrafluoroethane (HBFC-124B1) 2-Bromo-1,1,1,2-trafluoroethane 1-Bromo-1,2,2,2-trafluoroethane	C ₂ HF ₄ Br	124-72-1
				Halon-2103	Tribromofluoroethane (HBFC-131B3) 1,1,2-tribromo-1-fluoroethane (CAS No 420-88-2) 1,1,2-tribromo-2-fluoroethane (CAS No 598-67-4)	C ₂ H ₂ FBr ₃	172912-75-3 420-88-2 598-67-4
				Halon-2202	Dibromodifluoroethane (HBFC-132 B2) 1,2-Dibromo-1,1-difluoroethane (CAS No 75-82-1) 1,1-Dibromo-2,2-difluoroethane (CAS No 359-19-3, 430-85-3)	C ₂ H ₂ F ₂ Br ₂	359-19-3 430-85-3 75-82-1

Montreal Protocol							
Class	Annex	Group	Sample substances			Chemical formula	Sample CAS No
II	C	I	Halon-2301	Bromotrifluoroethane (HBFC-133B1) 1-Bromo-2,2,2-trifluoroethane (HBFC-133a B1)(CAS No 421-06-7)		C ₂ H ₂ F ₃ Br	421-06-7
			Halon-2102	Dibromofluoroethane (HBFC-141 B2) 1,2-Dibromo-1-fluoroethane 1,2-Dibromo-2-fluoroethane		C ₂ H ₃ Br ₂	358-97-4
			Halon-2201	Bromodifluoroethane (HBFC-142 B1) 2-Bromo-1,1-difluoroethane		C ₂ H ₃ F ₂ Br	359-07-9
			Halon-2101	Bromofluoroethane (HBFC-151 B1) 1-Bromo-2-fluoroethane		C ₂ H ₄ FBr	762-49-2
			Halon-3106	Hexabromofluoropropane (HBFC-221 B6)		C ₃ HFBr ₆	
			Halon-3205	Pentabromodifluoropropane (HBFC-222 B5)		C ₃ HF ₂ Br ₅	
			Halon-3304	Tetrabromotrifluoropropane (HBFC-223 B4)		C ₃ HF ₃ Br ₄	
			Halon-3403	Tribromotetrafluoropropane (HBFC-224 B3)		C ₃ HF ₄ Br ₃	666-48-8
			Halon-3502	Dibromopentafluoropropane (HBFC-225 B2) 1,2-Dibromo-1,1,3,3,3-pentafluoropropane		C ₃ HF ₅ Br ₂	431-78-7
			Halon-3601	Bromohexafluoropropane (HBFC-226 B1) 1-Bromo-1,1,2,3,3,3-hexafluoropropane (CAS No 2252-78-0) 2-Bromo-1,1,1,3,3,3-hexafluoropropane (CAS No 2252-79-1)		C ₃ HF ₆ Br	2252-78-0 2252-79-1
			Halon-3105	Pentabromofluoropropane (HBFC-231 B5)		C ₃ H ₂ FBr ₅	
			Halon-3204	Tetrabromodifluoropropane (HBFC-232 B4) 1,1,1,3-Tetrabromo-3,3-difluoropropane		C ₃ H ₂ F ₂ Br ₄	148875-98-3
			Halon-3303	Tribromotrifluoropropane (HBFC-233 B3) 2,2,3-Tribromo-1,1,1-trifluoropropane (CAS No 421-90-9)		C ₃ H ₂ F ₃ Br ₃	421-90-9 431-48-1
			Halon-3402	Dibromotetrafluoropropane (HBFC-234 B2) 1,3-Dibromo-1,1,3,3-tetrafluoropropane		C ₃ H ₂ F ₄ Br ₂	460-86-6
			Halon-3501	Bromopentafluoropropane (HBFC-235 B1) 3-bromo-1,1,1,2,2-pentafluoropropane (CAS No 422-01-5) 1-bromo-1,1,3,3,3-pentafluoropropane (CAS No 460-88-8) 1-bromo-1,1,2,2,3-pentafluoropropane (CAS No 677-53-2) 1-bromo-1,2,2,3,3-pentafluoropropane (CAS No 679-94-7)		C ₃ H ₂ F ₅ Br	22692-16-6 26391-11-7 422-01-5 460-88-8 53692-43-6 53692-44-7 677-52-1 677-53-2 679-94-7
			Halon-3104	Tetrabromofluoropropane (HBFC-241 B4) 1,1,1,3-tetrabromo-3-fluoropropane		C ₃ H ₃ FBr ₄	148875-95-0
			Halon-3203	Tribromodifluoropropane (HBFC-242 B3) 1,1,1-Tribromo-2,2-difluoropropane (CAS No 70192-80-2)		C ₃ H ₃ F ₂ Br ₃	666-25-1 70192-80-2
			Halon-3302	Dibromotrifluoropropane (HBFC-243 B2) 2,3-Dibromo-1,1,1-trifluoropropane (CAS No 431-21-0) 1,3-Dibromo-1,1,3-trifluoropropane (CAS No 460-60-6)		C ₃ H ₃ F ₃ Br ₂	431-21-0 460-60-6
			Halon-3401	Bromotetrafluoropropane (HBFC-244 B1) 2-Bromo-1,1,1,3-tetrafluoropropane (CAS No 29151-25-5) 3-Bromo-1,1,1,3-tetrafluoropropane (CAS No 460-67-3) 3-Bromo-1,1,2,2-tetrafluoropropane (CAS No 679-84-5) 1-Bromo-1,1,2,2-tetrafluoropropane (CAS No 70192-84-6)		C ₃ H ₃ F ₄ Br	19041-01-1 29151-25-5 460-67-3 679-84-5 70192-71-1 70192-84-6
			Halon-3103	Tribromofluoropropane (HBFC-251 B1) 1,2,3-Tribromo-1-fluoropropane		C ₃ H ₄ FBr ₃	75372-14-4
			Halon-3202	Dibromodifluoropropane (HBFC-252 B2) 1,3-Dibromo-1,1-difluoropropane (CAS No 460-25-3)		C ₃ H ₄ F ₂ Br ₂	460-25-3 51584-25-9
			Halon-3301	Bromotrifluoropropane (HBFC-253 B1) 3-Bromo-1,1,1-trifluoropropane (CAS No 460-32-2) 2-Bromo-1,1,1-trifluoropropane (CAS No 421-46-5)		C ₃ H ₄ F ₃ Br	421-46-5 460-32-2
			Halon-3102	Bromodifluoropropane (HBFC-261 B2) 1,3-Dibromo-2-fluoropropane (CAS No 1786-38-5) 1,2-Dibromo-3-fluoropropane (CAS No 453-00-9) 1,3-Dibromo-1-fluoropropane (CAS No 51584-26-0) 1,2-Dibromo-1-fluoro-(R*,R*)-propane (CAS No 62135-11-9) 1,2-Dibromo-1-fluoro-(R*,S*)-propane (CAS No 62135-10-8)		C ₃ H ₅ Br ₂	1786-38-5 453-00-9 51584-26-0 62135-10-8 62135-11-9
			Halon-3201	Bromodifluoropropane (HBFC-262 B1) 1-Bromo-2,3-difluoropropane (CAS No 111483-20-6) 2-Bromo-1,3-difluoropropane (CAS No 2195-05-3) 1-Bromo-2,2-difluoropropane (CAS No 420-98-4) 3-Bromo-1,1-difluoropropane (CAS No 461-49-4)		C ₃ H ₅ F ₂ Br	111483-20-6 2195-05-3 420-89-3 420-98-4 430-87-5 461-49-4
			Halon-3101	Bromofluoropropane (HBFC-271 B1) 1-Bromo-2-fluoropropane (CAS No 1871-72-3) 1-Bromo-3-fluoropropane (CAS No 352-91-0)		C ₃ H ₆ FBr	1871-72-3 352-91-0
II	C	I	HCFC [Hydrochlorofluorocarbon]				
			HCFC-21	Dichlorodifluoromethane (*)		CHClF ₂ (*)	75-43-4

Montreal Protocol						
Class	Annex	Group	Sample substances		Chemical formula	Sample CAS No
			HCFC-22	Chlorodifluoromethane (*)	CHF ₂ Cl (*)	75-45-6
			HCFC-31	Chlorofluoromethane	CH ₂ FCI	593-70-4
			HCFC-121	Tetrachlorofluoroethan (HCFC-121) 1,1,2,2-Tetrachloro-1-fluoroethan (HCFC-121) 1,1,1,2-Tetrachloro-2-fluoroethan (HCFC 121a)	C ₂ HFCl ₄	134237-32-4 354-11-0 354-14-3
			HCFC-122	Trichlorodifluoroethane (HCFC-122) 1,2,2-Trichloro-1,1-difluoroethane (HCFC-122) 1,1,2-Trichloro-1,2-difluoroethane (HCFC-122a) 1,1,1-Trichloro-2,2-difluoroethane (HCFC-122b)	C ₂ HF ₂ Cl ₃	354-12-1 354-15-4 354-21-2 41834-16-6 62549-18-2
			HCFC-123	Dichlorotrifluoroethane (HCFC-123) 2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123) (*) 1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a) 1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)	C ₂ HF ₃ Cl ₂ CHCl ₂ CF ₃ (*)	306-83-2 34077-87-7 354-23-4 812-04-4 90454-18-5
			HCFC-124	Chlorotetrafluoroethane (HCFC-124) 2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124) (*) 1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)	C ₂ HF ₅ Cl CHFClCF ₃ (*)	2837-89-0 354-25-6 63938-10-3
			HCFC-131	Trichlorofluoroethane (HCFC-131) 1,1,2-Trichloro-2-fluoroethane (HCFC-131) 1,1,2-Trichloro-1-fluoroethane (HCFC-131a) 1,1,1-Trichloro-2-fluoroethane (HCFC-131b)	C ₂ H ₂ FCI ₃	134237-34-6 2366-36-1 27154-33-2 359-28-4 811-95-0
			HCFC-132	Dichlorodifluoroethane (HCFC-132) 1,2-Dichloro-1,2-difluoroethane (HCFC-132) 1,1-Dichloro-2,2-difluoroethane (HCFC-132a) 1,2-Dichloro-1,1-difluoroethane (HCFC-132b)	C ₂ H ₂ F ₂ Cl ₂	1649-08-7 1842-05-3 25915-78-0 431-06-1 471-43-2
			HCFC-133	Chlorotrifluoroethane (HCFC-133) 1-Chloro-1,2,2-trifluoroethane (HCFC-133) 2-Chloro-1,1,1-trifluoroethane (HCFC-133a) 1-Chloro-1,1,2-trifluoroethane (HCFC-133b)	C ₂ H ₂ F ₃ Cl	1330-45-6 421-04-5 431-07-2 75-88-7
			HCFC-141 HCFC-141b (*)	Dichlorofluoroethane (HCFC-141) 1,2-Dichloro-1-fluoroethane (HCFC-141) 1,1-Dichloro-2-fluoroethane (HCFC-141a) 1,1-Dichloro-1-fluoroethane (HCFC-141b) (*)	C ₂ H ₃ FCI ₂ CH ₃ CFCl ₂ (*)	1717-00-6 25167-88-8 358-97-4 430-53-5 430-57-9
			HCFC-142 HCFC-142b (*)	Chlorodifluoroethane (HCFC-142) 2-Chloro-1,1-difluoroethane (HCFC-142) 1-Chloro-1,2-difluoroethane (HCFC-142a) 1-Chloro-1,1-difluoroethane (HCFC-142b)	C ₂ H ₃ F ₂ Cl CH ₃ CF ₂ Cl (*)	25497-29-4 338-64-7 338-65-8 55949-44-5 75-68-3
			HCFC-151	Chlorofluoroethane (HCFC-151) 1-Chloro-2-fluoroethane (HCFC-151) 1-Chloro-1-fluoroethane (HCFC-151a)	C ₂ H ₄ FCI	762-50-5 1615-75-4 110587-14-9
			HCFC-221	Hexachlorofluoropropane (HCFC-221) 1,1,1,2,2,3-Hexachloro-3-fluoropropane (HCFC-221ab)	C ₃ HFCl ₆	134237-35-7 29470-94-8 422-26-4
			HCFC-222	Pentachlorodifluoropropane (HCFC-222) 1,2,2,3,3-Pentachloro-1,1-difluoropropane (HCFC-222aa) 1,1,1,3,3-Pentachloro-2,2-difluoropropane (HCFC-222ca)	C ₃ HF ₂ Cl ₅	116867-32-4 134237-36-8 422-30-0 422-49-1
			HCFC-223	Tetrachlorotrifluoropropane (HCFC-223) 1,1,3,3-Tetrachloro-1,2,2-trifluoropropane (HCFC-223ca) 1,1,1,3-Tetrachloro-2,2,3-trifluoropropane (HCFC-223cb)	C ₃ HF ₃ Cl ₄	134237-37-9 422-50-4 422-52-6
			HCFC-224	Trichlorotetrafluoropropane (HCFC-224) 1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224ca) 1,1,3-Trichloro-1,2,2,3-tetrafluoropropane (HCFC-224cb) 1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc)	C ₃ HF ₄ Cl ₃	134237-38-0 422-51-5 422-53-7 422-54-8
			HCFC-225	2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa) 2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba) 1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb) 3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca) (*) 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb) (*) 1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc) 1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da) 1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea) 1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)	C ₃ HF ₅ Cl ₂ CF ₃ CF ₂ CHCl ₂ (*) CF ₂ ClCF ₂ CHClF(*)	111512-56-2 127564-92-5 128903-21-9 13474-88-9 136013-79-1 422-44-6 422-48-0 422-56-0 431-86-7 507-55-1
			HCFC-226	Chlorohexafluoropropane (HCFC-226) 2-Chloro-1,1,1,2,3,3-hexafluoropropane (HCFC-226ba) 3-Chloro-1,1,1,2,2,3-hexafluoropropane (HCFC-226ca) 1-Chloro-1,1,2,2,3,3-hexafluoropropane (HCFC-226cb) 2-Chloro-1,1,1,3,3,3-hexafluoropropane (HCFC-226da) 1-Chloro-1,1,2,3,3,3-hexafluoropropane (HCFC-226ea)	C ₃ HF ₆ Cl	134308-72-8 28987-04-4 359-58-0 422-55-9 422-57-1 431-87-8 51346-64-6
			HCFC-231	Pentachlorofluoropropane (HCFC-231) 1,1,1,2,3-Pentachloro-2-fluoropropane (HCFC-231bb)	C ₃ H ₂ FCI ₅	134190-48-0 421-94-3
			HCFC-232	Tetrachlorodifluoropropane (HCFC-232) 1,1,3,3-Tetrachloro-2,2-difluoropropane (HCFC-232ca) 1,1,1,3-Tetrachloro-2,2-difluoropropane (HCFC-232cb) 1,1,1,3-Tetrachloro-3,3-difluoropropane (HCFC-232fc)	C ₃ H ₂ F ₂ Cl ₄	1112-14-7 134237-39-1 460-89-9 677-54-3
			HCFC-233	Trichlorotrifluoropropane (HCFC-233) 1,1,3-Trichloro-2,2,3-trifluoropropane (HCFC-233ca) 1,1,3-Trichloro-1,2,2-trifluoropropane (HCFC-233cb) 1,1,1-Trichloro-2,2,3-trifluoropropane (HCFC-233cc) 1,1,1-Trichloro-3,3,3-trifluoropropane (HCFC-233fb)	C ₃ H ₂ F ₃ Cl ₃	13211-71-7 131221-36-8 134237-40-4 421-99-8 7125-83-9

Montreal Protocol			Sample substances		Chemical formula	Sample CAS No
Class	Annex	Group				
			HCFC-234	Dichlorotetrafluoropropane (HCFC-234) 2,2-Dichloro-1,1,3,3-tetrafluoropropane (HCFC-234aa) 2,2-Dichloro-1,1,1,3-tetrafluoropropane (HCFC-234ab) 1,2-Dichloro-1,2,3,3-tetrafluoropropane (HCFC-234ba) 2,3-Dichloro-1,1,1,2-tetrafluoropropane (HCFC-234bb) 1,2-Dichloro-1,1,2,3-tetrafluoropropane (HCFC-234bc) 1,3-Dichloro-1,2,2,3-tetrafluoropropane (HCFC-234ca) 1,1-Dichloro-2,2,3,3-tetrafluoropropane (HCFC-234cb) 1,3-Dichloro-1,1,2,2-tetrafluoropropane (HCFC-234cc) 1,1-Dichloro-1,2,2,3-tetrafluoropropane (HCFC-234cd) 2,3-Dichloro-1,1,1,3-tetrafluoropropane (HCFC-234da) 1,2-ジクロロ-1,2,3,3-tetrafluoropropane (HCFC-234db) 1,3-ジクロロ-1,1,3,3-tetrafluoropropane (HCFC-234fa) 1,1-ジクロロ-1,3,3,3-tetrafluoropropane (HCFC-234fb)	$C_3H_2F_4Cl_2$	127564-83-4 146916-90-7 149329-24-8 149329-25-9 17705-30-5 4071-01-6 425-94-5 64712-27-2 70192-63-1 70341-81-0 76140-39-1
			HCFC-235	Chloropentafluoropropane (HCFC-235) 1-Chloro-1,2,2,3,3-pentafluoropropane (HCFC-235ca) 3-Chloro-1,1,1,2,3-pentafluoropropane (HCFC-235cb) 1-Chloro-1,1,2,2,3-pentafluoropropane (HCFC-235cc) 2-Chloro-1,1,1,3,3-pentafluoropropane (HCFC-235da) 1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	$C_3H_2F_5Cl$	108662-83-5 134237-41-5 134251-06-2 28103-66-4 422-02-6 460-92-4 677-55-4 679-99-2
			HCFC-241	Tetrachlorofluoropropane (HCFC-241) 1,1,2,3-Tetrachloro-1-fluoropropane (HCFC-241db)	$C_3H_3FCl_4$	134190-49-1 666-27-3
			HCFC-242	Trichlorodifluoropropane (HCFC-242) 1,3,3-Trichloro-1,1-difluoropropane (HCFC-242fa)	$C_3H_3F_2Cl_3$	127564-90-3 134237-42-6 460-63-9
			HCFC-243	Dichlorotrifluoropropane (HCFC-243) 1,3-Dichloro-1,2,2-trifluoropropane (HCF-243ca) 1,1-Dichloro-2,2,3-trifluoropropane (HCF-243cb) 1,1-Dichloro-1,2,2-trifluoropropane (HCF-243cc) 2,3-Dichloro-1,1,1-trifluoropropane (HCF-243da) 2,3-Dichloro-1,1,1-trifluoropropane (HCF-243db) 1,3-Dichloro-1,2,3-trifluoropropane (HCF-243ea) 1,3-Dichloro-1,1,2-trifluoropropane (HCF-243ec) 3,3-Dichloro-1,1,1-trifluoropropane (HCF-243fa)	$C_3H_3F_3Cl_2$	116890-51-8 134237-43-7 149329-27-1 151771-08-3 338-75-0 460-69-5 67406-68-2 70192-70-0 7125-99-7
			HCFC-244	Chlorotetrafluoropropane (HCFC-244) 2-Chloro-1,2,3,3-tetrafluoropropane (HCFC-244ba) 2-Chloro-1,1,1,2-tetrafluoropropane (HCFC-244bb) 3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244ca) 1-Chloro-1,2,2,3-tetrafluoropropane (HCFC-244cb) 1-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244cc) 2-Chloro-1,1,3,3-tetrafluoropropane (HCFC-244da) 2-Chloro-1,1,1,3-tetrafluoropropane (HCFC-244db) 3-Chloro-1,1,2,3-tetrafluoropropane (HCFC-244ea) 3-Chloro-1,1,1,2-tetrafluoropropane (HCFC-244eb) 1-Chloro-1,1,2,3-tetrafluoropropane (HCFC-244ec) 3-Chloro-1,1,1,3-tetrafluoropropane (HCFC-244fa) 1-Chloro-1,1,2,3-tetrafluoropropane (HCFC-244fb)	$C_3H_3F_4Cl$	117970-90-8 134190-50-4 19041-02-2 2730-64-5 421-73-8 421-75-0 67406-66-0 679-85-6
			HCFC-251	Trichlorofluoropropane (HCFC-251) 1,1,2-Trichloro-1-fluoropropane (HCFC-251dc) 1,1,3-Trichloro-1-fluoropropane (HCFC-251fb)	$C_3H_4FCl_3$	134190-51-5 421-41-0 818-99-5
			HCFC-252	Dichlorodifluoropropane (HCFC-252) 1,3-Dichloro-2,2-difluoropropane (HCFC-252ca) 1,1-Dichloro-2,2-difluoropropane (HCFC-252cb) 1,2-Dichloro-1,1-difluoropropane (HCFC-252dc) 1,1-Dichloro-1,2-difluoropropane (HCFC-252ec) 1,3-Dichloro-1,1-difluoropropane (HCFC-252fb)	$C_3H_4F_2Cl_2$	1112-01-2 1112-36-3 134190-52-6 819-00-1
			HCFC-253	Chlorotrifluoropropane (HCFC-253) 2-Chloro-1,2,3-trifluoropropane (HCFC-253ba) 2-Chloro-1,1,2-trifluoropropane (HCFC-253bb) 1-Chloro-2,2,3-trifluoropropane (HCFC-253ca) 1-Chloro-1,2,2-trifluoropropane (HCFC-253cb) 3-Chloro-1,1,2-trifluoropropane (HCFC-253ea) 1-Chloro-1,2,3-trifluoropropane (HCFC-253eb) 1-Chloro-1,1,2-trifluoropropane (HCFC-253ec) 3-Chloro-1,3,3-trifluoropropane (HCFC-253fa) 3-Chloro-1,1,1-trifluoropropane (HCFC-253fb) 1-Chloro-1,1,2-trifluoropropane (HCFC-253fc)	$C_3H_4F_3Cl$	134237-44-8 26588-23-8 460-35-5 56758-54-4 70192-76-6
			HCFC-261	Dichlorofluoropropane (HCFC-261) 1,2-Dichloro-2-fluoropropane (HCFC-261ba) 1,1-Dichloro-1-fluoropropane (HCFC-261fc)	$C_3H_5FCl_2$	127404-11-9 134237-45-9 420-97-3 7799-56-6
			HCFC-262	Chlorodifluoropropane (HCFC-262) 1-Chloro-2,2-difluoropropane (HCFC-262ca) 2-Chloro-1,3-difluoropropane (HCFC-262da) 3-Chloro-1,1-difluoropropane (HCFC-262fa) 1-Chloro-1,3-difluoropropane (HCFC-262fb) 1-Chloro-1,1-difluoropropane (HCFC-262fc)	$C_3H_5F_2Cl$	102738-79-4 134190-53-7 420-99-5 421-02-3
			HCFC-271	Chlorofluoropropane (HCFC-271) 2-Chloro-2-fluoropropane (HCFC-271ba) 2-Chloro-1-fluoropropane (HCFC-271d) 1-Chloro-1-fluoropropane (HCFC-271fb)	C_3H_6FCl	134190-54-8 420-44-0 430-55-7

(*) The substance which has the strongest possibility of being used in commerce.

(*)The substance name and the other information like CAS No etc. listed in this table are examples from the contents which our company has investigated. These do not always cover all information. Some of the substances may be customarily called by a name of the article on behalf. For details, we hope that your company will confirm it by the information obtained from the upper stream of the supply chain.

Appendix 2. PFOS/PFOS relative compounds <Perfluorooctane sulfonates>

Rev.1

2017.12.26

No	Substance name	CAS No
1	2-Propenoic acid, 2-methyl-, polymers with Bu methacrylate, lauryl methacrylate and 2-[methyl[(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl methacrylate(PFOS)	127133-66-8
2	Sulphonamides, C4-8-alkane, perfluoro, N-methyl-N-(oxiranylmethyl)(PFOS)	129813-71-4
3	1-Octanesulphonamide, N-[3-(dimethylamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-(PFOS)	13417-01-1
4	2-Propenoic acid, 2-methyl-, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl ester](PFOS)	14650-24-9
5	Fatty acids, C18-unsatd., trimers, 2-[[heptadecafluorooctyl)sulphonyl]methylamino]ethyl esters(PFOS)	148240-78-2
6	Sulphonamides, C4-8-alkane, perfluoro, N-(hydroxyethyl)-N-methyl, reaction products with 1,6-diisocyanatohexane homopolymer and ethylene glycol(PFOS)	148684-79-1
7	Sulphonamides, C4-8-alkane, perfluoro, N-ethyl-N-(hydroxyethyl), reaction products with 2-ethyl-1-hexanol and polymethylenepolyphenylene isocyanate(PFOS)	160901-25-7
8	1-Propanaminium, 3-[[[(heptadecafluorooctyl)sulphonyl]amino]-N,N,N-trimethyl-, iodide(PFOS)	1652-63-7
9	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-(PFOS)	1691-99-2
10	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-(PFOS); Perfluorooctane sulfonate acid	1763-23-1
11	1-Octanesulphonamide, N-[3-(dimethyloxidoamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-,potassium salt(PFOS)	178094-69-4
12	Sulphonamides, C4-8-alkane, perfluoro, N-ethyl-N-(hydroxyethyl)-, polymers with 1,1'-methylenebis[4-isocyanatobenzene] and polymethylenepolyphenylene isocyanate, 2-ethylhexyl esters, Me Et ketone oxime-blocked(PFOS)	178535-22-3
13	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-methyl-, reaction products with benzene-chlorine-sulphur chloride (S2Cl2) reaction(PFOS)	182700-90-9
14	Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulphonyl]-, ethyl ester(PFOS)	1869-77-8
15	Sulphonamides, C4-8-alkane, perfluoro, N-[3-(dimethylamino)propyl], reaction products with acrylic acid(PFOS)	192662-29-6
16	1-Octanesulphonamide, N,N',N''-[phosphinylidynetris(oxy-2,1-ethanediyl)]tris[N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-(PFOS)	2250-98-8
17	1-Octanesulphonamide, N-butyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-(PFOS)	2263-09-4
18	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-N-methyl-(PFOS)	24448-09-7
19	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-2-propenyl-(PFOS)	24924-36-5
20	1-Decanaminium, N-decyl-N,N-dimethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulphonic acid (1:1)(PFOS)	251099-16-8
21	2-Propenoic acid, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl ester(PFOS)	25268-77-3
22	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, potassium salt(PFOS); Perfluorooctane sulfonate potassium salt	2795-39-3
23	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, ammonium salt(PFOS); Perfluorooctane sulfonate ammonium salt	29081-56-9
24	Poly(oxy-1,2-ethanediyl), alpha-[2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl]-omega-hydroxy-(PFOS)	29117-08-6
25	1-Octanesulphonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, lithium salt(PFOS); Perfluorooctane sulfonate lithium salt	29457-72-5
26	Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulphonyl]-(PFOS)	2991-50-6
27	Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulphonyl]-, potassium salt(PFOS)	2991-51-7
28	1-Octanesulphonamide, N-[3-(dimethyloxidoamino)propyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-(PFOS)	30295-51-3
29	1-Octanesulphonamide, N,N'-[phosphinicobis(oxy-2,1-ethanediyl)]bis[N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, ammonium salt(PFOS)	30381-98-7
30	Fatty acids, linseed-oil, dimers, 2- [[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl esters(PFOS)	306973-46-6

No	Substance name	CAS No
31	Sulphonamides, C4-8-alkane, perfluoro, N-(hydroxyethyl)-N-methyl, reaction products with 12-hydroxystearic acid and 2,4-TDI, ammonium salts(PFOS)	306973-47-7
32	Sulphonamides, C4-8-alkane, perfluoro, N-methyl-N-[(3-octadecyl-2-oxo-5-oxazolidinyl)methyl](PFOS)	306974-19-6
33	Siloxanes and Silicones, di-Me, mono[3-[(2-methyl-1-oxo-2-propenyl)oxy]propyl]group - terminated, polymers with 2-[methyl[(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate and stearyl methacrylate(PFOS)	306974-28-7
34	Sulphonic acids, C6-8-alkane, perfluoro, compounds with polyethylene-polypropylene glycol bis(2-aminopropyl) ether(PFOS)	306974-45-8
35	Fatty acids, C18-unsatd., dimers, 2-[methyl[(perfluoro-C4-8-alkyl)sulphonyl]amino] ethyl esters(PFOS)	306974-63-0
36	Propanoic acid, 3-hydroxy-2-(hydroxymethyl)-2-methyl-, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and N,N',2-tris(6-isocyanatohexyl)imidodicarbonic diamide, reaction products with N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-1-octanesulphon(PFOS)	306975-56-4
37	Propanoic acid, 3-hydroxy-2-(hydroxymethyl)-2-methyl-, polymer with 1,1'-methylenebis[4-isocyanatobenzene] and 1,2,3-propanetriol, reaction products with N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)-1-octanesulphon(PFOS)	306975-57-5
38	2-Propenoic acid, 2-methyl-, dodecyl ester, polymers with 2-[methyl[(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate and vinylidene chloride(PFOS)	306975-62-2
39	Poly(oxy-1,2-ethanediyl), alpha-hydro-omega-hydroxy-, polymer with 1,6-diisocyanatohexane, N-(hydroxyethyl)-N-methyl perfluoro C4-8-alkane	306975-84-8
40	2-Propenoic acid, 2-methyl-, dodecyl ester, polymers with N-(hydroxymethyl)-2-propenamide, 2-[methyl[(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl methacrylate, stearyl methacrylate and vinylidene chloride(PFOS)	306975-85-9
41	1-Hexadecanaminium, N,N-dimethyl-N-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl]-, bromide, polymers with Bu acrylate, Bu methacrylate and 2-methyl[(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate(PFOS)	306976-25-0
42	2-Propenoic acid, 2-methyl-, 2-methylpropyl ester, polymer with 2,4-diisocyanato-1-methylbenzene, 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and 2-propenoic acid, N-ethyl-N-(hydroxyethyl)perfluoro-C4-8-alkanesulphonamides(PFOS)	306976-55-6
43	2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, polymers with acrylic acid, 2-[methyl[(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate and propylene glycol monoacrylate, hydrolysed, compounds with 2,2'-(methylimino)bis(PFOS)	306977-58-2
44	2-Propenoic acid, butyl ester, polymers with acrylamide, 2-[methyl[(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl acrylate and vinylidene chloride(PFOS)	306978-04-1
45	Hexane, 1,6-diisocyanato-, homopolymer, N-(hydroxyethyl)-N-methyl perfluoro-C4-8-alkane sulphonamides- and stearyl alc.-blocked(PFOS)	306978-65-4
46	Poly(oxy-1,2-ethanediyl), alpha-[2-(methylamino)ethyl]-omega-[(1,1,3,3-tetramethylbutyl)phenoxy]-, N-[(perfluoro-C4-8-alkyl)sulphonyl](PFOS)	306979-40-8
47	Sulphonamides, C4-8-alkane, perfluoro, N,N'-[1,6-hexanediy]bis[(2-oxo-3,5-oxazolidinediyl)methylene]]bis[N-methyl-(PFOS)	306980-27-8
48	1-Octanesulphonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-(PFOS); Perfluoro-1-octanesulfonyl fluoride	307-35-7
49	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-methyl-(PFOS)	31506-32-8
50	2-Propenoic acid, 2-methyl-, 2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl ester(PFOS)	376-14-7
51	1-Propanaminium, 3-[[[(heptadecafluorooctyl)sulphonyl]amino]-N,N',N''-trimethyl-, chloride(PFOS)	38006-74-5

No	Substance name	CAS No
52	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[2-(phosphonooxy)ethyl]-(PFOS)	3820-83-5
53	2-Propenoic acid, 2-[butyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl ester(PFOS)	383-07-3
54	Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulphonyl]-, sodium salt(PFOS)	3871-50-9
55	Sodium perfluorooctanesulfonate	4021-47-0
56	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[2-(phosphonooxy)ethyl]-(PFOS)	4151-50-2
57	2-Propenoic acid, 2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl ester(PFOS)	423-82-5
58	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-2-propenyl-(PFOS)	423-86-9
59	Perfluorooctane sulfonate anion(PFOS)	45298-90-6
60	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(phenylmethyl)-(PFOS)	50598-29-3
61	Poly(oxy-1,2-ethanediyl), alpha-[2-[(heptadecafluorooctyl)sulphonyl]propylamino]ethyl-omega-hydroxy-(PFOS)	52550-45-5
62	Ethanaminium, N,N',N''-triethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulphonic acid (1:1)(PFOS);	56773-42-3
63	Benzoic acid, 2,3,4,5-tetrachloro-6-[[[3-[(heptadecafluorooctyl)sulphonyl]oxy]phenyl]amino]carbonyl]-, monopotassium	57589-85-2
64	2-Propenoic acid, 4-[[[(heptadecafluorooctyl)sulphonyl]methylamino]butyl ester(PFOS)	58920-31-3
65	2-Propenoic acid, 2-methyl-, 4-[[[(heptadecafluorooctyl)sulphonyl]methylamino]butyl ester(PFOS)	61577-14-8
66	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[3-(trimethoxysilyl)propyl]-(PFOS)	61660-12-6
67	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[3-(trichlorosilyl)propyl]-(PFOS)	67939-42-8
68	1-Octanesulphonamide, N-[3-(dimethylamino)propyl]- 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, monohydrochloride(PFOS)	67939-88-2
69	1-Octanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[2-(phosphonooxy)ethyl]-, diammonium salt(PFOS)	67969-69-1
70	Carbamic acid, (4-methyl-1,3-phenylene)bis-, bis[2-[ethyl[(perfluoro-C4-8-alkyl)sulphonyl]amino]ethyl] ester(PFOS)	68081-83-4
71	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(4-hydroxybutyl)-N-methyl-(PFOS)	68239-73-6
72	1-Propanaminium, 3-[[[(heptadecafluorooctyl)sulphonyl](3-sulphopropyl)amino]-N-(2-hydroxyethyl)-N,N-dimethyl-, hydroxide, inner salt(PFOS)	68298-11-3
73	1-Propanaminium, 3-[[[(heptadecafluorooctyl)sulphonyl]amino]-N,N',N''-trimethyl-, iodide, ammonium salt(PFOS)	68310-75-8
74	2-Propenoic acid, eicosyl ester, polymer with 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl 2-propenoate, hexadecyl 2-propenoate, 2-[methyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-propenoate, 2-[methyl[(pentadecafluoroheptyl)sulphonyl](PFOS)	68329-56-6
75	2-Propenoic acid, polymer with 2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate and octadecyl 2-propenoate(PFOS)	68541-80-0
76	2-Propenoic acid, butyl ester,polymer with 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl 2-propenoate, 2-methyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-propenoate, 2-	68555-90-8
77	2-Propenoic acid, 2-methyl-, 2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl ester, polymer with 2-[ethyl[(nonafluorobutyl)sulphonyl]amino] ethyl 2-methyl-2-propenoate, 2-[ethyl[(pentadecafluoroheptyl)sulphonyl]amino]ethyl 2-methyl-2-propeno(PFOS)	68555-91-9
78	2-Propenoic acid, 2-methyl-, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl ester, polymer with 2- [methyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate, 2- [methyl[(pentadecafluoroheptyl)sulphonyl]amino]ethyl 2-methyl-2-(PFOS)	68555-92-0

No	Substance name	CAS No
79	Sulphonamides, C4-8-alkane, perfluoro, N-ethyl-N-(hydroxyethyl), reaction products with 1,1'-methylenebis[4-isocyanatobenzene](PFOS)	68608-14-0
80	N-(2-hydroxyethyl)-1-butan Sulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-N-(2-hydroxyethyl)- 1-heptanesulphonamide, N-ethyl-1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-(2-hydroxyethyl)-1-hexanesulphonamide, N-ethyl-1,1,2,(PFOS)	68649-26-3
81	2-Propenoic acid, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl ester, polymer with 2-[methyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-propenoate, 2-[methyl[(pentadecafluoroheptyl)sulphonyl]amino]ethyl 2-propenoate, 2-[methyl[(trideca(PFOS)	68867-60-7
82	2-Propenoic acid, 2-methyl-, 2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl ester, polymer with 2-[ethyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-methyl-2-propenoate, 2-[ethyl[(pentadecafluoroheptyl)sulphonyl]amino]ethyl 2-methyl-2-prope(PFOS)	68877-32-7
83	Chromium, diaquatetrachloro[μ-[N-ethyl-N- [(heptadecafluorooctyl)sulphonyl]glycinato-kappaO:kappaO']]-μ-hydroxybis(2-methylpropanol)di-(PFOS)	68891-96-3
84	2-Propenoic acid, eicosyl ester, polymers with branched octylacrylate, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl acrylate, 2-[methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate, 2-[methyl[(pentadecafluoroheptyl)sulphonyl]amino](PFOS)	68909-15-9
85	Poly(oxy-1,2-ethanediyl), alpha-[2-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl]-omega-methoxy-(PFOS)	68958-61-2
86	Bis(2-hydroxyethyl)ammonium perfluorooctanesulfonate	70225-14-8
87	2-Propenoic acid, 2-methyl-, octadecyl ester, polymer with 1,1-dichloroethene, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl 2-propenoate, N-(hydroxymethyl)-2-propenamide, 2-[methyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-propenoate, 2-(PFOS)	70776-36-2
88	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, compd. with piperidine (1:1)	71463-74-6
89	Phosphonic acid, [3-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]propyl]-(PFOS)	71463-78-0
90	Phosphonic acid, [3-[ethyl[(heptadecafluorooctyl)sulphonyl]amino]propyl]-, diethyl ester(PFOS)	71463-80-4
91	2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenylbenzene, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl 2-propenoate, 2-[methyl[(nonafluorobutyl)sulphonyl]amino]ethyl 2-propenoate, 2-[methyl[(pentadecafluoroheptyl)sulphonyl] (PFOS)	71487-20-2
92	1-Octanesulphonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-(PFOS)	754-91-6
93	Magnesium bis[heptadecafluorooctanesulphonate]	91036-71-4
94	Sulphonamides, C4-8-alkane, perfluoro, N-(hydroxyethyl)-N-methyl, reaction products with epichlorohydrin, adipates (esters)(PFOS)	91081-99-1
95	Ethanaminium, N,N,N-trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]-, chloride, polymer with 2-ethoxyethyl 2-propenoate, 2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethyl 2-propenoate and oxiranylmethyl 2-methyl-2-(PFOS)	92265-81-1
96	1-Propanesulphonic acid, 3-[[3-(dimethylamino)propyl][(heptadecafluorooctyl)sulphonyl]amino]-2-hydroxy-, monosodium salt(PFOS)	94133-90-1
97	Carbamic acid, [5-[[[2-[[[(heptadecafluorooctyl)sulphonyl]methylamino]ethoxy]carbonyl]amino]-2-	94313-84-5
98	Sulphonamides, C7-8-alkane, perfluoro, N-methyl-N-[2-[(1-oxo-2-propenyl)oxy]ethyl], polymers with 2-ethoxyethyl acrylate, glycidyl methacrylate and N,N,trimethyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]ethanaminium chloride(PFOS)	98999-57-6
99	Perfluorooctane sulfonates(PFOS) C ₈ F ₁₇ SO ₂ X (X = OH, Metal salt (O-M+), halide, amide, and other derivatives including polymers) [group]	JAMP-SN0035

Appendix 3: REACH Restriction substance list

REACH Annex XVII Restriction of placing on the market and use

*Refer the original text about the each restriction of use.

<https://echa.europa.eu/substances-restricted-under-reach>

[REACH Regulation Restricted substance list](#)

Rev.3

2025.04.08

Appendix 4. List of aromatic amines

Rev.1

2017.12.26

No.	Substance Name	CAS No
1	4-Aminoazobenzene 4-Phenylazoaniline	60-09-3
2	2-Methoxyaniline o-Anisidine	90-04-0
3	2-Naphthylamine	91-59-8
4	3,3'-Dichlorobenzidine 3,3'-Dichlorobiphenyl-4,4'-diamine	91-94-1
5	4-Aminobiphenyl Xenylamine Biphenyl-4-ylamine	92-67-1
6	Benzidine 4,4'-Biphenyldiamine 4,4'-Diaminobiphenyl	92-87-5
7	o-Toluidine 2-Aminotoluene	95-53-4
8	4-Chloro-o-toluidine	95-69-2 [1] 3165-93-3 [2]
9	4-Methyl-m-phenylenediamine 2,4-Toluenediamine	95-80-7
10	o-Aminoazotoluene 4-Amino-2',3-dimethylazobenzene 4-o-Tolylazo-o-toluidine	97-56-3
11	5-Nitro-o-toluidone 2-Amino-4-nitrotoluene	99-55-8 [1] 51085-52-0 [2]
12	2,2'-Dichloro-4,4'-methylene-dianiline 4,4'-Methylene-bis-(2-chloro-aniline)	101-14-4
13	4,4'-Diaminodiphenylmethane 4,4'-Methylenedianiline	101-77-9
14	4,4'-Oxydianiline 4,4'-Diaminodiphenylether	101-80-4
15	4-Chloroaniline p-Chloroaniline	106-47-8
16	3,3'-Dimethoxybenzidine o-Dianisidine	119-90-4
17	4,4'-Bi-o-toluidine 3,3'-Dimethylbenzidine	119-93-7
18	6-Methoxy-m-toluidine 2-Methoxy-5-methylaniline p-Cresidine	120-71-8
19	2,4,5-Trimethylaniline	137-17-7 [1] 21436-97-5 [2]
20	4,4'-Thiodianiline 4,4'-Diaminodiphenyl sulfide	139-65-1
21	2,4-Diaminoanisole 4-Methoxy-m-phenylenediamine	615-05-4 [1] 39156-41-7 [2]
22	4,4'-Methylenedi-o-toluidine 3,3'-Dimethyl-4,4'-	838-88-0
23	2,6-Xylidine 2,6-Dimethylaniline	87-62-7
24	2,4-Xylidine 2,4-Dimethylaniline	95-68-1

*: Although these substances are not subject to the Restriction of REACH regulation in EU, they are applicable in China and South Korea.

Appendix 5. List of Hexabromocyclododecane (HBCD or HBCC

Rev.1

2017.12.26

No.	Substance Name	CAS No
1	Alpha-hexabromocyclododecane; rel-(1R,2R,5S,6R,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane	134237-50-6
2	Beta-hexabromocyclododecane; rel-(1R,2S,5R,6R,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane	134237-51-7
3	Gamma-hexabromocyclododecane; rel-(1R,2R,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane	134237-52-8
4	(1R,2R,5R,6S,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane	138257-17-7
5	(1R,2R,5R,6S,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane	138257-18-8
6	(1R,2S,5S,6R,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane	138257-19-9
7	(1R,2S,5S,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane	169102-57-2
8	Hexabromocyclododecane	25637-99-4
9	1,2,5,6,9,10-hexabromocyclododecane	3194-55-6
10	rel-(1R,2S,5R,6S,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane	4736-49-6
11	rel-(1R,2S,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane	65701-47-5
12	(1R,2R,5S,6R,9R,10S)-1,2,5,6,9,10-Hexabromocyclododecane	678970-15-5
13	(1R,2S,5R,6S,9S,10S)-1,2,5,6,9,10-Hexabromocyclododecane	678970-16-6
14	(1R,2R,5R,6S,9S,10R)-1,2,5,6,9,10-Hexabromocyclododecane	678970-17-7

Appendix 6. List of Perfluorooctanoic acid (PFOA) and its salts and its esters

Rev.1
2017.12.26

No.	Substance Name	CAS No
1	Perfluorooctanoic acid (PFOA)	335-67-1
2	Perfluorooctanoic acid ammonium salt	3825-26-1
3	Perfluorooctanoic acid sodium salt	335-95-5
4	Perfluorooctanoic acid potassium salt	2395-00-8
5	Perfluorooctanoic acid silver salt	335-93-3
6	Perfluorooctanoic acid fluoride	335-66-0
7	Perfluorooctanoic acid methyl ester	376-27-2
8	Perfluorooctanoic acid ethyl ester	3108-24-5