



Montreal Protocol			Sample substances		Chemical formula	Sample CAS No						
Class	Annex	Group										
I	A	I	CFC [Chlorofluorocarbon]									
			CFC-11	Trichlorofluoromethane	CFCl <sub>3</sub>	75-69-4						
			CFC-12	Dichlorodifluoromethane	CF <sub>2</sub> Cl <sub>2</sub>	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 <sub>2</sub> F <sub>3</sub> Cl <sub>3</sub>	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 <sub>2</sub> F <sub>4</sub> Cl <sub>2</sub>	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 <sub>2</sub> F <sub>5</sub> Cl	76-15-3									
I	A	II	Halon									
			Halon-1211	Bromochlorodifluoromethane	CF <sub>2</sub> BrCl	353-59-3						
			Halon-1301	Bromotrifluoromethane	CF <sub>3</sub> Br	75-63-8						
			Halon-2402	Dibromotetrafluoroethane 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 <sub>2</sub> F <sub>4</sub> Br <sub>2</sub>	124-73-2 25497-30-7 27336-23-8						
Other completely halogenated CFC												
I	B	I	CFC-13	Chlorotrifluoromethane	CF <sub>3</sub> 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 <sub>2</sub> FCl <sub>5</sub>	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 <sub>2</sub> F <sub>2</sub> Cl <sub>4</sub>	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 <sub>3</sub> FCl <sub>7</sub>	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 <sub>3</sub> F <sub>2</sub> Cl <sub>6</sub>	134452-44-1 3182-26-1				
			CFC-213	Pentachlorotrifluoropropane (CFC-213) 1,1,1,3,3-Pentachloro-2,2,3-trifluoropropane (HCFC-213)	C <sub>3</sub> F <sub>3</sub> Cl <sub>5</sub>	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 <sub>3</sub> F <sub>4</sub> Cl <sub>4</sub>	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 <sub>3</sub> F <sub>5</sub> Cl <sub>3</sub>	1599-41-3 1652-81-9 4259-43-2 76-17-5 812-30-6				
			CFC-216		Dichlorohexafluoropropane	C <sub>3</sub> F <sub>6</sub> Cl <sub>2</sub>		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 <sub>3</sub> F <sub>7</sub> Cl		422-86-6 76-18-6				
			I		B	II		—	CFC-10	Carbon tetrachloride	CCl <sub>4</sub>	56-23-5
			I		B	III		—	—	1,1,1-Trichloroethane (1,1,2-Trichloroethane is excepted)	C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>	71-55-6
			I	C	III	—	Halon-1011	Bromochloromethane	CH <sub>2</sub> BrCl	74-97-5		
			I	E	I	—	Halon-1001	Methyl bromide Bromomethane	CH <sub>3</sub> Br	74-83-9		
I	C	II	HBFC [Hydrobromofluorocarbon]									
			Halon-1102	Dibromofluoromethane (HBFC-21 B2)	CHFB <sub>2</sub>	1868-53-7						
			Halon-1201	Bromodifluoromethane (HBFC-22 B1)	CHF <sub>2</sub> Br	1511-62-2						
			Halon-1101	Bromofluoromethane (HBFC-31 B1)	CH <sub>2</sub> FBr	373-52-4						
			Halon-2104	Tetrabromofluoroethane (HBFC-121 B4)	C <sub>2</sub> HFBr <sub>4</sub>	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 <sub>2</sub> HF <sub>2</sub> Br <sub>3</sub>	353-97-9 677-34-9 7304-53-2				
			Halon-2302		Dibromotrifluoroethane (HBFC-123 B2) 1,2-Dibromo-1,1,2-trifluoroethane	C <sub>2</sub> HF <sub>3</sub> Br <sub>2</sub>		354-04-1				
			Halon-2401	Bromotetrafluoroethane (HBFC-124 B1) 2-Bromo-1,1,1,2-tetrafluoroethane 1-Bromo-1,2,2,2-tetrafluoroethane	C <sub>2</sub> HF <sub>4</sub> Br	124-72-1						
				Halon-2103		Tribromofluoroethane (HBFC-131 B3) 1,1,2-tribromo-1-fluoroethane (CAS No 420-88-2) 1,1,2-tribromo-2-fluoroethane (CAS No 598-67-4)	C <sub>2</sub> H <sub>2</sub> FBr <sub>3</sub>	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 <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>2</sub>		359-19-3 430-85-3 75-82-1				

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			Halon-2301	Bromotrifluoroethane (HBFC-133B1) 1-Bromo-2,2,2-trifluoroethane (HBFC-133a B1)(CAS No 421-06-7) 2-Bromo-1,1,1-trifluoroethane (HBFC-133a B1)(CAS No 421-06-7)	$C_2H_2F_3Br$ 421-06-7
			Halon-2102	Dibromofluoroethane (HBFC-141 B2) 1,2-Dibromo-1-fluoroethane 1,2-Dibromo-2-fluoroethane	$C_2H_3FBr_2$ 358-97-4
			Halon-2201	Bromodifluoroethane (HBFC-142 B1) 2-Bromo-1,1-difluoroethane	$C_2H_3F_2Br$ 359-07-9
			Halon-2101	Bromofluoroethane (HBFC-151 B1) 1-Bromo-2-fluoroethane	$C_2H_4FBr$ 762-49-2
			Halon-3106	Hexabromofluoropropane (HBFC-221 B6)	$C_3HFBr_6$
			Halon-3205	Pentabromodifluoropropane (HBFC-222 B5)	$C_3HF_2Br_5$
			Halon-3304	Tetrabromotrifluoropropane (HBFC-223 B4)	$C_3HF_3Br_4$
			Halon-3403	Tribromotetrafluoropropane (HBFC-224 B3)	$C_3HF_4Br_3$ 666-48-8
			Halon-3502	Dibromopentafluoropropane (HBFC-225 B2) 1,2-Dibromo-1,1,3,3,3-pentafluoropropane	$C_3HF_5Br_2$ 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)	$C_3HF_6Br$ 2252-78-0 2252-79-1
			Halon-3105	Pentabromofluoropropane (HBFC-231 B5)	$C_3H_2FBr_5$
			Halon-3204	Tetrabromodifluoropropane (HBFC-232 B4) 1,1,1,3-Tetrabromo-3,3-difluoropropane	$C_3H_2F_2Br_4$ 148875-98-3
			Halon-3303	Tribromotrifluoropropane (HBFC-233 B3) 2,2,3-Tribromo-1,1,1-trifluoropropane (CAS No 421-90-9)	$C_3H_2F_3Br_3$ 421-90-9 431-48-1
			Halon-3402	Dibromotetrafluoropropane (HBFC-234 B2) 1,3-Dibromo-1,1,3,3-tetrafluoropropane	$C_3H_2F_4Br_2$ 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)	$C_3H_2F_5Br$ 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	$C_3H_3FBr_4$ 148875-95-0
			Halon-3203	Tribromodifluoropropane (HBFC-242 B3) 1,1,1-Tribromo-2,2-difluoropropane (CAS No 70192-80-2)	$C_3H_3F_2Br_3$ 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)	$C_3H_3F_3Br_2$ 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)	$C_3H_3F_4Br$ 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	$C_3H_4FBr_3$ 75372-14-4
			Halon-3202	Dibromodifluoropropane (HBFC-252 B2) 1,3-Dibromo-1,1-difluoropropane (CAS No 460-25-3)	$C_3H_4F_2Br_2$ 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)	$C_3H_4F_3Br$ 421-46-5 460-32-2
			Halon-3102	Dibromofluoropropane (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)	$C_3H_5FBr_2$ 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)	$C_3H_5F_2Br$ 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)	$C_3H_6FBr$ 1871-72-3 352-91-0
II	C	I	HCFC [Hydrochlorofluorocarbon]		
			HCFC-21	Dichlorofluoromethane (*)	$CH_2Cl_2$ (*) 75-43-4
			HCFC-22	Chlorodifluoromethane (*)	$CHF_2Cl$ (*) 75-45-6
			HCFC-31	Chlorofluoromethane	$CH_2FCl$ 593-70-4

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Class	Annex	Group			
			HCFC-121 Tetrachlorofluoroethan (HCFC-121) 1,1,2,2-Tetrachloro-1-fluoroethan (HCFC-121) 1,1,1,2-Tetrachloro-2-fluoroethan (HCFC 121a)	$C_2HFCl_4$	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)	$C_2HF_2Cl_3$	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)	$C_2HF_3Cl_2$ $CHCl_2CF_3$ (*)	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)	$C_2HF_4Cl$ $CHFClCF_3$ (*)	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)	$C_2H_2FCl_3$	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)	$C_2H_2F_2Cl_2$	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)	$C_2H_2F_3Cl$	1330-45-6 421-04-5 431-07-2 75-88-7
			HCFC-141 Dichlorofluoroethane (HCFC-141) 1,2-Dichloro-1-fluoroethane (HCFC-141) 1,1-Dichloro-2-fluoroethane (HCFC-141a) 1,1-Dichloro-1-fluoroethane (HCFC-141b) (*)	$C_2H_3FCl_2$ $CH_2CFCl_2$ (*)	1717-00-6 25167-88-8 358-97-4 430-53-5 430-57-9
			HCFC-142 Chlorodifluoroethane (HCFC-142) 2-Chloro-1,1-difluoroethane (HCFC-142) 1-Chloro-1,2-difluoroethane (HCFC-142a) 1-Chloro-1,1-difluoroethane (HCFC-142b)	$C_2H_3F_2Cl$ $CH_2CF_2Cl$ (*)	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)	$C_2H_4FCl$	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)	$C_3HFCl_6$	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)	$C_3HF_2Cl_5$	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)	$C_3HF_3Cl_4$	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)	$C_3HF_4Cl_3$	134237-38-0 422-51-5 422-53-7 422-54-8
			HCFC-225 Dichloropentafluoropropane (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)	$C_3HF_5Cl_2$ $CF_2CF_2CHCl_2$ (*) $CF_2ClCF_2CHCl$ (*)	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)	$C_3HF_6Cl$	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)	$C_3H_2FCl_5$	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)	$C_3H_2F_2Cl_4$	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)	$C_3H_2F_3Cl_3$	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)	$C_2H_2F_4Cl_2$	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-1,1,3,3-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-1,1,3-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	例示 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-
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	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
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

No	Substance name	例示 CAS No
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-octanesulphonamides(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-octanesulphonamides(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-propenamides, 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-octanesulphonyl 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-	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
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-(phosphonoxy)ethyl]- (PFOS)	3820-83-5
53	2-Propenoic acid, 2-[butyl[(heptadecafluorooctyl)sulphonyl]amino]ethyl ester(PFOS)	383-07-3

No	Substance name	例示 CAS No
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-	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	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-(phosphonoxy)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
79	Sulphonamides, C4-8-alkane, perfluoro, N-ethyl-N-(hydroxyethyl), reaction products with 1,1'-methylenebis[4-isocyanatobenzene](PFOS)	68608-14-0

No	Substance name	例示 CAS No
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-propenamamide, 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	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]amino](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-methylphenyl]-	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 <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> X (X = OH, Metal salt (O-M+), halide, amide, and other derivatives including polymers) [group]	JAMP-SN0035

**Appendix 3:**
**REACH Annex XVII Restriction of placing on the market and use**

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

[http://ec.europa.eu/enterprise/sectors/chemicals/reach/restrictions/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/chemicals/reach/restrictions/index_en.htm)

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No.	Chemical Name	Sample CAS No.	Main use of restriction	Maximum acceptable value
1	Poly chlorinated terphenyls (PCTs)	61788-33-8*	Substances, mixtures, including waste oils, or equipment	50ppm
2	Chloro-1-ethylene (monomer vinyl chloride)	75-01-4	Aerosols dispensers	Banning the use
3	Liquid substances or preparations, which are regarded as dangerous according to the definitions in Regulation 1272/2008/EC and Directive 1999/45/EC.	—	Ornamental oil lamps, etc.	Banning the use
4	Tris(2,3-dibromopropyl)phosphate	126-72-7	Textile articles coming into contact with the skin.	Banning the use
5	Benzene	71-43-2	Substances or mixtures	1000ppm
			Toys	5ppm
6	Asbestos		Articles	Banning the use
	(a) Crocidolite	12001-28-4		
	(b) Amosite	12172-73-5		
	(c) Anthophyllite asbestos	77536-67-5		
	(d) Actinolite asbestos	77536-66-4		
	(e) Tremolite asbestos	77536-68-6		
	(f) Chrysotile	12001-29-5 132207-32-		
7	Tris-aziridinyl-phosphinoxide	545-55-1	Textile articles, come into contact with the skin.	Banning the use
8	Polybromobiphenyls (PBB)	59536-65-1	Textile articles, come into contact with the skin.	Banning the use
9	(a) Soap bark powder (Quillaja saponaria) and its derivatives containing saponines	68990-67-0	Mixtures or articles in amenity goods like sneezing powder and stink bombs	Banning the use (stink bombs : under 1.5ml)
	(b) Powder of the roots of Helleborus viridis and Helleborus niger	—		
	(c) Powder of the roots of Veratrum album and Veratrum nigrum	—		
	(d) benzidine and/or its derivatives	92-87-5		
	(e) o-nitrobenzaldehyde	552-89-6		
	(f) Wood powder	—		
10	(a) Ammonium sulphide	12135-76-1		
	(b) Ammonium hydrogen sulphide	12124-99-1		
	(c) Ammonium polysulphide	9080-17-5		
11	Volatile esters of bromoacetic acids			
	(a) Methyl bromoacetate	96-32-2		
	(b) Ethyl bromoacetate	105-36-2		
	(c) Propyl bromoacetate	35223-80-4		
	(d) Butyl bromoacetate	18991-98-5		
12	2-naphthylamine and its salts	91-59-8	Substances or mixtures	1000ppm
13	Benzidine and its salts	92-87-5		
14	4-nitrobiphenyl	92-93-3		
15	4-aminobiphenyl and its salts	92-67-1		
16	Lead carbons		Substances or mixtures, where the substance or mixture is intended for use as paint	Banning the use
	(a) Neutral anhydrous carbonate (PbCO <sub>3</sub> )	598-63-0		
	(b) Trilead-bis(carbonate)-dihydroxide 2PbCO <sub>3</sub> -Pb(OH) <sub>2</sub>	1319-46-6		
17	Lead sulphates			
	(a) Lead sulphates(PbSO <sub>4</sub> )	7446-14-2		
	(b) Lead sulphates(PbxSO <sub>4</sub> )	15739-80-7		
18a		7439-97-6	Ffever thermometers, measuring devices including mercury	Banning the use (*) from 2014/4/10
18	Mercury compounds	—	boats and ships, equipment used for fish or shellfish farming, preservation of wood,	Banning the use
19	Arsenic compounds	—		
20	Organostannic compounds	—	Biocide ,the treatment of industrial waters	Banning the use
	Trisubstituted organostannic compounds Tributyltin (TBT) compounds, Triphenyltin (TPT) compounds etc.	—	Articles	1000ppm of Sn
	Dibutyltin (DBT) compounds	—	Mixtures or articles	
	Dioctyltin (DOT) compounds	—	Articles intended to come into contact with the skin	
21	Di-μ-oxo-di-n-butylstanniohydroxyborane (DBB)	75113-37-0	Substances or mixtures	1000ppm
22	Pentachlorophenol and its esters	87-86-5	Substances or mixtures	100ppm
23	Cadmium and its compounds	7440-43-9 etc.	Plastic, brazing fillers, jewelry goods, cadmium plating except special use	100ppm
			Paint	1000ppm
24	Monomethyl-tetrachlorodiphenyl methane	76253-60-6	Substances, mixtures or articles containing the substance	Banning the use
25	Monomethyl-dichlorodiphenyl methane	—		
26	Monomethyl-dibromo-diphenyl methane	99688-47-8		

No.	Chemical Name	Sample CAS No.	Main use of restriction	Maximum acceptable value
27	Nickel and its compounds	7440-02-0 etc.	The use intended to come into direct and prolonged contact with the skin (Discharge > 0.2 µg/cm <sup>2</sup> /week)	Banning the use (0.2 µg/cm <sup>2</sup> /week)
28	Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as carcinogen category 1A or 1B (Table 3.1) or carcinogen category 1 or 2 (Table 3.2) and listed as follows:	—	Supplies to the general public (As substances or in mixtures)	The concentration limit specified in Regulation (EC) No 1272/2008(CLP)
29	Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as germ cell mutagen category 1A or 1B (Table 3.1) or mutagen category 1 or 2 (Table 3.2) and listed as follows:	—		
30	Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as toxic to reproduction category 1A or 1B (Table 3.1) or toxic to reproduction category 1 or 2 (Table 3.2) and listed as follows:	—		
31	(a) Creosote (b) Creosote oil (c) Distillates (coal tar), naphthalene oils (d) Creosote oil, acenaphthene fraction (e) Distillates (coal tar), upper (f) Anthracene oil (g) Tar acids, coal, crude (h) Creosote, wood (i) Low temperature tar oil, alkaline	8001-58-9 61789-28-4 84650-04-4 90640-84-9 65996-91-0 90640-80-5 65996-85-2 8021-39-4 122384-78-5	Substances or mixtures where the substance or mixture is intended for the treatment of wood	Banning the use
32	Chloroform	67-66-3	Surface treatment , cleaner	1000ppm
33	(Missing number)	-		
34	1,1,2-trichloroethane	79-00-5		
35	1,1,2,2-tetrachloroethane	79-34-5		
36	1,1,1,2-tetrachloroethane	630-20-6		
37	Pentachloroethane	76-01-7		
38	1,1-dichloroethylene	75-35-4		
39	(Missing number)	-		
40	Substances meeting the criteria of flammability in Directive 67/548/EEC and classified as flammable, highly flammable or extremely flammable regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	—	Substances or mixtures in aerosol dispensers for the general public for entertainment and decorative purposes	Banning the use
41	Hexachloroethane	67-72-1	substance or mixtures where the substance or mixture is intended for the manufacturing or processing of non-ferrous metals	Banning the use
42	(Missing number)	-		
43	Azo colourants and azo dyes (may release the aromatic amines listed in Appendix	—	Articles intended to come into direct and prolonged contact with the skin (textile and leather articles)	30ppm
	4-aminoazobenzene	60-09-3		
	o-anisidine;	90-04-0		
	2-methoxyaniline			
	2-naphthylamine	91-59-8		
	3,3'-dichlorobenzidine;	91-94-1		
	3,3'-dichlorobiphenyl-4,4'-ylenediamine			
	4-aminobiphenyl	92-67-1		
	benzidine	92-87-5		
	o-toluidine;	95-53-4		
	2-aminotoluene			
	4-chloro-o-toluidine	95-69-2		
	4-methyl-m-phenylenediamine	95-80-7		
	o-aminoazotoluene;	97-56-3		
	4-amino-2',3'-dimethylazobenzene;			
	4-o-tolylazo-o-toluidine			
	5-nitro-o-toluidine	99-55-8		
	2,2'-dichloro-4,4'-methylenedianiline;	101-14-4		
	4,4'-methylene bis(2-chloroaniline)			
	4,4'-diaminodiphenylmethane;	101-77-9		
	4,4'-methylenedianiline			
	4,4'-oxydianiline	101-80-4		
	4-chloroaniline	106-47-8		
	o-dianisidine;	119-90-4		
	3,3'-dimethoxybenzidine			
	4,4'-bi-o-toluidine;	119-93-7		
	3,3'-dimethylbenzidine			
	p-cresidine;	120-71-8		
	6-methoxy-m-toluidine			
	2,4,5-trimethylaniline	137-17-7		
	4,4'-thiodianiline	139-65-1		
	4-methoxy-m-phenylenediamine	615-05-4		
	4,4'-methylenedi-o-toluidine	838-88-0		
44	(Missing number)	-		
45	Diphenyl ether, octabromo derivative	-	Substances, mixtures or articles	1000ppm

No.	Chemical Name	Sample CAS No.	Main use of restriction	Maximum acceptable value
46	(a) Nonylphenol (b) Nonylphenol ethoxylates	25154-52-3 —	Cleaner, etc.	1000ppm
47	Chromium VI compounds		Cement – Leather articles coming into contact with the skin – Articles containing leather parts coming into contact with the skin	2ppm of the total dry weight 3ppm of the total dry weight of the leather
48	Toluene	108-88-3	Adhesives or spray paints (for supply to the general public)	1000ppm
49	Trichlorobenzene	120-82-1	As substances, in mixtures	1000ppm
50	Polycyclic-aromatic hydrocarbons (PAH)	—	The production of tyres	1ppm(BaP) 10ppm(the total of PAH)
	(a) Benzo(a)pyrene (BaP)	50-32-8	Articles for supply to the general public, if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity (Apply after 27 December 2015)	1ppm
	(b) Benzo(e)pyrene (BeP)	192-97-2		
	(c) Benzo(a)anthracene (BaA)	56-55-3		
	(d) Chrysene (CHR)	218-01-9		
	(e) Benzo(b)fluoranthene (BbFA)	205-99-2	Toys, including activity toys, and childcare article if any of their rubber or plastic components that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity (Apply after 27 December 2015)	0.5ppm
	(f) Benzo(j)fluoranthene (BjFA)	205-82-3		
	(g) Benzo(k)fluoranthene (BkFA)	207-08-9		
	(h) Dibenzo(a, h)anthracene (DBAhA)	53-70-3		
51	The following phthalates (a) Bis(2-ethylhexyl) phthalate (DEHP) (b) Dibutyl phthalate (DBP) (c) Benzyl butyl phthalate (BBP)	117-81-7 84-74-2 85-68-7	Toys and childcare articles	1000ppm
52	The following phthalates (a) Di-isononyl phthalate (DINP) (b) Di-isodecyl phthalate (DIDP) (c) Di-n-octyl phthalate (DNOP)	28553-12-0 68515-48-0 26761-40-0 68515-49-1 117-84-0	Toys and childcare articles	1000ppm
53	(Missing number)	—		
54	2-(2-methoxyethoxy)ethanol (DEGME)	111-77-3	Paints, paint strippers, cleaning agents, self-shining emulsions or floor sealants	1000ppm
55	2-(2-butoxyethoxy)ethanol (DEGBE)	112-34-5	Spray paints for supply to the general public, etc	3000ppm
56	Methylenediphenyl diisocyanate (MDI) including the following specific isomers (a) 4,4'-Methylenediphenyl diisocyanate (b) 2,4'-Methylenediphenyl diisocyanate (c) 2,2'-Methylenediphenyl diisocyanate	26447-40-5  101-68-8 5873-54-1 2536-05-2	Mixtures for supply to the general public	1000ppm
57	Cyclohexane	110-82-7	Adhesives	1000ppm
58	Ammonium nitrate (AN)	6484-52-2	Substances or in mixtures that contain more than 28 % by weight of nitrogen in relation to AN for use as a solid fertiliser Substances or in mixtures that contain more than 16 % by weight of nitrogen in relation to AN	Banning the use Banning the use except agriculture or licensed user
59	Dichloromethane	75-09-2	Paint strippers	1000ppm
60	Acrylamide	79-06-1	Grouting applications	1000ppm
61	Dimethylfumarate (DMF)	624-49-7	Articles	0.1ppm
62	Phenylmercury compounds* (a) Phenylmercury acetate (b) Phenylmercury propionate (c) Phenylmercury 2-ethylhexanoate (d) Phenylmercury octanoate (e) Phenylmercury neodecanoate	62-38-4 103-27-5 13302-00-6 13864-38-5 26545-49-3	Articles Mixtures Substances *After 10 October 2017	mercury 100ppm or Banning the use
63	Lead and its compounds	—	Jewelry articles	500ppm
64	1,4-dichlorobenzene	106-46-7	– Substance or – Constituent of mixtures in a concentration equal to or greater than 1% by weight where the substance or the mixture is placed on the market for use or used as an air freshener or deodoriser in toilets, homes, offices or other indoor public areas.	Banning the use or placing on the market

\*Add a postscript to be plain though it was non-mention in the original

## Appendix 4. List of aromatic amines

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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 HBCDD)

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

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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