

Annex C: Controlled substances

Group	Substance	Number of isomers	Ozone-Depleting Potential*	100-Year Global Warming Potential***	
<i>Group I</i>					
	CHFCI ₂	(HCFC-21)**	1	0.04	151
	CHF ₂ Cl	(HCFC-22)**	1	0.055	1810
	CH ₂ FCI	(HCFC-31)	1	0.02	
	C ₂ HFCl ₄	(HCFC-121)	2	0.01–0.04	
	C ₂ HF ₂ Cl ₃	(HCFC-122)	3	0.02–0.08	
	C ₂ HF ₃ Cl ₂	(HCFC-123)	3	0.02–0.06	77
	CHCl ₂ CF ₃	(HCFC-123)**	–	0.02	
	C ₂ HF ₄ Cl	(HCFC-124)	2	0.02–0.04	609
	CHFClCF ₃	(HCFC-124)**	–	0.022	
	C ₂ H ₂ FCI ₃	(HCFC-131)	3	0.007–0.05	
	C ₂ H ₂ F ₂ Cl ₂	(HCFC-132)	4	0.008–0.05	
	C ₂ H ₂ F ₃ Cl	(HCFC-133)	3	0.02–0.06	
	C ₂ H ₃ FCI ₂	(HCFC-141)	3	0.005–0.07	
	CH ₃ CFCl ₂	(HCFC-141b)**	–	0.11	725
	C ₂ H ₃ F ₂ Cl	(HCFC-142)	3	0.008–0.07	
	CH ₃ CF ₂ Cl	(HCFC-142b)**	–	0.065	2310
	C ₂ H ₄ FCI	(HCFC-151)	2	0.003–0.005	
	C ₃ HFCl ₆	(HCFC-221)	5	0.015–0.07	
	C ₃ HF ₂ Cl ₅	(HCFC-222)	9	0.01–0.09	
	C ₃ HF ₃ Cl ₄	(HCFC-223)	12	0.01–0.08	
	C ₃ HF ₄ Cl ₃	(HCFC-224)	12	0.01–0.09	
	C ₃ HF ₅ Cl ₂	(HCFC-225)	9	0.02–0.07	
	CF ₃ CF ₂ CHCl ₂	(HCFC-225ca)**	–	0.025	122
	CF ₂ ClCF ₂ CHClF	(HCFC-225cb)**	–	0.033	595
	C ₃ HF ₆ Cl	(HCFC-226)	5	0.02–0.10	
	C ₃ H ₂ FCI ₅	(HCFC-231)	9	0.05–0.09	
	C ₃ H ₂ F ₂ Cl ₄	(HCFC-232)	16	0.008–0.10	
	C ₃ H ₂ F ₃ Cl ₃	(HCFC-233)	18	0.007–0.23	
	C ₃ H ₂ F ₄ Cl ₂	(HCFC-234)	16	0.01–0.28	
	C ₃ H ₂ F ₅ Cl	(HCFC-235)	9	0.03–0.52	
	C ₃ H ₃ FCI ₄	(HCFC-241)	12	0.004–0.09	
	C ₃ H ₃ F ₂ Cl ₃	(HCFC-242)	18	0.005–0.13	
	C ₃ H ₃ F ₃ Cl ₂	(HCFC-243)	18	0.007–0.12	
	C ₃ H ₃ F ₄ Cl	(HCFC-244)	12	0.009–0.14	
	C ₃ H ₄ FCI ₃	(HCFC-251)	12	0.001–0.01	
	C ₃ H ₄ F ₂ Cl ₂	(HCFC-252)	16	0.005–0.04	
	C ₃ H ₄ F ₃ Cl	(HCFC-253)	12	0.003–0.03	
	C ₃ H ₅ FCI ₂	(HCFC-261)	9	0.002–0.02	
	C ₃ H ₅ F ₂ Cl	(HCFC-262)	9	0.002–0.02	
	C ₃ H ₆ FCI	(HCFC-271)	5	0.001–0.03	

Group	Substance	Number of isomers	Ozone-Depleting Potential*
<i>Group II</i>			
	(HBFC-22B1)		
	CH ₂ Br ₂	1	1.00
	CHF ₂ Br	1	0.74
	CH ₂ FBr	1	0.73
	C ₂ HFBr ₄	2	0.3–0.8
	C ₂ HF ₂ Br ₃	3	0.5–1.8
	C ₂ HF ₃ Br ₂	3	0.4–1.6
	C ₂ HF ₄ Br	2	0.7–1.2
	C ₂ H ₂ FBr ₃	3	0.1–1.1
	C ₂ H ₂ F ₂ Br ₂	4	0.2–1.5
	C ₂ H ₂ F ₃ Br	3	0.7–1.6
	C ₂ H ₃ FBr ₂	3	0.1–1.7
	C ₂ H ₃ F ₂ Br	3	0.2–1.1
	C ₂ H ₄ FBr	2	0.07–0.1
	C ₃ HFBr ₆	5	0.3–1.5
	C ₃ HF ₂ Br ₅	9	0.2–1.9
	C ₃ HF ₃ Br ₄	12	0.3–1.8
	C ₃ HF ₄ Br ₃	12	0.5–2.2
	C ₃ HF ₅ Br ₂	9	0.9–2.0
	C ₃ HF ₆ Br	5	0.7–3.3
	C ₃ H ₂ FBr ₅	9	0.1–1.9
	C ₃ H ₂ F ₂ Br ₄	16	0.2–2.1
	C ₃ H ₂ F ₃ Br ₃	18	0.2–5.6
	C ₃ H ₂ F ₄ Br ₂	16	0.3–7.5
	C ₃ H ₂ F ₅ Br	8	0.9–1.4
	C ₃ H ₃ FBr ₄	12	0.08–1.9
	C ₃ H ₃ F ₂ Br ₃	18	0.1–3.1
	C ₃ H ₃ F ₃ Br ₂	18	0.1–2.5
	C ₃ H ₃ F ₄ Br	12	0.3–4.4
	C ₃ H ₄ FBr ₃	12	0.03–0.3
	C ₃ H ₄ F ₂ Br ₂	16	0.1–1.0
	C ₃ H ₄ F ₃ Br	12	0.07–0.8
	C ₃ H ₅ FBr ₂	9	0.04–0.4
	C ₃ H ₅ F ₂ Br	9	0.07–0.8
	C ₃ H ₆ FBr	5	0.02–0.7
<i>Group III</i>			
	CH ₂ BrCl	1	0.12
	bromochloromethane		

* Where a range of ODPs is indicated, the highest value in that range shall be used for the purposes of the Protocol. The ODPs listed as a single value have been determined from calculations based on laboratory measurements. Those listed as a range are based on estimates and are less certain. The range pertains to an isomeric group. The upper value is the estimate of the ODP of the isomer with the highest ODP, and the lower value is the estimate of the ODP of the isomer with the lowest ODP.

** Identifies the most commercially viable substances with ODP values listed against them to be used for the purposes of the Protocol.

***** For substances for which no GWP is indicated, the default value 0 applies until a GWP value is included by means of the procedure foreseen in paragraph 9 (a) (ii) of Article 2.**