

ANNEX I

OZONE-DEPLETING SUBSTANCES REFERRED TO IN ARTICLE 2, POINT (A) ⁽¹⁾

Group	Substance			Ozone-depleting potential (ODP) ⁽¹⁾	Global warming potential (GWP) ⁽²⁾
Group I	CFCl ₃	CFC-11	Trichlorofluoromethane	1,0	5 560
	CF ₂ Cl ₂	CFC-12	Dichlorodifluoromethane	1,0	11 200
	C ₂ F ₃ Cl ₃	CFC-113	Trichlorotrifluoroethane	0,8	6 520
	C ₂ F ₄ Cl ₂	CFC-114	Dichlorotetrafluoroethane	1,0	9 430
	C ₂ F ₅ Cl	CFC-115	Chloropentafluoroethane	0,6	9 600
Group II	CF ₃ Cl	CFC-13	Chlorotrifluoromethane	1,0	16 200
	C ₂ FCl ₅	CFC-111	Pentachlorofluoroethane	1,0	(*)
	C ₂ F ₂ Cl ₄	CFC-112	Tetrachlorodifluoroethane	1,0	4 620
	C ₃ FCl ₇	CFC-211	Heptachlorofluoropropane	1,0	(*)
	C ₃ F ₂ Cl ₆	CFC-212	Hexachlorodifluoropropane	1,0	(*)
	C ₃ F ₃ Cl ₅	CFC-213	Pentachlorotrifluoropropane	1,0	(*)
	C ₃ F ₄ Cl ₄	CFC-214	Tetrachlorotetrafluoropropane	1,0	(*)
	C ₃ F ₅ Cl ₃	CFC-215	Trichloropentafluoropropane	1,0	(*)
	C ₃ F ₆ Cl ₂	CFC-216	Dichlorohexafluoropropane	1,0	(*)
	C ₃ F ₇ Cl	CFC-217	Chloroheptafluoropropane	1,0	(*)
Group III	CF ₂ BrCl	halon-1211	Bromochlorodifluoromethane	3,0	1 930
	CF ₃ Br	halon-1301	Bromotrifluoromethane	10,0	7 200
	C ₂ F ₄ Br ₂	halon-2402	Dibromotetrafluoroethane	6,0	2 170
	CB ₂ F ₂	halon-1202	Dibromodifluoromethane	1,25	216
Group IV	CCl ₄	CTC	Tetrachloromethane (carbon tetrachloride)	1,1	2 200
Group V	C ₂ H ₃ Cl ₃ ⁽³⁾	1,1,1-TCA	1,1,1-Trichloroethane (methylchloroform)	0,1	161
Group VI	CH ₃ Br	methyl bromide	Bromomethane	0,6	2,43

⁽¹⁾ This Annex includes the ozone-depleting substances and their isomers. As per Article 2, point (a), mixtures containing the ozone-depleting substances listed in this Annex are considered as ozone-depleting substances covered by this Regulation.

Group	Substance			Ozone-depleting potential (ODP) ⁽¹⁾	Global warming potential (GWP) ⁽²⁾
Group VII	CH ₂ Br ₂	HBFC-21 B2	Dibromofluoromethane	1,00	(*)
	CHF ₂ Br	HBFC-22 B1	Bromodifluoromethane	0,74	380
	CH ₂ FBr	HBFC-31 B1	Bromofluoromethane	0,73	(*)
	C ₂ HFBr ₄	HBFC-121 B4	Tetrabromofluoroethane	0,8	(*)
	C ₂ HF ₂ Br ₃	HBFC-122 B3	Tribromodifluoroethane	1,8	(*)
	C ₂ HF ₃ Br ₂	HBFC-123 B2	Dibromotrifluoroethane	1,6	(*)
	C ₂ HF ₄ Br	HBFC-124 B1	Bromotetrafluoroethane	1,2	201
	C ₂ H ₂ FBr ₃	HBFC-131 B3	Tribromofluoroethane	1,1	(*)
	C ₂ H ₂ F ₂ Br ₂	HBFC-132 B2	Dibromodifluoroethane	1,5	(*)
	C ₂ H ₂ F ₃ Br	HBFC-133 B1	Bromotrifluoroethane	1,6	177
	C ₂ H ₃ FBr ₂	HBFC-141 B2	Dibromofluoroethane	1,7	(*)
	C ₂ H ₃ F ₂ Br	HBFC-142 B1	Bromodifluoroethane	1,1	(*)
	C ₂ H ₄ FBr	HBFC-151 B1	Bromofluoroethane	0,1	(*)
	C ₃ HFBr ₆	HBFC-221 B6	Hexabromofluoropropane	1,5	(*)
	C ₃ HF ₂ Br ₅	HBFC-222 B5	Pentabromodifluoropropane	1,9	(*)
	C ₃ HF ₃ Br ₄	HBFC-223 B4	Tetrabromotrifluoropropane	1,8	(*)
	C ₃ HF ₄ Br ₃	HBFC-224 B3	Tribromotetrafluoropropane	2,2	(*)
	C ₃ HF ₅ Br ₂	HBFC-225 B2	Dibromopentafluoropropane	2,0	(*)
	C ₃ HF ₆ Br	HBFC-226 B1	Bromohexafluoropropane	3,3	(*)
	C ₃ H ₂ FBr ₅	HBFC-231 B5	Pentabromofluoropropane	1,9	(*)
	C ₃ H ₂ F ₂ Br ₄	HBFC-232 B4	Tetrabromodifluoropropane	2,1	(*)

Group	Substance			Ozone-depleting potential (ODP) ⁽¹⁾	Global warming potential (GWP) ⁽²⁾
	C ₃ H ₂ F ₃ Br ₃	HBFC-233 B3	Tribromotrifluoropropane	5,6	(*)
	C ₃ H ₂ F ₄ Br ₂	HBFC-234 B2	Dibromotetrafluoropropane	7,5	(*)
	C ₃ H ₂ F ₅ Br	HBFC-235 B1	Bromopentafluoropropane	1,4	(*)
	C ₃ H ₃ FBr ₄	HBFC-241 B4	Tetrabromofluoropropane	1,9	(*)
	C ₃ H ₃ F ₂ Br ₃	HBFC-242 B3	Tribromodifluoropropane	3,1	(*)
	C ₃ H ₃ F ₃ Br ₂	HBFC-243 B2	Dibromotrifluoropropane	2,5	(*)
	C ₃ H ₃ F ₄ Br	HBFC-244 B1	Bromotetrafluoropropane	4,4	(*)
	C ₃ H ₄ FBr ₃	HBFC-251 B1	Tribromofluoropropane	0,3	(*)
	C ₃ H ₄ F ₂ Br ₂	HBFC-252 B2	Dibromodifluoropropane	1,0	(*)
	C ₃ H ₄ F ₃ Br	HBFC-253 B1	Bromotrifluoropropane	0,8	(*)
	C ₃ H ₅ FBr ₂	HBFC-261 B2	Dibromofluoropropane	0,4	(*)
	C ₃ H ₅ F ₂ Br	HBFC-262 B1	Bromodifluoropropane	0,8	(*)
	C ₃ H ₆ FBr	HBFC-271 B1	Bromofluoropropane	0,7	(*)
Group VIII	CHFCl ₂	HCFC-21 ⁽⁴⁾	Dichlorofluoromethane	0,040	160
	CHF ₂ Cl	HCFC-22 ⁽³⁾	Chlorodifluoromethane	0,055	1 960
	CH ₂ FCl	HCFC-31	Chlorofluoromethane	0,020	79,4
	C ₂ HFCl ₄	HCFC-121	Tetrachlorofluoroethane	0,040	58,3
	C ₂ HF ₂ Cl ₃	HCFC-122	Trichlorodifluoroethane	0,080	56,4
	C ₂ HF ₃ Cl ₂	HCFC-123 ⁽³⁾	Dichlorotrifluoroethane	0,020	90,4
	C ₂ HF ₄ Cl	HCFC-124 ⁽³⁾	Chlorotetrafluoroethane	0,022	597
	C ₂ H ₂ FCl ₃	HCFC-131	Trichlorofluoroethane	0,050	30 ⁽³⁾

Group	Substance			Ozone-depleting potential (ODP) ⁽¹⁾	Global warming potential (GWP) ⁽²⁾
	C ₂ H ₂ F ₂ Cl ₂	HCFC-132	Dichlorodifluoroethane	0,050	122
	C ₂ H ₂ F ₃ Cl	HCFC-133	Chlorotrifluoroethane	0,060	275 ⁽⁴⁾
	C ₂ H ₃ FCl ₂	HCFC-141	Dichlorofluoroethane	0,070	46,6
	CH ₃ CFCl ₂	HCFC-141b ⁽³⁾	1,1-Dichloro-1-fluoroethane	0,110	860
	C ₂ H ₃ F ₂ Cl	HCFC-142	Chlorodifluoroethane	0,070	175 ⁽⁴⁾
	CH ₃ CF ₂ Cl	HCFC-142b ⁽³⁾	1-Chloro- 1,1-difluoroethane	0,065	2 300
	C ₂ H ₄ FCl	HCFC-151	Chlorofluoroethane	0,005	10 ⁽⁴⁾
	C ₃ HFCl ₆	HCFC-221	Hexachlorofluoropropane	0,070	110 ⁽⁴⁾
	C ₃ HF ₂ Cl ₅	HCFC-222	Pentachlorodifluoropropane	0,090	500 ⁽⁴⁾
	C ₃ HF ₃ Cl ₄	HCFC-223	Tetrachlorotrifluoropropane	0,080	695 ⁽⁴⁾
	C ₃ HF ₄ Cl ₃	HCFC-224	Trichlorotetrafluoropropane	0,090	1 090 ⁽⁴⁾
	C ₃ HF ₅ Cl ₂	HCFC-225	Dichloropentafluoropropane	0,070	1 560 ⁽⁴⁾
	CF ₃ CF ₂ CHCl ₂	HCFC-225ca ⁽³⁾	3,3-Dichloro-1,1,1,2,2-pentafluoropropane	0,025	137
	CF ₂ ClCF ₂ CHClF	HCFC-225cb ⁽³⁾	1,3-Dichloro-1,1,2,2,3-pentafluoropropane	0,033	568
	C ₃ HF ₆ Cl	HCFC-226	Chlorohexafluoropropane	0,100	2 455 ⁽⁴⁾
	C ₃ H ₂ FCl ₅	HCFC-231	Pentachlorofluoropropane	0,090	350 ⁽⁴⁾
	C ₃ H ₂ F ₂ Cl ₄	HCFC-232	Tetrachlorodifluoropropane	0,100	690 ⁽⁴⁾
	C ₃ H ₂ F ₃ Cl ₃	HCFC-233	Trichlorotrifluoropropane	0,230	1 495 ⁽⁴⁾
	C ₃ H ₂ F ₄ Cl ₂	HCFC-234	Dichlorotetrafluoropropane	0,280	3 490 ⁽⁴⁾
	C ₃ H ₂ F ₅ Cl	HCFC-235	Chloropentafluoropropane	0,520	5 320 ⁽⁴⁾

Group	Substance			Ozone-depleting potential (ODP) ⁽¹⁾	Global warming potential (GWP) ⁽²⁾
	C ₃ H ₃ FC ₄	HCFC-241	Tetrachlorofluoropropane	0,090	450 ⁽⁴⁾
	C ₃ H ₃ F ₂ Cl ₃	HCFC-242	Trichlorodifluoropropane	0,130	1 025 ⁽⁴⁾
	C ₃ H ₃ F ₃ Cl ₂	HCFC-243	Dichlorotrifluoropropane	0,120	2 060 ⁽⁴⁾
	C ₃ H ₃ F ₄ Cl	HCFC-244	Chlorotetrafluoropropane	0,140	3 360 ⁽⁴⁾
	C ₃ H ₄ FC ₃	HCFC-251	Trichlorofluoropropane	0,010	70 ⁽⁴⁾
	C ₃ H ₄ F ₂ Cl ₂	HCFC-252	Dichlorodifluoropropane	0,040	275 ⁽⁴⁾
	C ₃ H ₄ F ₃ Cl	HCFC-253	Chlorotrifluoropropane	0,030	665 ⁽⁴⁾
	C ₃ H ₅ FC ₂	HCFC-261	Dichlorofluoropropane	0,020	84 ⁽⁴⁾
	C ₃ H ₅ F ₂ Cl	HCFC-262	Chlorodifluoropropane	0,020	227 ⁽⁴⁾
	C ₃ H ₆ FC	HCFC-271	Chlorofluoropropane	0,030	340 ⁽⁴⁾
Group IX	CH ₂ BrCl	BCM	Bromochloromethane	0,12	4,74

⁽¹⁾ The figures relating to ODP are estimates based on existing knowledge and will be reviewed and revised periodically in the light of decisions taken by the Parties.

⁽²⁾ Based on the Sixth Assessment Report, Chapter 7: The Earth's energy budget, climate feedbacks, and climate sensitivity – Supplementary Material adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

^(*) Default value, GWP not yet available.

⁽³⁾ This formula does not refer to 1,1,2-trichloroethane.

⁽⁴⁾ Identifies the most commercially viable substance as prescribed in the Protocol.

⁽⁵⁾ Scientific Assessment of Ozone Depletion: 2018; Appendix A Summary of Abundances, Lifetimes, Ozone Depletion Potentials (ODPs), Radiative Efficiencies (REs), Global Warming Potentials (GWPs), and Global Temperature change Potentials (GTPs).

ANNEX II

OZONE-DEPLETING SUBSTANCES REFERRED TO IN ARTICLE 2, POINT (A), NOT CONTROLLED UNDER THE PROTOCOL ⁽¹⁾

Substance		Ozone-depleting potential (ODP) ⁽¹⁾	Global warming potential (GWP) ⁽²⁾
C ₃ H ₇ Br	1-Bromopropane (n-propyl bromide)	0,02 – 0,10	0,052
C ₂ H ₅ Br	Bromoethane (ethyl bromide)	0,1 – 0,2	0,487
CF ₃ I	Trifluoroiodomethane (trifluoromethyl iodide)	0,01 – 0,02	(*)
CH ₃ Cl	Chloromethane (methyl chloride)	0,02	5,54
C ₃ H ₂ BrF ₃	2-bromo-3,3,3-trifluoroprop-1-en (2-BTP)	< 0,05 ⁽³⁾	(*)
CH ₂ Cl ₂	Dichloromethane (DCM)	non zero ⁽⁴⁾	11,2
C ₂ Cl ₄	Tetrachloroethene (Perchloroethylene (PCE))	0,006 – 0,007 ⁽³⁾	(*)

⁽¹⁾ The figures relating to ODP are estimates based on existing knowledge and will be reviewed and revised periodically in the light of decisions taken by the Parties.

⁽²⁾ Based on the Sixth Assessment Report, Chapter 7: The Earth's energy budget, climate feedbacks, and climate sensitivity – Supplementary Material adopted by the Intergovernmental Panel on Climate Change, unless otherwise indicated.

(*) Default value, GWP not yet available.

⁽³⁾ Scientific Assessment of Ozone Depletion: 2018; Appendix A Summary of Abundances, Lifetimes, Ozone Depletion Potentials (ODPs), Radiative Efficiencies (REs), Global Warming Potentials (GWPs), and Global Temperature change Potentials (GTPs).

⁽⁴⁾ New Ozone-Depleting substances that have been reported by the Parties: Decisions XIII/5, X/8 and IX/24 (Updated May 2012). https://ozone.unep.org/resources?term_node_tid_depth%5B883%5D=883

⁽¹⁾ This Annex includes the ozone-depleting substances and their isomers. As per Article 2, point (a), mixtures containing the ozone-depleting substances listed in this Annex are considered as ozone-depleting substances covered by this Regulation.