

# COMMISSION OF THE EUROPEAN COMMUNITIES

COM(93) 102 final

Brussels, 16 March 1993

Proposal for a

COUNCIL DECISION

concerning the conclusion of the amendment to the Montreal Protocol  
on substances that deplete the ozone layer as adopted in  
November 1992 in Copenhagen by the Parties to the Protocol

(presented by the Commission)

## EXPLANATORY MEMORANDUM

1. The Community concluded the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer through the Council Decision 88/540(EEC) of 14 October 1988 (1). The Community also concluded the amendment to the Montreal Protocol as adopted in London in 1990 through the Council Decision 91/690(EEC) of 12 December 1991 (2).
2. The Scientific Evaluation Group of the United Nations Environment Programme (UNEP) found the hole in the ozone layer in the Antarctic in 1991 to be as deep and extensive as the holes observed in 1987, 1989 and 1990. For the first time, observations in the Antarctic confirmed that the loss of ozone coincides with an increase in ultraviolet radiation at ground level. Moreover, the stratospheric ozone layer is being depleted more rapidly than expected and ozone losses are now being observed over densely populated areas of Europe and North America. The satellite-mounted TOMS spectrometer measured ozone losses from December to March of  $- 5.6\% \pm 3.5\%$  per decade over the period 1979 to 1991 at a latitude of 45° North. The concentration of chlorine in the stratosphere is expected to increase from the present level of 3.3 ppbv (parts per billion volume) to 4.1 ppbv in the year 2000. This increase will occur even if all the Parties apply the Protocol as amended in 1990.
3. In the light of this scientific evidence, the Fifth Action Programme underlines the necessity to further accelerate the world wide phase down of ozone depleting substances and calls on all Parties to the Protocol to adopt stricter control measures than those decided in 1990. The Fifth Action Programme also refers to the progressive control measures the Community has adopted beyond those foreseen by the Protocol (3).
4. On the basis of the negotiating directives adopted by the Council (4), the Commission, in collaboration with the Member States, participated in the negotiations leading to the second amendment to the Protocol in November 1992 in Copenhagen. The Commission proposal for these negotiating directives have taken into account the results of prior consultations with industry.
5. The outcome of the negotiations corresponds largely to the positions defended by the Community and the Member States: The Parties to the Protocol have decided in Copenhagen, inter alia, to strengthen existing controls on chlorofluorocarbons, halons, carbon tetrachloride and 1,1,1-trichloroethane, and to extend the controls to methyl bromide, hydrobromofluorocarbons and hydrochlorofluorocarbons. All these substances will be banned on a worldwide basis by 1 January 1996 except hydrochlorofluorocarbons, which are temporarily needed to phase out the other substances, and methyl bromide, on which there are ongoing investigations.

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(1) OJ L 297, 31 October 1988 P8.

(2) OJ L 377, 31 December 1991 P28.

(3) COM(92) 23 final VOL II, 27 March 1992 p. 41, 42, 81 and 84

(4) Doc 5431/92 ENV 73.

6. The ratification of the Copenhagen agreement by the Community will not in itself incur any costs within the Community. The internal implementation of this second amendment to the Protocol is done through Regulation (EEC) No 3952/92 (5), as regards the phase down of chlorofluorocarbons, halons, carbon tetrachloride and 1,1,1-trichloroethane, and through a new Regulation to be proposed by the Commission early in 1993, as regards the control on methyl bromide, hydrobromofluorocarbons and hydrochlorofluorocarbons.
7. The Community has participated as a major Party to the Protocol in all international negotiations in this field since the beginning in the mid '80s and acquired a leadership position in the ozone layer protection. It is therefore essential that the Community ratify this amendment as soon as possible in order to maintain this leadership position through a single strong position vis-à-vis its key negotiation partners, like the US, Japan, the Russian Federation and developing countries.
8. The Commission Proposal for a Council Decision concerning the conclusion of the second amendment to the Montreal Protocol is based on Article 130s, just as in 1990 the Commission Proposal for the ratification of the first amendment, since the Protocol is an environmental agreement aiming at restricting the production and the consumption of ozone depleting substances. Article 113 has been added as a joint legal basis in so far as the Montreal Protocol includes trade provisions, which are to be applied to non-signatories of the Protocol. The proposed legal basis is without prejudice to the question of what is the appropriate legal basis for the Community Regulation for the implementation of the second amendment of the Protocol.

Proposal for a Council Decision .../.../EEC  
of .....

concerning the conclusion of the amendment to the Montreal Protocol  
on substances that deplete the ozone layer as adopted in  
November 1992 in Copenhagen by the Parties to the Protocol

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,  
and in particular Article 130S and 113 thereof,

Having regard to the Proposal from the Commission,

Having regard to the opinion of the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Whereas it is established that continued emissions of  
chlorofluorocarbons, halons, carbon tetrachloride, 1,1,1-trichloroethane,  
methyl bromide and hydrobromofluorocarbons at current levels cause  
significant damage to the ozone layer; whereas there is an international  
consensus that significant reductions in both production and consumption  
of such substances are necessary;

Whereas hydrochlorofluorocarbons have a much lower ozone depleting  
potential than the above substances and are in certain applications  
substitutes for them, but have to be used in a careful manner because of  
their impact on the ozone layer;

Whereas the Community together with all of its Member States have signed  
the Vienna Convention for the protection of the ozone layer, hereinafter  
referred as the 'Vienna Convention';

Whereas a Protocol supplementary to the Vienna Convention, the Montreal  
Protocol on substances that deplete the ozone layer, hereinafter referred  
to as the 'Montreal Protocol', was negotiated and adopted on 16 September  
1987; whereas the Protocol has been signed by the Community and by all of  
its Member States; whereas a first amendment to the Protocol was adopted  
on 29 June 1990 in London;

Whereas the Community, in view of the responsibilities for the  
environment and trade, has approved, by Decision 88/540/EEC<sup>(3)</sup> the  
Vienna Convention and the Montreal Protocol, and by Decision 91/690 EEC  
the first amendment to the Protocol;

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(3) O.J. L 297, 31.10.1988, p. 8

Whereas the most recent scientific evidence indicates that for the adequate protection of the ozone layer a higher degree of control of chlorofluorocarbons, halons, carbon tetrachloride and 1,1,1-trichloroethane is required than that provided by the Montreal Protocol as amended in 1990; whereas the same evidence indicates that additional controls should be placed on methyl bromide, hydrobromofluorocarbons and hydrochlorofluorocarbons;

Whereas a second amendment and adjustments to the Montreal Protocol implementing these controls have been adopted in Copenhagen in November 1992 and only the amendment needs to be approved;

Whereas it is necessary for the protection, promotion and improvement of the environment to bring into force the second amendment to the Montreal Protocol, which is based on the principle of preventive action to avoid further damage to the ozone layer and on the scientific and technical data which were available at the time of its adoption;

Whereas, to that end, the Community must approve this second amendment.

Whereas it is, in particular, necessary for the Community and all Member States to approve the second amendment to the Montreal Protocol because some of its provisions can be carried out only if the Community and all its Member States approve it;

Whereas in order for all the obligations under the second amendment to be appropriately carried out, it is necessary that all Member States should also approve it;

Whereas this amendment has to be ratified by at least twenty Parties to the Protocol for its timely entry into force on 1 January 1994, all Member States should conclude as rapidly as possible their procedures for ratification of the second amendment, with a view to permit the deposit, as far as possible simultaneously and in any case before the above date, of the instruments of approval, acceptance or ratification by the Community and the Member States,

HAS ADOPTED THIS DECISION:

#### Article 1

The second amendment to the Montreal Protocol on substances that deplete the ozone layer as adopted in Copenhagen is hereby approved on behalf of the Community.

The text of this amendment appears as an Annex to this Decision.

Article 2

The President of the Council shall deposit the act of approval of this second amendment on behalf of the Community with the Secretary General of the United Nations in accordance with Article 13 of the Vienna Convention, as read in conjunction with Article 3 of the second amendment to the Montreal Protocol.

Article 3

Member States shall take the necessary steps to permit the deposit, as far as possible simultaneously, before 30 November 1993 of the instruments of ratification, acceptance or approval of the second amendment to the Montreal Protocol by the Community and the Member States.

Member States will inform the Commission, before 31 October 1993 of their decision to ratify or of the prospective date of finalization of their ratification procedures. The Commission, in cooperation with Member States, shall arrange a date for the simultaneous deposit of the instruments which shall in any case be before 31 December 1993.

Article 4

This Decision is addressed to the Member States.

For the Council

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AMENDMENT TO THE MONTREAL PROTOCOL ON SUBSTANCES  
THAT DEplete THE OZONE LAYER

ARTICLE 1: AMENDMENT

A. *Article 1, paragraph 4*

In paragraph 4 of Article 1 of the Protocol, for the words:

or in Annex B

there shall be substituted:

, Annex B, Annex C or Annex E

B. *Article 1, paragraph 9*

Paragraph 9 of Article 1 of the Protocol shall be deleted.

C. *Article 2, paragraph 5*

In paragraph 5 of Article 2 of the Protocol, after the words:

Articles 2A to 2E

there shall be added:

and Article 2H

D. *Article 2, paragraph 5 bis*

The following paragraph shall be inserted after paragraph 5 of Article 2 of the Protocol:

*5 bis.* Any Party not operating under paragraph 1 of Article 5 may, for one or more control periods, transfer to another such Party any portion of its calculated level of consumption set out in Article 2F, provided that the calculated level of consumption of controlled substances in Group I of Annex A of the Party transferring the portion of its calculated level of consumption did not exceed 0.25 kilograms per capita in 1989 and that the total combined calculated levels of consumption of the Parties concerned do not exceed the consumption limits set out in Article 2F. Such transfer of consumption shall be notified to the Secretariat by each of the Parties concerned, stating the terms of such transfer and the period for which it is to apply.

E. *Article 2, paragraphs 8 (a) and 11*

In paragraphs 8 (a) and 11 of Article 2 of the Protocol, for the words:

Articles 2A to 2E

there shall be substituted each time they occur:

Articles 2A to 2H

/...

F. Article 2, paragraph 9(a)(i)

In paragraph 9(a)(i) of Article 2 of the Protocol, for the words:

and/or Annex B

there shall be substituted:

, Annex B, Annex C and/or Annex E

G. Article 2F: Hydrochlorofluorocarbons

The following Article shall be inserted after Article 2E of the Protocol:

Article 2F: Hydrochlorofluorocarbons

1. Each Party shall ensure that for the twelve-month period commencing on 1 January 1996, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Group I of Annex C does not exceed, annually, the sum of:

(a) Three point one per cent of its calculated level of consumption in 1989 of the controlled substances in Group I of Annex A; and

(b) Its calculated level of consumption in 1989 of the controlled substances in Group I of Annex C.

2. Each Party shall ensure that for the twelve-month period commencing on 1 January 2004, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Group I of Annex C does not exceed, annually, sixty-five per cent of the sum referred to in paragraph 1 of this Article.

3. Each Party shall ensure that for the twelve-month period commencing on 1 January 2010, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Group I of Annex C does not exceed, annually, thirty-five per cent of the sum referred to in paragraph 1 of this Article.

4. Each Party shall ensure that for the twelve-month period commencing on 1 January 2015, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Group I of Annex C does not exceed, annually, ten per cent of the sum referred to in paragraph 1 of this Article.

5. Each Party shall ensure that for the twelve-month period commencing on 1 January 2020, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Group I of Annex C does not exceed, annually, zero point five per cent of the sum referred to in paragraph 1 of this Article.

6. Each Party shall ensure that for the twelve-month period commencing on 1 January 2030, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Group I of Annex C does not exceed zero.

7. As of 1 January 1996, each Party shall endeavour to ensure that:

(a) The use of controlled substances in Group I of Annex C is limited to those applications where other more environmentally suitable alternative substances or technologies are not available;



(b) The use of controlled substances in Group I of Annex C is not outside the areas of application currently met by controlled substances in Annexes A, B and C, except in rare cases for the protection of human life or human health; and

(c) Controlled substances in Group I of Annex C are selected for use in a manner that minimizes ozone depletion, in addition to meeting other environmental, safety and economic considerations.

H. Article 2G: Hydrobromofluorocarbons

The following Article shall be inserted after Article 2F of the Protocol:

Article 2G: Hydrobromofluorocarbons

Each Party shall ensure that for the twelve-month period commencing on 1 January 1996, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substances in Group II of Annex C does not exceed zero. Each Party producing the substances shall, for the same periods, ensure that its calculated level of production of the substances does not exceed zero. This paragraph will apply save to the extent that the Parties decide to permit the level of production or consumption that is necessary to satisfy uses agreed by them to be essential.

I. Article 2H: Methyl Bromide

The following Article shall be inserted after Article 2G of the Protocol:

Article 2H: Methyl Bromide

Each Party shall ensure that for the twelve-month period commencing on 1 January 1995, and in each twelve-month period thereafter, its calculated level of consumption of the controlled substance in Annex E does not exceed, annually, its calculated level of consumption in 1991. Each Party producing the substance shall, for the same periods, ensure that its calculated level of production of the substance does not exceed, annually, its calculated level of production in 1991. However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to ten per cent of its calculated level of production in 1991. The calculated levels of consumption and production under this Article shall not include the amounts used by the Party for quarantine and pre-shipment applications.

J. Article 3

In Article 3 of the Protocol, for the words:

2A to 2E

there shall be substituted:

2A to 2H

and for the words

or Annex B

there shall be substituted each time they occur:

, Annex B, Annex C or Annex E

**K. Article 4, paragraph 1 ter**

The following paragraph shall be inserted after paragraph 1 bis of Article 4 of the Protocol:

1 ter. Within one year of the date of entry into force of this paragraph, each Party shall ban the import of any controlled substances in Group II of Annex C from any State not party to this Protocol.

**L. Article 4, paragraph 2 ter**

The following paragraph shall be inserted after paragraph 2 bis of Article 4 of the Protocol:

2 ter. Commencing one year after the date of entry into force of this paragraph; each Party shall ban the export of any controlled substances in Group II of Annex C to any State not party of this Protocol.

**M. Article 4, paragraph 3 ter**

The following paragraph shall be inserted after paragraph 3 bis of Article 4 of the Protocol:

3 ter. Within three years of the date of entry into force of this paragraph, the Parties shall, following the procedures in Article 10 of the Convention, elaborate in an annex a list of products containing controlled substances in Group II of Annex C. Parties that have not objected to the annex in accordance with those procedures shall ban, within one year of the annex having become effective, the import of those products from any State not party to this Protocol.

**N. Article 4, paragraph 4 ter**

The following paragraph shall be inserted after paragraph 4 bis of Article 4 of the Protocol:

4 ter. Within five years of the date of entry into force of this paragraph, the Parties shall determine feasibility of banning or restricting, from States not party to this Protocol, the import of products produced with, but not containing, controlled substances in Group II of Annex C. If determined feasible, the Parties shall, following the procedures in Article 10 of the Convention, elaborate in an annex a list of such products. Parties that have not objected to the annex in accordance with those procedures shall ban or restrict, within one year of the annex having become effective, the import of those products from any State not party to this Protocol.

**O. Article 4, paragraphs 5, 6 and 7**

In paragraphs 5, 6 and 7 of Article 4 of the Protocol, for the words:

controlled substances

there shall be substituted:

controlled substances in Annexes A and B and Group II of Annex C

**P. Article 4, paragraph 8**

In paragraph 8 of Article 4 of the Protocol, for the words:

referred to in paragraphs 1, 1 bis, 3, 3 bis, 4 and 4 bis and exports referred to in paragraphs 2 and 2 bis

there shall be substituted:

and exports referred to in paragraphs 1 to 4 *ter* of this Article

and after the words:

Articles 2A to 2E

there shall be added:

, Article 2G

*Q. Article 4, paragraph 10*

The following paragraph shall be inserted after paragraph 9 of Article 4 of the Protocol:

10. By 1 January 1996, the Parties shall consider whether to amend this Protocol in order to extend the measures in this Article to trade in controlled substances in Group I of Annex C and in Annex E with States not party to the Protocol.

*R. Article 5, paragraph 1*

The following words shall be added at the end of paragraph 1 of Article 5 of the Protocol:

, provided that any further amendments to the adjustments or Amendments adopted at the Second Meeting of the Parties in London, 29 June 1990, shall apply to the Parties operating under this paragraph after the review provided for in paragraph 8 of this Article has taken place and shall be based on the conclusions of that review.

*S. Article 5, paragraph 1 bis*

The following paragraph shall be added after paragraph 1 of Article 5 of the Protocol:

1 bis. The Parties shall, taking into account the review referred to in paragraph 8 of this Article, the assessments made pursuant to Article 6 and any other relevant information, decide by 1 January 1996, through the procedure set forth in paragraph 9 of Article 2:

(a) With respect to paragraphs 1 to 6 of Article 2F, what base year, initial levels, control schedules and phase-out date for consumption of the controlled substances in Group I of Annex C will apply to Parties operating under paragraph 1 of this Article;

(b) With respect to Article 2G, what phase-out date for production and consumption of the controlled substances in Group II of Annex C will apply to Parties operating under paragraph 1 of this Article; and

(c) With respect to Article 2H, what base year, initial levels and control schedules for consumption and production of the controlled substance in Annex E will apply to Parties operating under paragraph 1 of this Article.

*T. Article 5, paragraph 4*

In paragraph 4 of Article 5 of the Protocol, for the words:

Articles 2A to 2E

there shall be substituted:

Articles 2A to 2H

U. Article 5, paragraph 5

In paragraph 5 of Article 5 of the Protocol, after the words:

set out in Articles 2A to 2E

there shall be added:

, and any control measures in Articles 2F to 2H that are decided pursuant to paragraph 1 bis of this Article,

V. Article 5, paragraph 6

In paragraph 6 of Article 5 of the Protocol, after the words:

obligations laid down in Articles 2A to 2E

there shall be added:

, or any or all obligations in Articles 2F to 2H that are decided pursuant to paragraph 1 bis of this Article,

W. Article 6

The following words shall be deleted from Article 6 of the Protocol:

Articles 2A to 2E, and the situation regarding production, imports and exports of the transitional substances in Group I of Annex C

and replaced by

Articles 2A to 2H

X. Article 7, paragraphs 2 and 3

Paragraphs 2 and 3 of Article 7 of the Protocol shall be replaced by the following:

2. Each Party shall provide to the Secretariat statistical data on its production, imports and exports of each of the controlled substances

- in Annexes B and C, for the year 1989;
- in Annex E, for the year 1991,

or the best possible estimates of such data where actual data are not available, not later than three months after the date when the provisions set out in the Protocol with regard to the substances in Annexes B, C and E respectively enter into force for that Party.

3. Each Party shall provide to the Secretariat statistical data on its annual production (as defined in paragraph 5 of Article 1) of each of the controlled substances listed in Annexes A, B, C and E and, separately, for each substance,

- Amounts used for feedstocks,
- Amounts destroyed by technologies approved by the Parties, and
- Imports from and exports to Parties and non-Parties respectively,

for the year during which provisions concerning the substances in Annexes A, B, C and E respectively entered into force for that Party and for each year thereafter. Data shall be forwarded not later than nine months after the end of the year to which the data relate.

Y. Article 7, paragraph 3 bis

The following paragraph shall be inserted after paragraph 3 of Article 7 of the Protocol:

3 bis. Each Party shall provide to the Secretariat separate statistical data of its annual imports and exports of each of the controlled substances listed in Group II of Annex A and Group I of Annex C that have been recycled.

Z. Article 7, paragraph 4

In paragraph 4 of Article 7 of the Protocol, for the words:

in paragraphs 1, 2 and 3

there shall be substituted:

in paragraphs 1, 2, 3 and 3 bis

AA. Article 9, paragraph 1 (a)

The following words shall be deleted from paragraph 1 (a) of Article 9 of the Protocol:

and transitional

BB. Article 10, paragraph 1

In paragraph 1 of Article 10 of the Protocol, after the words:

Articles 2A to 2E

there shall be added:

and any control measures in Articles 2F to 2H that are decided pursuant to paragraph 1 bis of Article 5.

CC. Article 11, paragraph 4 (g)

The following words shall be deleted from paragraph 4 (g) of Article 11 of the Protocol:

and the situation regarding transitional substances

DD. Article 17

In Article 17 of the Protocol, for the words:

Articles 2A to 2E

there shall be substituted:

Articles 2A to 2H

EE. Annexes

1. Annex C

The following annex shall replace Annex C of the Protocol:

Annex C

Controlled substances

Group	Substance	Number of Isomers	Ozone Depleting Potential*
<i>Group I</i>			
	CHFC1 <sub>2</sub> (HCFC-21)**	1	0.04
	CHF <sub>2</sub> Cl (HCFC-22)**	1	0.055
	CH <sub>2</sub> FCl (HCFC-31)	1	0.02
	C <sub>2</sub> HFC1 <sub>4</sub> (HCFC-121)	2	0.01 - 0.04
	C <sub>2</sub> HF <sub>2</sub> Cl <sub>3</sub> (HCFC-122)	3	0.02 - 0.08
	C <sub>2</sub> HF <sub>3</sub> Cl <sub>2</sub> (HCFC-123)	3	0.02 - 0.06
	CHCl <sub>2</sub> CF <sub>3</sub> (HCFC-123)**	-	0.02
	C <sub>2</sub> HF <sub>2</sub> Cl (HCFC-124)	2	0.02 - 0.04
	CHFC1CF <sub>3</sub> (HCFC-124)**	-	0.022
	C <sub>2</sub> H <sub>2</sub> FCl <sub>3</sub> (HCFC-131)	3	0.007 - 0.05
	C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Cl <sub>2</sub> (HCFC-132)	4	0.008 - 0.05
	C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Cl (HCFC-133)	3	0.02 - 0.06
	C <sub>2</sub> H <sub>2</sub> FCl <sub>2</sub> (HCFC-141)	3	0.005 - 0.07
	CH <sub>2</sub> CFCl <sub>2</sub> (HCFC-141b)**	-	0.11
	C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Cl (HCFC-142)	3	0.008 - 0.07
	CH <sub>2</sub> CF <sub>2</sub> Cl (HCFC-142b)**	-	0.065
	C <sub>2</sub> H <sub>2</sub> FCl (HCFC-151)	2	0.003 - 0.005
	C <sub>3</sub> HFC1 <sub>6</sub> (HCFC-221)	5	0.015 - 0.07
	C <sub>3</sub> HF <sub>2</sub> Cl <sub>5</sub> (HCFC-222)	9	0.01 - 0.09
	C <sub>3</sub> HF <sub>3</sub> Cl <sub>4</sub> (HCFC-223)	12	0.01 - 0.08
	C <sub>3</sub> HF <sub>4</sub> Cl <sub>3</sub> (HCFC-224)	12	0.01 - 0.09
	C <sub>3</sub> HF <sub>5</sub> Cl <sub>2</sub> (HCFC-225)	9	0.02 - 0.07
	CF <sub>3</sub> CF <sub>2</sub> CHCl <sub>2</sub> (HCFC-225ca)**	-	0.025
	CF <sub>3</sub> ClCF <sub>2</sub> CHClF (HCFC-225cb)**	-	0.033
	C <sub>3</sub> H <sub>2</sub> FCl (HCFC-226)	5	0.02 - 0.10
	C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Cl <sub>5</sub> (HCFC-231)	9	0.05 - 0.09
	C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Cl <sub>4</sub> (HCFC-232)	16	0.008 - 0.10
	C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Cl <sub>3</sub> (HCFC-233)	18	0.007 - 0.23
	C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Cl <sub>2</sub> (HCFC-234)	16	0.01 - 0.28
	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> Cl (HCFC-235)	9	0.03 - 0.52
	C <sub>3</sub> H <sub>3</sub> FCl <sub>4</sub> (HCFC-241)	12	0.004 - 0.09
	C <sub>3</sub> H <sub>3</sub> F <sub>2</sub> Cl <sub>3</sub> (HCFC-242)	18	0.005 - 0.13

\* 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.

Group	Substance	Number of Isomers	Ozone Depleting Potential*
	C <sub>3</sub> H <sub>3</sub> F <sub>3</sub> Cl <sub>2</sub> (HCFC-243)	18	0.007 - 0.12
	C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> Cl (HCFC-244)	12	0.009 - 0.14
	C <sub>3</sub> H <sub>4</sub> FCl <sub>3</sub> (HCFC-251)	12	0.001 - 0.01
	C <sub>3</sub> H <sub>4</sub> F <sub>2</sub> Cl <sub>2</sub> (HCFC-252)	16	0.005 - 0.04
	C <sub>3</sub> H <sub>4</sub> F <sub>3</sub> Cl (HCFC-253)	12	0.003 - 0.03
	C <sub>3</sub> H <sub>5</sub> FCl <sub>2</sub> (HCFC-261)	9	0.002 - 0.02
	C <sub>3</sub> H <sub>5</sub> F <sub>2</sub> Cl (HCFC-262)	9	0.002 - 0.02
	C <sub>3</sub> H <sub>6</sub> FCl (HCFC-271)	5	0.001 - 0.03

Group II

CH <sub>2</sub> FBr <sub>2</sub>		1	1.00
CHF <sub>2</sub> Br	(HBFC-22B1)	1	0.74
CH <sub>2</sub> FBr		1	0.73
C <sub>2</sub> H <sub>4</sub> FBr <sub>4</sub>		2	0.3 - 0.8
C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>3</sub>		3	0.5 - 1.8
C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Br <sub>2</sub>		3	0.4 - 1.6
C <sub>2</sub> H <sub>2</sub> F <sub>4</sub> Br		2	0.7 - 1.2
C <sub>2</sub> H <sub>2</sub> FBr <sub>3</sub>		3	0.1 - 1.1
C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>2</sub>		4	0.2 - 1.5
C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Br		3	0.7 - 1.6
C <sub>2</sub> H <sub>2</sub> FBr <sub>2</sub>		3	0.1 - 1.7
C <sub>2</sub> H <sub>3</sub> F <sub>2</sub> Br		3	0.2 - 1.1
C <sub>2</sub> H <sub>4</sub> FBr		2	0.07- 0.1
C <sub>3</sub> H <sub>4</sub> FBr <sub>6</sub>		5	0.3 - 1.5
C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>5</sub>		9	0.2 - 1.9
C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Br <sub>4</sub>		12	0.3 - 1.8
C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Br <sub>3</sub>		12	0.5 - 2.2
C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Br <sub>2</sub>		9	0.9 - 2.0
C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> Br		5	0.7 - 3.3
C <sub>3</sub> H <sub>2</sub> FBr <sub>5</sub>		9	0.1 - 1.9
C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Br <sub>4</sub>		16	0.2 - 2.1
C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Br <sub>3</sub>		18	0.2 - 5.6
C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Br <sub>2</sub>		16	0.3 - 7.5
C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Br		8	0.9 - 14
C <sub>3</sub> H <sub>2</sub> FBr <sub>4</sub>		12	0.08- 1.9
C <sub>3</sub> H <sub>3</sub> F <sub>2</sub> Br <sub>3</sub>		18	0.1 - 3.1
C <sub>3</sub> H <sub>3</sub> F <sub>3</sub> Br <sub>2</sub>		18	0.1 - 2.5
C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> Br		12	0.3 - 4.4
C <sub>3</sub> H <sub>3</sub> FBr <sub>3</sub>		12	0.03- 0.3
C <sub>3</sub> H <sub>3</sub> F <sub>2</sub> Br <sub>2</sub>		16	0.1 - 1.0
C <sub>3</sub> H <sub>3</sub> F <sub>3</sub> Br		12	0.07- 0.8
C <sub>3</sub> H <sub>3</sub> FBr <sub>2</sub>		9	0.04- 0.4
C <sub>3</sub> H <sub>3</sub> F <sub>2</sub> Br		9	0.07- 0.8
C <sub>3</sub> H <sub>3</sub> FBr		5	0.02- 0.7

\* 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.

2. Annex E

The following annex shall be added to the Protocol:

Annex E

Controlled substances

Group	Substance	Ozone-depleting Potential
Group I CH <sub>3</sub> Br	methyl bromide	0.7

ARTICLE 2: RELATIONSHIP TO THE 1990 AMENDMENT

No State or regional economic integration organization may deposit an instrument of ratification, acceptance, approval or accession to this Amendment unless it has previously, or simultaneously, deposited such an instrument to the Amendment adopted at the Second Meeting of the Parties in London, 29 June 1990.

ARTICLE 3: ENTRY INTO FORCE

1. This Amendment shall enter into force on 1 January 1994, provided that at least twenty instruments of ratification, acceptance or approval of the Amendment have been deposited by States or regional economic integration organizations that are Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. In the event that this condition has not been fulfilled by that date, the Amendment shall enter into force on the ninetieth day following the date on which it has been fulfilled.
2. For the purposes of paragraph 1, any such instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by member States of such organization.
3. After the entry into force of this Amendment, as provided under paragraph 1, it shall enter into force for any other Party to the Protocol on the ninetieth day following the date of deposit of its instrument of ratification, acceptance or approval.



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