



**Twenty-Ninth Meeting of the Parties to
the Montreal Protocol on Substances
that Deplete the Ozone Layer**

Montreal, Canada, 20–24 November 2017

Item 4 (b) (ii) of the provisional agenda for the preparatory segment*

**Data reporting under Article 7 of the Montreal Protocol,
including related issues and destruction technologies for
substances in Annex F to the Montreal Protocol**

**Data reporting under Article 7 of the Montreal Protocol,
including related issues and destruction technologies arising
from the Kigali Amendment to the Montreal Protocol to phase
down hydrofluorocarbons**

Note by the Secretariat

I. Introduction

1. The present note sets out a summary of issues related to data reporting of hydrofluorocarbons (HFCs) under Article 7 of the Montreal Protocol on Substances that Deplete the Ozone Layer, including destruction technologies for substances in Annex F to the Montreal Protocol. These issues were initially discussed by the Open-ended Working Group of the Parties to the Montreal Protocol at its thirty-ninth meeting (documents UNEP/OzL.Pro.WG.1/39/2 and UNEP/OzL.Pro.WG.1/39/3) and further considered in a contact group that was formed at that meeting.
2. Section II of the present note includes updated information on the following issues:
 - (a) Timeline for reporting of baseline data for HFCs by parties operating under paragraph 1 of Article 5 (Article 5 parties);
 - (b) Trade with non-parties and associated reporting;
 - (c) Global-warming-potential values for HCFC-141 and HCFC-142;
 - (d) Process for approving destruction technologies for HFCs.
3. Section III provides updated information on the revision of the data reporting forms and associated instructions that was presented in document UNEP/OzL.Pro.WG.1/39/3, based on the input received from parties since then (see paragraph 19 below).
4. Annex I contains the proposed Article 7 data reporting forms and associated instructions and guidelines. The forms and instructions and guidelines are presented in the appendices and sections of the annex, as follows:
 - (a) Appendix I: Questionnaire;
 - (b) Appendices II to IX: Data reporting forms, from form 1 to form 8;

* UNEP/OzL.Pro.29/1.

- (c) Appendix X: Data reporting instructions and guidelines, split into sections as follows:
- (i) Section 1: Introduction;
 - (ii) Section 2: Reporting and clarifications associated with Article 7 of the Montreal Protocol;
 - (iii) Section 3: General instructions;
 - (iv) Section 4: Definitions;
 - (v) Section 5: Instruction I on data on imports of controlled substances (data form 1);
 - (vi) Section 6: Instruction II on data on exports of controlled substances (data form 2);
 - (vii) Section 7: Instruction III on data on production of controlled substances (data form 3);
 - (viii) Section 8: Instruction IV on data on destruction of controlled substances (data form 4);
 - (ix) Section 9: Instruction V on data on imports from and exports to non-parties (data form 5);
 - (x) Section 10: Instruction VI on data on emissions of Annex G Group II substance – HFC-23 (data form 6);
 - (xi) Section 11: Illustrative list of mixtures containing controlled substances

5. Annex II summarises the reporting provisions and related decisions for reporting of information other than Article 7 reporting, and includes the following sections:

- (a) Section 1: Reporting and clarifications associated with reporting of information other than Article 7 reporting;
- (b) Section 2: Instruction VII on data on consumption (imports) under the exemption for high-ambient-temperature parties (data form 7);
- (c) Section 3: Instruction VIII on data on production under the exemption for high-ambient-temperature parties (data form 8).

II. Issues for consideration by the Meeting of the Parties

A. Timeline for reporting of baseline data for HFCs by parties operating under paragraph 1 of Article 5 (Article 5 parties)

6. Following the adoption of the Kigali Amendment, paragraph 2 of Article 7 of the Protocol requires that each party operating under paragraph 1 of Article 5 (Article 5 party) provide to the Secretariat statistical data on its production, imports and exports of controlled substances in Annex F for the baseline years (2020–2022 for group 1 parties¹ and 2024–2026 for group 2 parties²), or best 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 those substances enter into force for that party.

7. Based on that paragraph, Article 5 parties that ratify the Kigali Amendment before the end of 2022 for group 1 parties and before the end of 2026 for group 2 parties could be required to report some or all of their respective baseline data before the data actually become available.

8. During the discussions that took place at the thirty-ninth meeting of the Open-ended Working Group, both in plenary sessions and in the contact group, and also in subsequent written submissions by some parties, there was general agreement that Article 5 parties should not report their baseline data before the real data becomes available. One proposal was to allow Article 5 parties that ratify the Kigali Amendment early to report baseline data within six or nine months after each relevant baseline year. Another proposal was to allow one-time reporting for all the baseline data by a predefined date after the end of the last baseline year. There was also a suggestion to have a compliance deferral

¹ All the Article 5 parties except for the 10 parties listed in footnote 2.

² Bahrain, India, Iran (Islamic Republic of), Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia and the United Arab Emirates.

mechanism to prevent the delayed reporting of the baseline data from resulting in non-compliance with the Protocol in respect of data reporting. In their deliberations on this issue, the parties may wish to take into consideration that upon ratification, the parties to the Kigali Amendment are required to report annual data within nine months of the end of each calendar year.

B. Trade with non-parties and associated reporting

9. During the discussion in the contact group at the thirty-ninth meeting of the Open-ended Working Group, the parties that took the floor expressed their understanding that the delay to 2033 of the non-party trade provisions under Article 4 of the amended Protocol should also apply to other aspects of trade with non-parties, including under Article 7 for reporting of trade with non-parties, as well as to the calculation of consumption under Article 3 when exports to non-parties occur.

C. Global-warming-potential values for HCFC-141 and HCFC-142

10. The Kigali Amendment introduced global-warming-potential (GWP) values for 8 of the 40 HCFCs listed in Annex C of the Protocol. A provision was included in Annex C stating that for substances for which no GWP value is indicated, the default value zero applies until a GWP value is included by means of the procedure foreseen in paragraph 9 (a) (ii) of Article 2 of the Protocol.³

11. At the thirty-ninth meeting of the Open-ended Working Group, the Secretariat pointed out that GWP values were assigned to HCFC-141b and HCFC-142b, the most commercially viable isomers for the HCFC-141 and HCFC-142.⁴ The Secretariat requested the parties to consider providing guidance to use the GWP values of those isomers for the full group of isomers of those substances.

12. During the discussions in the contact group, some parties pointed out that instances of HCFC-141 and HCFC-142 reported in the past could have been due to misreporting on the substance. While some parties indicated that they could agree with the Secretariat's proposal, others said that they needed to think more about the issue. Concerns were also expressed, one being the possibility of significant differences between the different isomers, including in their GWP values. It was agreed that the issue would be revisited at the Twenty-Ninth Meeting of the Parties.

13. The Secretariat has reviewed the history of the Protocol with respect to the reporting of HCFC-141, 142, 141b and 142b, as well as the data submitted by some parties with respect of their 1989 data on production, imports and exports, and wishes to provide the following additional background that could assist the parties in their deliberations:

(a) In 1990, the London Amendment to the Montreal Protocol introduced the requirement to report data on HCFCs. At the time, the most commercially viable isomers of the substances, such as HCFC-141b and HCFC-142b, were not listed in Annex C of the amended Protocol.

(b) In 1991, the Third Meeting of the Parties, in decision III/9, adopted revised formats for reporting data under the amended Protocol. The list of substances in the formats matched their listing in the Protocol at the time, and therefore did not include the substances HCFC-141b and HCFC-142b.

(c) In 1992, the Copenhagen Amendment to the Montreal Protocol introduced the most commercially viable isomers for some HCFCs into Annex C, including HCFC-141b and HCFC-142b, and directed that their ozone-depletion potential (ODP) values be used for purposes of the Protocol.

(d) In 1993, the Fifth Meeting of the Parties adopted revised and updated data reporting forms that included HCFC-141b and HCFC-142b in the listed substances.

(e) Parties that reported HCFC data for 1989 before the Fifth Meeting of the Parties used the previously approved data reporting forms, which did not list HCFC-141b and HCFC-142b, and therefore could only report HCFC-141b and HCFC-142b as HCFC-141 and HCFC-142 respectively.

(f) The Secretariat has checked the information on the submissions of 1989 Article 7 data by some parties not operating under paragraph 1 of Article 5 (non-Article 5 parties) and confirmed that those parties used the forms adopted in 1991 at the Third Meeting of the Parties, which did not include the most commercially viable isomers of HCFCs. The parties whose submissions were reviewed are Canada, the European Union, France, Japan and Sweden, all of whom made their submissions between 1991 and 1993. It is likely that the HCFC-141 and HCFC-142 data reported by those parties were for the most commercially viable isomers of those substances, namely HCFC-141b and HCFC-142b.

³ Paragraph 9 (a) (ii) of Article 2 of the Montreal Protocol states that "Based on the assessments made pursuant to Article 6, the Parties may decide whether adjustments to the global warming potentials specified in Group I of Annex A, Annex C and Annex F should be made and, if so, what the adjustments should be."

⁴ See document UNEP/OzL.Pro.WG.1/39/3.

D. Process for approving destruction technologies for HFCs

14. Paragraph 6 of Article 2J of the amended Protocol requires that each party manufacturing substances listed in Annex C Group I or Annex F should, for the 12-month period commencing on 1 January 2020 and in each 12-month period thereafter, destroy emissions of HFC-23 (Annex F Group II substance) generated in each facility that produces Annex C Group I or Annex F substances to the extent practicable using technologies approved by the parties in the same 12-month period. Paragraph 7 of Article 2J further states that any such destruction shall occur only by technologies approved by the parties. The provisions are applicable to both non-Article 5 and Article 5 parties.

15. During the thirty-ninth meeting of the Open-ended Working Group, a draft decision was put forward by Australia, Canada, the European Union and the United States of America (see section II, part A of document UNEP/OzL.Conv.11/3-UNEP/OzL.Pro.29/3). In that draft decision, the parties note the need to approve destruction technologies for HFCs and to keep the list of approved destruction technologies annexed to decision XXIII/12 up to date, and decide to approve on a provisional basis the currently approved destruction technologies for ozone-depleting substances for the destruction of HFCs. The draft decision also requests the Technology and Economic Assessment Panel to report to the Open-ended Working Group at its fortieth meeting on an assessment of the provisionally approved destruction technologies with a view to confirming their applicability to HFCs, and to review any other technology for possible inclusion in the list of approved destruction technologies in relation to controlled substances. Furthermore, parties are invited to submit relevant information to the Secretariat by an as-yet undetermined date.

16. During discussions in the contact group, several parties pointed out the time-sensitive nature of the issue due to the need for parties to put in place regulations and systems in advance of 2019, when the control measures for non-Article 5 parties kick in. However, a number of parties expressed concerns about provisionally adopting destruction technologies pending the report by the Technology and Economic Assessment Panel. It was agreed that the draft decision submitted by Australia, Canada, the European Union and the United States would be discussed further at the Twenty-Ninth Meeting of the Parties.

17. In further consideration of the matter, parties may wish to take into account a similar approach that was taken for process agents applications under decision VI/10, by which parties agreed to an interim period during which process agents uses were treated in a manner similar to feedstocks pending the outcome of a study by the Technology and Economic Assessment Panel. The interim arrangement was then extended by decision VII/10 before a final decision was taken (decision X/14).

III. Revised data reporting forms and associated instructions, including the reporting of mixtures and blends

18. The need to review and update the data reporting forms, including the associated instructions, arose following the adoption of the Kigali Amendment, which introduced new reporting obligations in relation to HFCs.

19. For the thirty-ninth meeting of the Open-ended Working Group, the Secretariat prepared an initial set of revised data reporting forms, as well as an updated version of the associated instructions and guidelines, which had not been updated since 2009, when the Meeting of the Parties requested the Secretariat to do so in paragraph 2 (a) of decision XX/6. The contact group considered the proposed forms, and various suggestions were made for improvements. It was also agreed that parties wishing to provide the Secretariat with additional or more comprehensive comments would be given until 30 August 2017 to submit their comments. The Secretariat sent a reminder to all parties on 14 August 2017 and received written feedback from nine parties, namely Argentina, Armenia, Australia, Barbados, European Union, Israel, Malaysia, United States and Zimbabwe. Other parties had provided oral feedback in the margins of the meeting.

20. The Secretariat reviewed the comments received and made various revisions to the reporting forms for consideration by the Twenty-Ninth Meeting of the Parties. The proposed revised data reporting forms and the associated instructions incorporating most of the suggestions received are set out in annexes I and II to the present note.

21. Proposals that were incorporated into the data reporting forms and instructions and guidelines included the following:

(a) Edits and clarifications to various parts of the data reporting forms and the associated instructions and guidelines;

(b) Separation of provisions associated with Article 7 data reporting from other reporting requirements or decisions that do not actually relate to Article 7 reporting: The provisions related to Article 7 reporting are set out in annex I to the present note, while other reporting provisions can be found in annex II;

(c) Clarification that reporting of mixtures and blends and reporting of the constituent components are both acceptable, for all substances (not just HFCs), while emphasising that double reporting should be avoided.

22. Some of the comments were related to the continuing discussions that are expected to take place in the contact group, hence have not yet been incorporated. They are as follows:

(a) A suggestion to remove or delete optional reporting of various data where some parties expressed reservations or queries: In the data forms, sections relating to optional reporting are shaded in light grey to make them easier to identify, and text is included to indicate the optional nature of the information. Such optional reporting can be found in the annex to data form 1 on imports, column 2 of data form 2 on exports, and columns 3 to 7 of data form 6 on HFC-23 emissions. In the associated instructions and guidelines, the Secretariat did not classify decisions on reporting according to obligatory or mandatory reporting vis-à-vis optional or voluntary reporting;

(b) A proposal to use separate data reporting forms for HFC reporting and reporting for ozone-depleting substances: To address this concern, the online reporting tool will be structured to allow multiple streams of data entry.

23. One issue that was brought to the attention of the Secretariat, and which the parties may need to discuss and provide guidance on, is how to report HFC-23 that is generated and subsequently used in the country, hence becoming part of the country's consumption, or HFC-23 that once generated is exported, hence becoming consumption by some other country.

24. Some parties, in addition to specific comments on the data reporting forms, included in their submissions:

(a) Their point of view on some of the issues under consideration, including the timeline for reporting of baseline data by Article 5 parties and global warming potential values;

(b) Agreement with the proposal to allow direct reporting of blends rather than constituent components of blends;

(c) Requests for the Secretariat to develop an online tool for calculating the different components of blends.

25. One party submitted an Excel tool as an example for calculating quantities of controlled substances from blends, while other parties indicated that they had reviewed the forms and did not have further comments that could substantially change the content of the proposed data reporting forms.

Annex I

Proposed Article 7 data reporting forms and associated instructions and guidelines

Appendix I – Questionnaire

Party: _____ Reporting Year: _____

Before beginning the questionnaire, respondents are requested to read the following sections of the data reporting instructions and guidelines document carefully: (a) Section 1: Introduction; (b) Section 3: General instructions; and (c) Section 4: Definitions. Respondents are encouraged to refer to the data reporting instructions and guidelines as necessary when completing the data forms.

Questionnaire

1.1. Did your country import CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes No

If No, ignore data form 1 and go to question 1.2. If Yes, please complete data form 1. Please read instruction I (Data on imports of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.2. Did your country export or re-export CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes No

If No, ignore data form 2 and go to question 1.3. If Yes, please complete data form 2. Please read instruction II (on data on exports of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.3. Did your country produce CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes No

If No, ignore data form 3 and go to question 1.4. If Yes, please complete data form 3. Please read instruction III (on data on production of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.4. Did your country destroy any ozone-depleting substances or HFCs in the reporting year?

Yes No

If No, ignore data form 4 and go to question 1.5. If Yes, please complete data form 4. Please read instruction IV (on data on destruction of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.5. Did your country import from or export or re-export to non-parties in the reporting year?

Yes No

If No, ignore data form 5 and go to question 1.6. If Yes, please complete data form 5. Please read instruction V (on data on imports from and exports to non-parties) of the data reporting instructions and guidelines document carefully, particularly the definition of non-parties, before filling in the form.

1.6. Did your country generate the substance HFC-23 in the reporting year from any facility that produces (manufactures) Annex C Group I or Annex F substances?

Yes No

If No, ignore data form 6. If Yes, please complete data form 6. Please read instruction VI (on data on emissions of Annex G Group II substance – HFC-23) of the data reporting instructions and guidelines document carefully before filling in the form.

Name of reporting officer:

Signature:

Designation:

Organization:

Postal address:

Country:

Phone:

Email:

Date:

Appendix II

Data form 1 on imports

DATA FORM 1

UNEP/OzL.Pro/Dataform17

1. Fill in this form only if your country imported
CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs,
HBFCs, bromochloromethane, methyl bromide or HFCs

DATA ON IMPORTS

2. Please read instruction I carefully
before filling in this form.

in tonnes^[1] (not ODP or GWP tonnes)

Annex A, B, C, E and F substances

Party: _____

Period: January - December 20____

| (1) Annex/group | (2) Substance | Total quantity imported for all uses | | (5) Quantity of new substance imported for feedstock uses | Quantity of new substance imported for exempted essential, critical or other uses* | |
|--------------------|--|--------------------------------------|-----------------------------------|--|--|--------------------------------|
| | | (3) New | (4) Recovered and reclaimed | | (6) Quantity | (7) Decision / type of use* |
| A-Group I | CFC-11 (CFCl ₃) | | | | | |
| | CFC-12 (CFC ₂ Cl ₂) | | | | | |
| | CFC-113 (C ₂ F ₃ Cl ₃) | | | | | |
| | CFC-114 (C ₂ F ₄ Cl ₂) | | | | | |
| | CFC-115 (C ₂ F ₃ Cl) | | | | | |
| A-Group II | HALON 1211 (CF ₂ BrCl) | | | | | |
| | HALON 1301 (CF ₃ Br) | | | | | |
| | HALON 2402 (C ₂ F ₄ Br ₂) | | | | | |
| B-Group I | CFC-13 (CF ₃ Cl) | | | | | |
| B-Group II | Carbon tetrachloride (CCl ₄) | | | | | |
| B-Group III | Methyl chloroform, i.e., 1,1,1-trichloroethane (C ₂ H ₃ Cl ₃) | | | | | |
| | | | | | | |

Comments:

^[1] Tonne = Metric ton.

* Against each substance imported for exempted essential, critical or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

| DATA FORM 1 (continued) | | | | UNEP/OzL.Pro/Dataform17 | | |
|---|---|--------------------------------------|--------------------------------|--|---|--------------------------------|
| (1) Annex/group | (2) Substance | Total quantity imported for all uses | | (5) Quantity of new substance imported for feedstock uses | Quantity of new substance imported for exempted essential, critical or other uses* | |
| | | (3) New | (4) Recovered and reclaimed | | (6) Quantity | (7) Decision / type of use* |
| C-Group I | HCFC-21** (CHFCl ₂) | | | | | |
| | HCFC-22** (CHF ₂ Cl) | | | | | |
| | HCFC-31 (CH ₂ FCl) | | | | | |
| | HCFC-123** (CHCl ₂ CF ₃) | | | | | |
| | HCFC-124** (CHFClCF ₃) | | | | | |
| | HCFC-133 (C ₂ H ₂ F ₃ Cl) | | | | | |
| | HCFC-141b** (CH ₃ CFCl ₂) | | | | | |
| | HCFC-142b** (CH ₃ CF ₂ Cl) | | | | | |
| | HCFC-225 (C ₃ HF ₂ Cl ₂) | | | | | |
| | HCFC-225ca (CF ₃ CF ₂ CHCl ₂) | | | | | |
| | HCFC-225cb (CF ₂ ClCF ₂ CHClF) | | | | | |
| C-Group II | HBFCs | | | | | |
| C-Group III | Bromochloromethane (CH ₂ BrCl) | | | | | |
| E-Group I | Methyl bromide (CH ₃ Br) | | | | | |
| | | | | | Quantity of new methyl bromide imported to be used for quarantine and pre-shipment applications | |
| <p><i>Comments:</i></p> | | | | | | |
| <p><i>Note:</i> As per paragraph 5 bis of Article 2 of the Protocol, any transfer of HCFC consumption by non-Article 5 parties shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.</p> <p>* Against each substance imported for exempted essential, critical or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.</p> <p>** Identifies the most commercially viable substances with ozone-depleting-potential (ODP) values listed against them to be used for the purposes of the Protocol.</p> | | | | | | |

| DATA FORM 1 (continued) | | | | UNEP/OzL.Pro/Dataform17 | | |
|--|---|--------------------------------------|--------------------------------|--|--|--------------------------------|
| (1) Annex/group | (2) Substance | Total quantity imported for all uses | | (5) Quantity of new substance imported for feedstock uses | Quantity of new substance imported for exempted essential, critical, high-ambient-temperature or other uses* | |
| | | (3) New | (4) Recovered and reclaimed | | (6) Quantity | (7) Decision / type of use* |
| F-Group I | HFC-32 (CH ₂ F ₂) | | | | | |
| | HFC-41 (CH ₃ F) | | | | | |
| | HFC-125 (CHF ₂ CF ₃) | | | | | |
| | HFC-134 (CHF ₂ CHF ₂) | | | | | |
| | HFC-134a (CH ₂ FCF ₃) | | | | | |
| | HFC-143 (CH ₂ FCHF ₂) | | | | | |
| | HFC-143a (CH ₃ CF ₃) | | | | | |
| | HFC-152 (CH ₂ FCH ₂ F) | | | | | |
| | HFC-152a (CH ₃ CHF ₂) | | | | | |
| | HFC-227ea (CF ₃ CHFCF ₃) | | | | | |
| | HFC-236cb (CH ₂ FCF ₂ CF ₃) | | | | | |
| | HFC-236ea (CHF ₂ CHFCF ₃) | | | | | |
| | HFC-236fa (CF ₃ CH ₂ CF ₃) | | | | | |
| | HFC-245ca (CH ₂ FCF ₂ CHF ₂) | | | | | |
| | HFC-245fa (CHF ₂ CH ₂ CF ₃) | | | | | |
| | HFC-365mfc (CF ₃ CH ₂ CF ₂ CH ₃) | | | | | |
| | HFC-43-10mee (CF ₃ CHFCHFCF ₂ CF ₃) | | | | | |
| F-Group II | HFC-23 (CHF ₃) | | | | | |
| <i>Mixtures and blends containing any controlled substance(s) – applicable to all substances, not just HFCs (add additional rows or pages as required for blends not listed below)</i> | | | | | | |
| | R-404A (HFC-125 = 44%, HFC-134a = 4%, HFC-143a = 52%) | | | | | |
| | R-407A (HFC-32 = 20%, HFC-125 = 40%, HFC-143a = 40%) | | | | | |
| | R-407C (HFC-32 = 23%, HFC-125 = 25%, HFC-143a = 52%) | | | | | |
| | R-410A (HFC-32 = 50%, HFC-125 = 50%) | | | | | |
| | R-507A (HFC-125 = 50%, HFC-143a = 50%) | | | | | |
| | R-508B (HFC-23 = 46%, PFC-116 = 54%) | | | | | |
| <i>Comments:</i> | | | | | | |
| <p><i>Note:</i> When reporting blends, reporting of controlled substances should not be duplicated. Parties may choose to report imports of individual controlled substances, total quantities of blends imported, or a combination of both, provided that the amounts of imported controlled substances are not reported more than once. If a non-standard blend not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the “comments” box above.</p> <p>* Against each substance imported for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the “comments” box above. In case of multiple exemptions per substance for some of the controlled substances, multiple entries may be used for those substances to report on those exemptions.</p> | | | | | | |

Appendix IV

Data form 3 on production

| | | | | | | | |
|---|--|--|--|---|--------------------------------|--|--|
| <p>1. Fill in this form only if your country produced CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs</p> <p>2. Please read instruction III carefully before filling in this form</p> <p>Party: _____</p> | <p>DATA FORM 3</p> <p><u>DATA ON PRODUCTION</u></p> <p>in tonnes^[1] (not ODP or GWP tonnes)</p> <p><u>Annex A, B, C, E and F substances</u></p> <p>Period: January - December 20____</p> | <p>UNEP/OzL.Pro/Dataform17</p> | | | | | |
| <p>(1) Annex/group</p> | <p>(2) Substance</p> | <p>(3) Total production for all uses</p> | <p>(4) Production for feedstock uses within your country</p> | <p>Production for exempted essential, critical or other uses within your country*</p> | | <p>(7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5</p> | |
| | | | | (5) Quantity | (6) Decision / type of use* | | |
| A-Group I | CFC-11 (CFCl ₃) | | | | | This column is no longer applicable to Annex A and B substances (CFCs, halons, CCL ₄ and methyl chloroform) | |
| | CFC-12 (CFC ₂ Cl ₂) | | | | | | |
| | CFC-113 (C ₂ F ₃ Cl ₃) | | | | | | |
| | CFC-114 (C ₂ F ₄ Cl ₂) | | | | | | |
| | CFC-115 (C ₂ F ₅ Cl) | | | | | | |
| A-Group II | HALON 1211 (CF ₂ BrCl) | | | | | | |
| | HALON 1301 (CF ₃ Br) | | | | | | |
| | HALON 2402 (C ₂ F ₄ Br ₂) | | | | | | |
| B-Group I | CFC-13 (CF ₃ Cl) | | | | | | |
| B-Group II | Carbon tetrachloride (CCl ₄) | | | | | | |
| B-Group III | Methyl chloroform, i.e., 1,1,1-trichloroethane (C ₂ H ₃ Cl ₃) | | | | | | |
| <p><i>Comments:</i></p> | | | | | | | |
| <p><small>[1] Tonne = Metric ton. Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply. * Against each substance produced for exempted essential, critical or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.</small></p> | | | | | | | |

| DATA FORM 3 (continued) | | | | UNEP/OzL.Pro/Dataform17 | | |
|---|---|--------------------------------------|--|---|--------------------------------|---|
| (1) Annex/group | (2) Substance | (3) Total production for all uses | (4) Production for feedstock uses within your country | Production for exempted essential, critical or other uses within your country* | | (7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5 |
| | | | | (5) Quantity | (6) Decision / type of use* | |
| C-Group I | HCFC-21** (CHFCl ₂) | | | | | |
| | HCFC-22** (CHF ₂ Cl) | | | | | |
| | HCFC-31 (CH ₂ FCI) | | | | | |
| | HCFC-123** (CHCl ₂ CF ₃) | | | | | |
| | HCFC-124** (CHFClCF ₃) | | | | | |
| | HCFC-133 (C ₂ H ₂ F ₃ Cl) | | | | | |
| | HCFC-141b** (CH ₃ CFCl ₂) | | | | | |
| | HCFC-142b** (CH ₃ CF ₂ Cl) | | | | | |
| | HCFC-225 (C ₃ HF ₅ Cl ₂) | | | | | |
| | HCFC-225ca (CF ₃ CF ₂ CHCl ₂) | | | | | |
| | HCFC-225cb (CF ₂ ClCF ₂ CHClF) | | | | | |
| C-Group II | HBFCs | | | | | This column is no longer applicable to Annex/group C/II, C/III and E/I substances (HBFCs, BCM and methyl bromide) |
| C-Group III | Bromochloromethane (CH ₂ BrCl) | | | | | |
| E-Group I | Methyl bromide (CH ₃ Br) | | | | | |
| | | | | Total quantity of new methyl bromide produced for quarantine and pre-shipment applications within your country and for export | | |
| <p>Comments:</p> | | | | | | |
| <p>Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.</p> <p>* Against each substance produced for exempted essential, critical or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.</p> <p>** Identifies the most commercially viable substances with ozone-depleting-potential (ODP) values listed against them to be used for the purposes of the Protocol.</p> | | | | | | |

DATA FORM 3 (continued)

| (1) Annex/group | (2) Substance | (3) Total production for all uses | (4) Production for feedstock uses within your country | Production for exempted essential, critical, high-ambient-temperature or other uses within your country* | | (7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5 |
|--------------------|---|---|--|--|--------------------------------|---|
| | | | | (5) Quantity | (6) Decision / type of use* | |
| F-Group I | HFC-32 (CH ₂ F ₂) | | | | | This column is not applicable to Annex F substances (HFCs) |
| | HFC-41 (CH ₃ F) | | | | | |
| | HFC-125 (CHF ₂ CF ₃) | | | | | |
| | HFC-134 (CHF ₂ CHF ₂) | | | | | |
| | HFC-134a (CH ₂ FCF ₃) | | | | | |
| | HFC-143 (CH ₂ FCHF ₂) | | | | | |
| | HFC-143a (CH ₃ CF ₃) | | | | | |
| | HFC-152 (CH ₂ FCH ₂ F) | | | | | |
| | HFC-152a (CH ₃ CHF ₂) | | | | | |
| | HFC-227ea (CF ₃ CHF ₂ CF ₃) | | | | | |
| | HFC-236cb (CH ₂ FCF ₂ CF ₃) | | | | | |
| | HFC-236ea (CHF ₂ CHF ₂ CF ₃) | | | | | |
| | HFC-236fa (CF ₃ CH ₂ CF ₃) | | | | | |
| | HFC-245ca (CH ₂ FCF ₂ CHF ₂) | | | | | |
| | HFC-245fa (CHF ₂ CH ₂ CF ₃) | | | | | |
| | HFC-365mfc (CF ₃ CH ₂ CF ₂ CH ₃) | | | | | |
| | HFC-43-10mee (CF ₃ CHFCH ₂ CF ₂ CF ₃) | | | | | |
| F-Group II | HFC-23 (CHF ₃) | | | | | |

Comments:

Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.

* Against each substance produced for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Appendix VIII

Separate reporting of consumption (imports) under the exemption for high-ambient-temperature parties

| | | | | | | |
|--|--|--|---|--|--|--|
| <p>1. Fill in this form only if your country is listed in Appendix II of decision XXVIII/2, has formally notified the Secretariat of its intention to use the high-ambient-temperature exemption, and imported HFCs for its own use in the subsectors contained in Appendix I of decision XXVIII/2.</p> <p>Party: _____</p> | | <p>DATA FORM 7</p> <p><u>DATA ON IMPORTS OF ANNEX F SUBSTANCES FOR EXEMPTED SUBSECTORS</u></p> <p>in tonnes^[1] (not ODP or GWP tonnes)</p> <p>Period: January - December 20____</p> | | | <p>UNEP/OzL.Pro/HAT_Dataform17</p> | |
| | | <p><i>Quantity of new substances imported for approved subsectors to which the high-ambient-temperature exemption applies (columns to be added as required for other subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2)*</i></p> | | | | |
| (1) Annex/group | (2) Substance | (3) New imports for use in multi-split air conditioners | (4) New imports for use in split ducted air conditioners | (5) New imports for use in ducted commercial packaged (self-contained) air conditioners | (6) New imports for use in subsector** | (7) New imports for use in subsector** |
| F-Group I | HFC-32 (CH ₂ F ₂) | | | | | |
| | HFC-41 (CH ₃ F) | | | | | |
| | HFC-125 (CHF ₂ CF ₃) | | | | | |
| | HFC-134 (CHF ₂ CHF ₂) | | | | | |
| | HFC-134a (CH ₂ FCF ₃) | | | | | |
| | HFC-143 (CH ₂ FCHF ₂) | | | | | |
| | HFC-143a (CH ₃ CF ₃) | | | | | |
| | HFC-152 (CH ₂ FCH ₂ F) | | | | | |
| | HFC-152a (CH ₃ CHF ₂) | | | | | |
| | HFC-227ea (CF ₃ CHF ₂ CF ₃) | | | | | |
| | HFC-236cb (CH ₂ FCF ₂ CF ₃) | | | | | |
| | HFC-236ea (CHF ₂ CHF ₂ CF ₃) | | | | | |
| | HFC-236fa (CF ₃ CH ₂ CF ₃) | | | | | |
| | HFC-245ca (CH ₂ FCF ₂ CHF ₂) | | | | | |
| | HFC-245fa (CHF ₂ CH ₂ CF ₃) | | | | | |
| | HFC-365mfc (CF ₃ CH ₂ CF ₂ CH ₃) | | | | | |
| | HFC-43-10mee (CF ₃ CHFCH ₂ CF ₂ CF ₃) | | | | | |
| F-Group II | HFC-23 (CHF ₃) | | | | | |
| <p><i>Mixtures and blends containing controlled substance(s) – applicable to all substances, not just HFCs (add additional rows or pages as required for blends not listed below)</i></p> | | | | | | |
| R-404A (HFC-125 = 44%, HFC-134a = 4%, HFC-143a = 52%) | | | | | | |
| R-407A (HFC-32 = 20%, HFC-125 = 40%, HFC-143a = 40%) | | | | | | |

| | | | | | |
|--|--|--|--|--|--|
| R-407C (HFC-32 = 23%, HFC-125 = 25%, HFC-143a = 52%) | | | | | |
| R-410A (HFC-32 = 50%, HFC-125 = 50%) | | | | | |
| R-507A (HFC-125 = 50%, HFC-143a = 50%) | | | | | |
| R-508B (HFC-23 = 46%, PFC-116 = 54%) | | | | | |

Comments:

^[1] Tonne = Metric ton.

Note: If a non-standard blend not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the “comments” box above.

* Only bulk gases for servicing of exempted equipment should be reported here, not gases imported inside pre-charged equipment.

** For each substance imported for use in subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please specify the approved subsector. Should the column space be insufficient, further information can be provided in the “comments” box above.

Appendix IX

Separate reporting of production under the exemption for high-ambient-temperature parties

| | | |
|--|--|------------------------------------|
| <p>1. Fill in this form only if your country is listed in Appendix II of decision XXVIII/2, has formally notified the Secretariat of its intention to use the high-ambient-temperature exemption, and produced HFCs for its own use in the subsectors contained in Appendix I of decision XXVIII/2.</p> <p>Party: _____</p> | <p>DATA FORM 8</p> <p><u>DATA ON PRODUCTION OF ANNEX F SUBSTANCES FOR EXEMPTED SUBSECTORS</u></p> <p>in tonnes^[1] (not ODP or GWP tonnes)</p> <p>Period: January - December 20____</p> | <p>UNEP/OzL.Pro/HAT_Dataform17</p> |
|--|--|------------------------------------|

| (1) Annex/group | (2) Substance | Quantity of new substances produced for approved subsectors to which the high-ambient-temperature exemption applies (production should be for use within the producing country) (columns to be added as required for other sub-sectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2)* | | | | |
|--------------------|--|---|--|---|---|---|
| | | (3) New production for use in multi-split air conditioners | (4) New production for use in split ducted air conditioners | (5) New production for use in ducted commercial packaged (self-contained) air conditioners | (6) New production for use in subsector* | (7) New production for use in subsector* |
| F-Group I | HFC-32 (CH ₂ F ₂) | | | | | |
| | HFC-41 (CH ₃ F) | | | | | |
| | HFC-125 (CHF ₂ CF ₃) | | | | | |
| | HFC-134 (CHF ₂ CHF ₂) | | | | | |
| | HFC-134a (CH ₂ FCF ₃) | | | | | |
| | HFC-143 (CH ₂ FCHF ₂) | | | | | |
| | HFC-143a (CH ₃ CF ₃) | | | | | |
| | HFC-152 (CH ₂ FCH ₂ F) | | | | | |
| | HFC-152a (CH ₃ CHF ₂) | | | | | |
| | HFC-227ea (CF ₃ CHF ₂ CF ₃) | | | | | |
| | HFC-236cb (CH ₂ FCF ₂ CF ₃) | | | | | |
| | HFC-236ea (CHF ₂ CHF ₂ CF ₃) | | | | | |
| | HFC-236fa (CF ₃ CH ₂ CF ₃) | | | | | |
| | HFC-245ca (CH ₂ FCF ₂ CHF ₂) | | | | | |
| | HFC-245fa (CHF ₂ CH ₂ CF ₃) | | | | | |
| | HFC-365mfc (CF ₃ CH ₂ CF ₂ CH ₃) | | | | | |
| | HFC-43-10mee (CF ₃ CHFCH ₂ CF ₂ CF ₃) | | | | | |
| F-Group II | HFC-23 (CHF ₃) | | | | | |

Comments:

^[1] Tonne = Metric ton.
 * For each substance produced for use in subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please specify the approved subsector. Should the column space be insufficient, further information can be provided in the "comments" box above.

Appendix X

Data reporting instructions and guidelines

Section 1: Introduction

- 1.1 The attached data forms have been designed to make reporting easier for the parties. The reporting is prescribed by Article 7 of the Montreal Protocol and further described in various decisions of the Meeting of the Parties. Some decisions introduce additional items that parties may report voluntarily.
- 1.2 The data reported in accordance with the data forms will be used to determine the calculated levels of production and consumption, upon which the control measures are based.
- 1.3 The major features of the forms are as follows:
- (a) Six separate data forms are provided for imports, exports, production, destruction, trade with non-parties and emissions of controlled substances. Please use only those data forms applicable to your country and ignore the other forms, after ticking off the respective “No” box in the questionnaire. For example, many parties only import and do not export, produce, destroy or trade with non-parties in any of the substances. If this is the case, please use only data form 1 on imports and ignore the other forms, after ticking off the “No” boxes for questions 1.2 – 1.6 on the questionnaire.
 - (b) A row has been provided for each of the substances in Annex A and Annex F. However, for categories of “Other CFCs” (Annex B Group I) and HCFCs (Annex C Group I), the form is made shorter by providing rows only for substances commonly reported by parties in the past. A few blank rows are provided for more substances, if needed. HBFCs and BCM (Annex C Groups II and III) have already been phased out by all parties; hence, one blank row has been provided for them as a formality only. You may use the computerized forms supplied by the Secretariat or paper forms. Parties who use the computerized forms can easily add more rows as needed; parties using paper forms are free to add pages as required.
 - (c) The following are some of the different categories of uses of controlled substances that need to be reported:
 - Feedstock uses for all substances
 - Essential uses, including laboratory and analytical uses, for substances as approved by the Meeting of the Parties from time to time
 - Quarantine and pre-shipment applications for methyl bromide
 - Process agent uses for specific applications as approved in table A of decision X/14 and updated periodically by the Meeting of the Parties
 - Critical or emergency uses of methyl bromide as approved from time to time
 - Exemption for high-ambient-temperature parties

It is necessary for each party to specify how much of its production, export or import is used for these categories. Where applicable, the Secretariat will deduct these quantities from the total figures. Provision is made in the data forms for these categories. For exempted essential, critical, high-ambient-temperature or other uses, provision has also been made for parties to specify the decision of the Meeting of the Parties that approved the use.
 - (d) The same forms can be used for reporting for baseline years and other years. It should be noted that paragraphs 1 and 2 of Article 7 of the Montreal Protocol both provide that the parties may submit the best possible estimates of data for the base years if actual data are not available.
 - (e) The basis for reporting requirements and definitions are given in section 2 and section 4 below, respectively.
 - (f) A “comments” box has been provided at the end of each form for parties to include any additional information that they believe would assist the Secretariat in processing their data report.

Section 2: Reporting and clarifications associated with Article 7 of the Montreal Protocol

Reporting set out under Article 7 of the Montreal Protocol, and related requests pursuant to decisions by the Meeting of the Parties

| <i>Basis for reporting under Article 7</i> | <i>Information to be provided</i> |
|---|--|
| Annual data reporting under Article 7 | (reported annually) |
| a) Article 7 paragraphs 3, 3 bis and 3 ter | Statistical data on production of each of the controlled substances Amounts used for feedstock Amounts destroyed by technologies approved by the parties Imports from and exports to parties and non-parties respectively Statistical data on the amount of methyl bromide used for quarantine and pre-shipment applications Statistical data on imports and exports of recycled halons and HCFCs Statistical data on emissions of HFC-23 per facility in accordance with paragraph 1 (d) of Article 3 of the Protocol |
| b) To verify implementation of Articles 2A to 2F and 2H | Excess production above the control limit in order to satisfy the basic domestic needs of Article 5 parties |
| c) Decision IV/11, paragraph 3 | Actual quantities of controlled substances destroyed |
| d) Decision VII/30, paragraph 1 | Volumes of controlled substances imported for feedstock uses by importing countries |
| e) Decision XI/13, paragraph 3 | Amount of methyl bromide used for quarantine and pre-shipment applications |
| f) Decision XVII/16, paragraph 4, and decision VII/9, paragraph 4 | Types, quantities and destinations of exports of all controlled substances |
| g) Decision XXIV/12, paragraph 1 | Types, quantities and exporting party for quantities reported as imports |
| Baseline data reporting under Article 7 | (reported once) |
| Article 7, paragraphs 1 and 2 | Statistical data on production, imports and exports of each of the controlled substances in: – Annex A, for the year 1986 – Annex B and Groups I and II of Annex C, for the year 1989 – Annex E, for the year 1991 – Annex F: by non-Article 5 parties, for the years 2011 to 2013; by Article 5, group 1 parties, for the years 2020 to 2022; and by Article 5, group 2 parties, for the years 2024 to 2026 or the best possible estimates of such data where actual data are not available, within three months of entry into force |

Definitions and clarifications on calculating production and consumption using the reported data

| <i>Basis for clarification</i> | <i>Guidance provided</i> |
|--------------------------------|--|
| a) Article 1, paragraph 5 | Subtract the amount destroyed by technologies approved by the parties and the amount entirely used as feedstock in the manufacture of other chemicals from production. The amount recycled and reused is not to be considered as production. |
| b) Article 1, paragraph 6 | “Consumption” means production plus imports minus exports of controlled substances. |
| c) Article 2H, paragraph 6 | Calculated levels of consumption and production for methyl bromide shall not include the amounts used for quarantine and pre-shipment applications. |
| d) Article 3, paragraph 1 (c) | Beginning on 1 January 1993, any export of controlled substances to non-parties shall not be subtracted in calculating the consumption level of the exporting party. |
| e) Decision IV/24, paragraph 2 | The import and export of recycled and used controlled substances should not be taken into account for calculating consumption (except when calculating the base year consumption under paragraph 1 of Article 5 of the Protocol). |

| <i>Basis for clarification</i> | <i>Guidance provided</i> |
|---------------------------------|--|
| f) Decisions X/14, paragraph 3 | Quantities of controlled substances produced or imported for the purpose of being used as process agents in plants and installations in operation before 1 January 1999 should not be taken into account in the calculation of production and consumption from 1 January 2002 onwards. |
| g) Decision VII/30, paragraph 1 | The amount of controlled substances produced and exported for the purpose of being entirely used as feedstock in the manufacture of other chemicals in importing countries should not be the subject of the calculation of production or consumption in exporting countries. |
| h) Decision VII/30, paragraph 2 | The amount of controlled substances entirely used as feedstock in the manufacture of other chemicals should not be the subject of calculation of consumption in importing countries. |

Section 3: General instructions

- 3.1 Parties are requested to report the production and consumption of bulk controlled substances in tonnes, without multiplying by the relevant ozone-depleting-potential or global-warming-potential values.
- 3.2 In order to avoid duplication, quantities contained in manufactured products should not be included in a country's consumption, regardless of whether the end-products are imported or exported.
- 3.3 It is crucial that data be provided separately for each individual substance listed in the forms. Further, as requested in decision XXIV/14, parties should enter a number in each cell in the data reporting forms that they submit, including zero, where appropriate, rather than leaving any cells blank.
- 3.4 When calculating production, the Montreal Protocol allows countries to deduct amounts of controlled substances destroyed and amounts used for feedstock and for quarantine and pre-shipment applications. However, when reporting data, parties should not deduct these figures from their data. The Secretariat will make the necessary deductions.
- 3.5 Parties with approved essential-use exemption should report to the Secretariat on the amounts of controlled substances produced or consumed for those uses using the accounting form approved by decision VIII/9, paragraph 9.
- 3.6 Parties with approved critical-use exemptions should report to the Secretariat on the amounts of methyl bromide produced or consumed for those uses using the form approved by decision Ex.I/4, paragraph 9 (f) and decision Ex.II/1, paragraph 3.
- 3.7 Parties might import or export mixtures or blends containing controlled substances, in particular Annex F substances. If this is the case, the parties may choose to report the quantity of the mixture or blend in the designated section on the form. If you choose to report mixtures or blends, take care to ensure that the quantities reported are those of the mixtures or blends, not their individual constituents. The Secretariat will calculate the quantity of each pure substance from the mixtures or blends and will include the appropriate quantities of those pure substances in the reported data. An illustrative list of mixtures and blends containing controlled substances with their compositions is given in section 11 of these data reporting instructions and guidelines. If the mixture or blend being reported is not included in section 11, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported. For further information about the composition and commercial trade names of chemical products containing controlled substances, visit the "Trade names of chemicals containing ozone-depleting substances and their alternatives" page of the OzonAction website.⁵ This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.
- 3.8 Parties listed in Appendix II to decision XXVIII/2 that produce or consume controlled substances under the high-ambient-temperature exemption should also report separate production and consumption data to the Secretariat for the subsectors to which the exemption applies (decision XXVIII/2, paragraph 30). Subsector-specific information should be provided by the country using the exemption, not by the producer country. Production under the high-ambient-temperature exemption should only be reported if the production is for use internally by the producing country, not for export.

⁵ <http://www.unep.fr/ozonaction/library/tradenames/main.asp>

Section 4: Definitions

- 4.1 “Consumption” means production plus imports minus exports of controlled substances (Montreal Protocol, Article 1).
- 4.2 “Controlled substance” means a substance in Annex A, Annex B, Annex C, Annex E or Annex F to the Protocol, whether existing alone or in a mixture. It includes the isomers of any such substance except as specified in the relevant annex, but excludes any controlled substance or mixture (blend) which is in a manufactured product other than a container used for the transportation or storage of that substance (Montreal Protocol, Article 1).
- 4.3 “Destruction process” is one which, when applied to controlled substances, results in the permanent transformation or decomposition of all or a significant portion of such substances (decisions I/12F, IV/11, V/26 and VII/35).
- 4.4 “Production” means the amount of controlled substances produced, minus the amount destroyed by technologies approved by the parties and minus the amount entirely used as feedstock in the manufacture of other chemicals. The data forms prescribe reporting of feedstock use and of quantities destroyed separately, and reporting of total production without deduction. The Secretariat will make the necessary deduction.
- 4.5 Amounts recovered, reclaimed or recycled (or reused) are not to be considered as “production” (Montreal Protocol, Article 1), even though they are to be reported (Article 7 of the Protocol).
- “Recovery, recycling and reclamation” have been defined by the parties (decision IV/24) as follows:
- (a) Recovery: The collection and storage of controlled substances from machinery, equipment, containment vessels, etc., during servicing or prior to disposal;
 - (b) Recycling: The reuse of a recovered controlled substance following a basic cleaning process such as filtering and drying. For refrigerants, recycling normally involves recharge back into equipment. It often occurs “on-site”;
 - (c) Reclamation: The re-processing and upgrading of a recovered controlled substance through such mechanisms as filtering, drying, distillation and chemical treatment in order to restore the substance to a specified standard of performance. It often involves processing “off-site” at a central facility.
- 4.6 “Quarantine and pre-shipment applications” have been defined by the parties (decision VII/5) as follows:
- (a) “Quarantine applications”, with respect to methyl bromide, are treatments to prevent the introduction, establishment and/or spread of quarantine pests (including diseases), or to ensure their official control, where:
 - (i) Official control is that performed by, or authorized by, a national plant, animal or environmental protection or health authority;
 - (ii) Quarantine pests are pests of potential importance to the areas endangered thereby and not yet present there, or present but not widely distributed and being officially controlled.
 - (b) “Pre-shipment applications” are those treatments applied directly preceding and in relation to export, to meet the phytosanitary or sanitary requirements of the importing country or existing phytosanitary or sanitary requirements of the exporting country.
- 4.7 The Eleventh Meeting of the Parties decided in decision XI/12 that pre-shipment applications are those non-quarantine applications applied within 21 days prior to export to meet the official requirements of the importing country or existing official requirements of the exporting country. Official requirements are those which are performed by, or authorized by, a national plant, animal, environmental, health or stored product authority.
- 4.8 On transshipment and re-export of substances, the Fourth Meeting of the Parties decided (decision IV/14):
- “To clarify Article 7 of the amended Protocol so that it is understood to mean that, in cases of transshipment of controlled substances through a third country (as opposed to imports and subsequent re-exports), the country of origin of the controlled substances shall be regarded as the exporter and the country of final destination shall be regarded as the importer. Cases of import and re-export should be treated as two separate transactions; the country of origin would report shipment to the country of intermediate destination, which would subsequently report the import from the country of origin and export to the country of final destination, while the country of final destination would report the import.”
- 4.9 With respect to trade in bulk methyl bromide, the Eighth Meeting of the Parties decided (decision VIII/14):
- “To clarify decision I/12A of the First Meeting of the Parties as follows: trade and supply of methyl bromide in cylinders or any other container will be regarded as trade in bulk in methyl bromide.”

- 4.10 “Regional Economic Integration Organization” means an organization constituted by sovereign States of a given region which has competence in respect of matters governed by the Vienna Convention or its protocols and has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to the instruments concerned. The only such organization for the purpose of the Montreal Protocol is the European Union.
- 4.11 The Montreal Protocol stipulates, under paragraph 8 (a) of Article 2, that any parties which are member States of a regional economic integration organization as defined above may agree that they shall jointly fulfil their obligations respecting consumption provided that their total combined calculated level of consumption under Articles 2A to 2J of the Protocol does not exceed the levels required by those articles.

Section 5: Instruction I on data on imports of controlled substances (data form 1)

- 5.1 Please use data form 1 to report data on imports of substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs or BCM), Annex E (methyl bromide) or Annex F (HFCs).
- 5.2 All the substances in Annex A, Annex B (Groups II and III) and Annex F are listed in column 2 of data form 1. For Annex B Group I (other fully halogenated CFCs) and Annex C Group I (HCFCs), only substances that have been reported by parties in the past are listed. HBFCs have already been phased out by all parties, and hence for HBFCs one blank row has been provided as a formality only. If you are importing controlled substances other than those listed, please use the blank space to report data on those substances, and use additional pages, if necessary.
- 5.3 If your country imported mixtures (blends) of controlled substances, e.g., R-410A (50% HFC-32; 50% HFC-125), you may choose to report only the quantity of the mixture or blend or the individual constituents of the blend directly. If you choose to report mixtures or blends, take care to ensure that the quantities reported are those of the mixtures or blends, not their individual constituents. The Secretariat will calculate the quantity of the individual pure controlled substances contained in the mixture or blend and enter the appropriate data under each controlled substance. An illustrative list of mixtures with their compositions is given in section 11 of these data reporting instructions and guidelines. If the mixture being reported is not included in section 11, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported. For further information about the composition and commercial trade names of chemical products containing controlled substances, visit the “Trade names of chemicals containing ozone-depleting substances and their alternatives” page on the OzonAction website.⁶ This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.
- 5.4 Please enter the number of tonnes imported in column 3 of data form 1 for each substance imported. If you did not import any of the substances listed, or if you have imported only recovered or reclaimed substances, please enter a zero in column 3, “New”, for each substance. If you imported any recovered or reclaimed substances, please enter the data in column 4.
- 5.5 When calculating a party's consumption, substances used as feedstock for the production of other chemicals are exempted, as such substances are completely transformed in the manufacturing process of the new chemical. In reporting total quantities of new substances imported in column 3, do not deduct the quantities imported for feedstock reported in column 5. Similarly, do not deduct the quantities imported for exempted essential, critical, high-ambient-temperature or other uses reported in column 6. The Secretariat will make the necessary deductions. In column 7, please indicate, for each type of controlled substance imported for exempted essential, critical, high-ambient-temperature or other uses, the decision of the Meeting of the Parties that approved the use. Should the column space be insufficient, further information can be provided in the “comments” box at the bottom of the form.
- 5.6 When calculating a party's consumption of methyl bromide, the quantities used for quarantine and pre-shipment applications are excluded. In data form 1, please enter the quantities of methyl bromide imported for quarantine and pre-shipment applications separately at the bottom of the form, and do not deduct them from the total quantity imported. The Secretariat will make the necessary deductions.
- 5.7 Decision XXIV/12, paragraph 1, requested the Secretariat to revise the reporting forms resulting from decision XVII/16 to include an annex indicating the exporting party for the quantities reported as imports, noting that the annex is excluded from the reporting requirements under Article 7 of the Protocol, and that the information in the annex would be provided on a voluntary basis. If a particular controlled substance is imported from more than one country, please indicate the quantity imported from each country separately. Please see the example below.

⁶ <http://www.unep.fr/ozonaction/library/tradenames/main.asp>

- 6.5 Decision VII/9, paragraph 4, requests the parties to report on the destination of Annex A and Annex B substances (new, recovered or reclaimed) that are exported. Decision XVII/16, paragraph 4, extended this arrangement to cover the export of all controlled substances contained in the annexes of the Protocol. Please fill in column 2 on the destination of exports, ensuring that if a particular controlled substance is exported to more than one country, the quantity exported to each country is indicated separately. Please see the example below.

| <p>1. Fill in this form only if your country exported or re-exported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCS, bromochloromethane, methyl bromide or HFCs</p> <p>2. Please read instruction II carefully before filling in this form.</p> <p>Party: _____</p> | | <p>DATA FORM 2 UNEP/OzL.Pro/Dataform17</p> <p><u>DATA ON EXPORTS*</u></p> <p>in tonnes^[1] (not ODP or GWP tonnes)</p> <p><u>Annex A, B, C, E and F substances</u></p> <p>Period: January - December 20____</p> | | | | |
|--|--|--|--------------------------------|--|--|-----------------------------------|
| (1) Substance | (2) Country of destination of exports** | Total quantity exported for all uses | | (5) Quantity of new substance exported for feedstock*** | Quantity of new substances exported for exempted essential, critical, high-ambient-temperature or other uses**** | |
| | | (3) New | (4) Recovered and reclaimed | | (6) Quantity | (7) Decision / type of use**** |
| HCFC-22 | Destination AAA | 50 | | | | |
| HCFC-22 | Destination BBB | 75 | | | | |
| HFC-134a | Destination AAA | 80 | | | | |
| HFC-134a | Destination CCC | 60 | | | | |
| HFC-134a | Destination DDD | 30 | | | | |
| Methyl bromide (CH ₃ Br) | | | | | <i>Quantity of new methyl bromide exported to be used for quarantine and pre-shipment applications</i> | |
| <p><i>Comments:</i></p> | | | | | | |

[1] Tonne = Metric ton.

Note: If a non-standard blend not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the “comments” box above.

* Includes re-exports. Ref. decisions IV/14 and XVII/16, paragraph 4.

** Applicable to all substances, including those contained in mixtures and blends.

*** Do not deduct from total production in column 3 of data form 3 (data on production).

**** Against each substance exported for exempted essential, critical, high-ambient-temperature or other uses, please specify the Meeting of the Parties decision that approved the use. Should the column space be insufficient, further information can be provided in the “comments” box above.

- 6.6 If your country is exporting new controlled substances, please provide the quantity in tonnes for the chemical(s) you exported in column 3. If you exported any recovered or reclaimed substances, please enter the data in column 4.
- 6.7 Under the Montreal Protocol, controlled substances used as feedstock for the production of other chemicals are not included in the calculation of a party’s consumption, as such controlled substances are completely transformed in the manufacturing process of new chemicals. When reporting the total quantities of new substances exported in column 3, do not deduct the quantities exported to be used as feedstock reported in column 5. Similarly, do not deduct the quantities exported for exempted essential, critical, high-ambient-temperature or other uses, reported in column 6. In column 7, please indicate, for each type of controlled

substance exported for exempted essential, critical, high-ambient-temperature or other uses, the decision of the Meeting of the Parties that approved the use. Should the column space be insufficient, further information can be provided in the “comments” box at the end of the form.

- 6.8 When calculating a party's consumption of methyl bromide, quantities used for quarantine and pre-shipment applications are exempted. In data form 2, please enter quantities of methyl bromide exported for quarantine and pre-shipment applications separately, and do not deduct them from the quantity exported. The Secretariat will make the necessary deductions.

Section 7: Instruction III on data on production of controlled substances (data form 3)

- 7.1 Please use data form 3 to report data on production of substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs or BCM), Annex E (methyl bromide) or Annex F (HFCs).
- 7.2 All the substances in Annex A, Annex B Groups II and III, and Annex F are listed in column 2 of data form 3. For Annex B Group I (other fully halogenated CFCs) and Annex C Group I (HCFCs), only substances that have been reported by parties in the past are listed. HBFCs and BCM have already been phased out by all parties and hence one row has been provided as a formality only. If you are producing controlled substances other than those listed, please use the blank space to report data on those substances, or use additional pages, if necessary.
- 7.3 In column 3 of data form 3, please give the total production of your country without making any deductions for feedstock, destruction, export for feedstock uses, or any other use. Do not deduct from your total production the quantity of production used for feedstock within your country reported in column 4, or the production for exempted essential, critical, high-ambient-temperature or other uses within your country reported in columns 5. Similarly, do not deduct from your total production the quantity of production for supply to Article 5 parties reported in column 7. Please report exports of controlled substances to be used for feedstock by the importing country in column 5 of data form 2 (data on exports), not in data form 3 (this form). The Secretariat will make the necessary deductions. With regard to production for exempted essential, critical, high-ambient-temperature or other uses, please indicate in column 6, for each type of controlled substance produced for exempted essential, critical, high-ambient-temperature or other uses, the decision of the Meeting of the Parties that approved the use. Should the column space be insufficient, further information can be provided in the “comments” box at the end of the form.
- 7.4 When calculating a party's consumption, the Montreal Protocol does not include controlled substances used as a feedstock for the production of other chemicals, as such controlled substances are completely transformed in the manufacturing process of the new chemical. If your country produced controlled substances for feedstock use within the reporting period, please provide data on the quantity of each controlled substance produced for feedstock purposes in column 4. The Secretariat will make the necessary deductions.
- 7.5 Producers are allowed to produce additional amounts to meet the basic domestic needs of Article 5 parties. If your country produced controlled substances for this purpose, please enter the amount so produced in column 7 of data form 3.
- 7.6 When calculating a party's consumption of methyl bromide, quantities produced for quarantine and pre-shipment applications are exempted. Please enter the total quantities of methyl bromide produced for quarantine and pre-shipment applications separately at the bottom of data form 3 and do not deduct them from the total quantity produced. The Secretariat will make the necessary deductions.

Section 8: Instruction IV on data on destruction of controlled substances (data form 4)

- 8.1 Very few countries have the capacity to destroy controlled substances using approved destruction technologies. If your country has destroyed any of the substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs or BCM), Annex E (methyl bromide) or Annex F (HFCs) in the reporting period, please use data form 4.
- 8.2 The first column (“Substance”) has been left blank because each party may destroy different substances. Please list only the names of those substances destroyed in the reporting year.
- 8.3 Under the Montreal Protocol, the amount of substances destroyed is not included in the calculation of a party's production and consumption if destruction occurred through the use of an approved technology (listed in decision XXIII/12 and any subsequent relevant decisions). If you have destroyed any substance in the reporting year, do not deduct the quantity destroyed reported in column 2 of data form 4 from the total production reported in column 3 of data form 3. The Secretariat will make the necessary deductions.

Section 9: Instruction V on data on imports from and exports to non-parties (data form 5)

- 9.1 Please use data form 5 to report data on imports from and exports to non-parties of substances of Annex A (CFCs and halons), Annex B (Other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs or BCM), Annex E (methyl bromide) or Annex F (HFCs). The reporting on trade in HFCs, required under paragraph 3 of Article 7, does not inhibit trade with non-parties. Restrictions on trade with non-parties will take effect from the date of entry into force of Article 4 paragraphs 1 sept. and 2 sept. (at the earliest, 1 January 2033).
- 9.2 The first column (“Substance”) has been left blank because each party may import different substances from and/or export different substances to non-parties. Please fill in only the names of those substances that were imported from and/or exported to non-parties.
- 9.3 For purposes of these data forms, “non-party” means:
- With respect to Annex A substances, all countries that have not ratified the 1987 Montreal Protocol
 - With respect to Annex B substances, all countries that have not ratified the London Amendment
 - With respect to Annex C substances, all countries that have not ratified the Copenhagen Amendment
 - With respect to Annex E substances, all countries that have not ratified the Copenhagen Amendment
 - *With respect to Annex F substances, [with effect from the date of entry into force of paragraphs 1 sept. and 2 sept. of Article 4,] all countries that have not ratified the [1987 Montreal Protocol][Kigali Amendment]*
- except where the parties have otherwise specified by means of a decision.
- 9.4 The status of ratification of the Montreal Protocol and its amendments can be found in a document published by the Secretariat and updated several times a year. This information is also available on the website of the Ozone Secretariat, at: <http://ozone.unep.org/>.

Section 10: Instruction VI on data on emissions of Annex G Group II substance – HFC-23 (data form 6)

- 10.1 Very few countries will have manufacturing facilities for Annex C Group I or Annex F substances that generate HFC-23. If your country has such facilities that were operational in the reporting period, please use data form 6 to report emissions of HFC-23 from each facility. If there were no emissions from a manufacturing facility, please include the facility in the data form and enter a zero in the emissions column.
- 10.2 The amounts captured for use, destruction or storage may be reported on a voluntary basis as these are not requested under Article 7 of the Protocol. The information reflects the elements enumerated in paragraph 1 (d) of Article 3 of the Protocol, which are excluded from the calculation of emissions. The information, however, enables demonstration of a party’s implementation of paragraph 6 of Article 2J, namely ensuring that amounts of HFC-23 generated in each production facility are destroyed to the extent practicable.

Section 11: Illustrative list of mixtures containing controlled substances⁸

11.1 Zeotrope mixtures

| No. | Refrigerant | | Composition | | | | | | | | | | |
|-----|-------------|-----------|-------------|-----------|-------------|----------|-------------|----------|-------------|--|-------------|--|-------------|
| | | | Component 1 | | Component 2 | | Component 3 | | Component 4 | | Component 5 | | Component 6 |
| 1. | R-401A | HCFC-124 | 34% | HCFC-22 | 53% | HFC-152a | 13% | | | | | | |
| 2. | R-401B | HCFC-124 | 28% | HCFC-22 | 61% | HFC-152a | 11% | | | | | | |
| 3. | R-401C | HCFC-124 | 52% | HCFC-22 | 33% | HFC-152a | 15% | | | | | | |
| 4. | R-402A | HC-290 | 2% | HCFC-22 | 38% | HFC-125 | 60% | | | | | | |
| 5. | R-402B | HC-290 | 2% | HCFC-22 | 60% | HFC-125 | 38% | | | | | | |
| 6. | R-403A | HC-290 | 5% | HCFC-22 | 75% | PFC-218 | 20% | | | | | | |
| 7. | R-403B | HC-290 | 5% | HCFC-22 | 56% | PFC-218 | 39% | | | | | | |
| 8. | R-404A | HFC-125 | 44% | HFC-134a | 4% | HFC-143a | 52% | | | | | | |
| 9. | R-405A | HCFC-142b | 6% | HCFC-22 | 45% | HFC-152a | 7% | PFC-C318 | 43% | | | | |
| 10. | R-406A | HC-600a | 4% | HCFC-142b | 41% | HCFC-22 | 55% | | | | | | |
| 11. | R-407A | HFC-125 | 40% | HFC-134a | 40% | HFC-32 | 20% | | | | | | |
| 12. | R-407B | HFC-125 | 70% | HFC-134a | 20% | HFC-32 | 10% | | | | | | |
| 13. | R-407C | HFC-125 | 25% | HFC-134a | 52% | HFC-32 | 23% | | | | | | |
| 14. | R-407D | HFC-125 | 15% | HFC-134a | 70% | HFC-32 | 15% | | | | | | |
| 15. | R-407E | HFC-125 | 15% | HFC-134a | 60% | HFC-32 | 25% | | | | | | |
| 16. | R-407F | HFC-125 | 30% | HFC-134a | 40% | HFC-32 | 30% | | | | | | |
| 17. | R-407G | HFC-125 | 2.5% | HFC-134a | 95% | HFC-32 | 2.5% | | | | | | |
| 18. | R-408A | HCFC-22 | 47% | HFC-125 | 7% | HFC-143a | 46% | | | | | | |
| 19. | R-409A | HCFC-124 | 25% | HCFC-142b | 15% | HCFC-22 | 60% | | | | | | |
| 20. | R-409B | HCFC-124 | 25% | HCFC-142b | 10% | HCFC-22 | 65% | | | | | | |
| 21. | R-410A | HFC-125 | 50% | HFC-32 | 50% | | | | | | | | |
| 22. | R-410B | HFC-125 | 55% | HFC-32 | 45% | | | | | | | | |
| 23. | R-411A | HO-1270 | 1.5% | HCFC-22 | 87.5% | HFC-152a | 11% | | | | | | |
| 24. | R-411B | HO-1270 | 3% | HCFC-22 | 94% | HFC-152a | 3% | | | | | | |
| 25. | R-412A | HCFC-142b | 25% | HCFC-22 | 70% | PFC-218 | 5% | | | | | | |

⁸ For more information about trade names for mixtures and pure substances, visit the "Trade names of chemicals containing ozone-depleting substances and their alternatives" page on the UNEP DTIE OzonAction website, at <http://www.unep.fr/ozonaction/library/tradenames/main.asp>. This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.

| No. | Refrigerant | | Composition | | | | | | | | | | |
|-----|-------------|-----------|-------------|-----------|-------------|-----------|-------------|----------|-------------|----------|-------------|--|-------------|
| | | | Component 1 | | Component 2 | | Component 3 | | Component 4 | | Component 5 | | Component 6 |
| 26. | R-413A | HC-600a | 3% | HFC-134a | 88% | PFC-218 | 9% | | | | | | |
| 27. | R-414A | HC-600a | 4% | HCFC-124 | 28.5% | HCFC-142b | 16.5% | HCFC-22 | 51% | | | | |
| 28. | R-414B | HC-600a | 1.5% | HCFC-124 | 39% | HCFC-142b | 9.5% | HCFC-22 | 50% | | | | |
| 29. | R-415A | HCFC-22 | 82% | HFC-152a | 18% | | | | | | | | |
| 30. | R-415B | HCFC-22 | 25% | HFC-152a | 75% | | | | | | | | |
| 31. | R-416A | HC-600 | 1.5% | HCFC-124 | 39.5% | HFC-134a | 59% | | | | | | |
| 32. | R-417A | HC-600 | 3.4% | HFC-125 | 46.6% | HFC-134a | 50% | | | | | | |
| 33. | R-417B | HC-600 | 2.7% | HFC-125 | 79% | HFC-134a | 18.3% | | | | | | |
| 34. | R-417C | HC-600 | 1.7% | HFC-125 | 19.5% | HFC-134a | 78.8% | | | | | | |
| 35. | R-418A | HC-290 | 1.5% | HCFC-22 | 96% | HFC-152a | 2.5% | | | | | | |
| 36. | R-419A | HCE-170 | 4% | HFC-125 | 77% | HFC-134a | 19% | | | | | | |
| 37. | R-419B | HCE-170 | 3.5% | HFC-125 | 48.5% | HFC-134a | 48% | | | | | | |
| 38. | R-420A | HCFC-142b | 12% | HFC-134a | 88% | | | | | | | | |
| 39. | R-421A | HFC-125 | 58% | HFC-134a | 42% | | | | | | | | |
| 40. | R-421B | HFC-125 | 85% | HFC-134a | 15% | | | | | | | | |
| 41. | R-422A | HC-600a | 3.4% | HFC-125 | 85.1% | HFC-134a | 11.5% | | | | | | |
| 42. | R-422B | HC-600a | 3% | HFC-125 | 55% | HFC-134a | 42% | | | | | | |
| 43. | R-422C | HC-600a | 3% | HFC-125 | 82% | HFC-134a | 15% | | | | | | |
| 44. | R-422D | HC-600a | 3.4% | HFC-125 | 65.1% | HFC-134a | 31.5% | | | | | | |
| 45. | R-422E | HC-600a | 2.7% | HFC-125 | 58% | HFC-134a | 39.3% | | | | | | |
| 46. | R-423A | HFC-134a | 52.5% | HFC-227ea | 47.5% | | | | | | | | |
| 47. | R-424A | HC-600 | 1% | HC-600a | 0.9% | HC-601a | 0.6% | HFC-125 | 50.5% | HFC-134a | 47% | | |
| 48. | R-425A | HFC-134a | 69.5% | HFC-227ea | 12% | HFC-32 | 18.5% | | | | | | |
| 49. | R-426A | HC-600 | 1.3% | HC-601a | 0.6% | HFC-125 | 5.1% | HFC-134a | 93% | | | | |
| 50. | R-427A | HFC-125 | 25% | HFC-134a | 50% | HFC-143a | 10% | HFC-32 | 15% | | | | |
| 51. | R-428A | HC-290 | 0.6% | HC-600a | 1.9% | HFC-125 | 77.5% | HFC-143a | 20% | | | | |
| 52. | R-429A | HC-600a | 30% | HCE-170 | 60% | HFC-152a | 10% | | | | | | |
| 53. | R-430A | HC-600a | 24% | HFC-152a | 76% | | | | | | | | |
| 54. | R-431A | HC-290 | 71% | HFC-152a | 29% | | | | | | | | |
| 55. | R-434A | HC-600a | 2.8% | HFC-125 | 63.2% | HFC-134a | 16% | HFC-143a | 18% | | | | |

| No. | Refrigerant | | Composition | | | | | | | | | | | | | |
|-----|-------------|----------|-------------|----------------|-------------|----------------|-------------|------------|-------------|-----------|-------------|--------|-------------|--|--|--|
| | | | Component 1 | | Component 2 | | Component 3 | | Component 4 | | Component 5 | | Component 6 | | | |
| 56. | R-435A | HCE-170 | 80% | HFC-152a | 20% | | | | | | | | | | | |
| 57. | R-437A | HC-600 | 1.4% | HC-601 | 0.6% | HFC-125 | 19.5% | HFC-134a | 78.5% | | | | | | | |
| 58. | R-438A | HC-600 | 1.7% | HC-601a | 0.6% | HFC-125 | 45% | HFC-134a | 44.2% | HFC-32 | 8.5% | | | | | |
| 59. | R-439A | HC-600a | 3% | HFC-125 | 47% | HFC-32 | 50% | | | | | | | | | |
| 60. | R-440A | HC-290 | 0.6% | HFC-134a | 1.6% | HFC-152a | 97.8% | | | | | | | | | |
| 61. | R-442A | HFC-125 | 31% | HFC-134a | 30% | HFC-152a | 3% | HFC-227ea | 5% | HFC-32 | 31% | | | | | |
| 62. | R-444A | HFC-152a | 5% | HFC-32 | 12% | HFO-1234ze (E) | 83% | | | | | | | | | |
| 63. | R-444B | HFC-152a | 10% | HFC-32 | 41.5% | HFO-1234ze (E) | 48.5% | | | | | | | | | |
| 64. | R-445A | HFC-134a | 9% | R-744 | 6% | HFO-1234ze (E) | 85% | | | | | | | | | |
| 65. | R-446A | HC-600 | 3% | HFC-32 | 68% | HFO-1234ze (E) | 29% | | | | | | | | | |
| 66. | R-447A | HFC-125 | 3.5% | HFC-32 | 68% | HFO-1234ze (E) | 28.5% | | | | | | | | | |
| 67. | R-447B | HFC-125 | 8% | HFC-32 | 68% | HFO-1234ze (E) | 24% | | | | | | | | | |
| 68. | R-448A | HFC-125 | 26% | HFC-134a | 21% | HFO-1234ze (E) | 7% | HFO-1234yf | 20% | HFC-32 | 26% | | | | | |
| 69. | R-449A | HFC-125 | 24.7% | HFC-134a | 25.7% | HFC-32 | 24.3% | HFO-1234yf | 25.3% | | | | | | | |
| 70. | R-449B | HFC-125 | 24.3% | HFC-134a | 27.3% | HFC-32 | 25.2% | HFO-1234yf | 23.2% | | | | | | | |
| 71. | R-449C | HFC-125 | 20% | HFC-134a | 29% | HFC-32 | 20% | HFO-1234yf | 31% | | | | | | | |
| 72. | R-450A | HFC-134a | 42% | HFO-1234ze (E) | 58% | | | | | | | | | | | |
| 73. | R-451A | HFC-134a | 10.2% | HFO-1234yf | 89.8% | | | | | | | | | | | |
| 74. | R-451B | HFC-134a | 11.2% | HFO-1234yf | 88.8% | | | | | | | | | | | |
| 75. | R-452A | HFC-125 | 59% | HFC-32 | 11% | HFO-1234yf | 30% | | | | | | | | | |
| 76. | R-452B | HFC-125 | 7% | HFC-32 | 67% | HFO-1234yf | 26% | | | | | | | | | |
| 77. | R-452C | HFC-125 | 61% | HFC-32 | 12.5% | HFO-1234yf | 26.5% | | | | | | | | | |
| 78. | R-453A | HC-600 | 0.6% | HC-601a | 0.6% | HFC-125 | 20% | HFC-134a | 53.8% | HFC-227ea | 5% | HFC-32 | 20% | | | |
| 79. | R-454A | HFC-32 | 35% | HFO-1234yf | 65% | | | | | | | | | | | |
| 80. | R-454B | HFC-32 | 68.9% | HFO-1234yf | 31.1% | | | | | | | | | | | |
| 81. | R-454C | HFC-32 | 21.5% | HFO-1234yf | 78.5% | | | | | | | | | | | |
| 82. | R-455A | HFC-32 | 21.5% | HFO-1234yf | 75.5% | R-744 | 3% | | | | | | | | | |
| 83. | R-456A | HFC-134a | 45% | HFC-32 | 6% | HFO-1234ze (E) | 49% | | | | | | | | | |
| 84. | R-457A | HFC-152a | 12% | HFC-32 | 18% | HFO-1234yf | 70% | | | | | | | | | |
| 85. | R-458A | HFC-125 | 4% | HFC-134a | 61.4% | HFC-227ea | 13.5% | HFC-236fa | 0.6% | HFC-32 | 20.5% | | | | | |

| No. | Refrigerant | | Composition | | | | | | | | | | |
|-----|-------------|---------|-------------|------------|-------------|----------------|-------------|--------|-------------|--|-------------|--|-------------|
| | | | Component 1 | | Component 2 | | Component 3 | | Component 4 | | Component 5 | | Component 6 |
| 86. | R-459A | HFC-32 | 68% | HFO-1234yf | 26% | HFO-1234ze (E) | 6% | | | | | | |
| 87. | R-459B | HFC-32 | 21% | HFO-1234yf | 69% | HFO-1234ze (E) | 10% | | | | | | |
| 88. | R-460A | HFC-125 | 52% | HFC-134a | 14% | HFO-1234ze (E) | 22% | HFC-32 | 12% | | | | |
| 89. | R-460B | HFC-125 | 25% | HFC-134a | 20% | HFO-1234ze (E) | 27% | HFC-32 | 28% | | | | |

11.2 Azeotrope mixtures

| No. | Refrigerant number (trade name) of mixture | Composition | | | |
|-----|---|-------------|-------|----------------|-------|
| | | Component 1 | | Component 2 | |
| 1. | R-500 | CFC-12 | 73.8% | HFC-152a | 26.2% |
| 2. | R-501 | CFC-12 | 25% | HCFC-22 | 75% |
| 3. | R-502 | CFC-115 | 51.2% | HCFC-22 | 48.8% |
| 4. | R-503 | CFC-13 | 59.9% | HFC-23 | 40.1% |
| 5. | R-504 | CFC-115 | 51.8% | HFC-32 | 48.2% |
| 6. | R-505 | CFC-12 | 78% | HCFC-31 | 22% |
| 7. | R-506 | CFC-114 | 45% | HCFC-31 | 55% |
| 8. | R-507A (AZ-50) | HFC-125 | 50% | HFC-143a | 50% |
| 9. | R-508A | HFC-23 | 39% | PFC-116 | 61% |
| 10. | R-508B | HFC-23 | 46% | PFC-116 | 54% |
| 11. | R-509 (TP5R2) | HCFC-22 | 46% | PFC-218 | 54% |
| 12. | R-509A | HCFC-22 | 44% | PFC-218 | 56% |
| 13. | R-512A | HFC-134a | 5% | HFC-152a | 95% |
| 14. | R-513A (XP10/DR-11) | HFC-134a | 44% | HFO-1234yf | 56% |
| 15. | R-513B | HFC-134a | 41.5% | HFO-1234yf | 58.5% |
| 16. | R-515A | HFC-227ea | 12% | HFO-1234ze (E) | 88% |

11.3 Other mixtures

| No. | Trade name of mixture | Composition | | | | | | | |
|-----|--------------------------|-------------|-----|-------------|-------|-------------|------|-------------|-------|
| | | Component 1 | | Component 2 | | Component 3 | | Component 4 | |
| 1 | FX 20 | HFC-125 | 45% | HCFC-22 | 55% | | | | |
| 2 | FX 55 | HCF-C22 | 60% | HCFC-142b | 40% | | | | |
| 3 | D 136 | HCFC-22 | 50% | HCFC-124 | 47% | HC-600a | 3% | | |
| 4 | Daikin Blend | HFC-23 | 2% | HFC-32 | 28% | HCFC-124 | 70% | | |
| 6 | Free Zone | HCFC-142b | 19% | HFC-134a | 79% | Lubricant | 2% | | |
| 7 | GHG-HP | HCFC-22 | 65% | HCFC-142b | 31% | HC-600a | 4% | | |
| 8 | GHG-X5 | HCFC-22 | 41% | HCFC-142b | 15% | HFC-227ea | 40% | HC-600a | 4% |
| 9 | NARM-502 | HCFC-22 | 90% | HFC-152a | 5% | HFC-23 | 5% | | |
| 10 | NASF-S-III ⁹ | HCFC-22 | 82% | HCFC-123 | 4.75% | HCFC-124 | 9.5% | HC-600a | 3.75% |

11.4 Methyl bromide mixtures

| No. | Trade name of mixture | Composition | | | |
|-----|----------------------------------|----------------|-----|--------------|-----|
| | | Component 1 | | Component 2 | |
| 1 | Methyl bromide with chloropicrin | Methyl bromide | 67% | Chloropicrin | 33% |
| 2 | Methyl bromide with chloropicrin | Methyl bromide | 98% | Chloropicrin | 2% |

⁹ A halon alternative.

Annex II

Record of protocol provisions on reporting and related decisions for reporting of information other than Article 7 reporting

Section 1: Reporting and clarifications associated with reporting of information other than Article 7 reporting

Reporting provisions and related decisions for reporting of information other than Article 7 reporting

| <i>Basis for reporting</i> | <i>Information to be provided</i> |
|--|--|
| <i>Transfer or addition of production or consumption</i> | <i>(reported as and when it occurs)</i> |
| Article 2, paragraphs 5, 5 bis, 6, 7 | Transfer or addition of production or consumption |
| <i>Trade with non-parties (Article 4)</i> | |
| Decision IV/17 A, paragraph 1 | Information on the implementation of Article 4 of the Protocol, control of trade with non-parties |
| <i>Licensing information</i> | <i>(reporting periodicity specified below)</i> |
| a) Article 4B – Licensing | The establishment and operation of its licensing system <i>(reported once)</i> |
| b) Decision IX/8, paragraph 2 | Focal points for licensing systems for trade in controlled substances <i>(reported once, updated as required)</i> |
| c) Decision XIV/7, paragraph 7 | Information reported by the parties on illegal trade in controlled substances <i>(reported when cases occur)</i> |
| d) Decision XXVII/8 | Parties wishing to avoid the unwanted import of products and equipment containing or relying on hydrochlorofluorocarbons <i>(notification sent once)</i> |
| <i>Research, development, public awareness and exchange of information</i> | <i>(reported every two years)</i> |
| Article 9 | Summary of activities |
| <i>Essential use exemptions other than laboratory and analytical uses¹</i> | <i>(reported the year following an exemption)</i> |
| Decision VIII/9, paragraph 9 | Report on quantities and uses of controlled substances produced and consumed for essential uses (reporting accounting framework) |
| <i>Essential use exemptions: laboratory and analytical uses</i> | <i>(reported annually)</i> |
| Decision VI/9, paragraph 4, of Annex II to the report of the Sixth Meeting of the Parties | Each controlled substance produced for laboratory and analytical uses |
| <i>Exemption for high-ambient-temperature parties</i> | <i>(reported the year following an exemption)</i> |
| Decision XXVIII/2, paragraph 30 | Report separately production and consumption data for the subsectors to which the exemption applies |
| <i>Critical use exemptions for methyl bromide information</i> | <i>(reported once)</i> |
| a) Decision Ex.I/3, paragraph 5 | Parties that have a methyl bromide critical use exemption to report on the implementation of the requirement to ensure that the criteria in paragraph 1 of decision IX/6 are applied when licensing, permitting or authorizing the use of methyl bromide and that such procedures take into account available stocks |

¹ Decisions relating to essential use exemptions for CFCs for metered-dose inhalers for the treatment of asthma and chronic obstructive pulmonary diseases are no longer included here, since such exemptions have been phased out.

| <i>Basis for reporting</i> | <i>Information to be provided</i> |
|--|---|
| b) Decision Ex.I/4, paragraph 2 | Parties seeking methyl bromide critical use exemptions and parties that have ceased methyl bromide consumption to submit information on the alternatives available, listed according to their pre-harvest or post-harvest uses and the possible date of registration, if required, for each alternative; and on the alternatives which the parties can disclose to be under development, listed according to their pre-harvest or post-harvest uses and the likely date of registration, if required and known, for those alternatives |
| c) Decision Ex.I/4, paragraphs 3 and 6 | Parties seeking methyl bromide critical use exemptions to submit national methyl bromide phase out strategy and describe methodology used to determine economic feasibility in the event that economic feasibility is used as a criterion to justify the critical use |
| d) Decision Ex.I/4, paragraph 9 (f), and decision Ex.II/1, paragraph 3 | Report on quantities and uses of methyl bromide produced, imported and exported for critical uses in accounting framework |
| <i>Process agent uses</i> | <i>(reported annually)</i> |
| Decisions X/14, XV/7, XVII/6 and XXI/3 | Use of controlled substances as process agents, make-up amounts, resulting emissions, emission containment technologies employed and opportunities for emission reduction. Report on quantities of controlled substances produced or imported for process agent applications |
| <i>Requests for changes in reported baseline data</i> | <i>(reported once)</i> |
| a) Decision XIII/15, paragraph 5 | Requests for changes in reported baseline data for the base years to be presented to the Implementation Committee, which will in turn work with the Ozone Secretariat and the Executive Committee to confirm the justification for the changes and present them to the Meeting of the Parties for approval |
| b) Decision XV/19, paragraph 2 | Methodology for submission of requests for revision of baseline data: the information and documentation to be submitted |
| <i>Other information</i> | <i>(reporting periodicity specified below)</i> |
| a) Decision V/15 | Information relevant to international halon bank management (see the online Halon Trader, http://www.halontrader.org , a “business to business” web portal developed by the OzonAction Programme under the Multilateral Fund to contribute to ozone protection by promoting halon banking and responsible halon management) <i>(reported once)</i> |
| b) Decision V/25 and VI/14A | Parties supplying controlled substances to Article 5 parties to provide annually summary of requests from importing parties <i>(reported annually)</i> |
| c) Decision VI/19, paragraph 4 | List of reclamation facilities and their capacities <i>(reported annually)</i> |
| d) Decisions X/8 and IX/24 | New ozone-depleting substances reported by the parties <i>(reported when new substances emerge)</i> |
| e) Decision XX/7, paragraph 5 | Strategies on environmentally sound management of banks of ozone-depleting substances <i>(reported once, updated as required)</i> |
| 1.1 | The control measures under Articles 2A-2E, 2G and 2I include a provision for parties to decide to permit levels of production or consumption that are necessary to satisfy uses agreed by them to be essential. Decision IV/25 on essential uses states that a use of a controlled substance should qualify as “essential” only if: <ul style="list-style-type: none"> (a) It is necessary for the health, safety or is critical for the functioning of society (encompassing cultural and intellectual aspects); and (b) There are no available technically and economically feasible alternatives or substitutes that are acceptable from the standpoint of environment and health. |
| 1.2 | The conditions applied to exemption for laboratory and analytical uses, which fall under essential uses, are provided in annex II to the report of the Sixth Meeting of the Parties. |
| 1.3 | The control measures under Article 2H include a provision for parties to decide to permit levels of production or consumption that are necessary to satisfy uses agreed by them to be critical uses. In decision IX/6 on critical uses, the parties agreed to apply the following criteria and procedure in assessing a critical methyl bromide use for the purposes of control measures in Article 2 of the Protocol: |

- (a) That a use of methyl bromide should qualify as “critical” only if the nominating party determines that:
 - (i) The specific use is critical because the lack of availability of methyl bromide for that use would result in a significant market disruption; and
 - (ii) There are no technically and economically feasible alternatives or substitutes available to the user that are acceptable from the standpoint of environment and health and are suitable to the crops and circumstances of the nomination;
- (b) That production and consumption, if any, of methyl bromide for critical uses should be permitted only if:
 - (i) All technically and economically feasible steps have been taken to minimize the critical use and any associated emission of methyl bromide;
 - (ii) Methyl bromide is not available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide, also bearing in mind the developing countries’ need for methyl bromide;
 - (iii) It is demonstrated that an appropriate effort is being made to evaluate, commercialize and secure national regulatory approval of alternatives and substitutes, taking into consideration the circumstances of the particular nomination and the special needs of Article 5 parties, including lack of financial and expert resources, institutional capacity, and information. Non-Article 5 parties must demonstrate that research programmes are in place to develop and deploy alternatives and substitutes. Article 5 parties must demonstrate that feasible alternatives shall be adopted as soon as they are confirmed as suitable to the party’s specific conditions and/or that they have applied to the Multilateral Fund or other sources for assistance in identifying, evaluating, adapting and demonstrating such options;

1.4 “Process agents” should be understood to mean the use of controlled substances for the applications listed in table A of decision X/14, as amended by various decisions. Amounts produced or imported for use as process agents in plants and installations in operation before 1 January 1999 should not be taken into account in the calculation of production and consumption from 1 January 2002 onwards, provided that:

- (a) In the case of non-Article 5 parties, the emissions of controlled substances from these processes have been reduced to insignificant levels as defined in table B of decision X/14, as amended by various decisions;
- (b) In the case of Article 5 parties, the emissions of controlled substances from process-agent use have been reduced to levels agreed by the Executive Committee to be reasonably achievable in a cost-effective manner without undue abandonment of infrastructure.

Section 2: Instruction VII on data on consumption (imports) under the exemption for high-ambient-temperature parties (data form 7)

2.1 If your country formally notified the Secretariat, as specified under paragraph 29 of decision XXVIII/2, of its intention to use the exemption for high-ambient-temperature parties and is listed in appendix II of decision XXVIII/2, please use data form 7 to report quantities of new HFCs imported for use in approved subsectors as listed in annex I of the decision. Those imports must be for use within your country and not for export. In case other subsectors are approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please use the additional columns in the data form to specify the approved subsectors and the amounts imported for use in those subsectors. Only bulk gases for servicing of equipment in the exempted subsectors should be reported here, not gases imported inside pre-charged equipment.

Section 3: Instruction VIII on data on production under the exemption for high-ambient-temperature parties (data form 8)

3.1 Very few countries listed in Appendix II of decision XXVIII/2 will have production facilities for Annex F substances (HFCs). If your country formally notified the Secretariat, as specified under paragraph 29 of decision XXVIII/2, of its intention to use the exemption for high-ambient-temperature parties and is listed in Appendix II of decision XXVIII/2, please use data form 8 to report quantities of HFC produced for use in approved subsectors as listed in annex I of the decision. That production must be for use within your country and not for export. In case other subsectors are approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please use the additional columns in the data form to specify the approved subsectors and the amounts produced for use in those subsectors.