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برنامج الأمم المتحدة للبيئة

الفريق العامل المفتوح العضوية للأطراف في
بروتوكول مونتريال بشأن المواد المستنفدة
لطبقة الأوزون

الاجتماع التاسع والثلاثون

بانكوك، ١١-١٤ تموز/يوليه ٢٠١٧

البندان ٣ (أ) و ٣ (ب) من جدول الأعمال المؤقت*

الإبلاغ عن البيانات بموجب المادة ٧ والمسائل ذات الصلة الناشئة عن تعديل كيغالي
لبروتوكول مونتريال من أجل التخفيض التدريجي لمركبات الكربون الهيدروفلورية

مذكرة من الأمانة

أولاً - مقدمة

١- يرد في هذه المذكرة موجز للمسائل الناشئة عن اعتماد تعديل كيغالي فيما يتعلق بالإبلاغ عن
البيانات بموجب المادة ٧ من بروتوكول مونتريال بشأن المواد المستنفدة لطبقة الأوزون لكي تنظر فيها الأطراف
والإجراءات الممكنة المناسبة التي قد يتخذها اجتماع الأطراف.

ثانياً - مسائل تعرض على مؤتمر الأطراف لكي ينظر فيها ويتخذ إجراءات بشأنها

ألف - الإبلاغ عن البيانات بموجب المادة ٧ والمسائل ذات الصلة

١ - قيام جميع الدول الأطراف بالإبلاغ عن البيانات

٢- بعد بدء نفاذ تعديل كيغالي، يتوقع أن تقوم جميع أطراف التعديل بالإبلاغ الأمانة بموجب المادة ٧ من
البروتوكول بالبيانات السنوية عن إنتاج مركبات الكربون الهيدروفلورية واستهلاكها والانبعاثات السنوية من مركب
الكربون الهيدروفلوري-٢٣ (HFC-23). وللمزيد من المعلومات، يرجى الاطلاع على مذكرة من الأمانة بشأن
المسائل المطروحة لكي يناقشها الفريق العامل المفتوح العضوية (UNEP/OzL.Pro.WG.1/39/2).

٢- الجدول الزمني للإبلاغ عن بيانات خط الأساس لمركبات الكربون الهيدروفلورية للأطراف العاملة بموجب الفقرة ١ من المادة ٥

٣- بعد تعديل كيغالي، تقتضي الفقرة ٢ من المادة ٧ من البروتوكول أن يقوم كل طرف من الأطراف العاملة بموجب الفقرة ١ من المادة ٥ (الأطراف العاملة بموجب المادة ٥) بتزويد الأمانة بالبيانات الإحصائية عن الإنتاج والواردات والصادرات لكل مادة من المواد الخاضعة للرقابة في المرفق واو عن سنوات خط الأساس (٢٠٢٠ - ٢٠٢٢ للأطراف من المجموعة ١^(١) وللسنوات ٢٠٢٤ - ٢٠٢٦ للأطراف من المجموعة ٢^(٢)) أو أفضل تقديرات ممكنة لهذه البيانات في حالة عدم توافر البيانات الفعلية، في موعد لا يتجاوز ثلاثة أشهر من تاريخ سريان البنود الواردة في البروتوكول فيما يتعلق بهذه المواد على ذلك الطرف.

٤- ويمكن أن يُطلب إلى الأطراف العاملة بموجب المادة ٥ التي تصادق على تعديل كيغالي، قبل نهاية عام ٢٠٢٢ بالنسبة لأطراف المجموعة ١ وقبل نهاية العام ٢٠٢٦ بالنسبة لأطراف المجموعة ٢، أن تبلغ عن بعض بياناتها ذات الصلة أو كلها قبل أن تتاح البيانات فعلياً. وعلى الرغم من أن الفقرة ٢ من المادة ٧ من البروتوكول تسمح للأطراف بتقديم تقديرات محتملة في حالة عدم توافر البيانات الفعلية، فالأطراف التي قد ترغب في وقت لاحق في تغيير بيانات خط الأساس لها عندما تتاح البيانات الفعلية سيتعين عليها أن تعرض طلباتها لإجراء هذه التغييرات لكي تنظر فيها لجنة التنفيذ بموجب إجراء عدم الامتثال لبروتوكول مونتريال واجتماع الأطراف، على النحو المطلوب في الفقرة ٥ من المقرر ١٣/١٥.

٥- وفي الماضي، لم يكن البروتوكول ينص على أي إلزام صريح للأطراف العاملة بموجب المادة ٥ بأن تُبلغ البيانات عن سنوات خط الأساس. وطلبت الأمانة إلى الأطراف العاملة بموجب المادة ٥ أن تبلغ عن هذه البيانات بعد أن تدخل حيز النفاذ للطرف المعني تدابير الرقابة المتعلقة بمجموعة معينة من المواد وعندما يكون لدى ذلك الطرف إنتاج أو استهلاك لتلك المجموعة من المواد.

٦- ومن ناحية أخرى، فإن الإلزام بإبلاغ البيانات عن سنوات خط الأساس للأطراف غير العاملة بموجب الفقرة ١ من المادة ٥ (الأطراف غير العاملة بالمادة ٥) كان دائماً مُدرجاً في المادة ٧ من البروتوكول، كما هو الأمر بالنسبة لكيغالي. ومن الناحية التاريخية، تحدد سنوات خط الأساس دائماً بالنسبة إلى تاريخ بدء نفاذ البروتوكول أو التعديلات للمجموعات المعنية من المواد^(٣).

٧- وقد تود الأطراف أن توضح متى ينبغي أن تبلغ الأطراف العاملة بالمادة ٥ عن بيانات مركبات الكربون الهيدروفلورية لكل سنة من السنوات التي تمثل خط الأساس بالنسبة لها. وقد تود الأطراف أن تنظر في

(١) جميع الأطراف العاملة بموجب المادة ٥ باستثناء الأطراف المدرجة في الحاشية ٢.

(٢) الإمارات العربية المتحدة، إيران (جمهورية - الإسلامية)، باكستان، البحرين، العراق، عمان، قطر، الكويت، المملكة العربية السعودية، الهند.

(٣) بالنسبة لمواد المرفق ألف، ومركبات الكربون الكلورية فلورية، بدأ نفاذ بروتوكول مونتريال الأصلي الذي أدرج هذه المواد في العام ١٩٨٩، في حين كانت سنة خط الأساس للأطراف غير العاملة بالمادة ٥ هي سنة ١٩٨٦. ولمواد المرفق باء، كانت سنة خط الأساس للأطراف غير العاملة بالمادة ٥ هي ١٩٨٩، في حين دخل تعديل لندن الذي أدرج هذه المواد حيز النفاذ في العام ١٩٩٢. أما بالنسبة لمركبات الكربون الهيدروكلورية فلورية وبروميد الميثيل فقد كانت سنتا خط الأساس للأطراف غير العاملة بالمادة ٥ هما ١٩٨٩ و ١٩٩١ على التوالي، في حين دخل تعديل كوبنهاغن، الذي أدرج هذه المواد حيز النفاذ في ١٩٩٤. ولمركبات الكربون الهيدروفلورية، كانت سنوات خط الأساس للأطراف غير العاملة بالمادة ٥ هي ٢٠١١ حتى ٢٠١٣، في حين سيدخل تعديل كيغالي الذي أدرج هذه المواد حيز النفاذ في العام ٢٠١٩.

إلزام كل طرف من الأطراف العاملة بالمادة ٥ بإبلاغ البيانات عن سنوات خط الأساس في موعد لا يتجاوز بدء التزامات ذلك الطرف بمقتضى الفقرة ٨ رابعاً من المادة ٥ من البروتوكول فيما يتعلق باستهلاك وإنتاج مركبات الكربون الهيدروفلورية^(٤).

٣- الإبلاغ عن المزائج والخلائط المحتوية على مركبات الكربون الهيدروفلورية بموجب المادة ٧ من البروتوكول

٨- جزء كبير من التجارة في مركبات الكربون الهيدروفلورية كان ولا يزال في المزائج والخلائط المحتوية على تلك المواد بدلاً من المواد النقية. وترد في المرفق الثالث لهذه المذكرة قائمة بالمزائج والخلائط المحتوية على مركبات الكربون الهيدروفلورية، تم تلقيها من فريق التقييم التكنولوجي والاقتصادي. وبالنسبة للمواد الخاضعة للرقابة سابقاً (مركبات الكربون الكلورية فلورية، ومركبات الكربون الهيدروكلورية فلورية، وغيرها)، كان حجم التجارة التي تجري في أشكال المزائج والخلائط صغيراً بالمقارنة مع التجارة بالمواد النقية. وكانت الأطراف تطالب بحساب كمية كل مادة نقية في المزائج والخلائط، بحيث يجري الإبلاغ عن المواد النقية حصراً. غير أنه بسبب العدد الكبير من المزائج والخلائط المشمولة في التجارة بمركبات الكربون الهيدروفلورية، قد تود الأطراف أن تنظر في السماح بالإبلاغ عن كميات المزائج والخلائط بدلاً من الكميات المحددة من مركبات الكربون الهيدروفلورية النقية التي تحتوي عليها تلك المزائج والخلائط. وتتولى الأمانة بعد ذلك مسؤولية إجراء الحسابات لاستخلاص الكميات المختلفة من المواد النقية التي تحتوي عليها المزائج والخلائط المبلغ عنها.

٩- ويمكن أن تستخدم القائمة التوضيحية للمزائج والخلائط التي ترد في نهاية التعليمات والمبادئ التوجيهية المرتبطة باستمارات الإبلاغ عن البيانات، على النحو المبين في الفرع ١١ من التذييل العاشر للمرفق الأول لهذه المذكرة، كأساس لحساب كميات المواد النقية التي يساهم بها كل خليط أو مزيج يبلغ عنه. وفي الحالات التي يود فيها أحد الأطراف أن يبلغ عن مزيج أو خليط غير قياسي لا يكون مدرجاً في القائمة التوضيحية للمزائج والخلائط، يتعين على الطرف المبلغ أن يُعلم الأمانة بتركيب هذا المزيج أو الخليط غير القياسي. وينعكس هذا النهج في الاستمارات المقترحة للإبلاغ عن البيانات، وما يرتبط بها من التعليمات والمبادئ التوجيهية المبينة في المرفق الأول لهذه المذكرة.

باء - عملية الموافقة على تقنيات التدمير للمواد المُدرجة في المرفق واو من بروتوكول مونتريال

١- تحديث استمارات الإبلاغ عن البيانات

١٠- وبعد اعتماد تعديل كيغالي، قد ترغب الأطراف في استعراض وتحديث استمارات الإبلاغ عن البيانات لكي تشمل التزامات الإبلاغ الناشئة عن اعتماد التعديل.

١١- وجميع التغييرات التي أدخلت في الماضي على استمارات الإبلاغ عن البيانات بموجب المادة ٧ من بروتوكول مونتريال وافق عليها اجتماع الأطراف بمقررات، على النحو المسجل في المرفق الثاني لهذه المذكرة. واتخذ بعض تلك المقررات على أساس التوصيات المقدمة من الأمانة أو لجنة التنفيذ.

(٤) يسمح هذا لكل طرف من الأطراف العاملة بالمادة ٥ بالإبلاغ حالما تتاح بيانات خط الأساس وفي الوقت المناسب لتمكين الطرف من اتخاذ التدابير التي تلي التزاماته بالامتثال لتدابير الرقابة فيما يتعلق بخطط أساس مركبات الكربون الهيدروفلورية.

١٢- وتقتراح الأمانة مجموعة من الاستثمارات المنقحة والإضافية لاستيعاب التزامات الإبلاغ الجديدة بموجب المادة ٧ من البروتوكول، على النحو الذي عدلت به في تعديل كيغالي. وترد الاستثمارات المنقحة في المرفق الأول لهذه المذكرة. وتظهر جميع التغييرات الرئيسية التي أدخلت على استثمارات الإبلاغ باللون الأحمر.

٢- عنصر بيانات مركبات الكربون الهيدروفلورية

١٣- قد تود الأطراف النظر في تمديد فترة استثمارات الإبلاغ الحالية لكي تغطي عناصر مركبات الكربون الهيدروفلورية والالتزامات الجديدة على النحو التالي:

(أ) إضافة صفحة إلى استثمار بيانات "الصادرات" (الاستثمار ١) بإدراج مركبات الكربون الهيدروفلورية الجديدة؛

(ب) إضافة صفحة إلى استثمار بيانات "الإنتاج" (الاستثمار ٣) بإدراج مركبات الكربون الهيدروفلورية الجديدة؛

(ج) إضافة استثمار بيانات جديدة (الاستثمار ٦) من أجل المتطلبات الجديدة للإبلاغ عن انبعاثات مركب الكربون الهيدروفلوري-٢٣ (HFC-23) على أساس كل منشأة على حدة، ولإضافة سؤال مقابل على صفحة "الاستبيان" من استثمارات الإبلاغ عن البيانات لتغطية الاستثمار الجديدة. تتطلب الفقرة ٣ ثالثاً من المادة ٧ من البروتوكول الإبلاغ عن الانبعاثات السنوية لكل منشأة وفقاً للفقرة ١ (د) من المادة ٣ من البروتوكول، التي تنص بدورها على أن تستثنى من الانبعاثات الكميات المحتجزة من أجل الاستخدام أو التدمير أو التخزين. ولذلك تتضمن الاستثمار ٦ الجديدة المقترحة عموداً للإبلاغ عن الكميات المنبعثة وأعمدة اختيارية لإتاحة الإبلاغ الطوعي عن الكميات المحتجزة والكميات التي يتم تدميرها، مما يسهل حصر إجمالي كميات المركب (HFC-23) المولدة لكل منشأة؛

(د) استحداث استثمارات جديدة للبيانات للإبلاغ عن البيانات المنفصلة للإنتاج والاستهلاك في إطار استثناءات درجات الحرارة المحيطة العالية للقطاعات الفرعية التي ينطبق عليها الإعفاء (المقرر ٢/٢٨، الفقرة ٣٠). ولا تستخدم استثمار الإبلاغ عن الإنتاج إلا من الأطراف التي تنتج مركبات الكربون الهيدروفلورية لتلبية احتياجاتها لإعفاءات استخدامات درجات الحرارة المحيطة العالية.

١٤- ومن الممكن أن تظل الاستثمارات الموجودة الأخرى بشأن "الصادرات" (الاستثمار ٢) و"التدمير" (الاستثمار ٤) و"التجارة مع غير الأطراف" (الاستثمار ٥) دون تغيير لأن المركبات ليست مذكورة فيها، بل يقوم الطرف المبلغ بدلاً من ذلك بملء المواد المعنية التي يرغب في الإبلاغ عنها.

٣- النهج الذي تقترحه الأمانة

١٥- يهدف النهج الذي تقترحه الأمانة إلى إدخال أقل قدر ممكن من التغييرات على استثمارات البيانات الحالية التي تعرفها الأطراف.

١٦- ولأن بعض الأطراف لا تزال تبلغ عن استخدامات كميات معاد تدويرها من المواد التي تقرر التخلص التدريجي منها كمواد وسيطة وعن عمليات تجارة فيها، احتفظت الأمانة بإدراج تلك المواد في القائمة المنقحة المقترحة.

١٧- ونقحت الأمانة أيضاً "التعليمات والمبادئ التوجيهية للإبلاغ عن البيانات" لتصبح أكثر شمولاً فأدرجت فيه المقررات الإضافية ذات الصلة بالإبلاغ والتي تساعد دوماً على إرشاد الأطراف في تقديمها للبيانات.

١٨- ويدعى الفريق العامل إلى النظر في ما قد يلزم من التوجيهات بشأن الاستثمارات المنقحة للإبلاغ عن البيانات وفي "التعليمات والمبادئ التوجيهية للإبلاغ عن البيانات" على النحو المبين في المرفق الأول من هذه المذكرة، وإلى تقديم الإرشاد بشأنها إلى الأمانة.

جيم- عمل فريق التقييم العلمي على تحديث المعلومات المتعلقة بإمكانية الاحتراز العالمي لمواد المجموعة الأولى من المرفق ألف والمرفق جيم والمرفق واو من بروتوكول مونتريال

١٩- أدرج تعديل كيغالي فقرة فرعية جديدة ٩ (أ) '٢' ضمن المادة ٢ من البروتوكول، وتنص على أنه يجوز للأطراف أن تقرر إذا كان ينبغي إجراء تعديلات على القدرة على إحداث الاحتراز العالمي المحددة في المجموعة الأولى من المرفق ألف، والمرفق جيم، والمرفق واو، وإن كان الأمر كذلك، تحديد تلك التعديلات. وهذا البند مماثل لذلك الوارد في الفقرة الفرعية ٩ (أ) '١' من المادة ٢ من البروتوكول والتي بموجبها يجوز للأطراف أن تقرر بشأن تعديل قيم القدرة على استنفاد الأوزون للمواد المستنفدة للأوزون.

٢٠- ومثلما يظهر في تقرير الاجتماع الثامن للأطراف (UNEP/OzL.Pro.28/12، الفقرة ٢٠٤)، أُنقِص على أن يقوم فريق التقييم العلمي بتزويد اجتماع الأطراف بالمعلومات التي يحتاج إليها لتعديل قيم إمكانية الاحتراز العالمي لمواد المجموعة الأولى من المرفق ألف والمرفق جيم والمرفق واو، وأن يقدم تقريراً عن التقدم في هذا الصدد إلى الفريق العامل المفتوح العضوية في اجتماعه التاسع والثلاثين.

٢١- وبموجب تعديل كيغالي، لم يجر تعيين قيم إمكانية الاحتراز العالمي إلا لبعض مركبات الكربون الهيدروكلورية فلورية المدرجة في المرفق جيم من البروتوكول، في حين لم تحدد قيم إمكانية الاحتراز العالمي لمركبات الكربون الهيدروكلورية فلورية الأخرى. وأدرج في المرفق جيم من البروتوكول بند ينص على أنه بالنسبة للمواد التي لم يشر إلى قيمة إمكانية الاحتراز العالمي لها ستطبق القيمة الفرضية صفر إلى حين إدراج قيمة إمكانية إحداث الاحتراز العالمي بواسطة الإجراء المتوخى في الفقرة ٩ (أ) '٢' من المادة ٢ من البروتوكول. ومنذ ذلك الحين، حددت الأمانة أنه بالنسبة لسنوات خط الأساس لمركبات الكربون الهيدروكلورية فلورية، لم يبلغ إلا عن ستة مركبات هي HCFC-121 و HCFC-122 و HCFC-133 و HCFC-141 و HCFC-142 و HCFC-225، ولم تعين لها قيم إمكانية إحداث الاحتراز العالمي. وأبلغ ١٩ طرفاً عن مركبات الكربون الهيدروكلورية فلورية هذه، منها ١١ طرفاً من الأطراف غير العاملة بالمادة ٥ و ٨ من الأطراف العاملة بالمادة ٥.

٢٢- وقد تود الأطراف أن تلاحظ أنه جرى تعيين قيم منخفضة لإمكانية الاحتراز العالمي لكل من HCFC-141b و HCFC-142b، وهما الإيسومران الأكثر جدوى من الناحية التجارية للمادتين HCFC-141 و HCFC-142 على التوالي. وقد تود الأطراف النظر في تقديم توجيهات إلى الأمانة بشأن ما إذا كان من الممكن استخدام هذه القيم لإمكانية الاحتراز العالمي للمادتين HCFC-141 و HCFC-142.

٢٣- وفي إطار البند ٣ (ب) من جدول الأعمال المؤقت، يتوقع أن يقدم فريق التقييم العلمي إلى الفريق العامل المفتوح العضوية في اجتماعه التاسع والثلاثين معلومات مستكملة عن هذه المسائل

دال- قيم إمكانية الاحترار العالمي المحتملة للإيسومرات الأكثر جدوى من الناحية التجارية للمادتين HCFC-123 و HCFC-124

٢٤- إن HCFC-123** و HCFC-124** هما المادتان الأكثر جدوى من الناحية التجارية بالنسبة لمجموعي الإيسومرات المناظرتين، وقد أدرجت قيم قدرات استنفاد الأوزون لهما لاستخدامهما لأغراض البروتوكول. غير أنه لم تعين لأي من المادتين قيم لإمكانية إحداث الاحترار العالمي.

٢٥- ولكن قيم إمكانية الاحترار العالمي المدرجة لكل من مجموعتي الإيسومرات HCFC-123 و HCFC-124 بأكملهما تنطبق أيضاً على الإيسومرات الأكثر جدوى من الناحية التجارية لكل من المجموعتين. والمنطق الذي يستند إليه هذا الفهم هو أن كل مجموعة من الإيسومرات تشمل جميع الإيسومرات التي تضمها هذه المجموعة، بما في ذلك الإيسومر الذي يمثل المادة الأكثر جدوى من الناحية التجارية. وفي حالة عدم تحديد قيمة لإمكانية الاحترار العالمي لإيسومر معين، يمكن أن تنطبق قيمة إمكانية الاحترار العالمي لمجموعة الإيسومرات بأكملها على الإيسومر المعين الذي تنقصه قيمة محددة لإمكانية إحداث الاحترار العالمي. وستستخدم الأمانة قيمتي إمكانية إحداث الاحترار العالمي ٧٧ و ٦٠٩ للإيسومرين HCFC-123** و HCFC-124**، على التوالي، لأغراض حساب مستويات الإنتاج والاستهلاك، المعبر عنها بمكافئ ثاني أكسيد الكربون.

هاء- التجارة مع غير الأطراف: اشتراط الإبلاغ مقابل القيود التجارية

٢٦- تنص الفقرة ٢ من المادة الرابعة من تعديل كيغالي على أن تدخل التغييرات على المادة ٤ من البروتوكول، مراقبة المبادلات التجارية مع غير الأطراف، والواردة في المادة الأولى من هذا التعديل حيّز النفاذ في ١ كانون الثاني/يناير ٢٠٣٣.

٢٧- ولا ينطبق التأخير حتى العام ٢٠٣٣ على الإبلاغ السنوي عن المعلومات المتعلقة بالتجارة مع غير الأطراف والمطلوبة بموجب الفقرة ٣ من المادة ٧ من البروتوكول. ويجري تناول الصادرات إلى غير الأطراف في الفقرة ١ (ج) من المادة ٣ من البروتوكول وتسري اعتباراً من السنة التي يتم الإبلاغ فيها عن البيانات السنوية.

٢٨- لذلك، يشترط على الأطراف الإبلاغ عن المعلومات المتعلقة بالتجارة مع غير الأطراف اعتباراً من بدء نفاذ تعديل كيغالي. وستعامل الأمانة تلك الصادرات إلى غير الأطراف على أنها استهلاك من الطرف المصدر.

٢٩- ولتيسير الإبلاغ عن التجارة مع غير الأطراف، إذا أبلغ طرف عن بلدان المقصد لصادراته أو بلدان المصدر لوارداته، يمكن للأمانة أن تحدد تلقائياً الصادرات أو الواردات التي جرت التجارة فيها مع غير الأطراف، وتملاً المعلومات في استمارة البيانات بشأن التجارة مع غير الأطراف وفقاً لذلك.

Proposed data reporting forms and associated instructions and guidelines

Appendix I – Questionnaire (Significant changes in text are indicated red)

Party: _____ Reporting Year: _____

Respondents are requested to read carefully the Introduction in section 1, the General Instructions in section 3 and the Definitions in section 4 before proceeding to the questionnaire and to refer to them 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 of the 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 of the 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 of the document carefully before filling in the form.

1.4. Did your country destroy any ODSs **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 of the 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 of the document carefully, and, 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 of the document carefully before filling in the form.

Name of reporting officer:

Signature:

Designation:

Organization:

Postal Address:

.....

Country:

Phone:

E-Mail:

Date:

Appendix II – Data Form 1 on Imports *(Significant changes in text are indicated red)*

1. Fill in this form only if your country imported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs	Data Form 1 DATA ON IMPORTS	UNEP/OzL.Pro/Dataform17
2. Please read Instruction I carefully before filling in this form.	in tonnes ^[1] (not ODP or GWP tonnnnes) <u>Annexes A, B, C, E and F substances</u>	
Party : _____		Period : January - December 20____

Annex/Group 1	Substances 2	Total Quantity Imported for All Uses		Quantity of New Substances Imported for Feedstock Uses 5	Quantity of New Substances Imported for Exempted Essential, Critical or Other Uses*	
		New 3	Recovered and Reclaimed 4		Quantity 6	Decision / Type of Use* 7
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 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)					

[1] "tonne" = "metric ton".

Comments:

* Against each substance imported for exempted Essential, Critical or Other Uses, please specify the Meeting of the Parties decision that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical 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		
Annex/Group 1	Substances 2	Total Quantity Imported for All Uses		Quantity of New Substances Imported for Feedstock Uses 5	Quantity of New Substances Imported for Exempted Essential, Critical or Other Uses*	
		New 3	Recovered and Reclaimed 4		Quantity 6	Decision / Type of Use* 7
C-Group I	HCFC-21** (CH ₂ Cl ₂)					
	HCFC-22** (CHF ₂ Cl)					
	HCFC-31 (CH ₂ FCI)					
	HCFC-123** (CHCl ₂ CF ₃)					
	HCFC-124** (CHFCICF 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 ₃ 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	
Comments:						
<p>NB: As per paragraph 5bis 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 or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical use. Should the column space be insufficient, further information can be provided in the “comments” box above.</p>						

Data Form 1 (continued)		UNEP/OzL.Pro/Dataform17				
Annex/Group 1	Substances 2	Total Quantity Imported for All Uses		Quantity of New Substances Imported for Feedstock Uses 5	Quantity of New Substances Imported for Exempted Essential, Critical, HAT or Other Uses*	
		New 3	Recovered and Reclaimed 4		Quantity 6	Decision / Type of Use* 7
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 CHFCF ₂ CF ₃)					
Mixtures and Blends (Please add additional rows or additional pages as required for blends not listed below)						
	R-404A (HFC125 = 44%, HFC134a = 4%, HFC143a = 52%)					
	R-407A (HFC32 = 20%, HFC125 = 40%, HFC143a = 40%)					
	R-407C (HFC32 = 23%, HFC125 = 25%, HFC143a = 52%)					
	R-410A (HFC32 = 50%, HFC125 = 50%)					
	R507A (AZ50) (HFC125 = 50%, HFC143a = 50%)					
	R-508B (HFC23 = 46%, CFC116 = 54%)					
F-Group II	HFC-23 (CHF ₃)					
Comments:						
<p>NB: If a non-standard blend not listed in section 11 of the Data Reporting Guidelines is to be reported, please indicate the percentage by weight of each constituent substance of the mixture being reported in the comments section of the form.</p> <p>* Against each substance imported for exempted Essential, Critical, HAT or Other Uses, please specify the Meeting of the Parties decision that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical use. Should the column space be insufficient, further information can be provided in the "comments" box above.</p>						

Annex to Data Form 1 - Exporting Parties for Quantities reported as Imports

UNEP/OzL.Pro/Dataform17

NB: This annex is excluded from the reporting requirements under Article 7 of the Protocol, and provision of the information in the annex is to be done on a voluntary basis (decision XXIV/12)

Substances 1	Exporting Party for the quantities reported as imports 2	Total Quantity Imported for All Uses		Quantity of New Substances Imported for Feedstock Uses 5	Quantity of New Substances Imported for Exempted Essential, Critical or Other Uses*	
		New 3	Recovered and Reclaimed 4		Quantity 6	Decision / Type of Use* 7
methyl bromide (CH ₃ Br)						
					Quantity of New Methyl Bromide Imported to be used for Quarantine and Pre-shipment Applications within your country	
Comments:						

Appendix III – Data Form 2 on Exports *(Significant changes in text are indicated red)*

<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 style="text-align: right;">Data Form 2</p> <p style="text-align: right;">UNEP/OzL.Pro/Dataform17</p> <p style="text-align: center;"><u>DATA ON EXPORTS*</u></p> <p style="text-align: center;">in tonnes^[1] (not ODP or GWP tonnnes)</p> <p style="text-align: center;"><u>Annexes A, B, C, E and F substances</u></p> <p style="text-align: center;">Period : January - December 20____</p>
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Substances	Country of Destination of Exports**	Total Quantity Exported for All Uses		Quantity of New Substances Exported for Feedstock***	Quantity of New Substances Exported for Exempted Essential, Critical, HAT or Other Uses****	
		New 3	Recovered and Reclaimed 4		Quantity 6	Decision / Type of Use**** 7
methyl bromide (CH ₃ Br)						
					Quantity of New Methyl Bromide Exported to be used for Quarantine and Pre-shipment Applications	

[1] "tonne" = "metric ton".

Comments:

NB: If a non-standard blend not listed in section 11 of the Data Reporting Guidelines is to be reported, please indicate the percentage by weight of each constituent substance of the mixture being reported in the comments section of the form.

* Includes re-exports. Ref. decisions IV/14 and XVII/16(4)

** Applicable to all substances, including those contained in mixtures (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, HAT or Other Uses, please specify the Meeting of the Parties decision that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Appendix IV – Data Form 3 on Production *(Significant changes in text are indicated red)*

<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>UNEP/OzL.Pro/Dataform17</p> <p><u>DATA ON PRODUCTION</u></p> <p>in tonnes^[1] (not ODP or GWP tonnes)</p> <p><u>Annexes A, B, C, E and F substances</u></p> <p>Period : January - December 20____</p>
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Annex/Group	Substances	Total Production for All Uses	Production for Feedstocks within your Country	Production for Exempted Essential, Critical or Other Uses within your Country* Quantity Decision / Type of Use*	Production for Supply to Article 5 countries in accordance with Articles 2A-2H and 5
1	2	3	4	5	6
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 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)				

This column is no longer applicable to Annex A and B substances (CFCs, Halons, CCL₄ and methyl chloroform)

[1] "tonne" = "metric ton".

Comments:

NB: 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 or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data Form 3 (continued)

Data Form C (Continued)						
Annex/Group	Substances	Total Production for All Uses	Production for Feedstocks within your Country	Production for Exempted Essential, Critical or Other Uses within your Country*		Production for Supply to Article 5 countries in accordance with Articles 2A-2H and 5
				Quantity	Decision / Type of Use*	
1	2	3	4	5	6	7
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 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 groups 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		

Comments:

NB: 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 or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data Form 3 (continued)

Annex/Group	Substances	Total Production for All Uses	Production for Feedstocks within your Country	Production for Exempted Essential, Critical, HAT or Other Uses within your Country*		Production for Supply to Article 5 countries in accordance with Articles 2A-2H and 5
				Quantity	Decision / Type of Use*	
1	2	3	4	5	6	7
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:

NB: 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, HAT or Other Uses, please specify the Meeting of the Parties decision that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Appendix V – Data Form 4 on Destruction of controlled substances *(Significant changes in text are indicated red)*

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

2. Please read Instruction IV carefully before filling in this form

Party : _____

Data Form 4

UNEP/OzL.Pro/Dataform17

DATA ON QUANTITY OF SUBSTANCES DESTROYED

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

Annexes A, B, C, E **and F** substances

Period : January - December 20____

[illegible]

[1] "tonne" = "metric ton".

Comments:

NB: If a non-standard blend not listed in section 11 of the Data Reporting Guidelines is to be reported, please indicate the percentage by weight of each constituent substance of the mixture being reported in the comments section of the form.

Appendix VI – Data Form 5 on Trade with Non-Party (*Significant changes in text are indicated red*)

UNEP/OzL.Pro/Dataform1

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

Data Form 5

2. Please read Instruction V carefully before filling in this form.

DATA ON IMPORTS FROM AND/OR EXPORTS TO NON-PARTIES*

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

Annexes A, B, C, E **and F** substances

Party : - _____

Period : January - December 20____

[illegible]

[1] "tonne" = "metric ton".

Comments:

NB: If a non-standard blend not listed in section 11 of the Data Reporting Guidelines is to be reported, please indicate the percentage by weight of each constituent substance of the mixture being reported in the comments section of the form.

* See definition of "Non-Parties" in Instruction V.

Appendix VII – Data Form 6 on Emissions *(New form)*

Data Form 6

UNEP/OzL.Pro/Dataform17

1. Fill in this form only if your country generated HFC-23 from any facility that produced (manufactured) Annex C, Group I, or Annex F substances

DATA ON QUANTITY OF EMISSIONS OF HFC-23 FROM
FACILITIES MANUFACTURING ANNEX C GROUP I OR ANNEX F SUBSTANCES

2. Please read Instruction VI carefully before filling in this form

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

Party : _____

Period : January - December 20__

[illegible]

[1] "tonne" = "metric ton".

NB: Amount of HFC-23 generated is the sum of emissions (column 2) and quantities captured (sum of columns 5, 6 and 7)

Comments:

Appendix VIII – Separate reporting of consumption (imports) under the HAT exemption *(New form)*

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 intent to use the HAT exemption and imported HFCs for its own use in the sub-sectors contained in Appendix I of decision XXVIII/2.		HAT Exemption - Data Form 1 DATA ON IMPORTS OF ANNEX F SUB-SECTORS in tonnes ^[1] (not ODP nor GWP tonnes)			UNEP/OzL.Pro/HAT_Dataform17	
Party : _____		Period : January - December 20_____				
Annex/Group 1	Substances 2	Quantity of New Substances IMPORTED for Approved Sub-sectors to which the HAT exemption applies (Columns to be added as required for other sub-sectors that may be approved after the assessments under paragraph 32 of decision XXVIII/2)*				
		Multi-split air conditioners 3	Split ducted air conditioners 4	Ducted commercial packaged (self-contained) air-conditioners 5	Sub-Sector* 6	Sub-Sector* 7
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)					
	Mixtures and Blends (Please add additional rows or additional pages as required for blends not listed below)					
R-404A (HFC125 = 44%, HFC134a = 4%, HFC143a = 52%)						
R-407A (HFC32 = 20%, HFC125 = 40%, HFC143a = 40%)						
R-407C (HFC32 = 23%, HFC125 = 25%, HFC143a = 52%)						
R-410A (HFC32 = 50%, HFC125 = 50%)						
R507A (AZ50) (HFC125 = 50%, HFC143a = 50%)						
R-508B (HFC23 = 46%, CFC116 = 54%)						
F-Group II	HFC-23 (CHF ₃)					
Comments:						

[1] "tonne" = "metric ton".
 NB: If a non-standard blend not listed in section 11 of the Data Reporting Guidelines is to be reported, please indicate the percentage by weight of each constituent substance of the mixture being reported in the comments section of the form.
 * For each substance **imported** for use in sub-sectors that may be approved after the assessments under paragraph 32 of decision XXVIII/2, please specify the approved sub-sector. Should the column space be insufficient, further information can be provided in the "comments" box above.

Appendix IX – Separate reporting of production under the HAT exemption (New form)

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 intent to use the HAT exemption and produced HFCs for its own use in the sub-sectors contained in Appendix I of decision XXVIII/2.	HAT exemption - Data Form 2 <u>DATA ON PRODUCTION OF ANNEX F SUB-SECTORS</u> in tonnes ^[1] (not ODP nor GWP tonnes)	UNEP/OzL.Pro/HAT_Dataform17										
Party : _____ Period : January - December 20____												
Annex/Group 1	Substances 2	Quantity of New Substances PRODUCED for Approved Sub-sectors to which the HAT 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 paragraph 32 of decision XXVIII/2)*										
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Multi-split air conditioners</td> <td style="width: 15%;">Split ducted air conditioners</td> <td style="width: 15%;">Ducted commercial packaged (self-contained) air-conditioners</td> <td style="width: 15%;">Sub-Sector*</td> <td style="width: 15%;">Sub-Sector*</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> <td style="text-align: center;">..... 6</td> <td style="text-align: center;">..... 7</td> </tr> </table>	Multi-split air conditioners	Split ducted air conditioners	Ducted commercial packaged (self-contained) air-conditioners	Sub-Sector*	Sub-Sector*	3	4	5 6 7
Multi-split air conditioners	Split ducted air conditioners	Ducted commercial packaged (self-contained) air-conditioners	Sub-Sector*	Sub-Sector*								
3	4	5 6 7								
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)											
[1] "tonne" = "metric ton".												
Comments:												
* For each substance produced for use in sub-sectors that may be approved after the assessments under paragraph 32 of decision XXVIII/2, please specify the approved sub-sector. Should the column space be insufficient, further information can be provided in the "comments" box above.												

Appendix X – DATA REPORTING INSTRUCTIONS AND GUIDELINES

(Significant changes in text are indicated red)

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 by various decisions of the Meeting of the Parties.

1.2 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, respectively. 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 the Imports Data Form 1 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 Annex B CFCs and HCFCs, the form is made shorter by providing rows only for substances which have been reported by Parties in the past. A few blank rows are provided for more substances, if needed. HBFCs and BCM (Annex C, Groups II & III) have already been phased out by all Parties. Hence, only one blank row has been provided for them, as a formality. You can use the computerized forms supplied by the Secretariat or paper forms. Parties who use the computerized forms can easily add more rows as needed; if using paper forms, Parties are free to add pages as required.
- (c) The following are the exempted categories of **uses of controlled substances**:
 - Feedstock uses for all the substances,
 - Essential uses, including laboratory and analytical uses, for substances as approved by Meetings 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 Meetings of the Parties,**
 - Critical or emergency uses of Methyl Bromide as approved from time to time, and
 - **Exemption for high-ambient-temperature parties (HAT exemption).**

It is necessary for each Party to specify how much of its production, export or import is used for these exempted categories. The Secretariat will deduct, where applicable, these exempted quantities from the total figures. Provision is made in the data forms for these exempted categories. For **exempted** essential, critical, **HAT or other** uses, provision has also been made for Parties to specify the decision of the Meeting of the Parties that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical use.
- (d) The same forms can be used for reporting of base years and other years.
- (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.

2. REPORTING CALLED FOR UNDER THE PROTOCOL

2.1 Reporting set out under the Montreal Protocol, and requested pursuant to decisions by Meetings of the Parties are as follows:

<u>Basis for reporting</u>	<u>Information to be provided</u>
<u>Annual Data Reporting under Article 7</u>	<i>(reported annually)</i>
a) Article 7 paragraphs 3, 3 bis and 3 ter	<ul style="list-style-type: none"> - Production, imports and exports of each of the controlled substances - Amounts used for feedstock - Amounts destroyed by technologies approved by the Parties - Imports from and exports to non-Parties - Imports and exports of recycled halons and HCFCs - Emissions of HFC-23 from facilities producing HCFCs or HFCs
b) To verify implementation of Articles 2A - 2H	- Increased (annual) production to meet the basic domestic needs of Article 5 Parties
c) Decision IV/11, paragraph 3	- Statistical data on the actual quantities of controlled substances destroyed
d) Decision IV/17 A, paragraph 1	- Information on the implementation of Article 4 of the Protocol, trade with non-Parties
e) Decision IV/24, paragraph 2	- Import and export of recycled and used controlled substances
f) Decision VII/30, paragraph 1	- Amount of controlled substances produced and exported for the purpose of being entirely used as feedstock in importing countries so that it is not the subject of the calculation of "production" or "consumption" in exporting countries
g) Decision VII/30, paragraph 2	- Importing countries -the volumes of controlled substances imported for feedstock
h) Decision XI/13, paragraph 3	Statistical data on amount used for quarantine and pre-shipment applications
i) Decision XVII/16, paragraph 4	- Types, quantities and destinations of exports of all controlled substances
j) Decision XXIV/12, paragraph 1	- Types of controlled substances, quantities and exporting party for quantities reported as imports
<u>Baseline Data Reporting under Article 7</u>	<i>(reported once)</i>
a) Article 7 paragraphs 1 and 2	- Statistical data on production, imports and exports of each of the controlled substances for the baseline years, or the best possible estimates of such data where actual data are not available, within 3 months of entry into force
b) 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.
c) Decision XV/19, paragraph 2	- Methodology for submission of requests for revision of baseline data: the information and documentation to be submitted
<u>Transfer or addition of production or consumption</u>	<i>(reported as and when it occurs)</i>
Article 2, paragraphs 5, 5 bis, 6, 7	- Transfer or addition of production or consumption

<u>Basis for reporting</u>	<u>Information to be provided</u>
<u>Research, development, public awareness and exchange of information</u>	<i>(reported every two years)</i>
Article 9	- Summary of activities
<u>Process agent uses</u>	<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
<u>Essential use exemptions other than laboratory and analytical uses*</u>	<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 <i>(reporting accounting framework)</i>
* Decisions relating to essential use exemptions for CFCs for metered-dose inhalers (MDIs) for the treatment of asthma and chronic obstructive pulmonary diseases (COPD) are no longer included here, since such exemptions have been phased-out.	
<u>Essential use exemptions: laboratory and analytical uses</u>	<i>(reported annually)</i>
Decision VI/9, paragraph 3 and paragraph 4 of Annex II to the report of the Sixth Meeting of the Parties	- Each controlled substance produced for laboratory and analytical uses
<u>Exemption for high-ambient-temperature parties (HAT Exemption)</u>	<i>(reported the year following an exemption)</i>
Decision XXVIII/2, paragraph 30	- Report separately production and consumption data for the sub-sectors to which the exemption applies
<u>Licensing information</u>	<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>
<u>Critical use exemptions for Methyl bromide information</u>	<i>(reporting requirements specified below)</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

Basis for reporting**Information to be provided**

- | | |
|--|--|
| 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 export for critical uses in accounting framework |

Other information**(reporting periodicity specified below)**

- | | |
|--------------------------------|---|
| a) Decision V/15 | - Information relevant to international halon bank management (see the On-line Halon Trader, http://www.halontrader.org , a "business to business" web portal developed by the OzonAction Programme under the Multilateral Fund, to contribute to the ozone protection by promoting halon banking and responsible halon management) <i>(reported once)</i> |
| b) Decision V/25 and VI/14 A | - 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> |

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 ODPs (ozone depleting potentials) **or GWPs (global warming potentials)**.
- 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 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. It is, therefore, 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, amounts** used for feedstock uses, 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 It should be noted that both paragraphs 1 and 2 of Article 7 of the Montreal Protocol provide that the Parties may submit the best possible estimates of data for the base years if actual data are not available.
- 3.6 Parties producing or consuming controlled substances for approved essential uses should also report to the Secretariat using the accounting form approved by decision VIII/9, paragraph 9.

- 3.7 Parties producing or consuming methyl bromide for approved critical uses should also report to the Secretariat using the form approved by decision Ex.I/4 paragraph 9 (f) and decision Ex.II/1 paragraph 3.
- 3.8 Parties might import or export mixtures or blends containing controlled substances. If this is the case, the Parties are requested to report the quantity of the mixture or blend. Parties should take care to ensure quantities are only reported as the blend, and not the individual constituents of the blend. 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. If the mixture or blend being reported is not included in section 11 of this guide, Parties need to indicate percentage by weight of each constituent 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" on the OzonAction web site. 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.
- 3.9 Parties producing or consuming controlled substances under the HAT exemption should also report separately to the Secretariat production and consumption data for the sub-sectors to which the exemption applies (decision XXVIII/2, paragraph 30). Sub-sector specific information should be provided by the country using the exemption, not by the producer country. Production under the HAT exemption should only be reported if the production is not for export, and is for use internally by the producing country.

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 The 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 Parties decided at their Fourth Meeting (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 of 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 Parties decided at their Eighth Meeting (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 **Decision IV/25 on essential uses states that a use of a controlled substance should qualify as "essential" only if:**
- (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;
- 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.
- 4.11 **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;
- 4.12 **"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.

- 4.12 “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.
- 4.13 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 these Articles.

5. INSTRUCTION I: Data on Imports of controlled substances (Data Form 1)

- 5.1 For reporting 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), please use data form 1.
- 5.2 In column 2 of Data Form 1, all substances of Annex A, Annex B (Groups II and III) and Annex F have been listed. For Annex B Group I (Other fully halogenated CFCs) and Annex C Group I (HCFCs), only substances which have been reported by Parties in the past are listed. HBFCs have already been phased out by all Parties and hence for HBFCs only one blank row has been provided as a formality. If you are importing controlled substances other than those listed, please use the blank space to report data on these substances, and use additional pages, if necessary.
- 5.3 If your country imported mixtures (blends) of controlled substances, e.g. R-502 (HCFC-22 48.8%; CFC-115 51.2%), please report only the quantity of the mixture or blend. Parties should take care to ensure quantities are only reported as the blend, and not the individual constituents of the blend. 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. If the mixture being reported is not included in section 11 of this guide, Parties need to indicate the percentage by weight of each constituent 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" on the OzonAction web site. 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 zero (0) in column 3 for "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. Substances so used are completely transformed in the manufacturing process of the new chemical. In reporting total quantities of new substances imported in column 3, the quantities imported for feedstocks, reported in column 5, should not be deducted. Similarly, the quantities imported for exempted essential, critical, HAT or other uses, reported in column 6, should not be deducted. The Secretariat will make the necessary deductions. With regard to column 7, provision has been made for Parties to indicate against each type of controlled substance imported for exempted essential, critical, HAT or other uses, the decision of the Meeting of the Parties that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical use. Should the column space be insufficient, further information can be provided in the “comments” box at the end of the form.
- 5.6 When calculating a Party's consumption of methyl bromide, the quantities used for quarantine and pre-shipment (QPS) applications are excluded. In data form 1, quantities of methyl bromide imported for quarantine and pre-shipment applications should be entered separately at the bottom of the form, and not deducted from the total quantity imported. The Secretariat will make the necessary deductions.

- 5.7 Decision XXIV/12, paragraph 1, requested the Ozone Secretariat to revise the reporting forms resulting from decision XVII/16 to include in the data forms an annex indicating the exporting party for the quantities reported as import, noting that the annex is excluded from the reporting requirements under Article 7 of the Protocol and that the provision of the information in the annex would be done on a voluntary basis. If a particular controlled substance is imported from more than one country, the quantity imported from each country should be indicated separately. Please see the example below.

Annex to Data Form 1 - Exporting Parties for Quantities reported as Imports UNEP/OzL.Pro/Dataform17						
NB: This annex is excluded from the reporting requirements under Article 7 of the Protocol, and provision of the information in the annex is to be done on a voluntary basis (decision XXIV/12)						
Substances 1	Exporting Party for the quantities reported as imports 2	Total Quantity Imported for All Uses		Quantity of New Substances Imported for Feedstock Uses 5	Quantity of New Substances Imported for Exempted Essential, Critical or Other Uses*	
		New 3	Recovered and Reclaimed 4		Quantity 6	Decision / Type of Use* 7
HCFC-22	Country AAA	50				
HCFC-22	Country BBB	75				
HFC-134a	Country AAA	80				
HFC-134a	Country CCC	60				
HFC-134a	Country DDD	30				
methyl bromide (CH ₃ Br)						
					Quantity of New Methyl Bromide Imported to be used for Quarantine and Pre-shipment Applications within your country	
Comments:						

6. INSTRUCTION II: Data on Export of controlled substances (Data Form 2)

- 6.1 For reporting data on exports, including re-exports, 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)**, please use data form 2.
- 6.2 Data on re-exports of the substances listed above should also be included in this form. Decision IV/14 clarified that cases of import and re-export should be treated as two separate transactions, so that the country of intermediate destination would report both the import from the country of origin and re-export to the country of final destination.
- 6.3 The first column ("SUBSTANCES") has been left blank because each Party may export different substances. Please add the names and relevant information of only those substances being exported by your country.
- 6.4 If your country exported mixtures (blends) of controlled substances, e.g. R-502 (which contains 48.8% HCFC-22 and 51.2% CFC-115), please **report only the quantity of the mixture or blend. Parties should take care to ensure quantities are only reported as the blend, and not the individual constituents of the blend. 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. **If the mixture being reported is not included in section 11 of this guide, Parties need to indicate the percentage by weight of each constituent 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" on the OzonAction web site. This worldwide database service is designed to help customs officials and National Ozone Units control imports and exports of **controlled substances** and prevent illegal trade.
- 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. Fill in column 2 on the destination of exports. Please ensure that, if a particular controlled substance is exported to more than one country, the quantity exported to each country is separately indicated. Please see the example below.

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 2. Please read Instruction II carefully before filling in this form.		Data Form 2 UNEP/OzL.Pro/Dataform17				
		DATA ON EXPORTS* <u>in tonnes (not ODP or GWP tonnes)</u> <u>Annexes A, B, C, E and F substances</u>				
Party : _____		Period : January - December 20____				
Substances	Country of Destination of Exports**	Total Quantity Exported for All Uses		Quantity of New Substances Exported for Feedstock***	Quantity of New Substances Exported for Exempted Essential, Critical or Other Uses****	
		New	Recovered and Reclaimed		Quantity	Decision / Type of Use****
1	2	3	4	5	6	7
HCFC-22	Destination AAA	50				
HCFC-22	Destination BBB	75				
HFC-134	Destination AAA	80				
HFC-134	Destination CCC	60				
HFC-134	Destination DDD	30				
methyl bromide (CH ₃ Br)						
					Quantity of New Methyl Bromide Exported to be used for Quarantine and Preshipment Applications	
Comments:						
NB: If a non-standard blend is to be reported, please indicate the composition of the mixture being reported. * Includes re-exports. Ref. decisions IV/14 and XVII/16(4) ** Applicable to all substances, including those contained in mixtures (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, HAT or Other Uses, please specify the Meeting of the Parties decision that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical 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 in column 3 the quantity in tonnes for the chemical(s) you exported. If you exported any recovered or reclaimed substances, please enter the data in column 4.
- 6.7 When calculating a Party's consumption, the Montreal Protocol does not include **controlled substances** used as feedstock for the production of other chemicals. **Controlled substances** so used are completely transformed in the manufacturing process of new chemicals. On reporting in column 3 the total quantities of new substances exported, the quantities exported to be used as feedstock reported in column 5, should not be deducted. Similarly, the quantities exported for **exempted** essential, critical, **HAT or other** uses, reported in column 6, should not be deducted. With regard to column 7, provision has been made for Parties to indicate against each type of **controlled substance** exported for **exempted** essential, critical, **HAT or other** uses, the decision of the Meeting of the Parties that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical 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 (QPS) applications are exempted. In Data Form 2, quantities of Methyl Bromide exported for quarantine and pre-shipment applications should be entered separately, and not deducted from the quantity exported. The Secretariat will make the necessary deductions.

7. INSTRUCTION III: Data on Production of controlled substances (Data Form 3)

- 7.1 For reporting 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)**, use data form 3.
- 7.2 In column 2 of data form 3, all substances in Annex A, Annex B Groups II and III, and **Annex F** have been listed. For Annex B, Group I (other fully halogenated CFCs) and Annex C, Group I (HCFCs), only substances which have been reported by Parties in the past are listed. HBFCs and BCM have already been phased out by all Parties and hence only one row has been provided as a formality. If you are producing controlled substances other than those listed, please use the blank space to report data on these 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. The quantity of production used for feedstock within your country reported in column 4, and for **exempted** essential, critical, **HAT or other** uses, within your country reported in columns 5, should not be deducted from the total production. Similarly, production for supply to Article 5 Parties filled in the form in column 7, should not be deducted from the total production. 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) and not in data form 3 (this form). The Secretariat will make the necessary deductions. With regard to production for **exempted** essential, critical, **HAT or other** uses, provision has been made in column 6 for Parties to indicate against each type of **controlled substance** produced for **exempted** essential, critical, **HAT or other** uses, the decision of the Meeting of the Parties that approved the use or, in the case of uses covered by the global laboratory and analytical essential use exemption, the type of laboratory or analytical 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** which are used as a feedstock for the production of other chemicals. **Controlled substances** so used 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 Parties operating under paragraph 1 of Article 5. If your country produced **controlled substances** for this purpose, please enter the amount so produced in column 7 on Data Form 3.
- 7.6 When calculating a Party's consumption of methyl bromide, quantities produced for quarantine and pre-shipment (QPS) applications are exempted. In data form 3, the total quantities of methyl bromide produced for quarantine and pre-shipment applications should be entered separately at the bottom of the form and not deducted from the total quantity produced. The Secretariat will make the necessary deductions.

8. INSTRUCTION IV: 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 ("SUBSTANCES") 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 When calculating a Party's production and consumption, the Montreal Protocol does not include the amount of substances destroyed, if destruction occurred through the use of a Protocol-approved technology (listed in decision XXIII/12). 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 quantity produced reported in column 3 of Data Form 3. The Secretariat will make the necessary deductions.

9. INSTRUCTION V: Data on Imports from and Exports to Non-Parties (Data Form 5)

- 9.1 Please use Data Form 5 for reporting 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).**
- 9.2 The first column "SUBSTANCES" 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 "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 and Beijing Amendments.**
 - With respect to Annex E substances, all countries that have not ratified the Copenhagen Amendment.
 - **With respect to Annex F substances, all countries that have not ratified the Kigali Amendment.**
- 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/>.

10. INSTRUCTION VI: 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 zero in the emissions column.
- 10.2 Reporting of the amounts captured for use, destruction or storage may be done on a voluntary basis as these are not requested under Article 7 of the Protocol. The information conforms with the elements enumerated in paragraph 1(d) of Article 3 of the Protocol and a party's adherence to paragraph 7 of Article 2J, namely ensuring that amounts of HFC-23 generated in each production facility are destroyed, using technologies approved by the parties.

11. ILLUSTRATIVE LIST OF MIXTURES CONTAINING CONTROLLED SUBSTANCES*

11.1: Zeotrope Mixtures

No.	Refrigerant Number (Trade Name) of Mixture	Composition							
		Component 1		Component 2		Component 3		Component 4	
1	R401A (MP 39)	HCFC22	53%	HFC152a**	13%	HCFC124	34%		
2	R401B (MP 66)	HCFC22	61%	HFC152a**	11%	HCFC124	28%		
3	R401C (MP 52)	HCFC22	33%	HFC152a**	15%	HCFC124	52%		
4	R402A (HP 80)	HFC125**	60%	HC290**	2%	HCFC22	38%		
5	R402B (HP 81)	HFC125**	38%	HC290**	2%	HCFC22	60%		
6	R403A (69S)	HC290**	5%	HCFC22	75%	FC218**	20%		
7	R403B (69L)	HC290**	5%	HCFC22	56%	FC218**	39%		
8	R-404A	HFC125**	44%	HFC134a**	4%	HFC143a**	52%		
9	R405A (G2015)	HCFC22	45%	HFC152a**	7%	HCFC142b	6%	C318**	43%
10	R406A (GHG-12)	HCFC22	55%	HC600a**	4%	HCFC142b	41%		
11	R-407A	HFC32**	20%	HFC125**	40%	HFC143a**	40%		
12	R-407C	HFC32**	23%	HFC125**	25%	HFC143a**	52%		
13	R408A (FX10)	HFC125**	7%	HFC143a**	46%	HCFC22	47%		
14	R409A (FX56)	HCFC22	60%	HCFC124	25%	HCFC142b	15%		
15	R409B (FX 57)	HCFC22	65%	HCFC124	25%	HCFC142b	10%		
16	R-410A	HFC32**	50%	HFC125**	50%				
17	R411A (G2018A)	HC1270**	1.5%	HCFC22	87.5%	HFC152a**	11%		
18	R411B (G2018B)	HC1270**	3%	HCFC22	94%	HFC152a**	3%		
19	R412A (TP5R)	HCFC22	70%	FC218**	5%	HCFC142b	25%		
20	R414B(Hotshot)	HCFC22	50%	HCFC124	39%	HCFC142b	9.5%	HC600a**	1.5%
21	R-416A (FRIGC)	HCFC124	39.5%	HFC134a**	59%	HC600a**	1.5%		

11.2: Azeotrope Mixtures

No.	Refrigerant Number (Trade Name) of Mixture	Composition			
		Component 1		Component 2	
1	R500	CFC12	73.8%	HFC152a**	26.2%
2	R501	HCFC22	75%	CFC12	25%
3	R502	HCFC22	48.8%	CFC115	51.2%
4	R503	HFC23**	40.1%	CFC13	59.9%
5	R504	HFC32**	48.2%	CFC115	51.8%
6	R505	CFC12	78%	HCFC31	22%
7	R506	HCFC31	55%	CFC114	45%
8	R507A (AZ50)	HFC125**	50%	HFC143a**	50%
9	R-508A	HFC23**	39%	CFC116	61%
10	R-508B	HFC23**	46%	CFC116	54%
11	R509 (TP5R2)	HCFC22	46%	FC218**	54%
12	R-509A	HCFC22	44%	FC218**	56%
13	R-512A	HFC134a**	5%	HFC152a**	95%
14	R-513A/XPI0/DR11	HFO-1234yf**	56%	HFC134a**	44%
15	R-513B	HFO-1234yf**	58.5%	HFC134a**	41.5%
16	R-515A	HFO-1234ze(E)**	88%	HFC227ea**	12%

* For more information about trade names for mixtures and pure substances, visit the "Trade Names of Chemicals Containing Ozone Depleting Substances and their Alternatives" on the UNEP DTIE OzonAction 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.

** Not ozone-depleting substances.

11.3: Other Mixtures

No.	Trade Name of Mixture	Composition							
		Component 1		Component 2		Component 3		Component 4	
1	FX20	HFC125**	45%	HCFC22	55%				
2	FX55	HCFC22	60%	HCFC142b	40%				
3	D136	HCFC22	50%	HCFC124	47%	HC600a**	3%		
4	Daikin Blend	HFC23**	2%	HFC32**	28%	HCFC124	70%		
6	Free Zone	HCFC142b	19%	HFC134a**	79%	Lubricant**	2%		
7	GHG-HP	HCFC22	65%	HCFC142b	31%	HC600a**	4%		
8	GHG-X5	HCFC22	41%	HCFC142b	15%	HFC227ea**	40%	HC600a**	4%
9	NARM-502	HCFC22	90%	HFC152a**	5%	HFC23**	5%		
10	NASF-S-III*	HCFC22	82%	HCFC123	4.75%	HCFC124	9.5 %		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%

* A halon alternative

** Not ozone depleting substances

سجل المقررات المتعلقة باعتماد أو تنقيح استمارات الإبلاغ عن البيانات

اعتمدت الأطراف أو استعرضت استمارات الإبلاغ عن البيانات في المقررات التالية:

(أ) في العام ١٩٩١، اعتمد اجتماع الأطراف بموجب مقرره ٩/٣ الاستمارات المنقحة للإبلاغ عن البيانات من أجل الإبلاغ السنوي بموجب المادة ٧ من البروتوكول (أي بعد مرور عام على اعتماد تعديل لندن الذي أضاف المواد المدرجة في المرفق باء كمواضع خاضعة للرقابة)؛

(ب) في العام ١٩٩٣، وافق اجتماع الأطراف بموجب مقرره ٥/٥ على الاستمارة المنقحة للإبلاغ عن البيانات بموجب المادة ٧ من البروتوكول (أي بعد مرور عام على اعتماد تعديل كوبنهاغن، الذي أضاف المواد المدرجة في المجموعة الأولى من المرفق جيم، والمرفق هاء كمواضع خاضعة للرقابة)؛

(ج) في العام ١٩٩٦، طلب اجتماع الأطراف في مقرره ٢١/٨ إلى لجنة التنفيذ أن تستعرض تقريراً أعدته الأمانة عن اختصاصات الإبلاغ التي يتطلبها البروتوكول، من أجل النظر في أحكام الإبلاغ وتحديد الضروري منها لتقييم الامتثال وتلك التي أصبحت غير لازمة، وأن تقدم التوصيات بشأن الطرق المحتملة لتبسيط متطلبات الإبلاغ؛

(د) في العام ١٩٩٧، وافق اجتماع الأطراف في مقرره ٢٨/٩، على الاستمارات المنقحة لنماذج إبلاغ المعلومات بموجب المادة ٧ من البروتوكول (أي بعد مرور عام على اعتماد تعديل مونتريال) على أساس العمل الذي قامت به لجنة التنفيذ والأمانة وفقاً للمقرر ٢١/٨ بشأن الاستمارات المنقحة للإبلاغ عن البيانات بموجب المادة ٧ من البروتوكول؛

(هـ) في العام ٢٠٠٥، طلب اجتماع الأطراف بموجب مقرره ١٦/١٧ إلى الأمانة أن تنقح استمارة الإبلاغ لتغطي صادرات (بما في ذلك إعادة التصدير) جميع المواد المستفدة للأوزون الخاضعة للرقابة، بما في ذلك الخلائط التي تحتوي عليها، وأن تحت الأطراف على بدء استخدام استمارة الإبلاغ المنقحة على وجه السرعة. ووفقاً لذلك، استكملت الأمانة استمارة الإبلاغ عن البيانات بناء على هذا الطلب؛

(و) في العام ٢٠٠٨، طلب اجتماع الأطراف في المقرر ٦/٢٠ إلى أمانة الأوزون أن تستكمل تعريف تطبيقات معالجة "ما قبل الشحن" لبروميد الميثيل، الوارد في الفقرة ٥-٦ من التعليمات/المبادئ التوجيهية للإبلاغ عن البيانات، بحيث تعكس المقرر ١٢/١١ الذي جرى بموجبه تنقيح التعريف؛

(ز) في العام ٢٠١٢، طلب اجتماع الأطراف في مقرره ١٢/٢٤ إلى أمانة الأوزون أن تنقح استمارة الإبلاغ الناتجة عن المقرر ١٦/١٧ بحيث يُدرج في استمارة البيانات مرفق يشير إلى الطرف المصدر للكميات المبلغ عنها كواردات، مشيراً إلى أن المرفق مستثنى من التزامات الإبلاغ بموجب المادة ٧ من بروتوكول مونتريال وأن تقديم المعلومات في المرفق سيكون على أساس طوعي. ووفقاً لذلك، نقحت الأمانة استمارة الإبلاغ عن البيانات بناء على هذا الطلب وأضافت المرفق المطلوب.

Mixtures and blends containing HFCs as received from TEAP

Refrigerant		Molecular Weight	Bubble point/dew point (°C)	ATEL/ODL (kg/m3)	LFL (kg/m3)	Safety class	ODP
Number	Composition (Mass %)						
Zeotropes							
R-401A	R-22/152a/124 (53,0/13,0/34,0)	94,4	-34,4/-28,8	0,10	NF	A1	0,02
R-401B	R-22/152a/124 (61,0/11,0/28,0)	92,8	-35,7/-30,8	0,11	NF	A1	0,03
R-401C	R-22/152a/124 (33,0/15,0/52,0)	101	-30,5/-23,8	0,083	NF	A1	0,02
R-402A	R-125/290/22 (60,0/2,0/38,0)	101,5	-49,2/-47,0	0,27	NF	A1	0,01
R-402B	R-125/290/22 (38,0/2,0/60,0)	94,7	-47,2/-44,9	0,24	NF	A1	0,02
R-403A	R-290/22/218 (5,0/75,0/20,0)	92	-44,0/-42,3	0,24	0,480	A2	0,03
R-403B	R-290/22/218 (5,0/56,0/39,0)	103,3	-43,8/-42,3	0,29	NF	A1	0,02
R-404A	R-125/143a/134a (44,0/52,0/4,0)	97,6	-46,6/-45,8	0,52	NF	A1	
R-406A	R-22/600a/142b (55,0/4,0/41,0)	89,9	-32,7/-23,5	0,14	0,302	A2	0,04
R-407A	R-32/125/134a (20,0/40,0/40,0)	90,1	-45,2/-38,7	0,31	NF	A1	
R-407B	R-32/125/134a (10,0/70,0/20,0)	102,9	-46,8/-42,4	0,33	NF	A1	
R-407C	R-32/125/134a (23,0/25,0/52,0)	86,2	-43,8/-36,7	0,29	NF	A1	
R-407D	R-32/125/134a (15,0/15,0/70,0)	91	-39,4/-32,7	0,25	NF	A1	
R-407E	R-32/125/134a (25,0/15,0/60,0)	83,8	-42,8/-35,6	0,27	NF	A1	
R-407F	R-32/125/134a (30,0/30,0/40,0)	82,1	-46,1/-39,7	0,32	NF	A1	
R-407G	R-32/125/134a (2,5/2,5/95,0)	100	-29,2/-27,2			A1	
R-408A	R-125/143a/22 (7,0/46,0/47,0)	87	-45,5/-45,0	0,33	NF	A1	0,02
R-409A	R-22/124/142b (60,0/25,0/15,0)	97,4	-35,4/-27,5	0,12	NF	A1	0,03
R-409B	R-22/124/142b (65,0/25,0/10,0)	96,7	-36,5/-29,7	0,12	NF	A1	0,03
R-410A	R-32/125 (50,0/50,0)	72,6	-51,6/-51,5	0,42	NF	A1	
R-410B	R-32/125 (45,0/55,0)	75,6	-51,5/-51,4	0,43	NF	A1	
R-411A	R-1270/22/152a (1,5/87,5/11,0)	82,4	-39,7/-37,2	0,074	0,186	A2	0,03
R-411B	R-1270/22/152a (3,0/94,0/3,0)	83,1	-41,6/-41,3	0,044	0,239	A2	0,03
R-412A	R-22/124/142b (70,0/5,0/25,0)	92,2	-36,4/-28,8	0,17	0,329	A2	0,04
R-413A	R-218/134a/600a (9,0/88,0/3,0)	104	-29,3/-27,6	0,21	0,375	A2	
R-414A	R-22/124/600a/142b (51,0/28,5/4,0/16,5)	96,9	-34,0/-25,8	0,10	NF	A1	0,03
R-414B	R-22/124/600a/142b (50,0/39,0/1,5/9,5)	101,6	-34,4/-26,1	0,096	NF	A1	0,03
R-415A	R-22/152a (82,0/18,0)	81,9	-37,5/-34,7	0,19	0,188	A2	0,03
R-415B	R-22/152a (25,0/75,0)	70,2	-23,4/-21,8	0,15	0,13	A2	0,009
R-416A	R-134a/124/600 (59,0/39,5/1,5)	111,9	-23,4/-21,8	0,064	NF	A1	0,008
R-417A	R-125/134a/600 (46,6/50,0/3,4)	106,7	-38,0/-32,9	0,057	NF	A1	
R-417B	R-125/134a/600 (79,0/18,3/2,7)	113,1	-44,9/-41,5	0,069	NF	A1	
R-417C	R-125/134a/600 (19,5/78,8/1,7)	103,7	-32,7/-29,2		NF	A1	
R-418A	R-290/22/152a (1,5/96,0/2,5)	84,6	-41,2/-40,1	0,20	0,31	A2	0,03
R-419A	R-125/134a/E170 (77,0/19,0/4,0)	109,3	-42,6/-36,0	0,31	0,25	A2	
R-419B	R-125/134a/E170 (48,5/48,0/3,5)	105,2	-37,4/-31,5			A2	
R-420A	R-134a/142b (88,0/12,0)	101,8	-25,0/-24,2	0,18	NF	A1	0,007
R-421A	R-125/134a (58,0/42,0)	111,7	-40,8/-35,5	0,28	NF	A1	
R-421B	R-125/134a (85,0/15,0)	116,9	-45,7/-42,6	0,33	NF	A1	
R-422A	R-125/134a/600a (85,1/11,5/3,4)	113,6	-46,5/-44,1	0,29	NF	A1	
R-422B	R-125/134a/600a (55,0/42,0/3,0)	108,5	-40,5/-35,6	0,25	NF	A1	
R-422C	R-125/134a/600a (82,0/15,0/3,0)	113,4	-45,3/-42,3	0,29	NF	A1	
R-422D	R-125/134a/600a (65,1/31,5/3,4)	109,9	-43,2/-38,4	0,26	NF	A1	
R-422E	R-125/134a/600a (58,0/39,3/2,7)	109,3	-41,8/-36,4		NF	A1	

.This annex has not been formally edited. (١)

Refrigerant		Molecular Weight	Bubble point/dew point (°C)	ATEL/ODL (kg/m3)	LFL (kg/m3)	Safety class	ODP
Number	Composition (Mass %)						
Zeotropes							
R-423A	134a/227ea (52,5/47,5)	126	-24,2/-23,5	0,30	NF	A1	
R-424A	R-125/134a/600a/600/601a (50,5/47,0/0,9/1,0/0,6)	108,4	-39,1/-33,3	0,10	NF	A1	
R-425A	R-32/134a/227ea (18,5/69,5/12)	90,3	-38,1/-31,3	0,27	NF	A1	
R-426A	R-125/134a/600/601a (5,1/93,0/1,3/0,6)	101,6	-28,5/-26,7	0,083	NF	A1	
R-427A	R-32/125/143a/134a (15,0/25,0/10,0/50,0)	90,4	-43,0/-36,3	0,29	NF	A1	
R-428A	R-125/143a/290/600a (77,5/20,0/0,6/1,9)	107,5	-48,3/-47,5	0,37	NF	A1	
R-429A	R-E170/152a/600a (60,0/10,0/30,0)	50,8	-26,0/-25,6	0,098	0,052	A3	
R-430A	R-152a/600a (76,0/24,0)	64	-27,6/-27,4	0,10	0,084	A3	
R-431A	R-290/152a (71,0/29,0)	48,8	-43,1/-43,1	0,10	0,044	A3	
R-432A	R-1270/E170 (80,0/20,0)	42,8	-46,6/-45,6	0,002 1	0,039	A3	
R-433A	R-1270/290 (30,0/70,0)	43,5	-44,6/-44,2	0,005 5	0,036	A3	
R-433B	R-1270/290 (5,0/95,0)	44	-42,7/-42,5	0,025	0,025	A3	
R-433C	R-1270/290 (25,0/75,0)	43,6	-44,3/-43,9	0,006 6	0,032	A3	
R-434A	R-125/143a/134a/600a (63,2/18,0/16,0/2,8)	105,7	-45,0/-42,3	0,32	NF	A1	
R-435A	R-E170/152a (80,0/20,0)	49	-26,1/-25,9	0,09	0,069	A3	
R-436A	R-290/600a (56,0/44,0)	49,3	-34,3/-26,2	0,073	0,032	A3	
R-436B	R-290/600a (52,0/48,0)	49,9	-33,4/-25,0	0,071	0,033	A3	
R-437A	R-125/134a/600/601 (19,5/78,5/1,4/0,6)	103,7	-32,9/-29,2	0,081	NF	A1	
R-438A	R-32/125/134a/600/601a (8,5/45,0/44,2/1,7/0,6)	99,1	-43,0/-36,4	0,079	NF	A1	
R-439A	R-32/125/600a (50,0/47,0/3,0)	71,2	-52,0/-51,8	0,34	0,304	A2	
R-440A	R-290/134a/152a (0,6/1,6/97,8)	66,2	-25,5/-24,3	0,14	0,124	A2	
R-441A	R-170/290/600a/600 (3,1/54,8/6,0/36,1)	48,3	-41,9/-20,4	0,006 3	0,032	A3	
R-442A	R-32/125/134a/152a/227ea (31,0/31,0/30,0/3,0/5,0)	81,8	-46,5/-39,9	0,33	NF	A1	
R-443A	R-1270/290/600a (55,0/40,0/5,0)	43,5	-44,8/-41,2			A3	
R-444A	R-32/152a/1234ze(E) (12,0/5,0/83,0)	96,7	-34,3/-24,3			A2L	
R-444B	R-32/1234ze(E)/152a (41,5/48,5/10)	72,8	-44,6/-34,9			A2L	
R-445A	R-744/134a/1234ze(E) (6,0/9,0/85,0)	103,1	-50,3/-23,5			A2L	
R-446A	R-32/1234ze(E)/600 (68,0/29,0/3,0)	62	-49,4/-44,0			A2L	
R-447A	R-32/125/1234ze(E) (68,0/3,5/28,5)	63	-49,3/-44,2			A2L	
R-447B	R-32/125/1234ze(E) (68,0/8,0/24,0)	63,1	-50,1/-46,0			A2L	
R-448A	R-32/125/1234yf/134a/1234ze(E) (26,0/26,0/20,0/21,0/7,0)	86,3	-45,9/-39,8			A1	
R-449A	R-32/125/1234yf/134a (24,3/24,7/25,3/25,7)	87,2	-46,0/-39,9			A1	
R-449B (Arkema)	R-32/125/1234yf/134a (25,2/24,3/23,2/27,3)	86,4	-46,1/-40,2			A1	
R-449C	R-32/125/1234yf/134a (20,0/20,0/31,0/29,0)	90,3	-44,6/-38,1			A1	
R-450A	R-1234ze(E)/134a (58/42)	108,7	-23,4/-22,8			A1	
R-451A	R-1234yf/134a (89,8/10,2)	112,7	-30,8/-30,5			A2L	
R-451B	R-1234yf/134a (88,8/11,2)	112,6	-31,0/-30,6			A2L	
R-452A	R-1234yf/32/125 (30/11/59)	103,5	-47,0/-43,2			A1	
R-452B	R-32/125/1234yf (67,0/7,0/26,0)	63,5	-51,0/-50,3			A2L	
R-452C	R-32/125/1234yf (12,5/61,0/26,5)	101,9	-47,5/-44,2			A1	

Refrigerant		Molecular Weight	Bubble point/dew point (°C)	ATEL/ODL (kg/m3)	LFL (kg/m3)	Safety class	ODP
Number	Composition (Mass %)						
Zeotropes							
R-453A	R-32/125/134a/227ea/600/601a (20,0/20,0/53,8/5,0/0,6/0,6)	88,8	-42,2/-35,0			A1	
R-454A	R-32/1234yf (35,0/65,0)	80,5	-48,4/-41,6			A2L	
R-454B	R-32/1234yf (68,9/31,1)	62,6	-50,9/-50,0			A2L	
R-454C	R-32/1234yf (21,5/78,5)	90,8	-46,0/-37,8			A2L	
R-455A	R-744/32/1234yf (3,0/21,5/75,5)	87,5	-51,6/-39,1			A2L	
R-456A	R-32/134a/1234ze(E) (6,0/45,0/49,0)	101,4	-30,4/-25,6			A1/ A1	
R-457A	R-32/1234yf/152a (18,0/70,0/12,0)	87,6	-42,7/-35,5			A2L	
R-458A	R-32/125/134a/227ea/236fa (20,5/4,0/61,4/13,5/0,6)	89,9	-39,8/-32,4			A1	
R-459A	R-32/1234yf/1234ze(E) (68,0/26,0/6,0)	63	-50,3/-48,6			A2L	
R-459B	R-32/1234yf/1234ze(E) (21,0/69,0/10,0)	91,2	-44,0/-36,1			A2L	
R-460A	R-32/125/134a/1234ze(E) (12,0/52,0/14,0/22,0)	100,6	-44,6/-37,2			A1	
R-460B	R-32/125/134a/1234ze(E) (28,0/25,0/20,0/27,0)	84,8	-45,2/-37,1			A1	

Refrigerant		Molecular Weight	Normal boiling point (°C)	ATEL/ODL (kg/m3)	LFL (kg/m3)	Safety class	ODP
Number	Composition (Mass %)						
Azeotropes							
R-500	R-12/152a (73,8/26,2)	99,3	-33,6/-33,6	0,12	NF	A1	0,5
R-501	R-22/12 (75,0/25,0)	93,1	-40,5/-40,3	0,21	NF	A1	0,2
R-502	R-22/115 (48,8/51,2)	111,6	-45,3/-45,0	0,33	NF	A1	0,1
R-503	R-23/13 (40,1/59,9)	87,2	-87,5/-87,5	ND	NF	A1	0,6
R-504	R-32/115 (48,2/51,8)	79,2	-57,1/-56,2	0,45	NF	A1	0,1
R-507A	R-125/143a (50,0/50,0)	98,9	-47,1/-47,1	0,53	NF	A1	
R-508A	R-23/116 (39,0/61,0)	100,1	-87,4/-87,4	0,23	NF	A1	
R-508B	R-23/116 (46,0/54,0)	95,4	-87,4/-87,0	0,2	NF	A1	
R-509A	R-22/218 (44,0/56,0)	124	-40,4/-40,4	0,38	NF	A1	0,01
R-510A	R-E170/600a (88,0/12,0)	47,2	-25,2/-25,2	0,087	0,056	A3	
R-511A	R-290/E170 (95,0/5,0)	44,2	-42,18/-42,1	0,092	0,038	A3	
R-512A	R-134a/152a (5,0/95,0)	67,2	-24,0/-24,0	0,14	0,124	A2	
R-513A / XP10 / DR11	R-1234yf/134a (56/44)	108,4	-29,2/-29,1			A1	
R-513B	R-1234yf/134a (58,5/41,5)	108,7	-29,2/-29,1			A1	
R-514A	R-1336mzz(Z)/1130(E) (74,7/25,3)	139,6	29,0/29,0			B1	
R-515A	R-1234ze(E)/227ea (88,0/12,0)	118,7	-18,9/-18,9			A1	