AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO



| Controlled substance | ODP | AT L | CLP | BLP |
|---|---|---|---|---|
| $C_3H_2F_3Br_3$ | 0.2–5.6 | | [Reserved] | |
| $C_3H_2F_4Br_2$ | 0.3–7.5 | | [Reserved] | |
| $C_3H_2F_5Br$ | 0.9–1.4 | | [Reserved] | |
| $C_3H_3FBR_4$ | 0.08–1.9 | | [Reserved] | |
| $C_3H_3F_2Br_3$ | 0.1–3.1 | | [Reserved] | |
| $C_3H_3F_3Br_2$ | 0.1–2.5 | | [Reserved] | |
| $C_3H_3F_4Br$ | 0.3–4.4 | | [Reserved] | |
| $C_3H_4FBr_3$ | 0.03–0.3 | | [Reserved] | |
| $C_3H_4F_2Br_2$ | 0.1–1.0 | | [Reserved] | |
| $C_3H_4F_3Br$ | 0.07–0.8 | | [Reserved] | |
| $C_3H_5FBr_2$ | 0.04–0.4 | | [Reserved] | |
| $C_3H_5F_2Br$ | 0.07–0.8 | | [Reserved] | |
| $C_3H_6FB$ | 0.02–0.7 | | [Reserved] | |
| 8. Group VIII: | | | | |
| $CH_2BrCl$ (Chlorobromomethane) | 0.12 | | [Reserved] | |
| B. Class II: | | | | |
| $CHFCl_2$-Dichlorofluoromethane (HCFC-21) | [Reserved] | 2.1 | 0.03 | 0.00 |
| $CHF_2$ Cl-Chlorodifluoromethane (HCFC-22) | 0.05 | 15.3 | 0.14 | 0.00 |
| $CH_2$ FCl-Chlorofluoromethane (HCFC-31) | [Reserved] | 1.44 | 0.02 | 0.00 |
| $C_2$ $HFCl_4$- (HCFC-121) | [Reserved] | 0.6 | 0.01 | 0.00 |
| $C_2$ $HF_2$ $Cl_3$- (HCFC-122) | [Reserved] | 1.4 | 0.02 | 0.00 |
| $C_2$ $HF_3$ $Cl_2$- (HCFC-123) | 0.02 | 1.6 | 0.016 | 0.00 |
| $C_2$ $HF_4$ Cl- (HCFC-124) | 0.02 | 6.6 | 0.04 | 0.00 |
| $C_2$ $H_2$ $FCl_3$- (HCFC-131) | [Reserved] | 4.0 | 0.06 | 0.00 |
| $C_2$ $H_2$ $F_2$ $Cl_2$- (HCFC-132b) | [Reserved] | 4.2 | 0.05 | 0.00 |
| $C_2$ $H_2$ $F_3$ Cl- (HCFC-133a) | [Reserved] | 4.8 | 0.03 | 0.00 |
| $C_2$ $H_3$ $FCl_2$- (HCFC-141b) | 0.12 | 7.8 | 0.10 | 0.00 |
| $C_2$ $H_3$ $F_2$ Cl- (HCFC-142b) | 0.06 | 19.1 | 0.14 | 0.00 |
| $C_3$ $HFCl_6$- (HCFC-221) | [Reserved] | | | 0.00 |
| $C_3$ $HF_2$ $Cl_5$- (HCFC-222) | [Reserved] | | | 0.00 |
| $C_3$ $HF_3$ $Cl_4$- (HCFC-223) | [Reserved] | | | 0.00 |
| $C_3$ $HF_4$ $Cl_3$- (HCFC-224) | [Reserved] | | | 0.00 |
| $C_3$ $HF_5$ $Cl_2$- (HCFC-225ca) | [Reserved] | 1.5 | 0.01 | 0.00 |
| | | −1.7 | | |
| (HCFC-225cb) | [Reserved] | 5.1 | 0.04 | 0.00 |
| $C_3$ $HF_6$ Cl- (HCFC-226) | [Reserved] | | | 0.00 |
| $C_3$ $H_2$ $FCl_5$- (HCFC-231) | [Reserved] | | | 0.00 |
| $C_3$ $H_2$ $F_{24}$- (HCFC-232) | [Reserved] | | | 0.00 |
| $C_3$ $H_2$ $F_3$ $Cl_3$- (HCFC-233) | [Reserved] | | | 0.00 |
| $C_3$ $H_2$ $F_4$ $Cl_2$- (HCFC-234) | [Reserved] | | | 0.00 |
| $C_3$ $H_2$ $F_5$ Cl- (HCFC-235) | [Reserved] | | | 0.00 |
| $C_3$ $H_3$ $FCl_4$- (HCFC-241) | [Reserved] | | | 0.00 |
| $C_3$ $H_3$ $F_2$ $Cl_3$- (HCFC-242) | [Reserved] | | | 0.00 |
| $C_3$ $H_3$ $F_3$ $Cl_2$- (HCFC-243) | [Reserved] | | | 0.00 |
| $C_3$ $H_3$ $F_4$ Cl- (HCFC-244) | [Reserved] | | | 0.00 |
| $C_3$ $H_4$ $FCl_3$- (HCFC-251) | [Reserved] | | | 0.00 |
| $C_3$ $H_4$ $F_2$ $Cl_2$- (HCFC-252) | [Reserved] | | | 0.00 |
| $C_3$ $H_4$ $F_3$ Cl- (HCFC-253) | [Reserved] | | | 0.00 |
| $C_3$ $H_5$ $FCl_2$- (HCFC-261) | [Reserved] | | | 0.00 |
| $C_2$ $H_5$ $F_2$ Cl- (HCFC-262) | [Reserved] | | | 0.00 |
| $C_3$ $H_6$ FCl- (HCFC-271) | [Reserved] | | | 0.00 |
| All isomers of the above chemicals | [Reserved] | | | |

[60 FR 24986, May 10, 1995, as amended at 68 FR 42894, July 18, 2003]

## Appendix G to Subpart A of Part 82—UNEP Recommendations for Conditions Applied to Exemption for Essential Laboratory and Analytical Uses

1. Essential laboratory and analytical uses are identified at this time to include equipment calibration; use as extraction solvents, diluents, or carriers for chemical analysis; biochemical research; inert solvents for chemical reactions, as a carrier or laboratory chemical and other critical analytical and laboratory purposes. Pursuant to Decision XI/15 of the Parties to the Montreal Protocol, effective January 1, 2002 the following uses of class I controlled substances are not considered essential under the global laboratory exemption:

a. Testing of oil and grease and total petroleum hydrocarbons in water;

b. Testing of tar in road-paving materials; and

c. Forensic finger printing.

Production for essential laboratory and analytical purposes is authorized provided that these laboratory and analytical chemicals shall contain only controlled substances manufactured to the following purities:

CTC (reagent grade)—99.5
1,1,1,-trichloroethane—99.5
CFC-11—99.5
CFC-13—99.5
CFC-12—99.5
CFC-113—99.5
CFC-114—99.5
Other w/ Boiling P>20 degrees C—99.5
Other w/ Boiling P<20 degrees C—99.0

d. Testing of organic matter in coal.

2. These pure, controlled substances can be subsequently mixed by manufacturers, agents or distributors with other chemicals controlled or not controlled by the Montreal Protocol as is customary for laboratory and analytical uses.

3. These high purity substances and mixtures containing controlled substances shall be supplied only in re-closable containers or high pressure cylinders smaller than three litres or in 10 millilitre or smaller glass ampoules, marked clearly as substances that deplete the ozone layer, restricted to laboratory use and analytical purposes and specifying that used or surplus substances should be collected and recycled, if practical. The material should be destroyed if recycling is not practical.

4. Parties shall annually report for each controlled substance produced: the purity; the quantity; the application, specific test standard, or procedure requiring its uses; and the status of efforts to eliminate its use in each application. Parties shall also submit copies of published instructions, standards, specifications, and regulations requiring the use of the controlled substance.

5. Pursuant to Decision XVIII/15 of the Parties to the Montreal Protocol, methyl bromide is exempted for the following approved essential laboratory and analytical purposes listed in following items (a) through (d). Use of methyl bromide for field trials is not an approved use under the global laboratory and analytical use exemption. The provisions of Appendix G, paragraphs (1), (2), (3), and (4), regarding purity, mixing, container, and reporting requirements for other exempt ODSs, also apply to the use of methyl bromide under this exemption.

a. Methyl bromide is exempted as an approved essential laboratory and analytical use as a reference or standard to calibrate equipment which uses methyl bromide, to monitor methyl bromide emission levels, or to determine methyl bromide residue levels in goods, plants and commodities;

b. Methyl bromide is exempted as an approved essential laboratory and analytical when used in laboratory toxicological studies;

c. Methyl bromide is exempted as an approved essential laboratory and analytical use to compare the efficacy of methyl bromide and its alternatives inside a laboratory; and

d. Methyl bromide is exempted as an approved essential laboratory and analytical use as a laboratory agent which is destroyed in a chemical reaction in the manner of feedstock.

[60 FR 24986, May 10, 1995, as amended at 67 FR 6362, Feb. 11, 2002; 72 FR 73269, Dec. 27, 2007]

## Appendix H to Subpart A of Part 82—Clean Air Act Amendments of 1990 Phaseout Schedule for Production of Ozone-Depleting Substances

| Date | Carbon tetrachloride (percent) | Methyl chloroform (percent) | Other class substances (percent) |
|---|---|---|---|
| 1994 | 70 | 85 | 65 |
| 1995 | 15 | 70 | 50 |
| 1996 | 15 | 50 | 40 |
| 1997 | 15 | 50 | 15 |
| 1998 | 15 | 50 | 15 |
| 1999 | 15 | 50 | 15 |
| 2000 | ..... | 20 | |
| 2001 | ..... | 20 | |

## Appendix I to Subpart A of Part 82—Global Warming Potentials (Mass Basis), Referenced to the Absolute GWP for the Adopted Carbon Cycle Model $CO_2$ Decay Response and Future $CO_2$ Atmospheric Concentrations Held Constant at Current Levels. (Only Direct Effects Are Considered.)

| Species (chemical) | Chemical formula | Global warming potential (time horizon) | | |
|---|---|---|---|---|
| | | 20 years | 100 years | 500 years |
| CFC-11 | $CFCl_3$ | 5000 | 4000 | 1400 |
| CFC-12 | $CF_2Cl_2$ | 7900 | 8500 | 4200 |
| CFC-13 | $CClF_3$ | 8100 | 11700 | 13600 |