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OPEN-ENDED WORKING GROUP OF THE PARTIES TO
THE MONTREAL PROTOCOL ON SUBSTANCES THAT
DEplete THE OZONE LAYER

Twenty-first meeting
Montreal, 24-26 July 2001

IMPORTANT INFORMATION THAT MAY HELP AVOID POTENTIAL CONFUSION OVER
THE ISSUE OF ETHYLENE OXIDE STERILIZATION AND PROTECTION
OF THE OZONE LAYER

Note by the Secretariat

1. Following consultations with the Technology and Economic Assessment Panel, the Ozone Secretariat wishes to provide Parties with important information likely to help avoid potential confusion over the issue of ethylene oxide sterilization and ozone layer protection.
2. Sterilization is critical to public health and ethylene oxide is used as a very effective sterilizing agent. It can be used in sterilization technology in a mixture with ozone-depleting substances (chlorofluorocarbons (CFC) or hydrochlorofluorocarbons (HCFC)) or without ozone-depleting substances.
3. The CFC-12 mixture with ethylene oxide called 12/88, contains 12 per cent ethylene oxide and 88 per cent CFC-12. Ethylene oxide is highly flammable and the purpose of the CFC in the mixture is to suppress the flammability of ethylene oxide. It should be noted, however, that CFC-12 depletes the ozone layer. Ethylene oxide does not itself deplete the ozone layer, so therefore when not mixed with a controlled substance under the Montreal Protocol (CFC, HCFC, etc), is not an ozone-depleting substance.
4. Ethylene oxide is toxic, mutagenic, flammable, explosive and a suspected carcinogen. As such, it presents a potential health and safety hazard through handling and exposure. In some countries, ethylene oxide use in sterilization is regulated in order to manage these health and safety hazards. Health and safety hazard considerations of ethylene oxide are independent of considerations of ozone-depleting substances used in ethylene oxide sterilization.
5. Parties are reminded that measures taken under the Montreal Protocol to phase out the use of ozone-depleting substances in ethylene oxide sterilization are taken for the purpose of protecting the ozone layer only.

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6. For further details and information on the use of ozone-depleting substances in ethylene oxide sterilization, Parties are referred to the following Technology and Economic Assessment Panel reports (the more recent of which are available from: <http://www.TEAP.org>):

- (a) Report of the Aerosols, Sterilants, Miscellaneous Uses, Carbon Tetrachloride Technical Options Committee, June 1989: chapter III - Sterilants, p. 26-41;
- (b) Final report of the Technology Review Panel, August 1989: section 3.5 - Sterilants, pp. 34-37;
- (c) 1991 Assessment of the Aerosols, Sterilants, Miscellaneous Uses, Carbon Tetrachloride Technical Options Committee: chapter 3 - Sterilants, pp. 46-70;
- (d) 1991 Assessment of the Technology and Economic Assessment Panel: chapter 10, Sterilants, pp. 10-3 to 10-6;
- (e) Report of the Technology and Economic Assessment Panel, July 1993: section 3.23 - Sterilants, pp. 3-14 to 3-17;
- (f) 1994 Assessment of the Aerosols, Sterilants, Miscellaneous Uses, Carbon Tetrachloride Technical Options Committee: chapter 4 - Sterilants, pp. 52-61;
- (g) Report of the Technology and Economic Assessment Panel, June 1996: section 1.2.4 - Sterilisation, pp. 99-103;
- (h) Report of the Technology and Economic Assessment Panel, April 1997: section 1.1.3 - Sterilants, Vol.1, p. 137;
- (i) Report of the Technology and Economic Assessment Panel, April 1998: section 3.1.3 - Sterilants, pp. 125-126;
- (j) 1998 Assessment of the Aerosols, Sterilants, Miscellaneous Uses, Carbon Tetrachloride Technical Options Committee: chapter 4.4 - Sterilants, pp. 65-68;
- (k) Report of the Technology and Economic Assessment Panel, April 1999: section 2.3 - Sterilants, p. 194;
- (l) Report of the Technology and Economic Assessment Panel, April 2000: section 5.1.3 - Sterilants, p. 52;
- (m) Report of the Technology and Economic Assessment Panel, April 2001: section 9.1.3 - Sterilants, p. 51.
