

A-6 Research on Comprehensive Assessment of Technologies for Control of Ozone Layer Depletion Materials

Contact Person Osami Nakasugi  
Principal Researcher  
Regional Environment Division, National Institute for Environmental Studies, Environment Agency  
16-2 Onogawa, Tsukuba, Ibaraki 305 Japan  
Phone +81-298-51-6111 (Ext.313), Fax +81-298-51-4732

Total Budgets for FY1991-FY1993 41,768,000 yen (FY1993; 13,507,000 yen)

Key Words CFCs, Control Technology, Feasibility, Environmental Impact Assessment

Technologies for control of ozone layer depletion materials were estimated in detail by questionnaire, hearing, references and experiments for making clear on feasibility of them. The obtained results are summarized as follows:

- (1) Good design of equipments for removal and recovery of chlorofluorocarbons (CFC's) from exhaust gas are economic and able to be applied also for removal and recovery of hydrochlorofluorocarbons, hydrofluorocarbons and other solvents.
- (2) Followings are need for construction of recycling system of disused refrigerant.
  - 1) High performance, low priced and small equipment to recover refrigerant from refrigerators.
  - 2) Social recovery system.
  - 3) Legal forbid to release CFC's in air.
- (3) It is possible to destruct CFC's completely by good designed incinerate system under the selected conditions.

Environmental impacts caused by technologies for control of ozone layer depletion materials are assessed according to following steps.

- (1) Environmental impacts of those technologies were picked up and clasified, and important aspects for assessing the environmental impacts were pointed out.
- (2) From the aspects, the environmental impacts were assessed qualitatively.
- (3) Model estimating environmental fate of chemical substances were developed.
- (4) Environmental impacts to likely cause serious damage on heman health and ecosystem were assessed quantitatively.

Following results were obtained from the assessment.

- (1) Environmetal impacts caused by most technologies were small.
- (2) But, methylene chloride was possible to damage human health via water and air pollution, and usage of methylene chloride as alternative solvents and/or forming agent was improper option.