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Minister  
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Ministry of  
Environment  
and Energy

Ministère de  
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et de l'Énergie

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Toronto ON M4V 1P5

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Toronto ON M4V 1P5

June 29, 1994

Ladies and Gentlemen:

Last year I reiterated Ontario's commitment to control substances that destroy the ozone layer, which protects us from the harmful effects of ultraviolet radiation.

Guided by our commitment to the terms of the international agreement, the Montreal Protocol, Ontario has regulated ozone-depleting substances used in aerosols, foam manufacturing, refrigerators and air conditioners. We have also regulated halons used in fire-extinguishers.

Today, I am pleased to release for public consultation two draft regulations that would lead to the control of solvents and sterilants containing ozone-depleting substances such as CFCs, HCFCs and methyl chloroform and others.

Ontario was the first jurisdiction in Canada to control ozone-depleting substances and now has a comprehensive program limiting their release. The proposed solvents and sterilants regulations, combined with those already in place, will control 98 per cent of these harmful substances.

I invite you and your associates to provide written comments based on your experience and knowledge of solvents. Your contributions are important to us, and will be used to refine the draft solvents regulation prior to its final release.

I encourage you to read the enclosed material outlining details of the proposed solvents regulation. If you would like information on either regulation or have any questions, please call the ministry's Public Information Centre at 1-800-565-4923 or call (416) 323-4321 in Toronto.

Yours sincerely,

*Bud Wildman*

C.J. (Bud) Wildman  
Minister  
Enclosures



Ministry of Environment and Energy  
Ministère de l'Environnement et de l'Énergie

June 29, 1994

### Ontario protects against ozone-damaging solvents and sterilants

Ontario is setting a strict timetable to phase out ozone-depleting sterilants and solvents. When approved, these regulations and others implemented by the government will set controls on 98 per cent of all ozone-depleting substances throughout the province.

Two draft regulations were released today for a 30-day public comment period by Environment and Energy Minister Bud Wildman.

Ontario was the first jurisdiction in Canada to regulate ozone-depleting substances and now has a comprehensive program to limit their release. Past regulations have dealt with the use of chlorofluorocarbons (CFCs) in aerosols, foam manufacturing and refrigerants. The province has also regulated the use of halons in fire extinguishers.

One of the new regulations would phase out the manufacture of solvents containing specific Class 1 ozone-depleting substances such as CFCs, carbon tetrachloride and methyl chloroform as of January 1, 1996. Their discharge, use or transfer will be phased out by July 1, 1996. After 1998, the regulation will prohibit storage of these materials. It also sets a January 2000 phaseout deadline for the less damaging Class 2 chemicals, hydrochlorofluorocarbons (HCFCs), which some users are considering as transitional solvents until they are ready to change to alternate solvents which do not deplete the ozone layer in the upper atmosphere.

The second regulation would prohibit the discharge, manufacture, use or transfer of specific Class 1, CFC-based ozone-depleting sterilants effective January 1, 1996. It would also prohibit storage of these materials after January 1, 1998. Like the solvents regulation, the sterilants regulation sets phaseout deadlines for the use of less damaging HCFCs. These HCFCs will be banned after January 1, 2000 and their storage prohibited by 2002.

"Ontario is living up to Canada's international commitment to eliminate the ozone-depleting chemicals that threaten our environment and human health," Mr. Wildman said.

Written comments on the draft regulations must be mailed by August 2, 1994, to :

The Honourable C.J. Wildman  
Minister of Environment and Energy  
135 St. Clair Ave. W.  
Toronto, Ontario  
M4V 1P5

- 30 -

**For further information:**

Minister's office (416) 323-4360

Gerry Merchant (416) 323-4333  
Public Affairs and Communications Branch

## BACKGROUND

### Regulation phasing out ozone-depleting solvents

A draft regulation was released June 29, 1994 for a 30-day public comment period by Environment and Energy Minister Bud Wildman. The regulation would phase out the discharge, manufacture, use or transfer of specific Class 1 ozone-depleting solvents (ODS) such as chlorofluorocarbons (CFC), carbon tetrachloride and methyl chloroform. It will ultimately prohibit storage of these materials.

The regulation also sets a phaseout deadline for the less damaging Class 2 chemicals, hydrochlorofluorocarbons (HCFC), which some users are considering as transitional solvents until they are ready to change to solvents which do not deplete ozone.

The draft regulation:

- Prohibits the discharge, use or transfer of specific Class 1 and Class 2 ozone-depleting solvents (ODS) after July 1, 1996 and Jan. 1, 2000, respectively.
- Prohibits making Class 1 and Class 2 ODS solvents as of Jan. 1, 1996 and 2000 respectively.
- Prohibits the storage of Class 1 and Class 2 ODS solvents after July 1, 1998 and Jan. 1, 2002, respectively.
- Requires a report for Class 1 ODS solvents stored after July 1, 1996, and Class 2 ODS solvents stored after Jan. 1, 2000, to be available on request by the Ministry of Environment and Energy.
- Exempts ODS Class 1 and 2 solvents used for research purposes related to the study of the ozone layer.
- Exempts use where the ODS Class 1 and 2 solvents used in a process are converted to another substance which is not an ODS Class 1 or 2 solvent.
- Exempts use where the ODS Class 1 or 2 solvents are created and then converted to another substance which is not a Class 1 or 2 solvent.

This regulation overrides conditions included in existing certificates of approval for Class 1 and 2 solvents.

## Background

Ozone-depleting substances cause serious environmental and health problems. They destroy the ozone layer that protects us from ultraviolet (UV-B) radiation and they contribute to the greenhouse effect.

UV-B radiation causes skin cancer, cataracts, crop and material damage.

Canada signed the Montreal Protocol and its Copenhagen amendments which ban the production and import of: CFCs, methyl chloroform and carbon tetrachloride by 1996; halons in 1994; and HCFCs by 2030.

Unlike the federal regulations, the Ontario legislation will regulate the use of specified Class 1 and 2 ozone-depleting substances used in solvent formulations. The new regulation sets a phaseout schedule for ODS that complements the Montreal Protocol.

Discharge/emissions of ODS into the environment and limitations of their storage will be prohibited, making the Ontario regulation the most comprehensive legislation in Canada.

## Industry Information

In Canada, about 4.5 per cent of total CFC consumption, 100 per cent of methyl chloroform produced and sold and about 3 per cent of carbon tetrachloride consumed were used as solvents in 1992.

In Ontario, an estimated 160 tonnes (4.5 per cent) of a total of 3,521.6 tonnes of CFCs and a total of 5,000 tonnes of methyl chloroform were used as solvent in 1992. In 1990, a total of 216 tonnes of carbon tetrachloride was used primarily as feedstock for the production of CFCs, with a small portion used in some solvent applications.

Solvents are used for cleaning purposes in a variety of manufacturing processes and are also used in adhesives, in paints and inks and in dry-cleaning. About 85 per cent of methyl chloroform and 97 per cent of CFC-113 are used in electronics, precision, metal and general cleaning.

CFC-113 and Methyl chloroform are no longer produced in Canada. Cornwall Chemicals Co. still produces small quantities of carbon tetrachloride in Canada.

Alternative cleaning chemical and technologies exist for these chemicals. Many of the larger companies in particular have already adopted non-ODS solvent alternatives. Examples include IBM, Northern Telecom and Litton Systems. Others who have not, should realize long-term cost-savings as the price of ODS solvents increases and availability decreases.

Substitute cleaning chemicals include:

- Other chlorinated solvents;
- Organic solvents;
- Hydrocarbons;
- Perfluorocarbons; and
- HCFCs.

Alternative cleaning systems include:

- Semi-aqueous cleaning;
- Aqueous cleaning;
- Non-solvent cleaning technologies; and
- No-clean production systems.

Substitute solvent chemicals and technologies also exist for: adhesives; coatings and inks; and dry cleaning. The alternatives for adhesive solvents include: water-based and high-solid formulations; hot-melt adhesives; and radiation curing. Similarly, alternatives for coatings and inks include: water-based; high-solids; and powder formulations. Dry-cleaning alternatives include: perchloroethylene, petroleum products and HCFCs. The latter are considered transitional substances which are also destined for phaseout.

Public comment on the proposed regulation must be mailed or delivered by August 2, 1994 to:

Solvents and Sterilants  
Industrial Emissions Section  
Program Development Branch  
Ontario Ministry of Environment and Energy  
40 St. Clair Ave. W., 11th floor  
Toronto, Ontario  
M4V 1M2







## D R A F T

### REGULATION MADE UNDER THE ENVIRONMENTAL PROTECTION ACT

#### S O L V E N T S

1. In this regulation:

“Class 1 Ozone Depleting Substance” means

- Chlorofluorocarbons (CFCs), limited to
  - CFC-11, also known as fluorotrichloromethane, chlorofluorocarbon-11, (CFCl<sub>3</sub>)
  - CFC-12, also known as dichlorodifluoromethane, chlorofluorocarbon-12, (CF<sub>2</sub>Cl<sub>2</sub>)
  - CFC-13, also known as chlorotrifluoromethane, chlorofluorocarbon-13, (CF<sub>3</sub>Cl)
  - CFC-111, also known as pentachlorofluoroethane, chlorofluorocarbon-111, (C<sub>2</sub>FCl<sub>5</sub>)
  - CFC-112, also known as tetrachlorodifluoroethane, chlorofluorocarbon-112, (C<sub>2</sub>F<sub>2</sub>Cl<sub>4</sub>)
  - CFC-113, also known as trichlorotrifluoroethane, chlorofluorocarbon-113, (C<sub>2</sub>F<sub>3</sub>Cl<sub>3</sub>)
  - CFC-114, also known as dichlorotetrafluoroethane, chlorofluorocarbon-114, (C<sub>2</sub>F<sub>4</sub>Cl<sub>2</sub>)
  - CFC-115, also known as monochloropentafluoroethane, chlorofluorocarbon-115, (C<sub>2</sub>F<sub>5</sub>Cl)
  - CFC-211, also known as fluoroheptachloropropane, C<sub>3</sub>FCl<sub>7</sub>
  - CFC-212, also known as difluorohexachloropropane, C<sub>3</sub>F<sub>2</sub>Cl<sub>6</sub>
  - CFC-213, also known as trifluoropentachloropropane, C<sub>3</sub>F<sub>3</sub>Cl<sub>5</sub>
  - CFC-214, also known as tetrafluorotetrachloropropane, C<sub>3</sub>F<sub>4</sub>Cl<sub>4</sub>
  - CFC-215, also known as pentafluorotrichloropropane, C<sub>3</sub>F<sub>5</sub>Cl<sub>3</sub>
  - CFC-216, also known as hexafluorodichloropropane, C<sub>3</sub>F<sub>6</sub>Cl<sub>2</sub>
  - CFC-217, also known as heptafluorochloropropane, C<sub>3</sub>F<sub>7</sub>Cl
- Halons, limited to:
  - Halon-1211, also known as bromochlorodifluoromethane, (CF<sub>2</sub>ClBr)
  - Halon-1301, also known as bromotrifluoromethane, (CF<sub>3</sub>Br)
  - Halon-2402, also known as dibromotetrafluoroethane, (C<sub>2</sub>F<sub>4</sub>Br<sub>2</sub>)
- Carbon tetrachloride (CCl<sub>4</sub>)
- Methyl chloroform, also known as 1,1,1 trichloroethane, (C<sub>2</sub>H<sub>3</sub>Cl<sub>3</sub>)
- All hydrobromofluorocarbons (HBFCs)
- All isomers of any of the above

“Class 2 Ozone Depleting Substance” means

- All Hydrochlorofluorocarbons (HCFCs)
- All isomers of any of the above

## Prohibitions

- 2.(1)Effective January 1, 1996, no person shall make a solvent which is or contains a Class 1 ozone depleting substance.
- 2.(2)Effective January 1, 1996, no person shall use or transfer a solvent which is or contains a Class 1 ozone depleting substance that is made after 1995.
- 2.(3)Effective July 1, 1996, no person shall discharge into the natural environment a Class 1 ozone depleting substance which is used as or intended for use as a solvent.
- 2.(4)Effective July 1, 1996, no person shall use or transfer a solvent which is or contains a Class 1 ozone depleting substance.
- 2.(5)Effective July 1, 1998, no person shall store a solvent which is or contains a Class 1 ozone depleting substance.
- 2.(6)A person who, after July 1, 1996, stores a solvent which is a Class 1 ozone depleting substance, shall prepare, by August 15th of each year, a report detailing the solvents stored which are Class 1 ozone depleting substances, the containers used, the place and manner of storage, the safety and security measures in place, and the intentions of the person with respect to the disposal or ultimate fate of the solvents.
- 2.(7)Effective January 1, 2000, no person shall discharge into the natural environment a Class 2 ozone depleting substance which is used as or intended for use as a solvent.
- 2.(8)Effective January 1, 2000, no person shall make, use or transfer a solvent which is or contains a Class 2 ozone depleting substance.
- 2.(9)Effective January 1, 2002, no person shall store a solvent which is or contains a Class 2 ozone depleting substance.
- 2.(10)A person who, after January 1, 2000, stores a solvent which is a Class 2 ozone depleting substance, shall prepare, by February 15th of each year, a report detailing the solvents stored which are Class 2 ozone depleting substances, the containers used, the place and manner of storage, the safety and security measures in place, and the intentions of the person with respect to the disposal or ultimate fate of the solvents.
- 2.(11)A person required by subsection (6) or (10) to prepare a report, shall retain a copy of the report at the site where the storage takes place for at least two years.
- 2.(12)A person required by subsection (6) or (10) to prepare a report, shall submit a copy of the report to the Director within five business days of the Director requesting it.

### Exception

3. Section 2, other than subsections 2(3) and 2(7), does not apply in relation to:

a) usage of a Class 1 ozone depleting substance or a Class 2 ozone depleting substance in an experimental or research laboratory for purposes related to the study of ozone depleting substances, replacements therefor, or the characteristics or performance of the ozone layer in the stratosphere;

b) usage in a process in which a Class 1 ozone depleting substance or a Class 2 ozone depleting substance is converted to another substance that is not a Class 1 ozone depleting substance or a Class 2 ozone depleting substance;

c) usage in a process in which a Class 1 ozone depleting substance or a Class 2 ozone depleting substance is generated and then converted to another substance that is not a Class 1 ozone depleting substance or a Class 2 ozone depleting substance.

### Hazardous Waste

4. Where a solvent which is or contains a Class 1 ozone depleting substance or a Class 2 ozone depleting substance is to be managed as waste, it shall be managed as a hazardous waste in accordance with Part V of the Act and Regulation 347 and it may be transferred for such purpose.

### Certificate of Approval

5. A prohibition in this regulation overrides any conflicting provision in a certificate of approval issued under the Act which is in force when this regulation takes effect.

**Note:** There will be an additional brief regulation amending the point of impingement numbers in Schedule 1 of Regulation 346 (Air) for methyl chloroform and trifluoro trichloro ethane (CFC-113). These numbers will be reduced to zero, effective January 1, 1996, to coincide with the ban on emissions **unless there are other uses, in addition to use as solvents and sterilants, which can continue and can legally discharge after that date.**





**ONTARIO BOOSTS  
ITS PROTECTION  
OF THE  
OZONE LAYER**

**An Information Seminar on  
ELIMINATION of  
OZONE-DEPLETING SUBSTANCES  
in SOLVENTS in ONTARIO**

**JULY 19, 1994**

**Main Auditorium**

**Laboratory Services Branch**

**125 Resources Road, Rexdale (401 and Islington Ave.)**

**Organized by the Ministry of Environment and Energy**



For no-charge participation, please complete the attached form and fax it to:

FAX (416) 314-4160

Program Development Branch, Ministry of Environment and Energy,  
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Phone (416) 314-7921

**ONTARIO BOOSTS ITS PROTECTION OF THE OZONE LAYER**

**SOLVENTS INFORMATION SEMINAR - JULY 19, 1994  
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