

# **A Plan to Reduce Volatile Organic Compound Emissions from Consumer Products in Canada**

**(excluding windshield washer fluid and surface coatings)**

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## **Final Report**



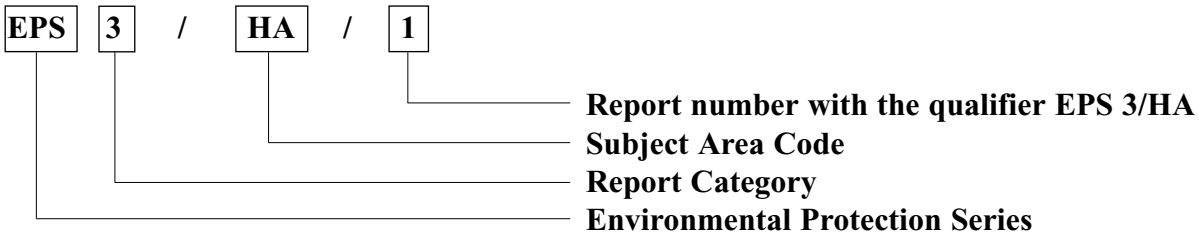
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# **A Plan to Reduce Volatile Organic Compound Emissions from Consumer Products in Canada** (excluding windshield washer fluid and surface coatings)

## **Final Report**

by  
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Mississauga, Ontario

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Commercial Chemicals Evaluation Branch  
Environment Canada  
Hull, Quebec

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## Abstract

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In the presence of sunlight, volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>) participate in photochemical reactions creating ground-level ozone, a major component of urban smog. Ground-level ozone has been shown to have adverse effects on human health, agricultural crops, and building materials. More than half of Canada's population lives in regions where the maximum acceptable air quality level for ground-level ozone is repeatedly exceeded every year.

In 1990, the Canadian Council of Ministers of the Environment developed a *Management Plan for Nitrogen Oxides (NO<sub>x</sub>) and Volatile Organic Compounds (VOCs): Phase I* to manage this air quality problem. One initiative of the plan described a program to reduce VOC emissions from Consumer Products, excluding windshield washer fluid and surface coatings. The 1997 *Phase 2 Federal Smog Management Plan* renewed this commitment to reduce ground-level ozone by directing Environment Canada to develop, in consultation with stakeholders, a Consumer Products emission reduction program that would be harmonized with U.S. regulations.

In response to the direction issued in the *Phase 2 Federal Smog Management Plan*, this report outlines recommendations for the development of a guideline (under the *Canadian Environmental Protection Act, 1999*) to provide a mechanism to reduce VOC emissions from Consumer Products in Canada.

## Résumé

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Les composés organiques volatils (COV) et les oxydes d'azote (NO<sub>x</sub>) participent à la formation d'ozone au niveau du sol, une composante importante du smog urbain, par réaction photochimique sous l'effet de la lumière du soleil. Il a été établi que l'ozone au niveau du sol a un effet néfaste sur la santé humaine, les récoltes et les matériaux de construction. Plus de la moitié de la population canadienne vit dans une région où la concentration maximale admissible d'ozone dans l'air est dépassée de façon répétée chaque année.

En 1990, le Conseil canadien des ministres de l'environnement (CCME) avait élaboré un *Plan de gestion pour les oxydes d'azote (NO<sub>x</sub>) et les composés organiques volatils (COV): Phase I*, destiné à maîtriser ce problème de pollution de l'air. L'une des initiatives du plan décrivait un programme de réduction des COV provenant des produits de consommation, à l'exclusion des liquides lave-glace et des revêtements. La *Phase 2 du Plan fédéral de gestion du smog* de 1997 a réaffirmé cet engagement en demandant à Environnement Canada d'élaborer, en consultation avec les intervenants, un programme de réduction des émissions provenant des produits de consommation harmonisé avec les normes américaines.

Ce rapport répond à la *Phase 2 du Plan fédéral de gestion du smog* et présente les recommandations visant l'élaboration d'une ligne directrice découlant de la *Loi canadienne sur la protection de l'environnement, 1999* pour la mise en place d'un mécanisme de réduction des émissions de COV provenant des produits de consommation au Canada.



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## Executive Summary

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In the presence of sunlight, nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) participate in photochemical reactions creating ground-level ozone, a major component of urban smog. Ground-level ozone has been shown to have adverse effects on human health, agricultural crops, and building materials. In Canada, the maximum acceptable air quality level for ozone has been set at 82 parts per billion (ppb) over a one-hour period. More than half of Canada's population lives in regions where this air quality objective is repeatedly exceeded every year (Environment Canada, 1993).

The United States Environmental Protection Agency (USEPA) has determined that volatile organic compound (VOC) emissions from the use of Consumer Products have the potential to contribute to ground-level ozone levels that violate U.S. national air quality objectives for ozone. The USEPA and many U.S. states consider the regulation of Consumer Products to be an important component of the overall approach to reduce VOC emissions. A similar view is shared by the Canadian Council of Ministers of the Environment (CCME) and Environment Canada with respect to Canadian VOC emissions and Canada's own air quality objective.

In 1990, the CCME developed a *Management Plan for Nitrogen Oxides (NO<sub>x</sub>) and Volatile Organic Compounds (VOCs): Phase I* (the "Phase I Plan") to manage this air quality problem (CCME, 1990). Initiative V103 of the *Phase I Plan* described a program to reduce VOC emissions from Consumer Products, excluding windshield washer fluid and surface coatings. The objective was to reduce VOC emissions from this sector by 20% by 1997, based

on 1985 levels. Action 16 of the 1997 *Phase 2 Federal Smog Management Plan* (the "Phase 2 Plan") renewed this commitment by directing Environment Canada to develop, in consultation with stakeholders, a Consumer Products emission reduction program harmonized with U.S. regulations (Environment Canada, 1997a).

This report is the result of Action 16 of the *Phase 2 Plan* and outlines recommendations for the development of a *Canadian Environmental Protection Act, 1999* Guideline (CEPA Guideline) to provide a mechanism to reduce VOC emissions from Consumer Products in Canada.

**Summary of Recommendations.** The following briefly describes recommendations for a CEPA Guideline, the purpose of which would be to provide a framework for reducing VOC emissions resulting from Consumer Products in Canada. The recommendations are described in greater detail in Section 5. The CEPA Guideline would describe VOC and high-volatility organic compound (HVOC) limits for Consumer Products, as well as record-keeping procedures. As the intent was to develop limits that harmonized with the U.S. action, the definitions and VOC limits proposed are essentially those described in the 1998 U.S. Final Rule on the National Volatile Organic Compound Emission Standards for Consumer Products (1998 U.S. Final Rule). It is probable that any future federal or provincial regulatory actions aimed at reducing VOC emissions from Consumer Products would be consistent with this CEPA Guideline and the 1998 U.S. Final Rule. The following control options were recommended:

**Recommendation #1:** A CEPA Guideline should be promulgated prescribing maximum VOC/HVOC content in Canadian Consumer Products. In the interest of harmonization, these limits should be identical to those contained in the 1998 U.S. Final Rule for Consumer Products. Compliance with the prescribed VOC limits would be required six months after publication of the CEPA Guideline in the *Canada Gazette*, Part I.

**Recommendation #2:** The CEPA Guideline should mandate that records specifying VOC content by constituents (in weight-percent) in Consumer Products be maintained on a batch-by-batch basis for a period of three years. Alternatively, access to this information extending back three years should be ensured. The CEPA Guideline thus creates a mechanism for accessing the same information required under the record-keeping provisions of the 1998 U.S. Final Rule for Consumer Products, should this information be requested

by Environment Canada. The option to ensure access to information rather than to maintain records in-house takes into consideration the predominance of consumer product importers in Canada and the difficulties importers may have in maintaining such records for all of their products.

**Recommendation #3:** The CEPA Guideline should prescribe a declaration procedure for Canadian importers and manufacturers of Consumer Products to report to Environment Canada as to whether their products comply with the VOC content and emission limits set out in the CEPA Guideline. A declaration of compliance should be provided to Environment Canada by all Canadian importers or manufacturers of Consumer Products within six months of the publication of the CEPA Guideline in the *Canada Gazette*, Part I. This would likely be a one-time reporting exercise, and would allow Environment Canada to monitor the effectiveness of the Guideline. Environment Canada may consider additional follow-up reporting in the future if deemed appropriate, and could use its powers under the *Canadian Environmental Protection Act, 1999* to request information concerning VOC content in Consumer Products from individual companies.

**Recommendation #4:** In order to track future progress in the reduction of VOC emissions from Consumer Products, Environment Canada should consider performing random spot checks using analytical methods to determine VOC content in Consumer Products. Environment Canada could use its powers under the *Canadian Environmental Protection Act, 1999* to request information concerning VOC product content for other products and product categories in cases where spot checks demonstrate non-compliance with recommended VOC content limits.

The VOC/HVOC content and emissions limits prescribed in the proposed CEPA Guideline, as well as the record-keeping and reporting (declaration) provisions, would come into effect six months after publication of the CEPA Guideline in the *Canada Gazette*, Part I. A six-month implementation period was considered to be a reasonable amount of time to comply with the Guideline since it is likely that most companies are already in compliance with the 1998 U.S. Final Rule for Consumer Products. The CEPA Guideline for Consumer Products is intended to apply to all Canadian manufacturers and importers who sell or import Consumer Products for use in Canada. The VOC content limits are

presented in Table 2, the HVOC content limits in Table 3, and the VOC emission limit for charcoal lighter material in Table 4. Definitions of Consumer Product categories recommended for inclusion in the CEPA Guideline can be found in Appendix A.

The target date for publication of the CEPA Guideline in the *Canada Gazette*, Part I is at the earliest December 31, 2000. The VOC/HVOC content and emission limits would in this case become effective July 1, 2001, and the declaration of compliance with these limits would be due on the same date.

## Abbreviations and Definitions

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1998 U.S. Final Rule	1998 U.S. Final Rule on the National Volatile Organic Compound Emission Standards for Consumer Products
CARB	California Air Resources Board
CCME	Canadian Council of Ministers of the Environment
CEPA (1988; 1999)	<i>Canadian Environmental Protection Act</i> (1988; 1999)
CEPA Guideline	<i>Canadian Environmental Protection Act, 1999</i> Guideline
EC	Environment Canada
ENGO	Environmental Non-Government Organization
EPA	(United States) Environmental Protection Agency
HVOC	High-volatility organic compound (see definition below)
kt	kilotonne (1 000 000 kg)
MOU	Memorandum of Understanding
NAICC	National Air Issues Coordinating Committee
NO <sub>x</sub>	nitrogen oxides
ppb	parts per billion
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compound (see definition below)

*High-volatility organic compounds (HVOCs)* are VOCs with a vapour pressure greater than 80 millimetres of mercury at 20°C.

*Volatile organic compound (VOC)* is any organic compound which participates in atmospheric photochemical reactions; that is, any such organic compound other than the following which have been excluded because of their negligible photochemical reactivity: methane; ethane; 1,1,1-trichloroethane (methyl chloroform); methylene chloride (dichloromethane); chlorofluorocarbons (CFCs); fluorocarbons (FCs); hydrochlorofluorocarbons (HCFCs).



# 1 Introduction

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## 1.1 The Canadian Smog Management Plan

In the presence of sunlight, nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) undergo a photochemical reaction creating ground-level ozone, a major component of urban smog. Ground-level ozone has been shown to have adverse effects on human health, crops, and building materials. The maximum acceptable level for ground-level ozone has been set at 82 parts per billion (ppb) over a one-hour period. More than one half of Canada's population is exposed to levels above this objective with the most severe exposures occurring in the Windsor–Quebec City corridor, the Southern Atlantic Region (southern New Brunswick and southern Nova Scotia), and the Lower Fraser Valley of British Columbia (Environment Canada, 1993).

In October 1988, the Canadian Council of Ministers of the Environment (CCME) requested that a management plan be developed for controlling NO<sub>x</sub> and VOC emissions. The objectives of the plan were to solve Canada's domestic environmental air quality problems related to emissions of NO<sub>x</sub> and VOCs, and to meet Canada's international obligations relating to the reduction of hydrocarbon emissions. The CCME Management Plan was designed as a three-phase program aimed at solving ground-level ozone problems by the year 2005, i.e., to achieve overall compliance with Canada's Air Quality Objective for a maximum ground-level ozone level of 82 ppb over a one-hour period. A major goal for achieving this objective was to reduce Canadian VOC emissions from Consumer Products by 20% by 1997, based on 1985 levels. Phase I of the *Federal Smog Management Plan (Phase I Plan)* was issued by the CCME in 1990 and contained over 80 initiatives covering virtually all sources of NO<sub>x</sub> and VOC emissions (CCME, 1990).

Initiative V103 of the *Phase I Plan* specifically addresses the Consumer Products sector.

In 1997, the federal government issued the *Phase 2 Federal Smog Management Plan (Phase 2 Plan)* (Environment Canada, 1997a). The objectives of the *Phase 2 Plan* are:

- to continue pursuing the objective of consistently attaining Canada's one-hour ambient air quality objective of 82 ppb for ozone by the year 2005, and to establish the framework required to meet more stringent objectives in the future;
- to adopt a multi-pollutant approach, including incorporation of the particulate issue and taking into account measures addressing other air quality issues, such as acid rain and climate change;
- to meet Canada's international commitments, including those in the Canada-U.S. Air Quality Agreement, and the United Nations Economic Commission for Europe NO<sub>x</sub>, VOC, and Sulphur Protocols;
- to implement a strong domestic national smog reduction program, enhancing the effectiveness of Canada's position regarding transboundary flows of smog-producing pollutants from the United States;
- to assist provinces in resolving regional smog problems across Canada by providing a strong national base of measures upon which Regional Smog Management Plans can build; and
- to coordinate and track results and progress against the Plan's objectives.

Action 16 of the 1997 *Phase 2 Federal Smog Management Plan* renewed the CCME's commitment to this issue by directing Environment Canada to develop a Consumer Products emission reduction program in consultation with stakeholders and harmonized with developments in the United States. The recommendations presented here are the result of this process.

The *Phase 3 Federal Smog Plan (Phase 3 Plan)* has been drafted and a stakeholder consultation process is currently under way. The *Phase 3 Plan* will aim to continue the work initiated under the two previous phases to attain compliance with Canada's Air Quality Objective for ozone.

## 1.2 Initiative V103 and the United States Final Rule

The current recommendations for a management plan for Consumer Product VOC emissions are directly related to Initiative V103 of the *Phase I Plan* (CCME, 1990; see Appendix A). Initiative V103 describes a program to reduce VOC emissions from Consumer Products by 20% by 1997. Windshield washer fluid and surface coatings are excluded. As a result of the *Phase I Plan* recommendations, a CCME Task Force was formed in 1993 to examine regulatory initiatives then under way in the United States and to produce a VOC emission reduction plan for Consumer Products in Canada (Environment Canada, 1995). The CCME Task Force was made up of a group of participating members as well as a number of corresponding members representing provincial and municipal governments, industry, industry associations, environmental non-government organizations (ENGOs), and academia.

To date, the following Canadian studies have been completed in view of achieving Initiative V103's objectives for Consumer Products:

- In 1995, a study was conducted by Ortech Corporation for Environment Canada to review available Canadian Consumer Products inventory estimates, to examine regulatory developments for Consumer Products in the United States, and to survey stakeholders in both Canada and the United States for responses to then-current regulatory developments. This study generated a 1990 Canadian Consumer Products inventory extrapolated from per capita emission data obtained from a draft USEPA study (Environment Canada, 1995).
- In 1998, another study was done by Ortech Corporation to review options for improving the 1990 Baseline Inventory for consumer product VOC emissions in Canada. It was concluded

from the study that the extrapolated inventory based on United States per capita emissions data was the most appropriate method for estimating Canadian Consumer Products emissions (Environment Canada, 1998a).

- Also in 1998, an extensive list of Canadian Consumer Products manufacturers and suppliers was compiled by CHEMInfo for Environment Canada.

In 1998, a "Final Rule" regulating VOCs in Consumer Products was published in the U.S. Federal Register (USEPA, 1998a). The United States Final Rule defined 24 categories of Consumer Products representing most of the VOC emissions from this sector. Product limits were established in terms of weight-percent VOC for most of these categories. For two aerosol categories, a limit was established for high-volatility organic compound (HVOC) content. The limit for charcoal lighter material was defined in terms of grams of VOC emitted per start for a given quantity of material, according to a standard testing procedure. The 1998 U.S. Final Rule for Consumer Products came into effect September 11, 1998, and compliance with VOC/HVOC content limits became mandatory as of December 10, 1998.<sup>1</sup>

It is important to recognize the significance of the 1998 U.S. Final Rule for Consumer Products in the development of the recommendations herein. Throughout the consultation process with the CCME Task Force, industry representatives made it quite clear that harmonization with the United States was critical. Action 16 of the *Phase 2 Plan* specifically described a mandate to develop a VOC emission reduction program harmonized with the United States. Consequently, the VOC and HVOC limits contained in the current recommendations for a CEPA Guideline are exactly the same as those defined in the 1998 U.S. Final Rule.

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<sup>1</sup> An exception was made for the *Federal Insecticide, Fungicide, and Rodenticide Act*-regulated products, (i.e., pesticides); these were to be in compliance with the limits by December 10, 1999.



### 1.3 The Canadian Consumer Products Sector

The Consumer Products sector is a complex one, involving thousands of companies and different product types, e.g., personal care products, cosmetics, and household products. Consumer product categories and subsectors have been defined in the USEPA 1990 baseline inventory study (USEPA, 1995). The 1990 Canadian inventory was developed using estimates based on United States

per capita emission factors derived from this study and applied to the Canadian population in 1990 (27 790 600 people). Total 1990 VOC emissions for Canadian Consumer Products are estimated at approximately 70 kilotonnes (kt). Table 1 lists subsectors that account for total contributions to Consumer Product VOC emissions. Notable subsector contributors to this total include hair care products (27%), all pesticides (29%), and automotive products (12%).

<b>Table 1 Canadian Consumer Products Subsectors and 1990 Estimated Emissions</b> (Environment Canada, 1998a; compiled from Tables 1A-C)		
<b>Subsector</b>	<b>1990 Emissions (tonnes)</b>	<b>Percentage of Total Consumer Products Emissions</b>
Hair care products	18 753	26.81
Auto maintenance and repair	8 724	12.47
Herbicides	6 436	9.20
Insecticides	5 816	8.32
Miscellaneous pesticides	3 871	5.53
Air fresheners	3 386	4.84
Deodorants and antiperspirants	3 044	4.35
Miscellaneous personal care products	2 976	4.26
Fungicides and nematocides	2 679	3.83
Hard surface cleaners	2 230	3.19
Fragrance products	1 896	2.71
Anti-microbial agents	1 779	2.54
Miscellaneous household products	1 371	1.96
Automotive detailing products	923	1.32
Laundry products	764	1.09
All other subcategories	5 291	7.57
<b>Total</b>	<b>69 939</b>	<b>100.00</b>

## 2 Objectives and Methodology

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### 2.1 Objectives

The objective of this project was to develop a plan to reduce volatile organic compounds emissions from Consumer Products, excluding windshield washer fluid and surface coatings, while harmonizing with the 1998 U.S. Final Rule. A Consumer Products Working Group was formed to address all relevant issues and provide appropriate multi-stakeholder representation.

Specific tasks undertaken by the Consumer Products Working Group included:

- a review of Canadian Consumer Products estimates and agreement on baseline emissions;
- a review of similarities between Canadian and U.S. use patterns as a basis for using U.S. regulatory initiatives as a model for Canadian emission reduction recommendations;
- an examination of issues of harmonization with USEPA standards;
- a review and assessment of available control instruments for managing VOC emissions from Canadian Consumer Products; and
- an assessment of the potential for achieving the objectives of Initiative V103 as a result of the proposed VOC reduction options.

### 2.2 Methodology

The methodology for this project was based on stakeholder consultation, which closely followed the details of the major initiative to regulate VOCs in Consumer Products in the United States (USEPA, 1998a). Work conducted in previous Canadian studies had indicated that U.S. Consumer Product consumption and VOC emission patterns in the

United States are similar to those in Canada, and suggested that Canadian harmonization with the U.S. Final Rule for Consumer Products was both possible and desirable (Environment Canada, 1995).

The Consumer Products Working Group was formed by contacting participating and corresponding members of the former CCME (V103) Task Force and inviting them to participate in the consultations for this project. Tables B-1 and B-2 of Appendix B list the participating and corresponding members of the Consumer Products Working Group.

Meetings of the Consumer Products Working Group were held at the CANTOX ENVIRONMENTAL INC. office in Mississauga, Ontario on October 7 and December 7, 1999. The agenda included a discussion of process issues, presentations on the project background, regulatory issues, the 1998 U.S. Final Rule, potential Canadian VOC control mechanisms, and record keeping and reporting issues. The control option preferred by all stakeholders was a federal regulation.

The process for completing the project after the two meetings of the Consumer Products Working Group involved the following steps:

- development of a revised Draft Report and distribution to members of the Stakeholder Working Group for comment;
- a one-month comment period to receive input from stakeholders;
- development of the Final Report taking into account stakeholder comments; and
- making the Final Report available to stakeholders and to the public.

## 3 Discussion

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### 3.1 The 1990 Canadian Inventory

As previously discussed, the Consumer Products sector is estimated to have generated about 70 kt of VOC emissions in 1990. The most recent and comprehensive data for overall Canadian VOC emissions from anthropogenic and biogenic sources are in Environment Canada's *1995 Criteria Air Contaminants Emissions for Canada* (Environment Canada, 1998c). The figure for total anthropogenic VOC emissions in Canada in 1995 is 2638 kt. Assuming total VOC emissions in Canada did not change significantly between 1990 and 1995, Consumer Products contribute to 2.65% of the total VOC emissions in Canada each year.

One argument put forward by industry was that the expenditure of government resources to develop control mechanisms and the potential costs to industry outweigh the benefits that may be obtained by reducing VOC emissions from the Consumer Products sector. However, it should be noted that a significant portion of Canadian VOC emissions can be attributed to contributions from many relatively small sectors. The 1990 CCME Management Plan for NO<sub>x</sub> and VOCs (*Phase I Plan*) included initiatives for many of these smaller sectors, including several whose contributions to total VOC emissions are significantly smaller than 70 kt/yr. Examples include:

- Automotive original equipment manufacture coatings (15.8 kt/yr);
- Automotive refinish coatings (13.3 kt/yr);
- Automotive parts coatings (5.4 kt/yr);
- Wood finishing coatings (11.2 kt/yr);  
and
- Industrial maintenance coatings (12.0 kt/yr).

The CCME Standards, Guidelines, and/or Codes of Practice have been or are being developed for each of these sectors. The strategy of the federal and provincial governments to address the serious ground-level ozone problem in Canada involves reducing VOC emissions from all significant sources. Every contributing sector is expected

to make a reasonable effort to do its part in helping to arrive at a solution.

In general, industry stakeholders accepted the 1990 Canadian inventory as a valid indication of VOC emissions from the Consumer Products sector. In generating the data, it had been assumed that use patterns for Consumer Products in Canada were similar to those found in the United States, and this was considered to be a fairly reasonable assumption. There were, however, too many assumptions made in the development of the 1990 inventory to regard the quantitative data as rigorous. This issue was particularly important during discussions of record keeping and reporting, since it meant that there were no high-quality baseline data against which any new Canadian data could be compared. Thus, generating an inventory of VOC emissions from the Consumer Products sector in the year 2000, for example, would not result in an effective tool for measuring whether VOC emissions had decreased, even taking into consideration shifts in production and importation.

### 3.2 Potential for VOC Reduction in Canadian Consumer Products

Discussions with industry stakeholders suggested that significant potential for reducing VOC emissions from the Consumer Products sector in Canada exists; however, it was believed that most of this potential will be achieved as a result of the direct and indirect influences of the 1998 U.S. Final Rule. The relationship between Canada and the United States is clearly a close one in terms of the Consumer Products sector, as is generally the case with the economies of these two countries. While there may be significant differences among certain subsectors of Consumer Products (e.g., cosmetics, personal care, and household products), most Consumer Products used in Canada are imported, and most of these imports come from the United States. Stakeholders speculated that for certain subsectors such as cosmetics as much as 90% of the products used in Canada are imported from the United States. There are no data available to substantiate this claim; however, there was general

consensus that most Consumer Products used in Canada are imported from the United States.

While the 1998 U.S. Final Rule does not apply to Consumer Products manufactured in the United States for export, Working Group participants indicated that in most cases it would not be economically viable to produce a special, non-compliant product solely for the Canadian market. Thus, in effect, most Consumer Products imported from the United States would be expected to be in compliance with the 1998 U.S. Final Rule. Conversely, it would not, in most cases, be economical for Canadian manufacturers of Consumer Products to market separate products for the Canadian and U.S. markets. Thus, most Canadian Consumer Products manufacturers, particularly those of significant size, would indirectly be regulated by the 1998 U.S. Final Rule since their exports to the United States must comply with its VOC limits.

The conclusion drawn by the Consumer Products Working Group was that the potential for reductions in VOC emissions from the Canadian Consumer Products sector above and beyond those reductions attributable to the 1998 U.S. Final Rule would likely be very small in the absence of stringent Canadian regulations. This did not negate the various reasons for pursuing VOC reduction initiatives in Canada for this sector; however, it did underscore the perception of many of the stakeholders that any non-regulatory mechanisms would have limited effectiveness in terms of actually reducing VOC emissions from Consumer Products in Canada.

### **3.3 Regulation of VOCs in Canada**

Consultations for this project made it clear that Canadian regulation to limit VOCs in Consumer Products, harmonized with the 1998 U.S. Final Rule, was desired by all stakeholders. Regulation was much preferred as a control mechanism over all voluntary mechanisms, largely due to industry's concern for establishing a "level playing field" for this sector, and the general opinion that only regulatory action would be effective in the case of VOCs from Consumer Products. Given the impact of the 1998 U.S. Final Rule, stakeholders felt that most Canadian manufacturers and importers are already in compliance, or will be in compliance in

the near future, with the VOC limits described in that legislation. The main issue for participating stakeholders focused on the few companies that may obtain a competitive advantage in Canada by not complying with the product VOC limits defined in the 1998 U.S. Final Rule. Higher VOC content in many Consumer Products was said to result in a superior product from the point of view of performance. It was felt that if voluntary measures were implemented in Canada, companies that are not already in compliance would be unlikely to reduce the VOC content of their products. Consequently, a regulatory approach was much preferred.

In Canada, regulation of VOCs was not an option at the time of consultation, and therefore could not be considered during the development of the recommendations for a VOC management plan for Consumer Products. It is possible that VOCs could be regulated in Canada in the future, although the precise mechanism for such regulation is unclear. The discussion of control mechanisms for VOC reduction in the Canadian Consumer Products sector, therefore, had to be limited to non-regulatory options for the purposes of this initiative, with the understanding that regulations could potentially be developed in the future.

### **3.4 Non-regulatory Mechanisms for Control of VOCs**

At the time of consultation, regulation was not an option for controlling VOC emissions in the Consumer Product sector because VOCs were not considered toxic under the *Canadian Environmental Protection Act* (CEPA). During the development of the recommendations contained herein, much attention was devoted to exploring the merits and limitations of non-regulatory mechanisms. The non-regulatory mechanisms examined were:

- CCME Standards;
- CEPA Guidelines;
- Canadian Standards Association (CSA) standards;
- Canadian General Standards Board (CGSB) standards;
- Environmental Choice labelling;
- generic environmental labelling;

- industry/association guidelines;
- a Memorandum of Understanding (MOU); and
- voluntary compliance (including declaration).

The general approach taken was to consider, as a primary step, the establishment of either a CCME Standard or a CEPA Guideline based closely upon the 1998 U.S. Final Rule. The other mechanisms were then explored for their potential to complement the CCME Standard or CEPA Guideline and encourage compliance with VOC content limits.

Ultimately, Environment Canada preferred a CEPA Guideline mechanism as opposed to a CCME Standard. It was thought that the CEPA Guideline could function in much the same way as a CCME Standard in terms of providing a voluntary national guideline applicable to VOCs in Consumer Products. This guideline could be used as the basis for provincial legislation, as with a CCME Standard, and would have the added advantage of providing a basis for any potential federal regulations or regulatory initiatives, such as a request for data, that might be developed in the future.

Most stakeholders were skeptical that a voluntary initiative such as a CEPA Guideline would be effective in reducing VOC emissions or encouraging compliance with VOC content limits in Consumer Products on the part of those companies not already in compliance. Stakeholders did agree, however, that a CEPA Guideline based on the 1998 U.S. Final Rule would send an appropriate message to the industry and to the international community. They also agreed that the guideline could be a valuable interim measure towards regulating VOCs in Consumer Products, assuming such regulations would be promulgated in the future.

As for the other non-regulatory mechanisms listed, none were thought to be particularly effective in terms of complementing a CEPA Guideline. The two main types of mechanisms included third-party certification programs allowing for environmental labelling that could provide compliant companies with a marketing advantage, and voluntary controls

achieved through industry agreements (i.e., an MOU).

The general consensus was that voluntary agreements such as an MOU would not be very effective in reducing VOC emissions from the Consumer Products sector. Memorandums of Understanding were seen as redundant in the context of a voluntary standard such as a CEPA Guideline. Since those who did not comply with a Standard or Guideline would likely be those who would not participate in an MOU, an MOU would likely result in no additional benefit in terms of encouraging voluntary compliance.

Third-party certification programs were generally considered to be complex and ineffective in the case of issues of VOC content in Consumer Products. Consumers are not particularly aware of the connection between VOCs and atmospheric pollution, or are not sufficiently informed to make purchasing decisions based on product VOC content. The marketing advantage of compliance with VOC limits was therefore questionable. Environmental labelling has been an option available to marketers of Consumer Products for some time. If it were an effective mechanism for promoting lower-VOC products based on their less severe environmental effects, this would have been done already. Overall, third-party certification programs or environmental labelling programs were seen not to have much potential for contributing to achieving the objective of lowering VOC emissions in the Consumer Products sector.

One mechanism that was thought to have some merit was voluntary compliance, particularly as it related to reporting issues discussed in the following text. Declaration for the purposes of verifying compliance with product VOC limits defined in a CEPA Guideline would allow Environment Canada to identify those companies already in compliance. Any future reporting requirements could then be focused on companies that had not provided a statement of compliance. This approach could create a situation where potential reporting requirements could provide an incentive for companies to pursue voluntary declaration, and compliance with the CEPA Guideline as well.

### 3.5 Record Keeping and Reporting

Record keeping and reporting were by far the most controversial issues associated with the development of the recommendations for a VOC management plan for Consumer Products. The discussions surrounding these issues are presented in some detail herein.

Environment Canada has the authority under section 71 of CEPA 1999 to request information on commercial and industrial activities involving specific substances, including VOCs. Thus, a reporting requirement for the types and amounts of VOCs used in Consumer Products, applicable to manufacturers and importers, could be published in the *Canada Gazette* and could be enforced under CEPA 1999. Environment Canada expressed a desire to have some mechanism for measuring the effectiveness of any VOC control initiative for Consumer Products in Canada. Essentially this meant having access to data quantifying VOC emissions in Canada before and after the implementation of any such initiative. Regular reporting would not necessarily be needed; however, it was suggested that at least two reporting periods spaced about five years apart could achieve this objective.

Industry representatives acknowledged that wanting to measure the effectiveness of policy initiatives in principle was reasonable; however, they consistently objected to the suggestion of any record keeping or reporting requirements that went beyond what is described in the 1998 U.S. Final Rule. The purpose of the record keeping requirements contained in the 1998 U.S. Final Rule is to provide a mechanism to verify whether individual companies are complying with the VOC limits. It is not meant to gather data to monitor VOC emissions or produce an overall inventory to confirm anticipated reductions in VOC emissions. Such an activity would involve the compilation of an enormous amount of complex data, as was seen in the development of the national inventory by the USEPA (USEPA, 1995). It was the view of industry representatives that the USEPA had recognized that VOC issues for the Consumer Products sector are highly complex, and also that the total contribution to VOC emissions from this sector was relatively small. A reporting/monitoring program therefore did not seem to be justified. To

pursue such an activity in Canada, and especially to generate data of credible quality, would consume large amounts of government resources and would be burdensome to industry. This is particularly true given the high proportion of Consumer Products importers in Canada compared to manufacturers. The difficulty of supplying the necessary product information is much greater for importers than for manufacturers, and in this sense the Canadian situation is very different from that in the United States. Industry representatives did not see an inventory development activity as being cost-effective in terms of the value of the information it would generate. They also did not feel it was justified to pursue an activity in Canada that would go beyond the measures described in the 1998 U.S. Final Rule, and it was not in the interests of international harmonization to consider such a measure.

There were a number of other specific objections to the record keeping and reporting activities suggested by Environment Canada. For importers, obtaining precise VOC content information for products from their suppliers would be extremely difficult, and in many cases simply not possible. Canadian importers do not have enough leverage to demand such information from their suppliers for all products in the absence of a regulatory requirement. For manufacturers, determining the amount of product sold that is used in Canada as opposed to exported would be a very difficult and time-consuming activity. Finally, industry stakeholders felt that an onerous reporting scheme would penalize the entire industry for the non-compliance of a minority, and that it would not be effective in forcing non-compliant companies to comply with the VOC limits.

Despite their consistent objections to the suggested record keeping and reporting initiatives, industry stakeholders did attempt to provide helpful alternative suggestions. While maintaining and reporting data to generate an inventory of VOC emissions from the Consumer Products sector did not seem reasonable, it did appear reasonable to establish mechanisms to verify whether Canadian companies were in compliance with VOC limits similar to those described in the 1998 U.S. Final Rule. Declaration and access to information were seen by industry representatives to be mechanisms

that could, in combination, achieve the desired objective. It was suggested that ensuring access to the relevant information, as opposed to pursuing reporting schemes or recommending in-house record keeping, would be sufficient for verification purposes. Verification of VOC content for individual Consumer Products could be pursued on a case-by-case basis. In addition, in the case of importers, it could be useful to have some sort of certification of compliance provided by suppliers, stating that “these products comply with the VOC limits described in CEPA Guideline...” for example. Should Environment Canada wish to investigate the basis for this claim, the supplier would be petitioned for the necessary information.

These suggestions were taken into consideration by Environment Canada and accepted with some modification as can be seen in the proposed CEPA Guideline described in the following section. The CEPA Guideline would call for the maintenance of records, or the assurance of having access to records, detailing the weight-percent of VOC

constituents in Consumer Products on a batch-by-batch basis. This represents the same information required by the 1998 U.S. Final Rule, but takes into consideration the predominance of Consumer Products importers in Canada, and the difficulties importers may have in maintaining such records for all of their products. Thus, the intent of the CEPA Guideline is to ensure access to such information on a case-by-case basis should it be requested by Environment Canada.

The proposed CEPA Guideline also describes a declaration procedure that would require importers and manufacturers of Consumer Products in Canada to report to Environment Canada as to whether their products comply with the CEPA Guideline VOC limits. In the future, Environment Canada may perform random spot checks on certain individual Consumer Products, and may use its powers under CEPA 1999 to request information concerning product formulation and quantities in cases where spot checks determine non-compliance with the VOC content limits.

## 4 Recommendations

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It is recommended that a CEPA Guideline be developed to provide a framework for reducing VOC emissions from Consumer Products in Canada. The CEPA Guideline should describe VOC and HVOC content limits for Consumer Products, a VOC emission limit for one product category, and record keeping procedures. In the interests of harmonization, these limits should be identical to those contained in the 1998 U.S. Final Rule for Consumer Products. The definitions of Consumer Products for the proposed CEPA Guideline should be essentially those described in the 1998 U.S. Final Rule (including definitions of VOC and HVOC). Record keeping and reporting requirements should be similar to those described in the 1998 U.S. Final Rule. However, a provision should be established to recognize that most Consumer Products are imported into Canada rather than manufactured, and therefore access to information rather than the maintenance of records for all products should be the recommended approach. The CEPA Guideline should prescribe compliance with the proposed VOC limits and record keeping/reporting provisions six months after publication in *Canada Gazette*, Part I. The proposed CEPA Guideline is described in greater detail in the following text.

### 4.1 VOC/HVOC Content and Emission Limits

The CEPA Guideline is intended to apply to all manufacturers and importers of Consumer Products that are used in Canada. The CEPA Guideline establishes limits to VOC content for various Consumer Product categories. It also establishes limits to HVOC<sup>2</sup> content for two special categories, and VOC emission limits for charcoal lighter material. The VOC content limits are presented in Table 2, the HVOC content limits in Table 3, and the VOC emission limit for charcoal lighter material in Table 4.

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<sup>2</sup> High-volatility organic compounds (HVOCs) are VOCs with a vapour pressure greater than 80 millimetres of mercury at 20°C.

### 4.2 Products that are Exempt

To be consistent with the U.S. Final Rule, the following Consumer Products should be exempt from the CEPA Guideline:

- Any consumer product manufactured solely for shipment and use outside of Canada.
- Insecticides and air fresheners containing at least 98% *paradichlorobenzene* or at least 98% naphthalene.
- Adhesives sold in containers of 0.03 litre (1 ounce) or less.
- Bait station insecticides.<sup>3</sup>
- Air fresheners whose VOC constituents are 100% fragrance materials.
- Non-aerosol mothproofing products that are principally for the protection of fabric from damage by moths and other fabric pests in adult, juvenile, or larval forms.
- Flooring seam sealers used to join or fill the seam between two adjoining pieces of flexible sheet flooring.

### 4.3 Record Keeping

The CEPA Guideline for Consumer Products should prescribe that all manufacturers and importers of Consumer Products maintain detailed records for these products, or ensure access to such records, as follows:

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<sup>3</sup> For the purpose of this Standard, bait station insecticides are containers enclosing an insecticidal bait that does not weigh more than 14 grams, where bait is designed to be ingested by insects and is composed of solid material feeding stimulants with less than 5% by weight active ingredients.



**Table 2 Volatile Organic Compound (VOC) Content Limits**

<b>Product Category</b>	<b>Weight-Percent VOC</b>
<b>Air fresheners</b>	
single-phase	70
double-phase	30
liquids/pump sprays	18
solids/gels	3
<b>Bathroom and tile cleaners</b>	
aerosols	7
all other forms	5
<b>Carburetor and choke cleaners</b>	75
<b>Cooking sprays— aerosol</b>	18
<b>Dusting aids</b>	
aerosols	35
all other forms	7
<b>Engine degreasers</b>	75
<b>Fabric protectants</b>	75
<b>Floor polishes/waxes</b>	
products for flexible flooring materials	7
products for non-resilient flooring	10
wood floor wax	90
<b>Furniture maintenance products— aerosol</b>	25
<b>General purpose cleaners</b>	10
<b>Glass cleaners</b>	
aerosols	12
all other forms	8
<b>Hairsprays</b>	80
<b>Hair mousses</b>	16
<b>Hair styling gels</b>	6
<b>Household adhesives</b>	
aerosols	75
contact	80
construction and panel	40
general purpose	10
structural waterproof	15
<b>Insecticides</b>	
crawling bug	40
flea and tick	25
flying bug	35
foggers	45
lawn and garden	20
<b>Laundry prewash</b>	
aerosols/solids	22
all other forms	5
<b>Laundry starch products</b>	5
<b>Nail polish removers</b>	85
<b>Oven cleaners</b>	
aerosols/pump sprays	8
liquids	5
<b>Shaving creams</b>	5

**Table 3 High-volatility Organic Compound (HVOC)\* Content Limits**

<b>Product Category</b>	<b>Weight-Percent HVOC</b>
Underarm antiperspirants—aerosol	60
Underarm deodorants—aerosol	20

\* High-volatility organic compounds (HVOCs) are VOCs with a vapour pressure greater than 80 millimetres of mercury at 20°C.

**Table 4 Volatile Organic Compound (VOC) Emission Limits**

<b>Product Category</b>	<b>Limit (g/start)</b>
Charcoal lighter material	9**

\*\*As determined by tests performed according to Section 59.208 of the 1998 U.S. Final Rule for Consumer Products.

- detailed product information related to VOC content for each batch of each Consumer Product<sup>4</sup> should be maintained for three years; or
- access to such information extending back over a period of three years should be ensured.

Specifically, manufacturers and importers of Consumer Products for use in Canada should keep or have access to records for each batch of Consumer Products for three years as follows:

- records of each batch of production;
- accurate records of the weight-percent and chemical composition of the individual product constituents; and
- for charcoal lighter materials, accurate records for three years of the results of tests performed to quantify VOC emissions per start.<sup>5</sup>

<sup>4</sup> Consumer Products as defined in this document, i.e., those belonging to the categories for which VOC/HVOC content limits and VOC emission limits apply.

<sup>5</sup> Tests should be according to or based upon methods described in Section 59.208 of the U.S. Final Rule.

The CEPA Guideline thus creates a mechanism for accessing the same information required under the record keeping provisions of the 1998 U.S. Final Rule for Consumer Products, should this information be requested by Environment Canada. The option to ensure access to information rather than to maintain records in-house takes into consideration the predominance of Consumer Product importers in Canada and the difficulties importers may have in maintaining such records for all of their products.

#### **4.4 Reporting (Declaration)**

It is recommended that the CEPA Guideline not require formal data reporting of records as long as access to such records (upon request) is ensured. Importers and manufacturers of Consumer Products for use in Canada should voluntarily provide Environment Canada with a declaration that their Consumer Products imported into or manufactured in Canada comply with the VOC/HVOC limits described in Tables 2, 3, and 4. Manufacturers and importers should base their calculations of VOC content on the theoretical formulations of the product on a weight-percent basis. A suggested format for providing the above information to Environment Canada can be found in Appendix C .

The purpose of the voluntary reporting provision is to provide Environment Canada with information regarding the state of compliance with VOC limits in Consumer Products. This would likely be a one-time reporting exercise; however, Environment Canada may consider additional reporting in the future if deemed appropriate. Environment Canada could use its powers under CEPA 1999 to request information concerning VOC product content for companies that do not report through the declaration procedure.

#### **4.5 Timing Issues**

The VOC/HVOC content and emissions limits described, as well as the record keeping and reporting (declaration) provisions, should come into effect six months after the CEPA Guideline is

published in the *Canada Gazette*, Part I. The target date for publication of the CEPA Guideline is December 31, 2000 at the earliest; in this case the effective date of the CEPA Guideline would be July 1, 2001.

#### **4.6 Other Control Mechanisms**

In addition to the proposed CEPA Guideline, once it becomes effective, Environment Canada should consider performing random spot checks on certain individual Consumer Products, using analytical methods to determine VOC content. Environment Canada could use its powers under CEPA 1999 to request information concerning VOC product content for other products and product categories in cases where spot checks determine non-compliance with recommended VOC content limits.

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## Appendix A      Definitions of Consumer Products

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*The following definitions are derived in part or whole from the September 11, 1998 United States Final Rule - National Volatile Organic Compound Emission Standards for Consumer Products, and are presented here to provide definitions for Consumer Product categories applicable to the proposed CEPA Guideline only.*

**Aerosol cooking spray** means any aerosol product designed either to reduce sticking on cooking and baking surfaces or to be directly applied on food for the purpose of reducing sticking on cooking and baking surfaces, or both.

**Aerosol product** means a product characterized by a pressurized spray system that dispenses product ingredients in aerosol form by means of a propellant (i.e., a liquefied or compressed gas that is used in whole or in part, such as a co-solvent, to expel a liquid or any other material from the same pressurized container or from a separate container) or mechanically induced force. “Aerosol product” does not include pump sprays.

**Agricultural use** means the use of any pest control product or method or device for the control of pests in connection with the commercial production, storage, or processing of any animal or plant crop. “Agricultural use” does not include the sale or use of pest control products in properly labelled packages or containers that are intended for:

- household use;
- use in structural pest control; or
- institutional use.

**Air freshener** means any consumer product including, but not limited to, sprays, wicks, powders, and crystals designed for the purpose of masking odours, or freshening,

cleaning, scenting, or deodorizing the air. This does not include products that are used on the human body, products that function primarily as cleaning products, disinfectant products claiming to deodorize by killing germs on surfaces, or institutional/industrial disinfectants when offered for sale solely through institutional and industrial channels of distribution. It does include spray disinfectants and other products that are expressly represented for use as air fresheners, except institutional and industrial disinfectants when offered for sale through institutional and industrial channels of distribution. To determine whether a product is an air freshener, all verbal and visual representations regarding product use on the label or packaging and in the product's literature and advertising may be considered. The presence of, and representations about, a product's fragrance and ability to deodorize (resulting from surface application) shall not constitute a claim of air freshening.

**All other forms** means all consumer product forms for which no form-specific VOC standard is specified. “All other forms” include, but are not limited to, solids, liquids, wicks, powders, crystals, and cloth or paper wipes (towelettes).

**Bathroom and tile cleaner** means a product designed to clean tile or surfaces in bathrooms. “Bathroom and tile cleaner” does not include products specifically designed to clean toilet bowls or toilet tanks.

**Carburetor and choke cleaner** means a product designed to remove dirt and other contaminants from a carburetor or choke. “Carburetor and choke cleaner” does not include products designed to be introduced directly into the fuel lines or fuel storage tank prior to introduction into the carburetor, or solvent use described in CCME (1995) .

**Charcoal lighter material** means any combustible material designed to be applied on, incorporated in, added to, or used with charcoal to enhance ignition. “Charcoal lighter material” does not include any of the following:

- electrical starters and probes;
- metallic cylinders using paper tinder;
- natural gas; and
- propane.

**Construction and panel adhesive** means any one-component household adhesive having gap-filling capabilities that distributes stress uniformly throughout the bonded area resulting in a reduction or elimination of mechanical fasteners.

**Consumer** means any person who purchases or acquires any consumer product for personal, family, household, or institutional use. Persons acquiring a consumer product for resale are not “consumers” of that product.

**Consumer Product** means any household or institutional product (including paints, coatings, and solvents), or substance, or article (including any container or packaging) held by any person, the use, consumption, storage, disposal, destruction, or decomposition of which may result in the release of VOC. For the purpose of this CEPA Guideline, Consumer Product means any product listed in Section 4. (*For the purpose of this report, consumer product means any product listed in Tables 2, 3, and 4.*)

**Contact adhesive** means any household adhesive that:

- when applied to two substrates, forms an instantaneous, non-repositionable bond;
- when dried to touch, exhibits a minimum 30-minute bonding range; and

- bonds only to itself without the need for reactivation by solvents or heat.

**Container or packaging** means the part or parts of the consumer product that serve only to contain, enclose, incorporate, deliver, dispense, wrap, or store the chemically formulated substance or mixture of substances that is solely responsible for accomplishing the purposes for which the product was designed or intended. “Container or packaging” includes any article onto or into which the principal display panel is incorporated, etched, printed, or attached.

**Crawling bug insecticide** means any insecticide product that is designed for use against crawling arthropods including, but not limited to, ants, cockroaches, mites (but not house dust mites), silverfish, or spiders. “Crawling bug insecticide” does not include products for agricultural use or products designed to be used exclusively on humans or animals.

**Distributor** means any person to whom a consumer product is sold or supplied for the purposes of resale or distribution in commerce.

**Double-phase aerosol air freshener** means an aerosol air freshener with liquid contents in two or more distinct phases that requires the product container to be shaken before use to mix the phases, producing an emulsion.

**Dusting aid** means a product designed to assist in removing dust and other soils from floors and other surfaces without leaving a wax or silicone-based coating. “Dusting aid” does not include products that consist entirely of compressed gases for use in electronic or other specialty areas.

**Engine degreaser** means a cleaning product designed to remove grease, grime, oil, and other contaminants from the external surfaces of engines and other mechanical parts. “Engine degreaser” does not include



any solvent used in parts washing equipment, or any solvent use described in CCME (1995).

**Fabric protectant** means a product designed to be applied to fabric substrates to protect the surface from soiling from dirt and other impurities or to reduce absorption of water into the fabric's fibres. "Fabric protectant" does not include silicone-based products whose function is to provide water repellency, or products designed for use solely on fabrics that are labelled "dry clean only."

**Flea and tick insecticide** means any insecticide product that is designed for use against fleas, ticks, and their larvae, or their eggs. "Flea and tick insecticide" does not include products that are designed to be used exclusively on humans or animals or their bedding.

**Flexible flooring material** means asphalt, cork, linoleum, no wax, rubber, seamless vinyl, and vinyl composite flooring.

**Floor polish or wax** means a wax, polish, or any other product designed to polish, protect, or enhance floor surfaces by leaving a protective coating that is designed to be periodically replenished. "Floor polish or wax" does not include "spray buff products," products designed solely for the purpose of cleaning floors, floor finish strippers, products designed for unfinished wood floors.

**Floor seam sealer** means any low viscosity specialty adhesive used in small quantities for the sole purpose of bonding adjoining rolls of installed flexible sheet flooring or to fill any minute gaps between and adjoining rolls.

**Flying bug insecticide** means any insecticide product that is designed for use against flying insects including, but not limited to, flies, mosquitoes, and gnats. "Flying bug insecticide" does not include "wasp and

hornet insecticide" products that are designed to be used exclusively on humans or animals or their bedding.

**Fragrance** means a substance or mixture of aroma chemicals, natural essential oils, and other functional components that is added to a consumer product to impart an odour or scent, or to counteract a malodour.

**Furniture maintenance product** means a wax, polish, conditioner, or any other product designed for the purpose of polishing, protecting, or enhancing finished wood surfaces other than floors. "Furniture maintenance product" does not include dusting aids, products designed solely for the purpose of cleaning, and products designed to leave a permanent finish such as stains, sanding sealers, and lacquers.

**Gel** means a colloid in which the dispersed phase has combined with the continuous phase to produce a semisolid material, such as jelly.

**General-purpose adhesive** means any non-aerosol household adhesive designed for use on a variety of substrates. General-purpose adhesives do not include contact adhesives or construction and panel adhesives.

**General purpose cleaner** means a product designed for general all-purpose cleaning, in contrast to cleaning products designed to clean specific substrates in certain situations. "General purpose cleaner" includes products designed for general floor cleaning, kitchen or countertop cleaning, and cleaners designed to be used on a variety of hard surfaces.

**Glass cleaner** means a cleaning product designed primarily for cleaning surfaces made of glass. Glass cleaner does not include products designed solely for the purpose of cleaning optical materials used in eyeglasses, photographic equipment, scientific equipment, and photocopying machines.

**Hair mousse** means a hairstyling foam designed to facilitate styling of a coiffure and provide limited holding power.

**Hair styling gel** means a high-viscosity, often gelatinous product that contains a resin and is designed for the application to hair to aid in styling and sculpting of the hair coiffure.

**Hairspray** means a consumer product designed primarily for the purpose of dispensing droplets of a resin on and into a hair coiffure to impart sufficient rigidity to the coiffure to establish or retain the style for a period of time.

**High-volatility organic compound (HVOC)** means any organic compound that exerts a vapour pressure greater than 80 millimetres of mercury when measured at 20 degrees Celsius.

**Household adhesive** means any household product that is used to bond one surface to another by attachment. “Household adhesive” does not include products used on humans or animals, adhesive tape, contact paper, wallpaper shelf liners, or any other product with an adhesive incorporated onto or in an inert substrate.

**Household product** means any consumer product that is primarily designed to be used inside or outside of living quarters or residences, including the immediate surroundings, that are occupied or intended for occupation by individuals.

**Household use** means use of a product in a home or its immediate environment.

**Importer** means any person who brings a consumer product into Canada that was manufactured, filled, or packaged at a location outside of Canada for sale or distribution in Canada.

**Industrial use** means use for, or in, a manufacturing, mining, or chemical process

or use in the operation of factories, processing plants, and similar sites.

**Insecticide** means a pest control product that is designed for use against insects or other arthropods, excluding any product that is:

- for agricultural use; or
- a restricted use pest control product.

**Insecticide fogger** means any insecticide product designed to release all or most of its content as a fog or mist into indoor areas during a single application. Foggers may target a variety of pests including (but not limited to) fleas and ticks, crawling insects, lawn and garden pests, and flying insects. Foggers are not subject to the specific VOC limitations or other categories of insecticides list in Table 2.

**Institutional product** means a consumer product that is designed for use in the maintenance or operation of an establishment that manufactures, transports, or sells goods or commodities, or provides services for profit; or is engaged in the non-profit promotion of a particular public, educational, or charitable cause. “Establishments” include, but are not limited to, government agencies, factories, schools, hospitals, sanitariums, prisons, restaurants, hotels, stores, automobile service and parts centres, health clubs, theatres, or transportation companies. “Institutional product” does not include household products and products that are incorporated into or used exclusively in the manufacture or construction of the goods or commodities that are produced by the establishment.

**Institutional use** means use within the confines of or on property necessary for the operation of buildings including, but not limited to, government agencies, factories, sanitariums, prisons, restaurants, hotels, stores, automobile service and parts centres, health clubs, theatres, transportation companies, hospitals, schools, libraries, auditoriums, and office complexes.

**Label** means any written, printed, or graphic matter affixed to, applied to, attached to, blown into, formed, molded into, embossed on, or appearing upon any consumer product package for purposes of branding, identifying, or giving information with respect to the product or to the contents of the package.

**Laundry prewash** means a product that is designed for application to a fabric prior to laundering and that supplements and contributes to the effectiveness of laundry detergents and/or provides specialized performance.

**Laundry starch product** means a product that is designed for application to a fabric, either during or after laundering, to impart and prolong a crisp look and may also facilitate ironing of the fabric. “Laundry starch product” includes, but is not limited to, fabric finish, sizing, and starch.

**Lawn and garden insecticide** means an insecticide product designed primarily to be used in household lawn and garden areas to protect plants from insects or other arthropods.

**Liquid** means a substance or mixture of substances that flows readily, but, unlike a gas, does not expand indefinitely (i.e., a substance with constant volume but not constant shape). “Liquid” does not include powders or other materials that are composed entirely of solid particles.

**Manufacturer** means any person who manufactures or processes a Consumer Product. Manufacturers include:

- processors who blend and mix Consumer Products;
- contract fillers who develop formulas and package these formulas under a distributor's label;
- contract fillers who manufacture products using formulas provided by a distributor; and

- distributors who specify formulas to be used by a contract filler or processor.

**Nail polish remover** means a product designed to remove nail polish or coatings from fingernails or toenails.

**Non-resilient flooring** means floor of a mineral content that is not flexible. “Non-resilient flooring” includes, but is not limited to, terrazzo, marble, slate, granite, brick, stone, ceramic tile, and concrete.

**Oven cleaner** means any cleaning product designed to clean and to remove dried food deposits from oven interiors.

**Person** means an individual corporation, partnership, association, province, any agency, department, or instrumentality of Canada, and any officer, agent, or employee thereof.

**Pest control product** means any product, device, organism, substance or thing that is manufactured, represented, sold, or used as a means for directly or indirectly controlling, preventing, destroying, mitigating, attracting or repelling any pest, and includes:

- any compound or substance that enhances or modifies or is intended to enhance or modify the physical or chemical characteristics of a control product to which it is added, and
- any active ingredient used for the manufacture of a control product.

**Principal display panel(s)** means that part, or those parts, of a label that are so designed as to most likely be displayed, presented, shown, or examined under normal and customary conditions of display or purchase. Whenever a principal display panel appears more than once, all requirements pertaining to the “principal display panel” shall pertain to all such “principal display panels.”

**Product category** means that applicable category which best describes the product as listed in Section 4 of this CEPA Guideline (listed in Tables 2, 3, and 4 of this report) and which appears on the product's principal display panel.

**Product form** means the form that most accurately describes the product's dispensing form including aerosols, gels, liquids, pump sprays, and solids.

**Pump spray** means a packaging system in which the product ingredients are expelled only while a pumping action is applied to a button, trigger, or other actuator. Pump spray product ingredients are not under pressure.

**Restricted use pest control product** means a pest control product that has been classified as restricted under the *Pest Control Products Act* and Regulations.

**Shaving cream** means an aerosol product that dispenses a foam lather intended to be used with a blade or cartridge razor, or other wet-shaving system in the removal of facial or other body hair.

**Single-phase aerosol air freshener** means an aerosol air freshener with liquid contents in a single homogeneous phase that does not require that the product container be shaken before use.

**Solid** means a substance or mixture of substances that does not flow or expand readily (i.e., a substance with constant volume such as the particles constituting a powder). "Solid" does not include liquids or gels.

**Spray buff product** means a product designed to restore a worn floor finish in conjunction with a floor buffing machine and special pad.

**Structural waterproof adhesive** means an adhesive whose bond lines are resistant to conditions of continuous immersion in fresh or salt water.

**Underarm antiperspirant** means any aerosol product that is intended by the manufacturer to be used to reduce perspiration in the human axilla by at least 20% in at least 50% of a target population.

**Underarm deodorant** means any aerosol product that is intended by the manufacturer to be used to minimize odour in the human axilla by retarding the growth of bacteria that cause the decomposition of perspiration.

**Volatile organic compound or VOC** is any organic compound which participates in atmospheric photochemical reactions; that is, any such organic compound other than the following which have been excluded because of their negligible photochemical reactivity: methane; ethane; 1,1,1-trichloroethane (methyl chloroform); methylene chloride (dichloromethane); chlorofluorocarbons (CFCs); fluorocarbons (FCs); and hydrochlorofluorocarbons (HCFCs).

**Wasp and hornet insecticide** means any insecticide product that is designed for use against wasps, hornets, yellow jackets, or bees by allowing the user to spray a high-volume directed stream or burst from a safe distance at the intended pest or its hiding place.

**Wax** means an organic mixture or compound with low melting point and high molecular weight, which is solid at room temperature. Waxes are generally similar in composition to fats and oils except that they contain no glycerides. "Wax" includes, but is not limited to, substances such as carnauba wax, lanolin, and beeswax derived from the secretions of plants and animals; substances of a mineral origin such as ozocerite, montan, and paraffin; and synthetic substances such as chlorinated naphthalenes and ethylenic polymers.

**Wood floor wax** means wax-based products for use solely on wood floors.

## Appendix B Lists of Stakeholders

**Table B-1 Contact Information for Participating Members of Working Group**

<b>Name</b>	<b>Title</b>	<b>Company Information</b>	<b>Work Phone/Fax /e-mail</b>
Gail Bebee	Director, Environmental Health and Safety, Corporate Affairs	Canadian Tire Corp. P.O. Box 770, Station K Toronto, Ontario, M4P 2V8	Tel: 416-480-8202 Fax: 416-480-3682 <i>gbebee@ibm.net</i>
Lynne Benallick	Chair, CMCS Air Quality Sub-committee	Rochester Midland Ltd. 851 Progress Court, P.O. Box 486 Oakville, Ontario, L6J 5A8	Tel: 905-847-3000 or 1-800-387-7174 Fax: 905-847-1675 <i>lbenallick@compuserve.com</i>
Carl Carter	Director, Regulatory Affairs	Canadian Cosmetic, Toiletry and Fragrance Association (CCTFA) 420 Britannia Road East, Suite 102 Mississauga, Ontario, L4Z 3L5	Tel: 905-890-5161 ext 223 Fax: 905-890-2607 <i>ccarter@cctfa.ca</i>
Pauline Desroches (replaced Joanne DiCaro)		Ontario Ministry of the Environment 135 St. Clair Ave. West Toronto, Ontario, M4V 1P5	Tel: 416-314-6794 Fax: 416-314-8478 <i>desrocpa@ene.gov.on.ca</i>
Alan Macdonald		Lever-Ponds Canada 1 Sunlight Park Road Toronto, Ontario, M4M 1B6	Tel: 416-778-2512 Fax: 416-462-3815 <i>Alan.macdonald@unilever.com</i>
Stephen K. Rathlou	Manager, Regulatory Affairs	SC Johnson and Son, Limited 1 Webster Street Brantford, Ontario, N3T 5R1	Tel: 519-758-6555 x7270 Fax: 519-758-6652 <i>Skrathlo2@scj.com</i>
Douglas Raymond	Director, Regulatory Affairs	Sherwin-Williams Consumer Group Inc. 26300 Fargo Ave. Bedford Hts. Ohio, U.S.A., 44146	Tel: 216-595-8962 Fax: 216-591-1310 <i>djraymond@sherwin.com</i>
Mary T. Roy	Vice President, Environmental & Regulatory Services	CCL Industries 105 Gordon Baker Road, Suite 800 Willowdale, Ontario, M2H 3P8	Tel: 416-756-8500 Fax: 416-756-8555 <i>mroy@cclind.com</i>
Dan Sulan	Vice President, Operations	Alberto-Culver Canada Inc. 506 Kipling Ave Toronto, Ontario, M8Z 5E2	Tel: 416-251-3741 Fax: 416-251-3062 <i>Dsulan@alberto.ca</i>
Bruce Walker		STOP 2050 de Maisonneuve, Apt. 501 Montreal, Quebec, H3H 1K7	Tel: 514-393-9559 Fax: 514-393-9588 <i>[No e-mail: send regular mail]</i>

**Table B-2 Contact Information for Corresponding Members of Working Group**

<b>Name</b>	<b>Title</b>	<b>Company Information</b>	<b>Work Phone/Fax/e-mail</b>
Ed Berry	V.P., Regulatory Affairs	Canadian Manufacturers of Chemical Specialties (CMCS) 56 Sparks Street, Suite 500 Ottawa, Ontario, K1P 5A9	Tel: 613-232-6616 Fax: 613-233-6350 <i>Berrye@cmcs.org</i>
Gary W. Browne	Ontario Director of Sustainable Development and Transportation	Consumers' Association of Canada 231 Bessborough Dr. Toronto, Ontario, M4G 3K4	Tel: 416-483-6966 Fax: 416-483-9220 <i>[No e-mail]</i>
Mark Collatz	Director of Government Relations	The Adhesives and Sealants Council 7979 Old Georgetown Road #500 Bethesda, Maryland 20814, U.S.A.	Tel: 301-986-9700 ext. 112 <i>mark.collatz@ascouncil.org</i>
Tom Cheung	Technical Director	Recochem 131 East Drive Brampton, Ontario, L6T 1B5	Tel: 905-791-1788 Fax: 905-791-0943 <i>tcheung@recochem.com</i>
Jean Van Dusen	Air Quality Specialist	Manitoba Environment Suite 160, 123 Main Street Winnipeg, Manitoba, R3C 1A5	Tel: 204-945-1671 Fax: 204-948-2357 <i>jvandusen@env.gov.mb.ca</i>
Michael Hingston	Air Quality Engineer	Nova Scotia Dept. of Environment P.O. Box 2107 5151 Terminal Road Halifax, Nova Scotia, B3J 3B7	Tel: 902-424-8207 Fax: 902-424-0503 <i>HINGSTMP@gov.ns.ca</i>
Martin Lecours		Gouvernement du Québec, Ministère de l'Environnement et de la Faune Direction des politiques du secteur industriel Édifice Marie-Guyart, 9e étage (Boite # 71) 675 boul. René-Lévesque est Québec (Québec), G1R 5V7	Tel: 418-521-3950 ext. 4973 Fax: 418-646-0001
Mike Marcellus	Q.A. Manager	Platex Canada Ltd. 124, 4 <sup>th</sup> Ave. Arnrior, Ontario, K7S 1Z4	Tel: 613-623-6531 Fax: 613-623-6821 <i>Marcelm@platexproducts.ca</i>
Ian Morton	Director, Environmental Health	Pollution Probe 12 Madison Ave. Toronto, Ontario, M5R 2S1	Tel: 416-926-1907 Fax: 416-926-1601 <i>Imorton@pollutionprobe.org</i>
Roger Quan	Senior Project Engineer	Greater Vancouver Regional District Air Quality Department 4330 Kingsway Burnaby, British Columbia, V5H 4G8	Tel: 604-436-6858 Fax: 604-436-6707 <i>roger.quan@gvrd.bc.ca</i>
Peter Paine	Senior Program Engineer	Environment Canada Chemical Industries Division 351 St. Joseph Blvd., 13 <sup>th</sup> Floor Hull, Quebec, K1A 0H3	Tel: 819-997-2295 Fax: 819-953-5595 <i>peter.paine@ec.gc.ca</i>
Pierre Pinault	Manager, NO <sub>x</sub> /VOC Program	Environment Canada Transboundary Air Issues 351 St. Joseph Blvd., 11 <sup>th</sup> Floor Hull, Quebec, K1A 0H3	Tel: 819-953-1143 Fax: 819-994-0549 <i>pierre.pinault@ec.gc.ca</i>
Mr. Chow-Seng	Air Quality Branch	Alberta Environmental Protection 9820-106 <sup>th</sup> Street, 4 <sup>th</sup> Floor Edmonton, Alberta, T5K 2J6	Tel: 780-422-4192 Fax: 780-427-6873

## Appendix C Declaration Form

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This Guideline requires each stakeholder to complete the attached Declaration Form which allows each company to identify whether the products it manufactures or imports for use in Canada have met the proposed VOC limit as specified for each product category. Additional information to be provided includes whether the products are manufactured in Canada or imported and if they are imported, from where.

Please indicate your company's achievement of the proposed VOC limits, by placing a check mark in the appropriate box on the attached Declaration Form. If all of the products, within each specific product category, that your company manufactures and/or imports have achieved the proposed VOC limit, please place a check mark in the "Yes" box beside the appropriate product category. For those products not associated with your company, please put a check mark in the "N/A" box. If you choose to indicate your plans to meet or exceed the VOC limit for specific categories, please check the "Notes" box and provide your explanation in the Notes section at the bottom of the form or on a separate sheet. Please indicate whether your company manufactures and/or imports the products. Finally, the origin of the imports should be noted in the last column.

For more information on how to complete this form, contact:

Head  
Use Patterns Section  
Commercial Chemicals Evaluation Branch  
Environment Canada  
Phone: (819) 953-1665  
Fax: (819) 994-0007  
E-mail: [scott.howarth@ec.gc.ca](mailto:scott.howarth@ec.gc.ca)

Please submit this form to:

Minister of the Environment  
attn: Head, Use Patterns Section  
Commercial Chemicals Evaluation Branch  
Environment Canada  
351 St. Joseph Blvd.  
Hull, Quebec  
K1A 0H3

# DECLARATION FORM

Name of person submitting this report: (e.g., corporation)

Address:

Name of officer or person authorized to act on behalf of person submitting this report: Telephone No.:

Title: Fax No.:

For Environment Canada Use

VOC Content Limits		VOC Content Limit Achieved?			Products Manufactured in Canada	Products Imported into Canada from Where?
Product Category	Weight-Percent VOC	Yes	N/A	Notes		
<b>Air fresheners</b>						
single-phase	70					
double-phase	30					
liquids/pump sprays	18					
solids/gels	3					
<b>Bathroom and tile cleaners</b>						
aerosols	7					
all other forms	5					
<b>Carburetor and choke cleaners</b>						
	75					
<b>Cooking sprays—aerosol</b>						
	18					
<b>Dusting aids</b>						
aerosols	35					
all other forms	7					
<b>Engine degreasers</b>						
	75					
<b>Fabric protectants</b>						
	75					
<b>Floor polishes/waxes</b>						
products for flexible flooring materials	7					
products for nonresilient flooring	10					
wood floor wax	90					
<b>Furniture maintenance products—aerosol</b>						
	25					
<b>General purpose cleaners</b>						
	10					
<b>Glass cleaners</b>						
aerosols	12					
all other forms	8					
<b>Hairsprays</b>						
	80					
<b>Hair mousses</b>						
	16					
<b>Hair styling gels</b>						
	6					
<b>Household adhesives</b>						
aerosols	75					
contact	80					
construction and panel	40					
general purpose	10					
structural waterproof	15					



VOC Content Limits (continued)		VOC Content Limit Achieved?			Products Manufactured in Canada	Products are Imported into Canada from Where?
Product Category	Weight-Percent VOC	Yes	N/A	Notes		
<b>Insecticides</b>						
crawling bug	40					
flea and tick	25					
flying bug	35					
foggers	45					
lawn and garden	20					
<b>Laundry prewash</b>						
aerosols/solids	22					
all other forms	5					
<b>Laundry starch products</b>						
	5					
<b>Nail polish removers</b>						
	85					
<b>Oven cleaners</b>						
aerosols/pump sprays	8					
liquids	5					
<b>Shaving creams</b>						
	5					
<b>HVOC Content Limits*</b>						
Product Category	Weight-Percent HVOC					
Underarm antiperspirants— <i>aerosol</i>	60					
Underarm deodorants— <i>aerosol</i>	20					
<b>VOC Emission Limits</b>						
Product Category	Limit (g/start)					
Charcoal lighter material	9**					

\* High-volatility organic compounds (HVOCs) are VOCs with a vapour pressure greater than 80 millimetres of mercury at 20°C.

\*\* As determined by tests performed according to Section 59.208 of the U.S. Final Rule for Consumer Products

**Notes:**

Please check only one of the following and sign.

The following information contained in this response is to be considered confidential for the purposes of Section 313, *Canadian Environmental Protection Act, 1999*. Please specify sections, tables, etc., and include a rationale for your decision.

The information contained in this response is not considered confidential and may be released without restriction.

I declare that the information provided in this document is accurate.

\_\_\_\_\_

Name

\_\_\_\_\_

Title

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

