

**A Proposed Scheme to Require  
Mandatory Registration and Labelling of the  
Contents of Volatile Organic Compounds in Specified Products**

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## **PURPOSE**

This document outlines the Government's proposed scheme to require mandatory registration and labelling of the contents of volatile organic compounds (VOCs) in paints, printing inks and selected consumer products for sale in Hong Kong.

## **BACKGROUND**

### **Volatile Organic Compounds and Air Pollution**

2. VOCs are emitted as gases from certain solids or liquids. They are found in a wide array of products. Examples include solvent-borne paints, printing inks and many consumer products. VOCs play a significant role in the formation of ozone and respirable suspended particulates (RSPs) in the atmosphere. Under sunlight, they react with nitrogen oxides (NO<sub>x</sub>) to form ozone through a photochemical process. Ground level ozone is a highly reactive gas, and when in high concentration can irritate the eyes and bring upper and lower respiratory symptoms to healthy people. It may also provoke asthmatic attacks in people who already have asthma. There is also evidence that prolonged exposure to high concentration of ozone may cause permanent damage to lung tissue and interfere with functioning of the immune system. RSPs can penetrate deeply into the lung and interfere with functioning of the respiratory system. Apart from the long-term health effects, RSPs can also exacerbate smog phenomenon and impair visibility of the region, which is a very important factor in the public's perception of a city's environmental condition.

### **Overseas Practices**

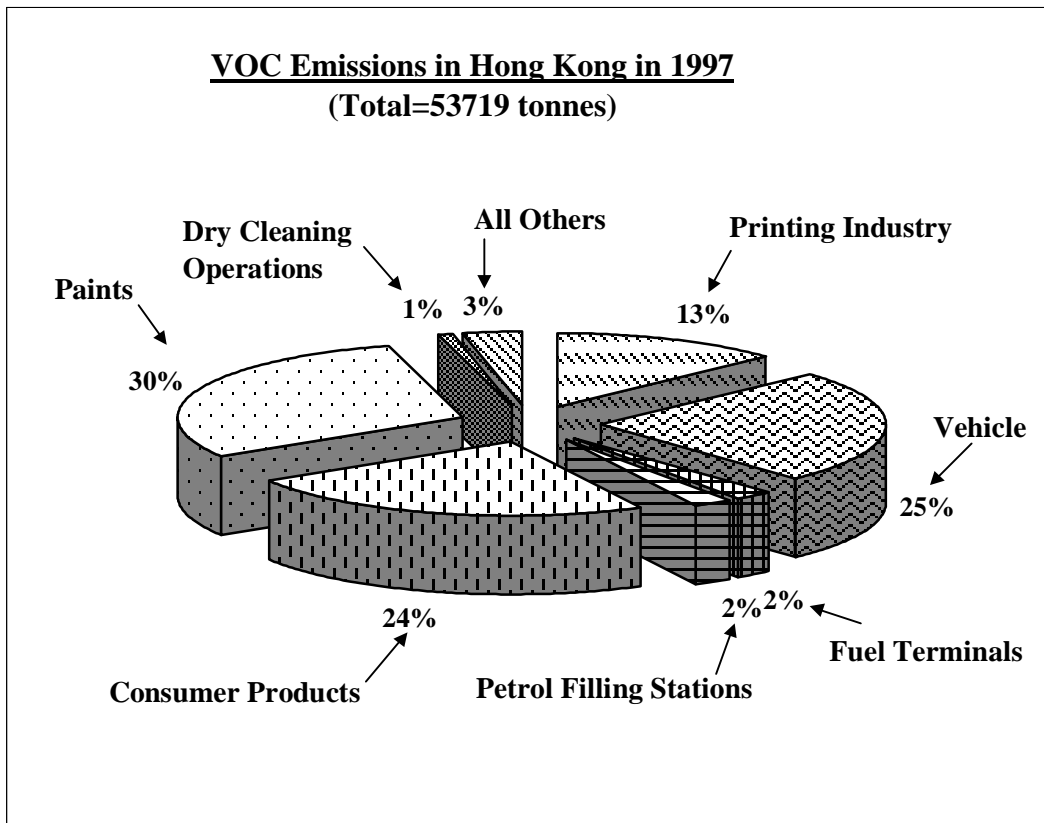
3. In view of the harmful effects of VOCs, some countries have introduced statutory VOC limits or labelling schemes on paints, printing inks and selected consumers products. For example, VOC limits are imposed nationwide for paints and selected consumer products in the United States (US), driven by a

pioneering VOC control scheme on products in California in the 1980s. Limits of VOCs in paints are legalised in Demark, the Netherlands and Sweden. In the European Union (EU), eco-labelling criteria have been set for paints since 1999, and the European Parliament, in March 2004, passed a directive to reduce VOC contents in decorative and vehicle paints and varnishes. The directive will take effect in two stages in 2007 and 2010, respectively.

### **Regional Air Quality**

4. To improve the air quality of the Pearl River Delta Region, the Hong Kong Special Administrative Region Government (the Government) and Guangdong Provincial Government reached a consensus in April 2002 to reduce, on a best endeavour basis, the regional emissions of four major pollutants, namely sulphur dioxide, NO<sub>x</sub>, RSPs and VOCs by 40%, 20%, 55% and 55% respectively, by 2010, using the emission levels at 1997 as a base. Achieving the emission reduction targets will enable Hong Kong to meet its current air quality objectives. This will also significantly improve the smog problem.

5. For VOCs, the Joint Study on Pearl River Delta Region Air Quality completed in 2002 has identified paints, the printing industry, VOC containing consumer products and motor vehicles to be the four major emission sources. They contributed to about 92% of the total VOC emissions in Hong Kong in 1997. The respective shares of these emission sources were 30%, 13%, 24% and 25%, as illustrated in the chart below –



6. The Government has been implementing a series of programmes to reduce pollutant emissions, including VOCs, from various major sources including motor vehicles. A regulation was introduced in 1999 to require petrol filling stations and petrol delivery vehicles to be equipped with effective vapour recovery systems to reduce petrol vapour emissions (which are VOCs) during petrol unloading. To control VOC emissions from dry-cleaning operations, we introduced in 2001 a regulation to require the registration of dry-cleaning machines and recovery of perchloroethylene (a kind of VOCs). Currently, we are planning to introduce into the Legislative Council within 2004 a legislative proposal to require petrol filling stations to install systems to recover the VOCs emitted during vehicle refuelling. We will also continue to tighten the emissions standards of motor vehicles in keeping with the EU requirements. Through these measures, VOC emissions from motor vehicles will be reduced to the practicable minimum. However, we will need to take further action to achieve the 55% VOC emission reduction target by 2010.

## **THE PROPOSAL**

### **Overall Framework**

7. In addition to the control measures being planned for reducing VOCs from motor vehicles and petrol filling stations, we propose to adopt a two-stage approach to reduce VOC emissions from paints, printing inks and selected consumer products in Hong Kong. Stage 1, as outlined in the ensuing paragraphs, primarily proposes a mandatory registration and labelling scheme. After reviewing the effectiveness of the Stage 1 programme, we will map out the way forward for Stage 2, which may introduce additional control programmes for selected products and industrial or commercial operations that emit VOCs.

### **Stage 1 – Mandatory Registration and Labelling Scheme**

8. We propose to introduce a new set of statutory regulations under the Air Pollution Control Ordinance (Cap 311) to require importers or manufacturers of all paints, printing inks and selected consumer products to register with the Environmental Protection Department (EPD) the VOC contents of their products for sale in Hong Kong. We also propose mandatory labelling of the VOC contents of these products on their containers and/or packaging for retail sales. We plan to exclude trans-shipment and exported items.

9. Some products may contain less VOCs than other products or even do not contain any VOCs. The labelling requirement will enable consumers to make informed choices in product selection. We will tie this in with a publicity programme to encourage consumers to use products with low or no VOC contents.

### Coverage

10. The proposed mandatory registration and labelling scheme covers all types of paints which include all liquid, liquefiable or mastic compositions that can be converted to solid protective, decorative, or functional adherent films after application. All paints for architectural, vehicle refinishing, industrial and all

other purposes will be covered. Varnishes and lacquer also fall under this definition.

11. We will cover printing inks commonly used in local printing processes, such as printing inks for flexographic printing, gravure printing, letterpress printing, lithographic printing and screen-printing. We propose to exclude printing inks for plateless printing, which covers xerographic, electrostatic, thermal, ink-jet, etc., which are of a very small scale as compared to industrial printing processes. Based on a survey conducted in 2002, the VOC emissions from these products should be less than 1% of total emissions.

12. Consumer products to be covered under the proposed scheme include insecticide, hair spray, air freshener, etc. (a detailed list is at *Annex A*). The list is drawn up on the basis of a survey on consumer products that are commonly found in Hong Kong conducted in 2002. We have also made reference to the practice of the California Air Resources Board (CARB) of the US, which has a comprehensive programme for controlling VOC emissions from consumer products.

### Registration

13. Importers or local manufacturers of paints, printing inks and selected consumer products for sale in Hong Kong (hereafter collectively referred as “registrants”) will be required to register with EPD the VOC contents of each type of paints, printing inks and consumer products that they carry. Registrants will need to support their registration by producing relevant testing reports, product information and other data as required. A registration fee will be levied.

### Testing of VOC Contents

14. Registrants are required to submit testing reports on the VOC contents of their products under the proposed scheme issued by a proper local or overseas laboratory accredited by the Hong Kong Laboratory Accreditation

Scheme or which is certified under ISO 9001 of the International Organisation for Standardisation or equivalent. We propose to adopt well-recognised testing standards such as those of the American Society of Testing Materials and CARB as the standard tests. For paints and printing inks, VOC contents shall be expressed in grams of VOCs per litre of the paint or ink as applied. VOC contents of consumer products shall be expressed as a percentage of the product weight (exclusive of packaging).

### Labelling

15. Any person who sells, supplies or offers to sell any products covered in paragraphs 10 to 12 above for local consumption will be required to ensure that a bilingual label is either printed upon or securely affixed onto individual containers and/or packaging of the concerned products. Each bilingual label should conspicuously incorporate the following information –

- | VOC contents of the product (expressed in gram/litre for paints and printing inks; in % by weight for consumer products);
- | an educational message : “VOCs Cause Air Pollution (「揮發性有機化合物引致空氣污染」)”; and
- | the registration number issued by EPD.

### Reporting of Sales Records

16. To facilitate monitoring of VOC emissions in Hong Kong, registrants will be required to submit to EPD the annual local sales amounts of the products by the registration number which shall be in net volume or weight of the products sold. Registrants should submit the data by the end of June of the following year either by letter, facsimile or electronic means in a format to be specified by EPD. Registrants shall also maintain sales records of the concerned products for three years for inspection by EPD when necessary. We will keep in confidence all sales data collected for this purpose.



## Offences and Penalties

17. We recommend penalty from a fine of \$50,000 to \$100,000, and to imprisonment of up to six months for non-compliance with the proposed registration and labelling requirements (detailed at *Annex B*). They are broadly in line with the penalties of other similar offences under the law. For example, Section 68(5) of the Air Pollution Control Ordinance imposes a fine of \$50,000 and imprisonment of one year for obtaining registration as registered personnel for asbestos work by submitting false information. Regulation 5(1) of the Food and Drugs (Composition and Labelling) Regulations imposes a penalty of \$50,000 and six months imprisonment for failing to label food or drug for sale.

## Transitional Period

18. To allow an adequate transitional period for the trades such that they could make the necessary preparations, the registration and labelling scheme should take effect six months after enactment of the relevant regulations.

## Cost Implication

19. The testing, labelling and reporting requirements of the proposal may incur costs to the registrants. However, since importers and manufacturers should have detailed information about the composition of their products, and that registrants should keep sales information for accounting purpose, we expect the cost implication to the prices of the products concerned to be small.

## **Stage 2**

20. To further reduce VOC emissions, we may introduce measures at Stage 2 to control the VOC contents of specified types of products or to discourage the use of certain products with higher VOC contents. Subject to the effectiveness of the proposed Stage 1 programme, we will consider how to proceed with Stage 2 in 2006-07. We will separately consult relevant stakeholders and the public about any proposed control measures in future.

## **WAY FORWARD**

21. Apart from consulting the public, we will embark on discussion with specific trade groups. We will finalise details of the Stage 1 proposals after taking into account comments and views received from stakeholders and the community during this public consultation. We plan to introduce the proposed regulations in 2005.

## **YOUR VIEWS**

22. We invite your views and comments on the proposed Stage 1 regulatory framework. Please send in your comments to us before 30 November 2004 by mail/electronic mail/facsimile to the following address/number –

Environment, Transport and Works Bureau  
10/F., Citibank Tower  
3 Garden Road  
Central  
Hong Kong  
(Attn.: VOC Public consultation)  
E-mail address: [voc\\_consult@etwb.gov.hk](mailto:voc_consult@etwb.gov.hk)  
Web link: <http://voc.etwb.gov.hk>  
Facsimile: 2509 8857  
Telephone enquiry: 2594 6218

23. Please note that the Government would wish, either in discussion with others or in any subsequent report, whether privately or publicly, to be able to refer to and attribute views submitted in response to this consultation document. Any request to treat all or part of a response in confidence will be respected, but if no such request is made, it will be assumed that the response is not intended to be confidential.

**List of VOC Containing Consumer Products to be Regulated under the  
Proposed Registration and Labelling Scheme**

**General Consumables**

1. Adhesive and adhesive remover
2. Aerosol cooking spray
3. Air freshener
4. Anti-static product
5. Cleaner – for bathroom and tile, general purpose, glass, carpet and upholstery, electrical and electronic components or equipment, oven, hand-cleaning, soap, wood and others.
6. Dusting aid
7. Fabric protectant, refresher
8. Floor polish, wax, wax stripper
9. Footwear and leather care product
10. Furniture maintenance product
11. General purpose degreaser
12. Graffiti remover/correction fluid
13. Insect repellent
14. Insecticide and herbicide
15. Laundry pre-wash/starch product
16. Metal polish, cleanser
17. Multi-purpose lubricant
18. Paint remover/stripper
19. Penetrant
20. Rubber and vinyl protectant
21. Sealant and caulking compound
22. Spot remover
23. Toilet or urinal care product

**Personal Care Products**

24. Antiperspirant/deodorant
25. Hair shine/spray
26. Hair styling product and mousse
27. Nail polish/polish remover

28. Personal fragrance product
29. Shaving cream, gel

### **Car Care Products**

30. Automotive brake cleaner
31. Automotive rubbing, polishing compound
32. Automotive wax, polish, sealant, glaze
33. Automotive windshield washer fluid
34. Bug and tar remover
35. Carburettor or fuel-injection air intake cleaner
36. Engine degreaser
37. Tyre sealant and inflator
38. Undercoating aerosol

### **Aerosol Coatings— General**

39. Top coat
40. Other coating

## Annex B

### Offences and Proposed Penalty

	<b>Offence</b>	<b>Proposed Penalty</b>
1.	Submit false information at registration	First offence : a fine of \$50,000 and to imprisonment for three months  Repeated offence : a fine of \$100,000 and to imprisonment for six months
2.	Fail to register products	First offence : a fine of \$50,000  Repeated offence : a fine of \$100,000 and to imprisonment for three months
3.	Sell, supply or offer for sale any products under the regulatory scheme for local consumption without adhering to the labelling requirements	First offence : a fine of \$50,000  Repeated offence : a fine of \$100,000 and to imprisonment for three months
4.	Fail to provide annual sales records	First offence : a fine of \$50,000  Repeated offence : a fine of \$100,000 and to imprisonment for three months
5.	Fail to maintain sales data for three years	First offence : a fine of \$50,000  Repeated offence : a fine of \$100,000 and to imprisonment for three months