

AIR POLLUTION CONTROL (DRY-CLEANING MACHINES)

(VAPOUR RECOVERY) REGULATION

(Made under section 43 of the Air Pollution Control Ordinance  
(Cap. 311) after consultation with the Advisory  
Council on the Environment)

PART I

Preliminary

1. Commencement

This Regulation shall come into operation on 1 November 2001.

2. Interpretation

In this Regulation, unless the context otherwise requires---

"Accredited Laboratory" (認可實驗室) means a laboratory accredited by HKAS managed by the Innovation and Technology Commission or by a body which has a mutual recognition agreement with HKAS Executive;

"approved" (核准) means approved under section 4;

"competent examiner" (合資格檢驗師) means a registered professional engineer in the building services, gas, chemical, environmental, marine and naval architecture or mechanical disciplines under the Engineers Registration Ordinance (Cap. 409);

"drum" (滾筒) means the rotating cylinder or wheel of a dry-cleaning machine that holds the materials being cleaned;

"dry-cleaning laundry" (乾洗場) means any premises in which is installed (and howsoever it is installed) a dry-cleaning machine;

"dry-cleaning machine" (乾洗機) means a machine which uses perchloroethylene to remove soil, grease or paint or other unwanted substances from materials;

"drying cycle" (乾衣程序) means the process which---

(a) is used to remove perchloroethylene remaining in the materials being dry-cleaned after washing and extraction in a dry-cleaning machine;

(b) starts with a heated portion followed by the activation of the vapour recovery system; and

(c) ends when the drum of the machine ceases rotation;

"existing machine" (現存乾洗機) means a dry-cleaning machine which is in Hong Kong before the commencement of this Regulation;

"fugitive control system" (逃逸性控制系統) means a device that collects perchloroethylene vapours from the door, button and lint traps, still, or other intentional openings of a dry-cleaning machine and routes those vapours to a device that reduces the mass of perchloroethylene prior to exhaust of the vapour to the

ambient air;

"HKAS" (香港認可處) has the same meaning as it has in Regulations for Laboratory Accreditation (HOKLAS 002) of the Hong Kong Laboratory Accreditation Scheme under the charge of the Commissioner for Innovation and Technology on behalf of the Government;

"HKAS Executive" (香港認可處執行人員) has the same meaning as it has in Regulations for Laboratory Accreditation (HOKLAS 002) of the Hong Kong Laboratory Accreditation Scheme under the charge of the Commissioner for Innovation and Technology on behalf of the Government;

"HOKLAS" (香港實驗所認可計劃) has the same meaning and objectives as it has in Regulations for Laboratory Accreditation (HOKLAS 002) of the Hong Kong Laboratory Accreditation Scheme under the charge of the Commissioner for Innovation and Technology on behalf of the Government;

"lease" (出租) includes---

- (a) offer or expose for lease;
- (b) lease without payment; and
- (c) offer or expose for lease without payment;

"materials" (物料) means wearing apparel, draperies, linens, fabrics, textiles, rugs, leather and other substances that are dry-cleaned;

"mutual recognition agreement" (相互承認協議) means any agreement or arrangement whereby the parties thereto have agreed or arranged to provide for the mutual recognition of testing laboratories which are accredited under the laboratory accreditation system administered by such parties;

"non-vented type" (密封型) means the type of dry-cleaning machine---

- (a) in which the processes of washing, extraction and drying cycle are all performed in the same single unit;
- (b) which recirculates perchloroethylene-laden vapour through a vapour recovery system with no exhaust to the ambient air during the drying cycle; and
- (c) in which the vapour may only be vented to the ambient air---
  - (i) through a fugitive control system after the drying cycle is complete; and
  - (ii) when the machine's door is open;

"perchloroethylene" (全氯乙烯) means the substance with the chemical formula  $C_2Cl_4$  and also known as tetrachloroethylene;

"refrigerated condenser" (冷凝器) means a closed loop vapour recovery device in which perchloroethylene-laden vapour is cooled and condensed by means of refrigeration;

"sell" (出售) includes---

- (a) offer or expose for sale;
- (b) supply without payment; and

(c) offer or expose for supply without payment;

"specified period" (指明期間), in relation to an existing machine---

(a) which is a vented type dry-cleaning machine, means the period of 5 years immediately following the commencement of this Regulation; and

(b) which is a non-vented type dry-cleaning machine, means the period of 7 years immediately following the commencement of this Regulation;

"use" (使用) includes operate;

"vapour adsorber" (汽體吸附器) means a device covered with a layer of activated carbon or other adsorbent into which perchloroethylene-laden vapour is introduced and trapped for subsequent desorption;

"vapour recovery system" (汽體回收系統) means a perchloroethylene vapour recovery system which reduces the perchloroethylene concentration in the drum of a dry-cleaning machine through the recovery of the perchloroethylene vapour in a totally enclosed system by---

(a) both a refrigerated condenser and a vapour adsorber; or

(b) a means which is equivalent to the means specified in paragraph (a);

"vented type" (非密封型) means the type of dry-cleaning machine in which---

(a) fresh air is introduced into the drum during the drying cycle; and

(b) the perchloroethylene-laden vapour is exhausted to the ambient air, either directly or through a control device.

### 3. Application

(1) Subject to subsection (2), this Regulation applies to every dry-cleaning machine.

(2) If any model of an existing machine becomes an approved machine, then the provisions of this Regulation applicable to existing machines shall cease to apply to that model of existing machine.

## PART II

### Approved Dry-cleaning Machine

4. Authority shall approve any model of non-vented type dry-cleaning machine which complies with certain requirements

The Authority shall approve any model of a non-vented type dry-cleaning machine if the Authority is satisfied that the machine---

(a) is equipped with a vapour recovery system capable of reducing the perchloroethylene concentration in the drum to 300 ppmv (that is, 2 034 mg/m<sup>3</sup> at 298 K and 101.325 kPa) or below at the end of the drying cycle, prior to the opening of the machine's door; and

(b) is certified by the machine manufacturer to meet the requirement of paragraph

(a).

5. Keeping of register

The Authority shall, in respect of each model of an approved machine, cause to be kept a register containing details of---

(a) the name of the manufacturer;

(b) the model; and

(c) such other information, if any, as the Authority thinks fit for the purposes of this Regulation.

6. Inspection of register

The register shall be open for inspection by the public during normal office hours at such places as the Secretary thinks fit.

PART III

Sale, etc. and Use of Dry-cleaning Machine

7. Sale, etc. of dry-cleaning machine

(1) A person shall not sell or permit to be sold, or lease or permit to be leased, a dry-cleaning machine for use in Hong Kong unless it---

(a) is an approved machine;

(b) is an existing machine and the sale or lease is completed within the specified period; or

(c) complies with the requirements specified in section 8(1)(b)(ii).

(2) For the avoidance of doubt, it is hereby declared that a person does not contravene subsection (1) by reason only of the fact that the person provides a financial service to facilitate the sale or lease of a dry-cleaning machine.

8. Use of dry-cleaning machine

(1) The owner of a dry-cleaning laundry shall not use, or permit any person to use, a dry-cleaning machine installed in the laundry unless---

(a) the machine is an approved machine; or

(b) the machine is an existing machine and---

(i) the specified period has not expired; or

(ii) the specified period has expired but---

(A) the machine is a non-vented type machine equipped with a vapour recovery system capable of reducing the perchloroethylene concentration in the drum to 300 ppmv (that is, 2 034 mg/m<sup>3</sup> at 298 K and 101.325 kPa) or below at the end of the drying cycle, prior to the opening of the machine's door;

(B) a competent examiner has signed a certificate under section 9 in respect of the machine;

(C) the Authority has registered the certificate under section 10(2);

(D) the competent examiner has issued the certificate under section 10(3); and

(E) the certificate is displayed in a conspicuous position on the machine.

(2) The owner of a dry-cleaning laundry in which is installed a dry-cleaning machine which cannot be used by virtue of subsection (1) shall, as soon as is reasonably practicable after the machine cannot be used by virtue of that subsection but, in any case, not later than 14 days after the machine cannot be used by virtue of that subsection---

(a) render the machine, or cause the machine to be rendered, permanently inoperable to the satisfaction of the Authority; or

(b) remove the machine, or cause the machine to be removed, from the laundry.

#### 9. Competent examiner to sign certificate

A competent examiner shall sign a certificate, in a form specified by the Authority, in respect of an existing machine if he is satisfied that---

(a) an Accredited Laboratory has issued a test report in respect of the machine in accordance with the testing procedures as specified in the Schedule; and

(b) the machine complies with the requirements specified in section 8(1)(b)(ii)(A).

#### 10. Registration of certificate

(1) After a competent examiner has under section 9 signed a certificate, he shall submit an application to the Authority for the registration of the certificate under subsection (2), accompanied with the test report concerned issued by the Accredited Laboratory.

(2) Where the Authority receives the certificate and the test report under subsection (1), the Authority shall---

(a) register the certificate by entering particulars of the certificate in a register kept by him for the purpose;

(b) keep the test report in the register;

(c) endorse on the certificate that it has been registered; and

(d) deliver the certificate as so endorsed to the competent examiner.

(3) The competent examiner shall issue the endorsed certificate to the owner of the dry-cleaning laundry---

(a) in which the dry-cleaning machine to which the certificate relates is installed; and

(b) within 14 days after the receipt of the certificate from the Authority.

### PART IV

#### Offences and Penalties

##### 11. Offences and penalties

(1) Subject to subsection (2), a person who contravenes section 7(1) commits an offence and is liable on conviction to a fine at level 6.

(2) It shall be a defence for a person charged with an offence under subsection

(1) to prove that at the time of the alleged offence he believed, and that it was reasonable for him to believe, that the dry-cleaning machine to which the offence relates was not for use in Hong Kong.

(3) An owner of a dry-cleaning laundry who contravenes section 8(1)(other than section 8(1)(b)(ii)(E)) or (2) commits an offence and is liable on conviction to a fine at level 6, and to a further fine of \$20,000 for each day during the whole or part of which the court is satisfied that the offence has continued.

(4) An owner of a dry-cleaning laundry who contravenes section 8(1)(b)(ii)(E) commits an offence and is liable on conviction to a fine at level 5.

#### SCHEDULE [s. 9]

#### Testing Procedures for Perchloroethylene Concentration in Drum of Non-vented Type Dry-cleaning Machine

##### 1. Duties of Accredited Laboratory

An Accredited Laboratory shall be responsible for the testing of the perchloroethylene concentration in the drum of a non-vented type dry-cleaning machine. It shall follow the testing conditions and testing methods as specified in this Schedule and shall issue a test report which shall bear the endorsement of HOKLAS or an accreditation body which has entered into a mutual recognition agreement with HKAS for the chemical analysis of air samples for perchloroethylene concentration.

##### 2. Testing conditions

A testing programme consisting of a minimum of 3 tests shall be conducted on a dry-cleaning machine under normal operating conditions. Each test shall be conducted during the cleaning of a load of materials which shall be no less than 75% of the dry-cleaning machine's capacity. The weight of materials shall be recorded for each test.

##### 3. Testing methods

The dry-cleaning machine shall be tested as follows---

(a) a sampling port and valve shall be appropriately installed so that one can draw an air sample from the drum or the lint filter housing; any sampling pump used shall have Teflon diaphragms;

(b) sampling of the perchloroethylene concentration in the drum shall be carried out only when the machine's door remains closed and any fugitive control system is not activated;

(c) sampling shall---

(i) begin at the end of the drying cycle; and

(ii) be completed within 5 minutes of the completion of drying cycle;

(d) the perchloroethylene concentration in the drum shall be determined in one of the following ways---

- (i) the NIOSH Method 1003 (NIOSH Manual of Analytical Methods, U.S. Department of Health and Human Services, August 15, 1994);
- (ii) the ARB Method 422 (17 CCR, Section 94132, December 31, 1991); or
- (iii) any alternative testing method as approved by the Authority.

Mrs. Lily YAM

Secretary for the Environment  
and Food

24 May 2001

Explanatory Note

This Regulation is made under the Air Pollution Control Ordinance (Cap. 311) to introduce requirements for dry-cleaning machines in order to reduce the amount of perchloroethylene-laden vapour which is vented to the air from such machines. In particular, the Regulation---

- (a) defines the terms "dry-cleaning machine", "existing machine", "non-vented type", "specified period" and "vented type" used in the Regulation (section 2);
- (b) provides that the Regulation applies to every dry-cleaning machine (section 3);
- (c) prescribes the requirements subject to which the air pollution control authority ("Authority") shall approve any model of non-vented type dry-cleaning machine (section 4);
- (d) provides that the Authority shall cause a register to be kept of each model of approved dry-cleaning machines which shall be open for inspection by the public (sections 5 and 6);
- (e) prohibits the sale or lease of certain dry-cleaning machines (section 7);
- (f) provides that the owner of a dry-cleaning laundry shall not use, or permit any person to use, a dry-cleaning machine installed in the laundry unless the machine is approved under section 4, or is an existing machine and the specified period has not expired, or is an existing machine which meets certain prescribed requirements after the expiration of the specified period. A dry-cleaning machine installed in the laundry which cannot be used must be rendered permanently inoperable or removed from the laundry (section 8);
- (g) specifies when a competent examiner shall sign a certificate that an existing machine complies with requirements specified in section 8 (section 9);
- (h) provides that the Authority has to register such a certificate submitted to him by the competent examiner (section 10);
- (i) provides penal provisions for contraventions of sections 7 and 8 (section 11); and
- (j) prescribes that an Accredited Laboratory has to follow the testing procedures for the perchloroethylene concentration in the drum of a non-vented type dry-cleaning

machine (the Schedule).