Guidance Note GU 07:

SAFETY OF AEROSOL CANS CONTAINING LPG AS A PROPELLANT

Gas Authority

EMSD

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Safety of Aerosol Cans Containing LPG as a Propellant

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1.0 Foreword and Scope

1.1 Some aerosol products (e.g. air freshener, corrosive inhibitor, deodorant, insecticide, lubricant, styling foam and snow spray, etc.) currently sold on the market contain a mixture of LPG and other chemicals. The LPG is pressurized into liquid form, which is then stored in the aerosol can for use as a propellant. Members of the public should pay attention to gas safety in keeping and using these aerosol products.

1.2 This Guidance Note provides guidelines on the safety standards of aerosol cans containing LPG which are sold in Hong Kong (hereinafter referred to as "aerosol cans"). This Guidance Note does not apply to aerosol cans which contain non-LPG gases being used as propellants, such as compressed carbon dioxide, dimethyl ether, etc.

1.3 This Guidance Note does not include any safety requirements with regard to the other contents of an aerosol can apart from LPG. Suppliers must ensure compliance with all other relevant safety standards and with other local statutory requirements.

1.4 This Guidance Note is also available at www.emsd.gov.hk.

2.0 Definitions

Aerosol can – means a disposable cylinder holding a product with LPG which is kept under pressure and use the LPG as a propellant. The cylinder is fitted with an aerosol valve, and the product will be discharged from the cylinder when the valve is opened.

Disposable cylinder - means a cylinder which has a water capacity of not more than 150 litres, and is not constructed or intended to be refilled with LPG after being filled with such gas.

Gas Authority - for the purpose of this Guidance Note refers to the Gas Standards Office of the Electrical and Mechanical Services Department of the Hong Kong Special Administrative Region Government acting on behalf of the Gas Authority appointed under section 5 of the Gas Safety Ordinance (Cap 51).

HOKLAS - means the Hong Kong Laboratory Accreditation Scheme under the charge of the Commissioner for Innovation and Technology on behalf of the Hong Kong Special Administrative Region Government.

Importer - means a person who brings or causes to be brought into Hong Kong any aerosol can for local sale and consumption.

Liquefied Petroleum Gas (LPG) - means any gas which is a mixture of -
(a) hydrocarbons primarily consisting of butanes, butylenes, propane or propylene; or
(b) all or any of the hydrocarbons referred to in paragraph (a).

Manufacturer - means a manufacturer of aerosol cans containing LPG.

Recognised Certification Authority (RCA) – means an independent organisation which is empowered under law or decree, (e.g. notified body appointed by the Commission of European Communities), to certify that an aerosol can is designed and produced in compliance with international or national safety standard(s).

Recognised Safety Standard – means an international or national safety design and manufacturing standard.

Retailer - means a person who sells aerosol cans to the end-user.

Type-test Certificate - means a document issued in accordance with recognised safety standards by a RCA certifying the type test results for an aerosol can.

3.0 The Design and Manufacture of Aerosol Cans

3.1 The design and manufacturing standard of an aerosol can should be in compliance with the recognised safety standards.

3.2 An aerosol can should comply with the recognised safety standards in both the empty and filled-can test requirements.

3.3 An aerosol can should be deemed to be in compliance with international and national safety standards if:-

(a) it comes with a valid type-test certificate issued by a RCA, certifying that the aerosol can is in compliance with the recognised safety standards; and

(b) it meets the bilingual warning label requirements stipulated in paragraphs 3.7-3.9.

3.4 For the purpose of this guidance note, a valid RCA type-test certificate refers to the original certificate, or certified copy, specifying the name and type of aerosol model, or models.

3.5 A certificate should be printed in English or Chinese language. If the certificate is provided in a different language, it should be accompanied by an English or Chinese translation of the relevant information thereon.

3.6 If there are any changes in the physical property of the can or its contents (active ingredients or propellants) affecting the safety standards of the can, a retest must be conducted to ensure compliance with relevant safety standards. For example:-

(a) change in aerosol can design, manufacturing process or factory of manufacture;
(b) change in the composition of the propellant or active ingredients which will affect the aerosol can.

3.7 The warning labels of aerosol cans should comply with the warning label requirements of any of the recognised safety standards and should be printed in both Chinese and English language.

3.8 Such warning labels should at least include the followings:-

(a) a warning that the contents include LPG;
(b) the aerosol can should not be used near any naked flame;
(c) the aerosol can should only be used in a well-ventilated area and should not be directed at any electrical appliances in operation;
(d) safe storage requirements like keeping the aerosol can out of reach of children and storing it in a well-ventilated and dry place;
(e) safe disposal requirements.

3.9 The warning label should be printed upon or securely affixed to the aerosol can and prominently displayed. In determining the position of the warning label, the top, bottom, flanges, shoulders or protective caps of the can should be excluded where possible.

4.0 Implications for Importers, Local Manufacturers and Retailers

4.1 Importers

4.1.1 An importer of aerosol cans should ensure that each aerosol can model is in compliance with a recognised design and manufacturing standard, by confirming that a valid RCA certificate has been issued in respect of each model.

4.2 Local Manufacturers

4.2.1 A local manufacturer of aerosol cans should ensure that each aerosol can is manufactured in compliance with at least one recognised safety standard.

4.2.2 A local manufacturer should arrange the aerosol cans to be tested by a RCA in accordance with recognised safety standards. The aerosol cans should also fulfil the warning label requirements stated in paragraphs 3.7-3.9.

4.3 Retailers

4.3.1 A retailer should ensure that the aerosol cans for sale to the public shall comply with at least one recognised safety standard.

5.0 The Storage, Transport and Sale of Aerosol Cans Containing LPG

5.1 Storage

5.1.1 Pursuant to regulation 3(1)(a) of the Gas Safety (Gas Supply) Regulations, LPG with an aggregate water capacity of more than 130 litres is not permitted to be stored in a chamber, unless prior approval of the Gas Authority is obtained. (The number of aerosol cans permitted to be stored may vary according to the design by different manufacturers and the amount of LPG contained. For example, for an aerosol can which has a water capacity of 200 millilitres and contains 10% of LPG, the maximum number of aerosol cans permitted to be stored in a chamber is 6,500.)

5.1.2 If net content of LPG with an aggregate water capacity of more than 130 litres is to be stored due to operational needs, the stipulations in regulation 3(1)(a) of the Gas Safety (Gas Supply) Regulations and the safety requirements stated in the Code of Practice for Hong Kong LPG Industry, Module 1 - LPG Compounds and Cylinder Stores must be followed.

5.2 Transport

5.2.1 Pursuant to regulation 25(2) of the Gas Safety (Gas Supply) Regulations, no person shall use a motor vehicle to carry on a road-

(a) any cylinder which has a water capacity of not less than 130 litres; or

(b) any combination of cylinders which have a combined water capacity of not less than 130 litres, unless-

(i) the vehicle is a cylinder wagon; and

(ii) there is a valid permit issued in respect of the wagon.

If aerosol cans are to be transported in bulk, arrangement should be made to use a motor vehicle with a valid permit to carry them, and all relevant gas safety regulations should be followed. Such requirements do not apply to transport of aerosol cans with a net aggregate water capacity of LPG less than 130 litres.

5.3 Sale

5.3.1 Shelves used for the storage of aerosol cans shall be of non-combustible materials.

5.3.2 The display areas should have good access and means of escape. Adequate access gangways should be provided and maintained to ensure unimpeded and rapid means of escape in the event of an incident involving aerosol cans.

5.3.3 Care should be exercised to ensure that aerosol cans in window displays or lighted cabinets are not exposed to direct sunlight, concentrated artificial light or placed close to lighted bulbs, heaters, hot pipes, hot air vents, or other heat sources. Suppliers may supply dummy packs for display purposes.

5.3.4 In the retail outlet, at least one fire extinguisher suitable for extinguishing a LPG fire should be easily accessible in the display area and the stock area.

5.3.5 All staff employed in the retail premises should be trained in emergency procedures, use of fire extinguishers and means of escape. Particular attention should be paid to ensure that staff and members of the public are evacuated as quickly as possible in the event of an incident.

5.3.6 Careful and safe handling of aerosol cans in the distribution chain contributes significantly to safety. High standards of cleanliness and tidiness should be maintained in the stock,

display, demonstration and point of sales areas.

5.3.7 Aerosol cans shall not be displayed or stored on staircases, in passageways, near the exit doors, next to flammable materials, or in any other places likely to hinder or endanger a means of escape. In addition, smoking and naked flame must be prohibited in and around the display or storage area.

5.3.8 Damaged or continuously leaking aerosol cans should be removed immediately to a well-ventilated, safe place preferably outdoors where there is no ignition source. The emergency services (e.g. the Fire Services Department) should be contacted as necessary in order to arrange a safe disposal method for continuously leaking aerosol cans. Defective aerosol cans should be returned to the supplier.

5.3.9 Particular care should be exercised when handling aerosol cans. They must not be dropped or allowed to come into violent contact with one another or any object at their side.

6.0 The Use of Aerosol Cans

6.1 Some aerosol products (e.g. air freshener, corrosive inhibitor, deodorant, insecticide, lubricant, styling foam and snow spray, etc.) currently sold on the market contain a mixture of LPG and other chemicals that are pressurised into liquid form in aerosol cans. Members of the public should pay attention to gas safety in keeping and using these aerosol products. They must first read and understand the directions and instructions provided by the manufacturers before using these products, and follow them strictly. Moreover, when using an aerosol can,

6.1.1 one should

- √ check the aerosol can for damage and leaks;
- √ use the aerosol can in a well-ventilated place, and far away from fire;
- √ keep the aerosol can in a dry, cool and well-ventilated place;
- √ keep the aerosol can out of reach of children.

6.1.2 one should not

- × smoke or use the aerosol can in a confined area where electrical appliances are also in operation;
- × spray on naked flame, fire or incandescent surfaces;
- × make an excessive use of the aerosol can, e.g. exhausting its contents in one spray;
- × inhale the contents of the aerosol can;
- × keep the aerosol can in an enclosed space, such as in the glove compartment of a car;
- × refill the aerosol can;
- × puncture or burn the used aerosol can.