

Hong Kong Green Label Scheme
Product Environmental Criteria for
Air Cleaners (GL-007-008)



BACKGROUND

The Hong Kong Green Label Scheme (HKGLS) is an independent and voluntary scheme, which aims to identify products that are, based on life cycle analysis consideration, more environmentally preferable than other similar products with the same function. The Scheme is organized by the Green Council (GC) with contributions from the HKGLS Advisory Committee and a number of supporting organizations.

The prime objectives of HKGLS are:

- For Consumers: assist in making purchases of products that are less harmful to the environment;
- For Industry: stimulate development and production of environmentally preferable alternatives.

This specification sets out the requirements that air cleaners will be required to meet in order to be licensed to use the HKGLS label. The requirements include product characteristics and environmental criteria and testing may be needed to verify conformance with the criteria.

POTENTIAL ENVIRONMENTAL IMPACTS

Air cleaners come as portable, stand-alone appliances, or as filters or cleaners in a central air system. This set of criteria refers to portable units for single rooms.

Air cleaners can be helpful solving indoor pollution problems when used along with source reduction and ventilation. However, most air cleaning devices will remove some of the particles from the indoor air but will not effectively remove certain types of pollutants, such as carbon monoxide, radon, odors, lead dust, and allergens from mold and dust mites. Most air cleaners remove particles, a few remove gases (and odors), and some do both.

Air cleaner that deliberately produces ozone (ozone generators) should not be used. It has been shown by studies including those by the U.S. Environmental Protection Agency that these devices at low levels of ozone do not effectively destroy microbes, remove odor sources, or reduce indoor pollutants enough to provide any health benefits. Ozone in air must reach hazardous levels (50-100 times the outdoor air quality standards) to effectively kill microbes. On the other hand, ozone also reacts with certain indoor pollutants to produce toxic byproducts, such as formaldehyde.

Regarding electronic air cleaners, there are three types in common use: electrostatic precipitators (ESPs), ionizers, and mechanical-electronic hybrids. Both ESPs and ionizers produce ozone as a by-product.

Photocatalytic air cleaners composed of a photocatalyst, e.g. nano-TiO₂, and an ultraviolet light source has emerged in recent years. The photocatalyst absorbs the ultraviolet light to drive reaction, which reportedly convert organic pollutants to carbon dioxide and water. Test reports indicate that toxic components of tobacco smoke such as formaldehyde and benzene are destroyed.

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The packaging of air cleaners may also contribute to solid waste generation.

LABEL OBJECTIVE

The aim of the environmental criteria developed for air cleaners is to:

- Minimize unhealthful impact of ozone from air cleaners to an acceptable level.
- Limit toxicity of component materials as well as packaging.

PRODUCT DEFINITION

This document and all product performance and environmental criteria therein apply to all types of air cleaners.

PRODUCT ENVIRONMENTAL CRITERIA

The table below sets out the product environmental criteria for air cleaners (GL-007-008) under the HKGLS.

Criteria	Verification Method
Performance Criteria	
1. The removal rate of dust or specified target pollutant shall not be less than 80%.	<i>Test report</i> or appropriate documentation indicating compliance shall be provided.
2. The product shall comply with safety requirements for electrical products under the Hong Kong Electricity Ordinance or equivalent regulations.	A declaration of compliance with these requirements shall be provided.
Environmental Criteria	
3. Ozone generators shall not be used as air cleaners.	Appropriate documentation indicating compliance shall be provided.
4. The ozone emission of the product shall not exceed 0.02mg/m (0.01ppm).	<i>Test report</i> indicating compliance shall be provided.
5. Noise 「sound pressure level」 shall satisfy the following requirements:	<i>Test report</i> indicating compliance shall be provided.
Air flow 「m/min」	< 5 5-10 10-20 < 20
Sound Pressure Level dB(A)	< 45 < 50 < 55 < 60

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6. For plastic parts weighing more than 25 grams, the following requirements shall be met: Appropriate documentation indicating compliance shall be provided.
- a. Halogenated compounds such as PVC shall not be used. However, organic fluorine additives of no more than 0.5 weights % in content is allowed.
- b. The following halogenated flame retardants shall not be added to any plastic parts :
- Polybrominated biphenyl (PBB)
 - Polybrominated biphenylether (PBDE)
 - High chlorinated, short chain chloroparaffins
7. General packaging requirements : Packaging materials shall not contain chlorine-based plastics. A declaration of compliance with the criteria shall be provided.
- Optional requirement: The plastics shall carry a plastic resin identification code.
8. Information for Consumers: The following information shall be provided either on the package, or in a manual in such a way to be clearly visible for consumers. The applicant shall prove compliance with these requirements by submitting a copy of the relevant pages of the user's manual or equivalent document.
- Proper procedure for use and maintenance, including filter cleansing and replacement.
 - Post-sale service for consumers and contact numbers
- (optional)