



**Singapore
Manufacturing
Federation**
新加坡制造商总会

DISINFECTANT INDUSTRY GUIDANCE

By the Singapore COVID-19 Cleaning &
Disinfection Industry Task Force

Energy & Chemicals Industry Group



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About the Singapore COVID-19 Cleaning & Disinfection Industry Task Force

Due to the COVID-19 Pandemic, there was a sudden surge in demand for cleaning, disinfection and hygiene products for consumers and institutional use. This has led to the SMF's Energy and Chemicals (E&C) Industry Group (IG) setting up the Singapore COVID-19 Cleaning & Disinfection Industry Task Force (CDITF).

The CDITF consists of members from Multinational Companies, as well as local companies operating in the cleaning and disinfectant industry in Singapore.

The task force is set up to discuss relevant issues pertaining to Cleaning, Disinfection and Hygiene industry while promoting best practices and innovation which would help the industry to grow competitively amidst the pandemic. Through collaboration with government sectors and private institutions, putting together with a collective effort and sharing of knowledge in disinfection, the task force also aims to educate the public on the safety and quality of products for consumers and institutional customers.

The CDITF has sought and incorporated inputs from the National Environment Agency for this guidance document.

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1. Scope

This guidance applies to all hard, non-porous surface disinfectants, which can be in concentrate or ready to use form. The primary function shall be to disinfect.

This guidance does not apply to any of the following products:

- a) Products that are regulated by the Health Sciences Authority such as cosmetics products, antiseptics and skin sanitisers
- b) Disinfectants for medical devices
- c) Sterilants
- d) Antibiotics
- e) Products that are represented to be for the treatment of water only;
- f) Any product that is primarily used for general cleaning
- g) Any freshener product that is primarily used for refreshing the air.
- h) Products used on soft/porous surfaces (e.g. fabric, leather)

Reference to disinfectants from this point on refers only to those products to which this guidance applies.

2. Purpose

The purpose of this guidance is for an informational guide to provide industry benchmarks for quality, safety and efficacy of surface disinfectants. The guidance is meant to serve as a voluntary guide for the industry and shall not replace any existing regulatory obligations but provide additional information that may assist in meeting existing regulatory obligations. The guidance also seeks to foster appropriate use of products as directed.

3. Definitions

'Active ingredient' refers to the ingredient that contributes to the disinfecting function of the product

'Disinfectant' refers to products that are used on surfaces which destroy disease-causing pathogens or other harmful microorganisms. Disinfectants are applied only to inanimate objects.

'Bactericide' refers to that which kills or inhibits the growth of bacteria or suppresses the ability of bacteria to reproduce.

'Fungicide' refers to that which kills or inhibits the growth of fungi or suppresses the ability of fungi to reproduce.

'Virucide' refers to that which kills or inhibits the growth of viruses or suppresses the ability of viruses to reproduce.

'tuberculocide' refers to that which kills or inhibits the growth of Mycobacterium tuberculosis, causal agent of tuberculosis or suppresses the ability of tuberculosis to reproduce.

'Sporicide' refers to that which kills or inhibits the growth of spores or suppresses the ability of spores to reproduce.

Medical device means any instrument, apparatus, implement, machine, appliance, implant, in



in vitro reagent or calibrator, software, material or other similar or related article that is intended by its manufacturer to be used, whether alone or in combination, for humans for one or more of the specific purposes of

- a) diagnosis, prevention, monitoring, treatment or alleviation of any disease;
- b) diagnosis, monitoring, treatment, alleviation or compensation for an injury;
- c) investigation, replacement, modification, or support of the anatomy or of physiological process;
- d) supporting or sustaining life;
- e) control of conception;
- f) disinfection of medical devices;
- g) providing information for medical or diagnostic purposes by means of in vitro examination of specimens derived from the human body; and which does not achieve its primary intended action in or on the human body by pharmacological, immunological, or metabolic means, but which may be assisted in its intended function by such means.

(http://www.hsa.gov.sg/content/hsa/en/Health_Products_Regulation/Medical_Devices/Overview/Regulatory_Framework.html)

'GHS' means the United Nations Globally Harmonised System of Classification and Labelling of Chemicals. The local standard we will refer to in this guidance is the SS 586:2014 "Specification for hazard communication for hazardous chemicals and dangerous goods"

'Label' means a display of printed information on or attached to the goods.

'Shelf life' means the recommended time that products can be stored, during which the defined quality of a specified proportion of the products remains acceptable under expected (or specified) conditions of distribution, storage and display.

4. General Requirements

4.1 Formulation

'The active ingredient(s), together with other accompanying ingredients used in surface disinfectant products shall be evaluated by the manufacturer as safe for humans and the environment' in accordance with the intended manufacturer's usage of the product.

4.2 Efficacy

All disinfectants shall be efficacious. Testing shall be done to support the claims of efficacy against harmful microorganisms. Testing shall follow standardised or equivalent testing methods. The applicable standards are those published by the International Organisation for Standardization (ISO), Association of Official Analytical Collaboration (AOAC) International, the European Committee for Standardisation (EN standards published by CEN) or ASTM International (American ASTM standards). Disinfectants will need to meet the efficacy requirements specified in those standards. For testing whereby applicable standards are not published by any of these standards bodies, compliance to applicable regional or national standards will be accepted.

A disinfectant shall be tested at the dilution recommended by the manufacturer on the product label, for the intended usage specified by the manufacturer.



4.3 Stability

The disinfectant shall retain its chemical and physical properties for the length of time of the intended shelf life.

5. Packaging

A disinfectant shall be enclosed in a container that is suitably designed to ensure that the disinfectant is adequately protected and contained. If the product is meant to be poured into other containers, adequate warning to ensure safety and compatibility of the product with other containers shall be specified.

6. Label

The following information on the product shall be legibly and durably marked with the following:

- a) Name and product description, including intended usage of product
- b) Name and address of manufacturer or importer or distributor
- c) Net weight or volume
- d) Manufacturing date
- e) Batch or number code
- f) Active ingredient and its concentration
- g) Directions for use

If the product is under the scope of SS 586:2014, it shall meet all the relevant labelling standards and requirements and have the relevant safety data sheet.

For products, not under the scope of SS 586:2014, the onus is on the manufacturer to ensure safety of the product and proper labelling which incorporates appropriate warnings to ensure safe usage of the product.

7. Claims

According to the Singapore Code of Advertising Practice, all descriptions, claims and comparisons that relate to matters of objectively ascertainable facts should be capable of substantiation. Advertisers and advertising agencies are required to hold such substantiation ready for immediate production without delay to Advertising Standards Authority of Singapore (ASAS) upon request. No advertisement for any antiseptics, germicides and disinfectants should claim or imply:

- (a) That it offers complete protection against diseases, or the danger of infection.
- (b) That it is a substitute for cleanliness.

Advertisements should not exaggerate the dangers of the presence of germs in the normal domestic situation.

All claims made for a disinfectant having a bactericidal, virucidal, fungicidal, sporicidal, or tuberculocidal use shall be supported with relevant and specific efficacy tests done based on the recommended dosage. Claims and recommendations shall be supported by the results of tests appropriate to the area of application. Standard efficacy test methods used and accepted by relevant regulatory agencies like US EPA, EU shall be acceptable. For



products that are in concentrate form, clear preparation instructions shall be provided on the pack for dilution levels that is efficacious as proven.

Any reference to 'cleaning' shall also be substantiated, noting that disinfectants do not remove dirt and debris and therefore the only 'cleaning' action performed is the removal of microorganisms.

In the absence of adequate regulation on claims, the manufacturers should take responsibility to inform and protect their customers health and safety.

8. Documents and Records

It is the responsibility of the Singapore manufacturer or importer to satisfy the safety and efficacy criteria and to keep a record of such safety and efficacy data.

All information related to formulation, claims, efficacy, packaging, stability, safety and testing shall be recorded and stored by the manufacturer, with access provided to the Singapore importer within a reasonable stipulated length of time agreed between parties.

In addition, the manufacturer or importer shall have a documented system in place to ensure ongoing consistency, quality, efficacy and safety of the products supplied through quality management system, verification through audit processes, validation, etc.

9. References

Available voluntary testing methods which are available (non – exhaustive list):

- European Standard EN 1040 - Chemical disinfectants and antiseptics. Quantitative suspension test for the evaluation of basic bactericidal activity of chemical disinfectants and antiseptics. Test method and requirements (phase 1)
- European Standard EN 13697 Chemical disinfectants and Antiseptics – Quantitative Non-porous Surface Test for the Evaluation of Bactericidal and/or Fungicidal Activity of Chemical Disinfectants used in Food, Industrial, Domestic and Institutional Areas – test method and requirements without mechanical action (phase 2, step 2)
- European Standard EN 1276 Chemical disinfectants and antiseptics. Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas. Test method and requirements (phase 2, step 1)
- AOAC Use Dilution Test (AOAC 955.14; 955.15; 964.02)
- AOAC Germicidal Spray Products Test (AOAC 961.02)
- ASTM E2362 Standard Practice for Evaluation of Pre-saturated or Impregnated Towelettes for Hard Surface Disinfection
- ASTM 1053 Standard Test Method for Efficacy of Virucidal Agents Intended for Inanimate Environmental Surfaces



- European Standard EN 13704 Chemical disinfectants - Quantitative Suspension Test for the Evaluation of Sporicidal Activity of Chemical Disinfectants used in Food, Industrial, Domestic and Institutional areas - test method and requirements (phase 2, step 1)
- Tuberculocidal Activity of Disinfectants (AOAC 965.12)

Available voluntary guidance for hospital-grade disinfectant claims:

- Product Performance Test Guideline, OCSPP 810.2200, Disinfectants for Use on Environmental Surfaces, Guidance for Efficacy Testing, [EPA 712-C-17-004], United States Environmental Protection Agency
- Therapeutic Goods (Standard for Disinfectants and Sanitary Products) (TGO 104) Order 2019, Australian Government, Department of Health, Therapeutic Goods Administration

Available voluntary guidance by National Environment Agency (NEA)

- Technical Guidance on the Testing of Self-Disinfecting Surface Coatings against SARS-CoV-2 (<https://www.nea.gov.sg/our-services/public-cleanliness/environmental-cleaning-guidelines/cleaning-and-disinfection/guidelines/technical-guidance-on-the-testing-of-self-disinfecting-surface-coatings-against-sars-cov-2>)
- Interim List of Household Products and Active Ingredients for Surface Disinfection of the COVID-19 Virus (<https://www.nea.gov.sg/our-services/public-cleanliness/environmental-cleaning-guidelines/guidelines/interim-list-of-household-products-and-active-ingredients-for-disinfection-of-covid-19>)

Available voluntary labelling icons and warnings which are available and non-exhaustive:

- “Safe Use Icons” created by International Association for Soaps, Detergents and Maintenance Products. (<https://www.aise.eu/library/artwork/safe-use-icons.aspx>)

