

**Supplementary Information to
Microbiological Guidelines for
Ready-to-eat Food
(February 2009)**

Centre for Food Safety
Food and Environmental Hygiene Department

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As part of the Government's ongoing efforts to enhance food safety for the protection of public health and consumer interest, the Administration conducts regular review on microbiological food standards and guidelines and, where necessary, will amend the standards/guidelines taking international standards and local situation into consideration. This supplement presents the recommended microbiological criteria for bottled waters, edible ice and non-bottled drinks. The supplement should be read together with the Microbiological Guidelines for Ready-to-eat Food May 2007 (Revised).

Ad Hoc Working Group on Microbiological Safety of Food

2. To facilitate enforcement in monitoring and control of microbiological quality of bottled water, edible ice and non-bottled drinks, an Ad Hoc Working Group on Microbiological Safety of Food (Working Group) was formed under the Expert Committee on Food Safety (Expert Committee) to establish the microbiological criteria for bottled water and edible ice, and to review the microbiological criteria for non-bottled drinks.

3. The Working Group consists of academics, professionals, representatives from Government Departments and members of the Expert Committee. The Working Group is chaired by Consultant (Community Medicine) (Risk Assessment and Communication) with Secretariat support provided by Risk Assessment Section of the Centre for Food Safety.

The non-official members are as follows:

Professor KWAN Hoi-shan	Professor in Biology, Dean of Science, The Chinese University of Hong Kong Chairman, Expert Committee on Food Safety
Dr CHAN Pui-kwong	Private Medical Practitioner Member, Expert Committee on Food Safety
Professor Frederick LEUNG	Professor, Department of Zoology, Dean of Faculty of Science, The University of Hong Kong Member, Expert Committee on Food Safety
Mr Peter JOHNSTON	General Manager (Quality, Food Safety and Regulatory Affairs, Retail HK) Member, Expert Committee on Food Safety
Dr HO Pak-leung	Associate Professor, Department of Microbiology, The University of Hong Kong
Professor Margaret IP	Professor, Department of Microbiology, The Chinese University of Hong Kong
Dr KAM Kai-man	Consultant Medical Microbiologist, Public Health Laboratory Services Branch, Centre for Health Protection, Department of Health
Professor Julia LING Mei-lun	Associate Professor, Department of Microbiology, The Chinese University of Hong Kong
Dr NG Tak-keung	Consultant Microbiologist, Department of Pathology, Princess Margaret Hospital

The microbiological criteria recommended by the Working Group were subsequently endorsed by the Expert Committee on Food Safety.

Adopted Microbiological Criteria

4. With reference to international standards and consideration of local situation, the following microbiological criteria for bottled waters, edible ice and non-bottled drinks were adopted.

Microbiological Criteria for Bottled Water

Natural Mineral Waters

First Examination	Decision			
<i>E. coli</i> or thermotolerant coliforms (1 × 250ml)	Must not be detectable in any sample			
Total coliform bacteria (1 × 250ml)	If ≥ 1 cfu* or ≤ 2 cfu → a second examination is carried out; If > 2 cfu → rejected			
Faecal streptococci (1 × 250ml)				
<i>Pseudomonas aeruginosa</i> (1 × 250ml)				
Sulphite-reducing anaerobes (1 × 50ml)				
Second Examination (same test volumes as for the first examination)				
	n	c [#]	m	M
Total coliform bacteria	4	1	0	2
Faecal streptococci	4	1	0	2
<i>Pseudomonas aeruginosa</i>	4	1	0	2
Sulphite-reducing anaerobes	4	1	0	2

*Colony-forming unit

[#]Results of the first and second examinations

n: number of sample units from a lot that must be examined to satisfy a given sampling plan.

c: the maximum acceptable number, or the maximum allowable number of sample units that may exceed the microbiological criterion m. When this number is exceeded, the lot is rejected.

m: the maximum number or level of relevant bacteria/test volume; values above this level are either marginally acceptable or unacceptable.

M: a quantity that is used to separate marginally acceptable quality from unacceptable quality foods. Values at or above M in any sample are unacceptable relative to either health hazard, sanitary indicators, or spoilage potential.

Note: The microbiological criteria *P. aeruginosa* would be implemented by 2009 when the testing capacity for this criterion is ready, while the two additional criteria, i.e. faecal streptococci and sulphite-reducing anaerobes, and the sampling plan will be implemented once additional resources are made available.

Bottled/Packaged Drinking Waters (Other than Natural Mineral Waters)

<i>E. coli</i>	0 cfu*/100ml
Total coliform bacteria	0 cfu/100ml
<i>P. aeruginosa</i> [#]	0 cfu/250ml

*Colony-forming unit

[#]to be implemented in 2009 when the testing capacity for this criterion is ready

Microbiological Criteria for Edible Ice

<i>Ice from ice manufacturing plants and retail outlets (packaged ice)</i>	
Total coliform bacteria	0 cfu*/100ml
<i>E. coli</i>	0 cfu/100ml
Aerobic Colony Count (ACC)	<500 cfu/ml

<i>Ice from retail business (loose ice)</i>	
Total coliform bacteria	<100 cfu/100ml
<i>E. coli</i>	0 cfu/100ml
ACC	<1,000 cfu/ml

*Colony-forming unit

Microbiological Criteria for Non-bottled Drinks

<i>Clostridium perfringens</i>	<100 cfu*/ml
<i>E. coli</i>	<100 cfu/ml
<i>Salmonella</i> spp.	Absent in 25 ml
<i>Staphylococcus aureus</i>	<100 cfu/ml
Others	Other pathogens in accordance with the Microbiological Guidelines for Ready-to-eat Food

*Colony-forming unit