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EAST AFRICAN STANDARD

Fish processing industry — Water and ice — Technical requirements

EAST AFRICAN COMMUNITY

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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East African Community

P O Box 1096

Arusha

Tanzania

Tel: 255 27 2504253/8

Fax: 255-27-2504481/2504255

E-Mail: eac@eachq.org

Web: www.each.int

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Introduction

Considerable quantity of water and ice is utilized in the processing of fish and fisheries products. Ice is mainly used to bring down temperature of fish to 0 °C. Ice is also used for cooling water for processing. It is a statutory requirement that the water and ice used in the industry is to be tested and certified as fit for fish processing. A need was, therefore, felt to prepare this standard indicating various technical requirements.

In the preparation of this East African Standard, the following sources were consulted extensively:

IS 14517:1998(R2003), *Fish Processing Industry — Water and ice — Technical Requirements*

CAC/RCP 52:2003(Rev. 4:2008), *Code of practice for fish and fishery products*

IS 4303-1:1975, *Code of hygienic conditions for fish industry — Part 1: Pre-processing stage*

IS 4303-2:1975, *Code of hygienic conditions for fish industry — Part 2: Canning stage*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd_q-e.jsp

USDA Foreign Agricultural Service website: <http://www.mrldatabase.com>

USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSV1.0/Standards>

European Union: http://ec.europa.eu/enterprise/sectors/pharmaceuticals/veterinary-use/maximum-residue-limits/index_en.htm

Assistance derived from these sources is hereby acknowledged.

Draft for comments only — Not to be cited as East African Standard

Fish processing industry — Water and ice — Technical requirements

1 Scope

This standard prescribes the technical requirements for water and ice used in the fish processing industry.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5667-1, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques*

ISO 5667-3, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of water samples*

ISO 5667-5, *Water quality — Sampling — Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems*

ISO 19458, *Water quality — Sampling for microbiological analysis*

ISO 9696, *Water quality — Measurement of gross alpha activity in non-saline water — Thick source method*

ASTM D1943, *Standard test method for alpha particle radioactivity in water*

ISO 9697, *Water quality — Measurement of gross beta activity in non-saline water*

ASTM D1890, *Standard test method for beta particle radioactivity of water*

CAC/GL 21, *Principles for the establishment and application of microbiological criteria for foods*

CAC/RCP 1, *Recommended international code of practice — General principles of food hygiene*

CAC/GL 30, *Principles and guidelines for the conduct of microbiological risk assessment*

CAC/GL 31, *Guidelines for the sensory evaluation of fish and shellfish in laboratories*

CAC/GL 48, *Model certificate for fish and fishery products*

CAC/RCP 52, *Code of practice for fish and fishery products*

CAC/GL 53, *Guidelines on the judgement of equivalence of sanitary measures associated with food inspection and certification systems*

EAS 38, *Labelling of prepackaged foods — Specification*

3 Requirements

3.1 The water shall comply with the requirements given in Tables 1, 2 and 3 for its microbiological, physical and chemical and radioactive characteristics.

Table 1 — Microbiological requirement of water

SL No	Micro-organisms	Max. limits	Method of test
i)	<i>Salmonella</i> per litre	Absent	ISO 6579
ii)	<i>E. coli</i> per 100 ml	Absent	ISO 7251
iii)	<i>Shigella</i> per gram	Absent	ISO 21567
iv)	Coliforms per gram	Absent	ISO 4832
v)	<i>Staphylococcus aureus</i> per ml	Absent	ISO 6888
vi)	<i>Clostridium perfringens</i> per gram	Absent	ISO 7937
vii)	<i>Vibrio Spp</i> per gram	Absent	ISO/TS 21872
viii)	Total viable count per gram	100	ISO 4833

3.2 Ice shall be clear, colourless and free from air bubbles and snowy butts. Water used for making ice shall comply with the requirements mentioned in 3.1.

Table 2 — Physical and chemical quality requirement

	Characteristic	Requirement	Method of test
(i)	Colour, hazen units, Max	5	ISO 7887
(ii)	Turbidity, NTU, Max	5	ISO 7027
(iii)	Odour/Taste	Odourless	ASTM E679; ISO 13301; BS EN 1622
(iv)	pH	6.5 – 8.5	ISO 10523
(v)	Total dissolved solids, mg/l, max	1500	EAS 15-1
(vi)	Alkalinity (as CaCO ₃), mg/l, max	100	ISO 9963-1
(vii)	Chlorides as NaCl, mg/l, max	1000	ISO 9297 [ISO 15682]
(viii)	Sulphates as SO ₄ , mg/l, max	200	ISO 22743
(ix)	Total hardness as CaCO ₃ , mg/l, max	600	EAS 15-1
(x)	Iron as Fe, mg/l, max	0.3	ISO 6332
(xi)	Copper as Cu, mg/l, max	0.1	ISO 8288
(xii)	Lead as Pb, mg/l, max	0.1	ISO 8288
(xiii)	Mercury as Hg, mg/l, max	0.001	ISO 17852
(xiv)	Cadmium as Cd, mg/l, max	0.01	ISO 8288
(xv)	Arsenic as As, mg/l, max	0.05	ISO 11969
(xvi)	Chromium as Cr, mg/l, max	0.05	ISO 9174
(xvii)	Selenium as Se, mg/l, max	0.01	ISO 9965
(xviii)	Free chlorine, mg/l, max	10	ASTM D1253

Table 3 — Radioactive requirement

	Characteristic	Requirement	Method of test
(i)	Alpha emitters, lic/ml, max	10 ⁻⁹	ISO 9696
(ii)	Beta emitters, lic/ml, max	10 ⁻⁸	ISO 9697

4 Sampling

4.1 Representative samples of water shall be drawn as prescribed in ISO 5667-1, ISO 5667-3, ISO 5667-5 and ISO 19458.

4.2 Representative samples of ice shall be drawn from the processing units under aseptic conditions for bacteriological analysis and in the usual way for physical and chemical analysis. For carrying out the physical and chemical analysis, about 5 liters of water shall be available after melting.

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