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ICS 13.060.20

EAST AFRICAN DRAFT STANDARD

Potable Water — Specification

EAST AFRICAN COMMUNITY

EAS ##:2009

Foreword

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

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

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.

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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Introduction

Increasingly it has been recognized that traditional suppliers of drinking water such as public and private waterworks may not be able in many instances or under all circumstances to guarantee the microbiological safety of product to the extent previously thought possible. This has led to high consumption of bottled water and thus rapid growth of the industry.

This standard has been prepared to guide manufacturers, importers and consumers on the quality requirements for bottled/packageged waters other than natural mineral waters and hence safeguard the consumers' health.

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

Potable water — Specification

1 Scope

This East African Standard prescribes the quality requirements and Method of sampling and test of Potable water used for domestic and containerized purposes.

2 Field of application

This standard applies to water distributed in the food industry for domestic and catering purposes, and Potable water. This standard applies to the biological, physical, chemical radiological, organoleptic and quality criteria of potable water. Mineral waters are covered in EAS 13, Specification for containerized mineral water.

3 Terms and Definitions

3.1

Potable water

Shall be water that is safe to drink, pleasant in taste and suitable for domestic purposes.

3.2

Containerized drinking water

shall be drinking water that has undergone treatment through filtration, decantation, dechlorination, reverse osmosis and UV light radiation and/or ozonation prior to packaging

3.3

drinking water

shall be potable water intended for human consumption

3.4

Treated water (piped, bottled, etc) e.g. piped treated water- water that is conventionally treated usually by coagulation, sedimentation, filtration and disinfection and distributed through pipe distribution network.

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3.5

Partially treated piped water

Water uses any one or more of the above treatment processes but not all

3.6

Untreated water/rural-

water that is supplied in its natural form without any treatment, e.g. from boreholes, shallow wells, springs or RWH

3.7

Conventional Treatment

collection, storage and distribution of drinking water involving deliberate coagulation, sedimentation, filtration, and disinfection to improve the safety and quality of the finished drinking water to consumers

3.8

Water Quality

The chemical, physical and biological characteristics of water in respect to suitability for an intended use/purpose, e.g. domestic, car washing, farming, mining, industrial purposes or healthy ecosystem,

3.9

Safe water

Water that is free of chemical substances & micro-organisms in concentrations which could cause illness or body disorders in any form.

3.10

Surveillance

An independent continuous, specific measurement, observation and reporting for the purpose of water quality management and operational activities – commonly done by Health

3.11

Disinfection

Reduction by means of chemical agents and/or physical methods, of the number of micro-organism to a level that does not compromise food safety or suitability.

4. Requirements for potable water

Potable water shall conform to the requirements enunciated in the following clauses and tables

4.1 Water intended for human consumption shall be free from organisms and from concentrations of particulate matter chemical substances that may be a hazard to health (See Tables 1, 2, 3, 4 and 5).

4.2 Potable water shall be free from microscopic organisms such as algae, zooplanktons, flagellates, parasites and toxin producing organisms.

4.3 Supplies of potable water shall be as pleasant to drink as circumstances permit. Coolness, absence of turbidity and absence of colour and of any disagreeable taste or smell are of the utmost importance in public supplies of potable water. The location, construction, operation and supervision of water supply, its reservoirs and its distribution system shall be such that they exclude any possible pollution of the water (see Tables 1, 2, 3, 4 and 5).

4.4 Potable containerized water shall be handled under hygienic conditions stipulated in EAS 39 Code of practice for food and drink industry,

4.5 Potable water shall be collected, processed and packaged in accordance with CAC/RCP 48, Code of hygienic practices for bottled/package drinking waters (other than natural mineral water)

Table 1— The Physical Requirements

Sl. No.	Characteristic	Drinking water	Containerized drinking water	Test method
i)	Colour TCU	15 true colour units max. Apparent colour	15 true colour units max. 25 units	ISO 7887
ii)	Turbidity NTU	5 max. (NTU)	1 max. (NTU)	ISO 7027
iii)	pH	6.5 – 8.5	6.5 – 8.5	ISO 10523
iv)	Taste	Not objectionable	Not objectionable	Es 605
v)	Odour	Odourless	Odourless	Es 605 or ASTMD 1292
vi)	Conductivity	1500 micro S/cm	1500 micro S/cm	ISO 7888
a) True colour units (TCU) mean 15 hazen units after filtration.				

Table 2 — Quality requirements for drinking water and containerized drinking water

Sl. No.	Substance or characteristic	Drinking water (mg/L max.)	Containerized drinking water (mg/L max.)	Test method
i)	Suspended matter	Not detectable	Not detectable	EAS 15
ii)	Total dissolved solids	700	700	"
iii)	Total organic matter	0.003	0.003	ISO 8245
iv)	Total hardness, as CaCO ₃ ,	300	300	"
v)	Aluminium, as Al ⁺⁺⁺ ,	0.1	0.1	ISO 12020
vi)	Chloride, as Cl ⁻	250	250	ISO 9297
vi)	Iron Fe	0.3	0.3	ISO 6332
vii)	Sodium, as Na ⁺	200	200	ISO 9964-1
viii)	Sulphate	300	300	ISO
ix)	Zinc, as Zn ⁺⁺	5	5	ISO 92
x)	Magnesium, as Mg ⁺⁺	100	100	"
xi)	Residual free chlorine	0.2-0.5	Not detectable	"
xii)	Calcium, as Ca ⁺⁺	150	150	"

a) The methods of test are prescribed in KS 459: Parts 2, 3, 4, 5 and 6.

b) Under conditions of epidemic diseases, it may be necessary to increase the residual chlorine temporarily.

Table 3 — Limits for inorganic contaminants in drinking water and containerized drinking water

Sl. No.	Substance	Limit of concentration mg/L, max.	Test method EAS 15
i)	Arsenic, as As	0.01	
ii)	Cadmium, as Cd	0.003	"
iii)	Lead, as Pb	0.01	"
iv)	Copper, as Cu	1.000	"
v)	Mercury (total as Hg)	0.001	"

vi)	Manganese, as Mn	0.1	"
vii)	Selenium, as Se	0.01	"
viii)	Ammonia (N)	0.5	"
ix)	Chromium, as Cr	0.05	"
x)	Nickel, as Ni	0.02	"
xi)	Cyanide, as CN	0.01	"
xii)	Barium, as Ba	0.7	"
xiii)	Nitrate, as NO ₃	45	"
xiv)	Boron, as (boric acid)	0.3	"
xv)	Fluoride, as F	1.000 ^{b)}	"
xvi)	Bromate, as BrO ₃	0.01	"
xvii)	Nitrite	0.003	"
xviii)	Phosphates, as PO ₄ ³⁻	2.2	"
<p>a) The methods of test are prescribed in EAS 15</p> <p>b) If the product contains more than 1.0 mg/L fluoride, the following term shall appear on the label as part of, or in close proximity to the name of the product on in any otherwise prominent position "water contains fluoride".</p>			

Table 4 — Limits for organic constituents in drinking water and containerized drinking water

Sl. No.	Substance	Limit µg/L max.	Test method EAS 15
i)	Aromatics		
	Benzene	10	
	Toluene	700	
	Xylene	500	
	Polynuclear aromatic hydrocarbon	0.7	

ii)	Chlorinated Alkanes and Alkenes		
	Carbon tetrachloride	2	
	1,2-Dichloroethane	30	"
	1,1-Dichloroethylene	0.3	"
	1,1-Dichloroethene	30	"
	Tetrachloroethene	40	"
iii)	Phenolic substances		
	Phenols	2	"
	2,4,6-Trichlorophenol	200	"
			"
iv)	Trihalomethanes		
	Chloroform	30	"
v)	Pesticides		"
	Aldrin/Dieldrin	0.03	"
	Chlordane (total)	0.3	"
	2,4- Dichlorophenoxyacetic acid	30	"
	DDT (total)	1	"
	Heptachlor and Heptachlor Epoxide	0.03	"
	Hexachlorobenzene	1	"
	Lindane BHC	2	"

