EAS 123: 1999

Rev.1:2009

ICS 71.100

EAST AFRICAN STANDARD

Distilled water – Specification

EAST AFRICAN COMMUNITY

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

© EAS 1999

First Edition 1999

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.

© East African Community 1999 – All rights reserved
East African Community
AICC Building
Kilimanjaro Wing, 5th Floor
P.O. Box 1096
Arusha
Tanzania
Tel: 255 27 2504253/8
Fax: 255 27 2504255
E-mail: eac@eachq.org
Web: www.eachq.org

ISBN

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

© EAS 2009– All rights reserved

Introduction

Though the material covered in this standard need strictly be 'distilled water', it should be as good as that. Proposals to call this material as 'pure water', 'purified water', 'water' and 'distilled water' has become almost sacrosanct with chemists and also since that material may not always be distilled water, it has been decided to call it 'water distilled quality'.

In view of the many references of such water in many standards it has been felt necessary to prepare specification for such water.

In reporting the result of a test or analysis made in accordance with this standard the final value, observed or calculated is to be rounded off, it shall be done in accordance with EAS 124: 1999 *Rounding off numerical values,*

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

© EAS 2009 – All rights reserved

Distilled water – Specification

1 Scope

This East African Standard prescribes the requirements and methods of sampling and testing for water, distilled quality; intended for general laboratory use, photograph washings, etc.

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 3696 *Water for laboratory use*

KS 05-88, *Specification for water, distilled quality,*

3 Requirements

3.1 The material shall be the water purified by thermal distillation. It shall be clear, colourless, odourless and tasteless.

3.2 The material, when tested according to the methods prescribed in Annex B, shall also comply with the requirements given in Table 1. Reference to relevant clauses of Annex B is given in the table.

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

© EAS 1999– All rights reserved

Table 1 — Quality Requirements for distilled water

No	Characteristics	Requirements	Method of test EAS 15
1	Non-volatile residue at 105 ℃, mg/kg max.	10	
2	pH	5.0-7.5	
3	Chlorides	Less than I mg/l	
4	Sulfate	Less than 2 mg/l	
5	Calcium	Less than 5 mg/l	
	Silica (SiO_2)	0.01-0.02 mg/l	
6	Magnesium	Less than 1 mg/l	
7	Heavy metals	Less than 1 mg/l	
8	Ammonia	Less than 1 mg/l	
9	Carbon dioxide	4.0 mg/l	
10	Oxidizable matter	0.5 mg/l	
11	Iron	Less than 1 mg/l	
12	Electrical conductivity	0.1-0.5 µS/m	ISO 7888

4 Packing and marking

4.1 The material shall be packed in suitable containers that will ensure the purity of the distilled water.

4.2 The containers shall be securely closed and legibly marked with the name of manufacturer, quantity of material in the container, and trademark if any.

4.2.1 The containers shall be marked with identification in code or otherwise to enable the date and lot of manufacture to be traced back from records.

4.2.2 The containers may also be marked with the certification mark for the respective country and also an indication of the purity specification of the distilled water.

© EAS 2009 – All rights reserved

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

NOTE The Certification Mark may be used by manufacturers, only under license from the respective country's Bureau of Standards. Particulars of conditions under which the licenses are granted, may be obtained from the respective country's Bureau of Standards.

The sampling shall be done in accordance with Annex A

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

© EAS 2009– All rights reserved

ANNEX A
(normative)

Sampling of bulk supplies of water, distilled quality

A.1 General requirements of sampling

A.1.1 In drawing, preparing, storing and handling samples, the following precautions and directions shall be observed.

A.1.2 Samples shall not be taken in an exposed place.

A.1.3 The sampling instrument shall be clean. Before use, these shall be washed several times with the material to be sampled.

A.1.4 Precautions shall be taken to protect the samples, the material being sampled, the sampling instruments and the containers for samples from adventitious contamination.

A.1.5 To draw a representative sample, the contents of each container selected for sampling shall be mixed thoroughly as possible by suitable means.

A.1.6 The samples shall be placed in clean airtight glass bottles or other suitable containers on which the material has no action and which have previously been washed several times with the material to be sampled.

A.1.7 The sample containers shall be of such a size that they are filled by the sample leaving an ullage of 10 %.

A.1.8 Each sample container shall be sealed airtight after filling, and marked with full details of sampling, the date of sampling and the year of manufacture of the material.

A.2 Scale of sampling

A.2.1 All containers in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot. If a consignment is declared or known to consist of different batches of manufacture, the batches shall be marked separately and the groups of containers in each batch constitute a separate lot.

A.2.2 For ascertaining conformity of material in a lot to the requirement of this standard, samples shall be tested for each lot separately. The number of containers to be selected at random from lots of different sizes shall be in accordance with Table 2.

© EAS 2009 – All rights reserved

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

Table 2 — Number of containers to be selected from lots of different sizes.

Lot size, *N*	Sample size, *n*
3 to 15	3
16 to 40	4
41 to 65	5
66 to 110	7
111 and above	9

In order to ensure randomness of selection, the following procedure shall be adopted. Arrange all the containers in a lot in a systematic manner and starting from anyone, count them as 1,2,3,.... up to *r*

where

r is an integral part of *N/n* (*N* and *n* being the lot size and sample size respectively). Every *r*th container thus counted shall be withdrawn to constitute the test sample.

A.3 Preparation of test samples

A.3.1 From each of the containers select according to A.2.2 equal portions of the material shall be taken out so that the total quantity collected from all the containers is about 18 L. This shall be the composite sample.

A.3.2 The composite sample shall be divided into three test samples not less than 2 L each. These test samples shall be transferred immediately to thoroughly washed bottles which are sealed airtight with glass stoppers and marked with the particulars of sampling as given in A.1.8. One test sample shall be sent to the purchaser and one to the vendor. The third test sample bearing the seals of the purchaser and the vendor shall constitute the referee sample, to be used in case of dispute.

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

© EAS 2009– All rights reserved