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**DRAFT IN
WIDE CIRCULATION**

**Our Ref : CHD 13/T –IS 1069
Date : 01- 02- 2010**

**TECHNICAL COMMITTEE: WATER QUALITY FOR INDUSTRIAL PURPOSES SECTIONAL
COMMITTEE, CHD 13**

ADDRESSED TO:

- 1 All Members of Water Quality for industrial purposes Sectional Committee, CHD 13 and**
- 2 All others interested.**

Dear Sir(s),

Please find enclosed the following draft Indian standard:

- 1 DOC:CHD 13 (1762)C Draft Indian Standard `Quality Tolerances for Water for Storage Batteries – Specification (Third Revision of IS 1069)'**

The documents are also hosted on BIS website www.bis.org.in.

Kindly examine draft Indian Standards and forward your views stating any difficulties which you are likely to experience in your business or profession, if these are finally adopted as National Standards.

Last Date for Comment: 1 May 2010.

Comments, if any, may please be made in the format as given overleaf and mailed to the undersigned at the above address.

In case no comments are received, we would presume your approval of the documents. However, in case we receive any comments on the document, the same shall be put up to the Sectional Committee for necessary action.

Thanking you,

Yours faithfully,

Encl: As above

**(E.Devendar)
Scientist F & Head (Chemical)**

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BUREAU OF INDIAN STANDARDS

Draft Indian Standard

**QUALITY TOLERANCES FOR WATER FOR
STORAGE BATTERIES – SPECIFICATION**
(Third Revision of IS 1069)

ICS 29.220.10

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Date

Price Group

FOREWORD

(formal clauses to be added later)

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Water Sectional Committee had been approved by the Chemical Division Council.

Water for storage batteries could be obtained either through the process of distillation or by any, other process by which the dissolved substances in it are removed, for example, by demineralization or with the help of ion-exchange, electro dialysis and reverse osmosis membrane.

This standard was first published in 1957 and revised in 1964 and 1993. In this third revision, limits of non volatile residue, chlorides, heavy metals, Hardness, Iron and Manganism, Oxidizable matter, Total Dissolved Solids have been deleted. Requirement for specific electric conductivity has been suitably modified. Reference to the latest methods of tests has been given.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in-this standard.

1 SCOPE

This standard prescribes requirements and-methods of sampling and test for water intended for use in storage batteries (lead-acid type).

2 REFERENCES

The Indian Standards listed below are necessary adjuncts to this standards.

<i>IS NO</i>	<i>Title</i>
IS 1070:1992	Reagent grade water (<i>third revision</i>)
IS 3025 (Part 11):1983	Methods of sampling and test (Physical and Chemical) for water and wastewater: Part 11 pH value (<i>first revision</i>)
IS 3025 (Part 14):1984	Methods of sampling and test (physical and chemical) for water and wastewater: Part 14 Specific conductance (wheatstone bridge, conductance cell) (<i>first revision</i>)

**Table 1 Requirements for Water for Storage Batteries
(Clause 3.2)**

Sl No.	Characteristic	Requirement	Method of Test Ref to
(1)	(2)	(3)	(4)
i)	pH	6.5 – 7.5	IS 3025 (Part 11):1983
ii)	Specific electrical conductivity at 25°C in ionic units (or micromhos per cm), <i>Max</i>	0.5	IS 3025 (Part 14):1984

Note: Hardness, heavy metals, iron etc are not expected in water of conductivity 0.5 µs/cm.

3 REQUIREMENTS

3.1 Description

The material shall be clear, odourless, tasteless, colourless and free from suspended impurities.

3.2 The material shall also comply with the requirements given in Table 1. Reference to the respective parts of IS 3025 is given in col 4 of Table 1.

4 PACKING AND MARKING

4.1 The material shall be packed in stoneware jars or glass carboys or any other suitable containers as agreed to between the purchaser and the supplier.

4.2 The containers shall be securely closed and legibly marked with the following information:

- a) Indication of source of manufacture;
- b) Quantity of material in the container;
- c) Recognized trade-mark, if any; and
- d) Identification in code or otherwise to enable the date and lot to be traced back from records.

5 SAMPLING

5.1 Preparation of Test Samples

Representative test samples of the material shall be prepared as prescribed in Annex A.

5.2 Number of Tests

Tests for all the characteristics given in **3.1**, **3.2** and Table 1 shall be carried out on the composite sample (*see A-3.2*).

5.3 Criteria for Conformity

The material shall be considered as conforming to this specification if the composite sample complies with all the requirements given in **3.1**, **3.2** and in Table 1.

ANNEX A

(Clause 5.1)

SAMPLING OF WATER FOR STORAGE BATTERIES

A-1 GENERAL REQUIREMENTS OF SAMPLING

A-1.0 In drawing, preparing, storing and handling samples, the following precautions and directions shall be observed.

A-1.1 Samples shall not be taken in an exposed place.

A-1.2 The sampling instruments shall be clean. Before use these shall also be washed several times with the material to be sampled.

A-1.3 Precautions shall be taken to protect the sample, the material being sampled, the sampling instruments and the containers for samples from adventitious contamination.

A-1.4 To draw a representative sample, the contents of each container selected for sampling shall be mixed as thoroughly as possible by suitable means.

A-1.5 The Samples shall be placed in clean and air-tight glass or other suitable containers on which the material has no action and which have been previously washed several times with the material to be sampled.

A-1.6 The sample containers shall be of such a size that they are filled by the sample, leaving ullage of 10 percent.

A-1.7 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 Lot

A-2.1.1 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 shall constitute separate lots.

A-2.1.2 For ascertaining conformity of the material in a lot to the requirements of this specification, samples shall be tested for each lot separately. The number be in accordance with Table 2.

A-2.1.3 In order to ensure randomness of selection, the following procedure shall be adopted. Arrange all the containers in the lot in a systematic manner and starting from any one, count them as 1, 2, 3 . . . up to r , where r IS the 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 selected according to **A-2.2.1**, equal portions of the

Table 2 Number of Containers to be Selected from Lots of Different Sizes
(*Clause A-2.2*)

Lot Size			Sample Size
N			n
(1)			(2)
3	to	15	3
16	„	40	4
41	„	65	5
66	„	110	7
111	and	above	10

material shall be taken out so that the total quantity collected from all the containers is about 8 litres. This shall be the composite sample.

A-3.2 The composite sample shall be divided into 3 test samples not less than 2 litres each. These test samples shall be transferred immediately to thoroughly washed bottles which are sealed air-tight with glass stoppers and marked with the particulars of sampling as given in **A-1.7**. One test sample shall be sent to the purchaser and one to the supplier. The third test sample bearing the seals of the purchaser and the supplier shall constitute the referee sample, to be used in case of dispute.