

Device Certification System





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इस भाग में विश्न पुष्ट संख्या दी जाते हैं जिससे कि यह अलग संकलन के रूप में रखा जा सके। Separate paging is given to this Part is order that it may be filed so a separate compilation.

MINISTRY OF LAW AND JUSTICE

(Legislative Department)

New Delhi, the 14th January, 2010/Pausa 24, 1931 (Salu)

The following Act of Parliament received the assent of the President on the 13th January, 2010, and is hereby published for general information:—

THE LEGAL METROLOGY ACT, 2009

(No. 1 or 2010)

[13th January, 2010]

An Act to establish and enforce standards of weights and measures, regulate trade and commerce in weights, measures and other goods which are sold or distributed by weight, measure or number and for matters connected therewith or incidental thereto. Provisions of this Act to override provisions of any other law. 3. The provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in any enactment other than this Act or in any instrument having effect by virtue of any enactment other than this Act.

CHAPTER II

STANDARD WEIGHTS AND MEASURES

Units of weights and measures to be based on metric system.

Base unit of weights and measures.

- Every unit of weight or measure shall be in accordance with the metric system based on the international system of units.
 - 5. (1) The base unit of --
 - (i) length shall be the metre;
 - (ii) mass shall be the kilogram;
 - (iii) time shall be the second;
 - (iv) electric current shall be the ampere;
 - (v) thermodynamic temperature shall be the kelvin;
 - (vi) luminous intensity shall be the candela; and
 - (vii) amount of substance shall be the mole.
- (2) The specifications of the base units mentioned in sub-section (1), derived units and other units shall be such as may be prescribed.

Base unit of numeration.

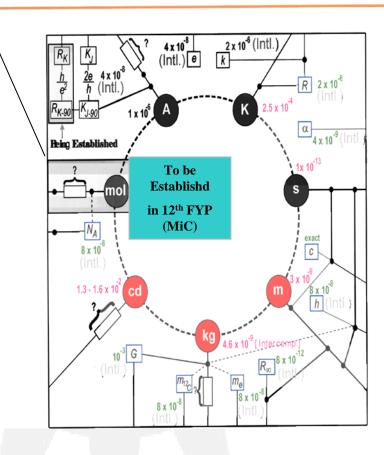
- (1) The base unit of numeration shall be the unit of the international form of Indian numerals.
 - (2) Every numeration shall be made in accordance with the decimal system.
- (3) The decimal multiples and sub-multiples of the numerals shall be of such denominations and be written in such manner as may be prescribed.

Standard units of weights and measures. 7. (1) The base units of weights and measures specified in section 5 shall be the standard units of weights and measures. CSIR-NPL India (NPLI) presently maintained standards of six SI base units like mass (kg), length (m), time (s), temperature (K), luminescence (cd) and current (A).

National standards of Measurements

Present Status

The realization of seventh base unit or amount of substance SI 'mole' has been initiated



VARIOUS RMOs OF THE WORLD

COOMET (former USSR, East Europe)

EUROMET (Europe)

MENAMET (Middle East, North Africa)

SADCMET (Southern Africa)

APMP (Asia Pacific Region)

Australia Bangladesh China

Chinese Taipei

DPR of Korea

Fiji

Hong Kong; China

India

Indonesia

Japan

Republic of Korea

Malaysia

Mongolia Nepal

New Zealand

Pakistan

Philippines Singapore

Sri Lanka

Thailand Vietnam SIM (Inter American)

NORAMET (North America)

ANDIMET

(Western Part of South America)

CARIMET

(Caribbean Sea)

CAMET (Central America)

SURAMET

(Eastern Part of South America)

International Comparisons for the **Global MRA** comparis Other RMO Ray **APMP** key comparisons comparisons **BIPM** bilateral **CIPM** comparis key comparisons **EUROMET** key comparisons SIM key comparisons link laboratori

In 1999, and in support of world trade, the CIPM established a Mutual Recognition Arrangement (MRA) of national measurement standards for calibration and measurement certificates issued by NMIs.

The aim of the CIPM MRA is to provide the technical basis for the worldwide acceptance of national measurement standards and calibration and measurement certificates of NMIs.

So far in India, there is no agency/institute which is doing performance test and certification for CEMs and CAMs.

Under the current national missions, several CEMs and CAMs manufacturers in India need a certificate for their product (as per recent guideline of CPCB).

Therefore a performance test facility and the certification scheme is urgently needed at national level to fulfill this requirement.

Establishment of device certification facility: Motivation...

This certification system is in accordance with the recent requirements:

- ➤ To help Central Pollution Control Board (CPCB) in establishing device certification processes
- To establish the test and calibration facilities for Continuous Emission Monitoring Systems (CEMs) and Continuous Ambient Air Monitors (CAMs) at National Physical Laboratory, India (NPL-I).
- ➤ Under "Make in India" mission, several CEMs and CAMs manufacturers in India need certification for their product (as per recent guideline of CPCB, http://cpcb.nic.in/upload/Latest/Latest_105_Online_Monitoring_Protocol.pdf)



Stack



Analyzer



NPL UK has been doing such certification –



Equipment Testing to the MCERTS Performance Standard

What is MCERTS?

In 1998, the Environment Agency established a rigorous certification scheme for pollution monitoring equipment, based on internationally accepted performance standards. The MCERTS scheme initially focused on continuous emission monitoring systems (CEMs) and has now been extended to continuous ambient air monitors (CAMs). Certified instruments will provide regulators and industry with the best basis with which to monitor releases from industrial processes.

Development of performance test facility for stack emission monitoring system and calibration facility for ambient air monitoring system

- ❖ Based on "Monitoring Certification Scheme (MCERTS)" for pollution monitoring equipments based on internationally accepted performance standards.
- To work on the performance test of different CEMs and CAMs for species e.g. HCl, NH₃, SO₂, HF, NO_x, N₂O, SO_x, CO, O₂, and VOCs, particle size distribution, concentration and mass emissions of particulates, metals, dioxins and furans, trace micro pollutants such as PAHs and PCBs, flue gas velocity and temperature, etc.

Current facility



Realization of Mole in Gas Measurements Through Gravimetric Preparation of Gas Standards









Equal arm balance (Raymor HCE-25G, sensitivity 1 mg):



Cavity ring-down spectroscopy (CRDS):



Gas chromatography- pulsed discharge helium ionization detector (GC-PDHID):



Homogenization system):



Gas chromatography- flame ionization detector (GC-FID):



Gas chromatography- electron capture detector (GC-ECD):



Prepared gas standards:



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The developments so far:

- CPCB NPL discussions initiated during 2015-16
- Interaction meetings with vendors/suppliers have been held during 2015
- Work on associated modalities for establishment of Indian device certification system are currently going on







