



REPORT OF ACTIVITIES OF DENSITY SUB WORKING GROUP 2007-2008

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SIM MWG7 Metrology working group of mass and related quantities
October 27 -28, 2008



SIM Comparison on the calibration of Hydrometers, SIM 7.33

In order to anticipate the CCM comparison CCM.D-K4, it was planned a SIM comparison in hydrometer calibration. As an additional goal of this comparison, is to link its results to the Euromet project 702.

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DE METROLOGIA**



Participants Country / NMI	Participants Country / NMI
<p>Canada / NRC United States / NIST Mexico / CENAM, Pilot Laboratory</p> <p>Costa Rica / LACOMET Panama / CENAMEP</p> <p>Bolivia / IBMETRO Colombia / SIC Ecuador / INEN Peru / INDECOPI</p>	<p>Brazil / INMETRO Chile / CESMEC Ltda. Uruguay / LATU Argentina / INTI</p> <p>Jamaica / BSJ</p>

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Travelling standards:

Four hydrometers

Division, 0,1 kg/m³

Range:	600 – 610 kg/m³
	800 – 810 kg/m³
	990 – 1 000 kg/m³
	1 290 – 1 300 kg/m³

Date of measurements:

April 2007 – June 2008

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SIM SISTEMA INTERAMERICANO DE METROLOGIA

CENAM CENTRO NACIONAL DE METROLOGÍA



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Liquids used by NMIs as buoyant liquid

Reference Liquid	Density	Laboratories
Water	998 kg/m ³	8
N-Tridecane	756 kg/m ³	2
Pentadecane	769 kg/m ³	1
N-nonane	718 kg/m ³	1
Cyclohexane	778 kg/m ³	1
Iso-Octane	692 kg/m ³	1
Alcohol	807 kg/m ³	1

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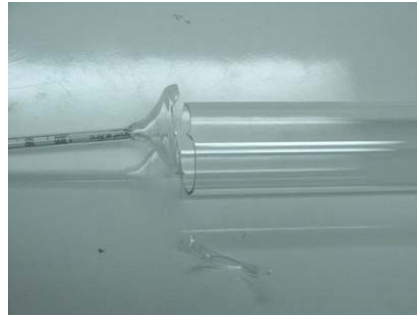


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Two hydrometers were broken during the comparison.



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Stability of the travelling standards: No significant drift were found in travelling standards

Status: Report in process

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Bilateral comparison on Hydrometer calibration between CENAM Mexico and INRIM Italy

In order to link the results of SIM Hydrometers comparison to the Euromet Project 702 (2003 -2007), CENAM and INRIM decided to carry out a bilateral comparison in Hydrometer comparison.

Participants

Country / NMI

Mexico / CENAM

Italy / INRIM

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Travelling standards:

Two hydrometers

Division, 0,2 kg/m³

Range: 800 – 820 kg/m³

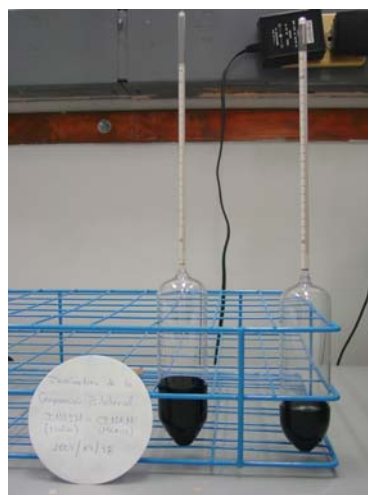
1 180 - 1 200 kg/m³

Date of measurements:

June – August 2007

Report:

In process



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Proposals of Future Work

Comparisons

- Liquid density
- Volume of Solids (Stainless Steel Weights)

Workshop

- Liquid Density
- Reference Materials Certified in Density
- Calibration of Density Meters (vibrating tube method)

SIM Guidelines

Calibration of Hydrometers

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