

<b>Method:</b> CAL-4 Revision: 1 Final Revision Date: 06/02/03	<b>Laboratory Instrument Calibration Method</b>	<b>INEOS Nitriles</b>
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## METHOD SUMMARY

This procedure is used to verify the calibration of hydrometers.

## SAFETY

Acrylonitrile and acetonitrile are hazardous to the health and dangerous to handle. Use acrylonitrile and acetonitrile in a well ventilated hood. Review the MSDS for detailed information concerning toxicity, first aid procedures and safety precautions.

Refer to the appropriate safety section or site manual for the necessary protective equipment to use when handling any reagents or samples.

## APPARATUS AND REAGENTS

**Specific Gravity Hydrometer**, Precision, Grade A, Range 0.75-0.85, traceable to NIST and capable of operation at 60F, 25C and 20C, with built-in thermometer.

**Backup NIST-Certified Hydrometer**, Precision, maintained only as a comparison for the hydrometer used for sample analysis.

### Hydrometer Jars

**Water**, ASTM type II, or equivalent. Minimum electrical resistivity 1.0 MΩ•cm at 298 K; maximum total organic carbon 50 µg/L; maximum sodium 5 µg/L; maximum chlorides 5 µg/L; maximum total silica 3 µg/L. Detailed specifications can be obtained from ASTM: [www.astm.org](http://www.astm.org).

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## CALIBRATION PROCEDURE

1. Pour water into the hydrometer jar and read the specific gravity directly when the water has equilibrated to  $20 \pm 0.1$ C.
2. Record the result in the third column of the attached Verification Log Sheet.
3. Pour water into the reference hydrometer jar and read the specific gravity directly when the water has equilibrated to  $20 \pm 0.1$ C.
4. Record this result in the fifth column of the attached Verification Log Sheet.
5. Perform the indicated operation to calculate the % difference in the readings and record in column six.

## ACTION

If the % difference in the hydrometer readings is greater than  $\pm 1\%$ , use the back-up hydrometer for sample analysis and order a replacement NIST-calibrated hydrometer.

## FREQUENCY

1. Hydrometers will be replaced after no more than three years.
2. Verification will take place every six months against a NIST traceable hydrometer. The attached Log Sheet and tolerances will be used to verify the hydrometers where required.

