

Method: ACRN-23 Revision: 5 Final Revision Date: 04/4/03	Acrylonitrile Specification Tests	INEOS Nitriles
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METHOD SUMMARY

The specific gravity is read directly with a precision hydrometer and corrected to the specification temperature of 25 °C (77 °F) or 20 °C (68 °F).

SAFETY

Acrylonitrile is hazardous to the health and dangerous to handle. Use acrylonitrile 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.

REFERENCES

Naziev, Y. M.; Guseinov, S. O.; Shakhmuradov, S. G. Proc. Symp. Thermophys. Prop., 1982, 8th(1), 227-231.

ASTM E126-92(1998) "Standard Test Method for Inspection and Verification of Hydrometers" <http://www.astm.org>

INTERFERENCES

There are no known interferences to this method.

APPARATUS AND REAGENTS

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

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2. **Thermometer**, °C graduated to 0.5 °C.
3. **Hydrometer Jar**

CALIBRATION

Refer to Instrument Calibration Procedure CAL-4 for calibration of hydrometers.

PROCEDURE

1. Pour the sample into a hydrometer jar and insert hydrometer and thermometer(if not built-in).
2. Allow hydrometer, sample and thermometer to reach the same equilibrium temperature.
3. Read the specific gravity with the hydrometer and record the temperature, T °C .

CALCULATIONS

Calculate the corrected specific gravity using the following formula:

$$\text{Specific Gravity (25 °C)} = \text{Specific Gravity (T °C)} \times 0.001086 (25 - T)$$

The correction factor of 0.001086 is derived from the data shown in the attached graph.

REPORT

Report the specific gravity at 25 °C to 3 decimal places.

Ex: Sp = 0.807

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Attachment

