

<b>Method:</b> <b>ACRN-7</b> Revision:        5    Final Revision Date: 05/29/03	<b>Acrylonitrile Specification Tests</b>	<b>INEOS Nitriles</b>
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## METHOD SUMMARY

The color of the sample is determined by visual comparison with known concentrations of standard platinum-cobalt solutions where 1 mg/liter of platinum as chloroplatinate ion is equivalent to 1 APHA unit of color.

## 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

STM C-33, "Color and Haze of Acrylonitrile, Color Difference Meter"

ASTM D1209-00, Standard Test Method for Color of Clear Liquids (Platinum-Cobalt Scale). [www.astm.org](http://www.astm.org)

## APPARATUS AND REAGENTS

1. **Color comparison tube support** - to permit visual comparison through tall-form 100 mL Nessler tubes along longitudinal axis.
2. **Tubes, color comparison**, Nessler, tall-form, 100 mL capacity, matched.
3. **Flask, volumetric**, 1 liter capacity, glass stoppered.
4. **Pipettes**, 1 mL, 2 mL, 3mL and 4 mL sizes.
5. **Water**, ASTM Type II , or equivalent. Minimum electrical resistivity 1.0 MΩ·cm at 298 K; maximum total organic carbon 50 µg/L; maximum

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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).

6. **APHA Color Standard**, APHA Std. #500, Fisher SP120-500 or equivalent. Can be prepared by dissolving 1.2450±0.0002 grams potassium chloroplatinate (K<sub>2</sub>PtCl<sub>6</sub>) and 1.0000±0.0002 grams of cobalt chloride (CoCl<sub>2</sub> · 6H<sub>2</sub>O) in a glass stoppered 1 liter volumetric flask containing ~500 mL water. Next, carefully add 100 mL concentrated HCl (sp.gr. = 1.19) and dilute to volume with water.
7. **APHA Color Standards** 0, 5, 10, 15, and 20. Pipette 0, 1.0, 2.0, 3.0 and 4.0 mL of the #500 APHA color standard into separate 100 mL Nessler tubes and dilute to the mark with ASTM water. Cap each tube.

## CALIBRATION

The reference standards are prepared from purchased reference materials and are used without further calibration.

## PROCEDURE

1. Fill a 100 mL Nessler tube to the mark with sample that is clear and free of suspended matter, and cap the tube.
2. Place the sample tube and standard tubes in the tube rack and compare sample visually with the standards looking down through the tubes against a white background. Arrange the tubes in order of increasing color intensity.
3. Record the sample APHA color as the number of the nearest standard that is darker than the sample.

## ALTERNATIVE PROCEDURE

The color may also be determined using a spectrophotometric method as outlined in ASTM D1209-84 Standard Test Method for Color of Clear Liquids (Platinum - Cobalt Scale). <http://www.astm.org/>

## REPORT

Report the APHA color as less than the next darker standard value.

Example: APHA color <10.

This document is UNCONTROLLED. For the latest revision of this test method, visit <http://techservice.innovene.com> and select Acrylonitrile in "Browse by Product."