Measuring Pt/Co/APHA in Petrochemicals

Applied Analytics Application Note No. AN-056

Application Summary

Analyte: **APHA color**

Detector: **OMA-300 Colorimeter**

Process Stream: **Liquid petrochemical streams**

Typical Measurement Range: **0-500**

Introduction

The APHA color scale (named after the American Public Health Association) is used for quality assurance in the production of petrochemical liquids. It is defined by ASTM D1209. This scale is also commonly referred to as the Platinum Cobalt (Pt/Co) Scale since it is based on standard solutions of platinum and cobalt in distilled water. The APHA scale has a range of 0 to 500 (clear to light yellow). The APHA color scale is used to measure the quality of certain liquids in the chemical, plastic, pharmaceutical, and petrochemical industries.

In the past, the APHA color would have been determined manually by comparing process samples to the APHA color scale. This method is detailed in ASTM D1209. The scale would be used to correlate the color of the sample to a numerical value which would then be used to determine the overall product quality. Making these measurements manually is unsafe and inaccurate.

The color of certain liquids in a process stream may be indicative of problems with the quality of the product or the equipment used to process the stream. Product discoloration (yellowing) may be caused by dips in process efficiency, equipment failure, excessive heat, filter breakdown, etc. The OMA-300 Colorimeter is proven in providing continuous, real time measurements corresponding to the APHA color scale. The spectrophotometer inside the OMA-300 Colorimeter obtains a full UV-Vis high-resolution absorbance spectrum every 5 seconds by transmitting a white light signal through the sample fluid and measuring lost intensity at each measurement wavelength. The OMA-300 then correlates the measured absorbance spectrum to an APHA number.

System Benefits

- Continuously measures the APHA color of a liquid stream using a UV-Vis spectrophotometer
- Totally solid-state build with no moving parts — modern design for low maintenance
- Additional software benches for up to 4 chemical analytes
- Ultra-safe fiber optic design with no sample fluid inside the analyzer unit — world's safest solution for this application

Further Reading

Subject	Location
OMA-300 Process Analyzer Data sheet	https://aai.solutions/documents/AA_DS001A_OMA300.pdf

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