University of Anbar

College of Engineering

Chemical & Petrochemical Engineering

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Experiment 6: Aniline Point

Definition

Aniline point is used to characterize pure hydrocarbons and to indicate the aromatic content of hydrocarbon mixtures. Equal volumes of aniline and sample or sample plus n-heptane are stirred together while being heated at a controlled rate. After the two phases become miscible, the mixture is cooled at a controlled rate and the temperature at which the two phases separate is the aniline point or mixed aniline point of the sample.

Aim

The aniline point can provide several important insights:

Aromatic content: Petroleum products with higher aromatic content generally have lower aniline points.

Fuel quality: Aniline point can be used to assess the quality of fuels like diesel and jet fuel. Lower aniline points indicate higher aromatic content, which is generally undesirable.

Lubricant properties: For lubricating oils, the aniline point correlates with solvency and detergency properties.

The aniline point test is standardized by organizations like ASTM International (ASTM D611) and ISO (ISO 2977). It is an important analytical tool used throughout the petroleum industry for fuel and lubricant characterization and quality control.

Featured

- Conforms to ASTM D611 and related specifications
- For samples ranging from clear to very dark
- Temperature range 0°C to 150°C (32°F to 302°F)
- Digital temperature display

Procedure

Performs aniline point and mixed aniline point determinations automatically by means of a modified thin film technique (ASTM D611 Method E). The sample-aniline mixture is directly heated by a platinum immersion heater and the aniline point is detected photoelectrically. Temperature is displayed on a large LED indicator. Built-in pressure regulator and solenoid valve permit the use of cooling air for quicker cooling cycles or to determine subambient aniline point temperatures. Aniline

points as low as 0°C (32°F) can be determined with the use of refrigerated cooling air. Equipped with variable controls for heater, light source and stirrer speed. Cabinet exterior surfaces have a chemical resistant polyurethane enamel finish.