



# ANILINE POINT

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Course Name: Petroleum Fluid Properties

Course Code: (PTR 224)

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Week #10 / Lecture #7 (Practical)

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# ANILINE POINT

- The Aniline Point is a critical measurement in petroleum engineering, helping us understand the behavior of oil products.
- It represents the temperature at which equal volumes of aniline and an oil product (often kerosene) become miscible.
- This parameter is crucial for assessing the paraffin and aromatic content of oil products.

# PARAFFIN CONTENT

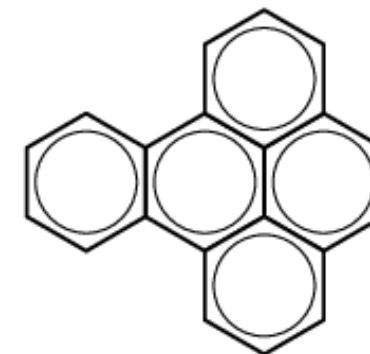
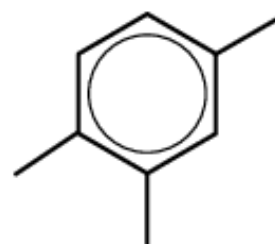
- Paraffins, also known as alkanes, are hydrocarbon compounds characterized by their straight-chain or branched-chain structure.
- Paraffin content in oil products can affect viscosity, pour point, and cloud point.



# AROMATIC CONTENT

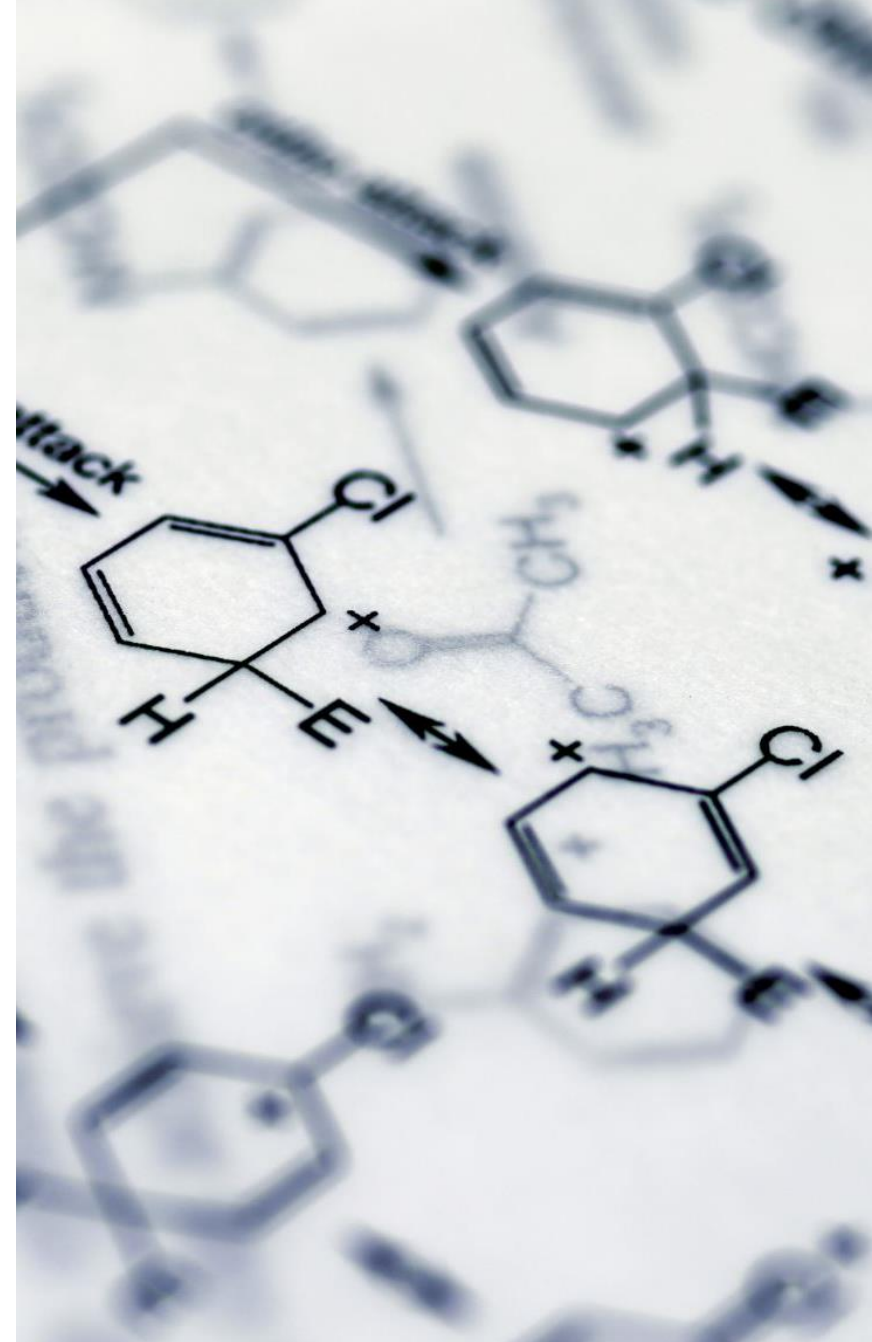


- Aromatics are hydrocarbon compounds characterized by the presence of a benzene ring in their molecular structure.
- Aromatic content in oil products can influence properties like color, odor, and combustion characteristics.



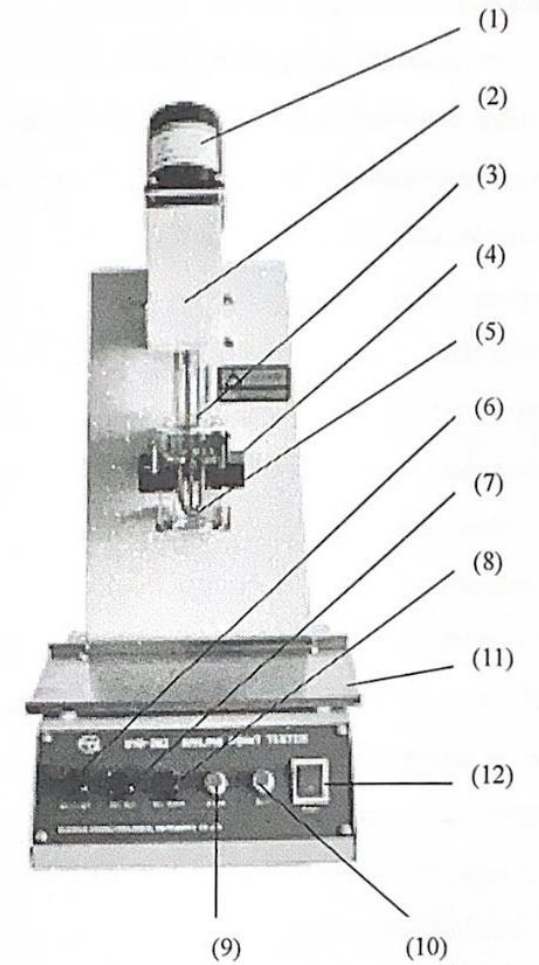
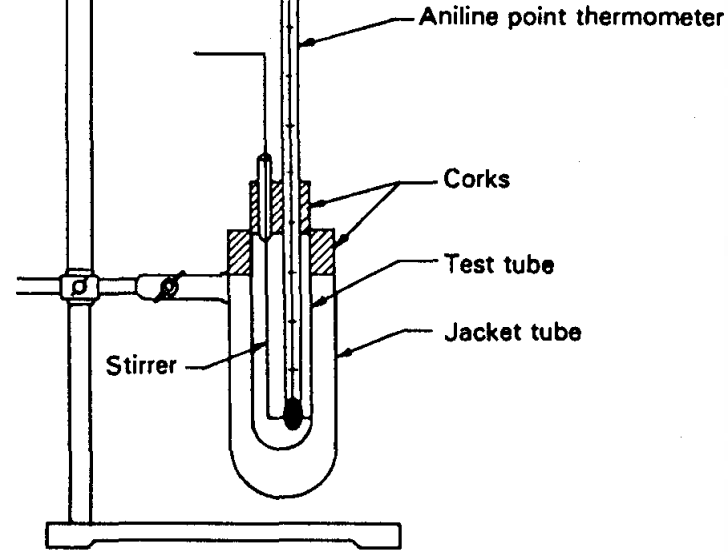
# LIKE DISSOLVES LIKE PRINCIPLE

- In chemistry, "like dissolves like" is a fundamental concept.
- Aromatic compounds, such as aniline, tend to mix more readily with other aromatics.
- If the oil product contains a higher percentage of paraffinic material, it will mix more slowly due to the difference in molecular structure.
  
- Aromatic + Aromatic = Fast & Easy Mix
- Aromatic + Paraffin = Slow & Hard Mix



# SETUP:

- Apparatus: Use the SYD262 model of the Aniline Point apparatus with precise temperature control.
- Materials: You will need aniline, kerosene, and a thermometer.



1. Stirring motor
2. Thermometer
3. Stirrer
4. Photo-electricity receiver
5. Heater
6. Light adjustment knob
7. Voltage adjustment knob
8. Speed adjustment knob
9. Alarm switch
10. Stir switch
11. Mud shield plate
12. Power supply switch

# PROCEDURE:

1. Measure equal volumes of kerosene and aniline (e.g., 10 mL each).
2. Pour them into the SYD262 Aniline Point apparatus.
3. Heat the mixture while continuously stirring.
4. Record the temperature at which the two fluids become completely miscible.



The objective of the Aniline Point experiment is to determine the temperature at which aniline and the oil product become miscible.

# CALCULATIONS



## Aniline Point Calculation

- To calculate the Aniline Point, use the recorded temperature.
- Formula: Aniline Point = Temperature at Miscibility (°C)

## Sources of Error:

- Inaccurate temperature measurement
- Variations in the purity of aniline
- Incomplete mixing due to unequal volumes



# APPLICATIONS

1. **Product Evaluation:**
  - Assessing the suitability of oil products for diverse applications.
  - Tailoring product properties for specific industrial uses.
2. **Quality Control:**
  - Ensuring the consistent quality of oil products.
  - Maintaining high standards and meeting regulatory requirements.
3. **Process Optimization for Sustainability:**
  - Optimizing manufacturing processes to minimize environmental impact.
  - Reducing resource consumption, emissions, and waste.





# END OF LECTURE

REPORT REQUIRED

DEADLINE: BY WEDNESDAY, NEXT WEEK

THROUGH TURNITIN