Laboratory Report

Report ID: 1354

Equipment and Materials Used

1. High-Performance Liquid Chromatography (HPLC) - System HPLC-9000:

Jojoba Oil, Beeswax, Vitamin E

Observations and Measurements:

For Jojoba Oil mixture,clear baseline separationwas observed with a stark presence at750.4 mg/L.

Description:

2. Fourier Transform Infrared Spectrometer (FTIR) - FTIR-8400:

Almond Oil, Glycerin

Observations and Measurements:

The Almond Oil mixture presented notable absorption at2140 1/cm, indicating glycerin's hydroxyl groups.

Description:

3. Thermocycler - TC-5000:

Jojoba Oil

Observation and Measurement:

Successfully held constant temperature of72°C, optimal for examining temperature-dependent reactions.

Description:

4. Gas Chromatograph - GC-2010:

Almond Oil, Beeswax, Vitamin E

Observations and Measurements:

Additionally, the Beeswax and Vitamin E mixture demonstrated concentration peaks settling at600.7 ppm.

Description:

5. Titrator - T-905:

Coconut Oil, Gum, Vitamin E

Observation and Measurement:

Equivalent point at0.008 M, offering quantification via volumetric analysis.

Description:

6. Viscometer - VS-300:

Almond Oil, Gum, Glycerin

Observations and Measurements:

Viscosity readings were1888.48 cPfor the Jojoba Oil mixture, and7625.26 cPfor the Almond Oil mixture.

Description:

Conclusions and Discussions

The collection and interpretation of the data from each testing apparatus yielded significant chemical insights into the samples tested. The methodologies applied were robust, with each instrument providing complementary analytical perspectives.

Applications:The results lay the groundwork for assessing the stability of formulations incorporating similar ingredients, pertinent for consumer product development such as cosmetics and pharmaceuticals.

Limitations:Occasionally observed drift in retention times suggests potential for improvement in system calibrations.

This complex interplay of various components within a lab setting underscores the depth of analysis required to ascertain the integrity and application readiness of such mixtures. The rigorous approach undertaken ensured a comprehensive analytic framework, beneficial for ongoing research across multiple sectors involving these substances.