Laboratory Report: Analysis of Various Oil Mixtures

Introduction

This laboratory report details the analysis of various oil mixtures conducted using multiple instruments. Each test sample consists of a unique combination of ingredients. Our objective was to measure specific properties of these mixtures using different analytical techniques, providing comprehensive insights into their chemical characteristics.

Materials and Methods

Each instrument was precisely calibrated before measurements to ensure accuracy and reliability. The compounds tested included a mixture of natural oils, emulsifiers, and vitamins, commonly used in cosmetic formulations. Below is a summarized list of measurements taken from various instruments.

Results

Table 1: Four Ball Wear Test Results

Report ID	Instrument	Mixture Components	Measurement	Unit
Report_1031	Four Ball FB-1000	Jojoba Oil, Cetyl Alcohol, Vitamin E	0.750 mm	mm

Observations:

Table 2: Mass Spectrometer Analysis

Report ID	Instrument	Mixture Components	Measurement	Unit
Report_1031	Mass Spectrometer MS-20	Almond Oil, Gum, Glycerin	800 m/z	m/z

Observations:

Table 3: NMR Spectroscopy Results

Report ID	Instrument	Mixture Components	Measurement	Unit
Report_1031	NMR Spectrometer NMR-500	Mink Oil, Cetyl Alcohol, Glycerin	15 ppm	ppm

Observations:

Table 4: Microplate Reader Analysis

Report ID	Instrument	Mixture Components	Measurement	Unit
Report_1031	Microplate Reader MR-X	Coconut Oil, Cetyl Alcohol, Vitamin E	3.5 OD	OD

Observations:

Table 5: Conductivity Meter Readings

Report ID	Instrument	Mixture Components	Measurement	Unit
Report_1031	Conductivity Meter CM-215	Coconut Oil, Gum	1500 uS/cm	uS/cm

Observations:

HPLC System Evaluation

Description:

Table 6: Titration Findings

Report ID	Instrument	Mixture Components	Measurement	Unit
Report_1031	Titrator T-905	Almond Oil, Glycerin	9.5 M	M

Observations:

FTIR Spectroscopy Data

Description:

Conclusion

In conclusion, each oil mixture displayed unique chemical properties and interactions when analyzed using different instrumentation. The comprehensive data collected allow for an in-depth understanding of their physicochemical behaviors, which are pivotal in tailoring formulations for specific cosmetic applications.

Irrelevant data such as calibration dates and ambient laboratory conditions were intentionally omitted for brevity. However, further scrutiny is recommended for optimizing formulations based on the specific ingredient combinations and desired product attributes.