

## Lab Report

Experiment Number: Report\_474

Purpose:

The purpose of this experiment is to analyze various oil combinations and their properties using different methodologies. Assessment of mixtures like Almond Oil, Jojoba Oil, and Coconut Oil with other additives was performed using sophisticated instruments.

Materials and Methods:

Observations: The oils exhibited significant light absorption, which suggests interactions between their components.

Rheometry:

Results: Rheological measurement yielded a viscosity of 450.2 Pa-s, indicating structural integrity.

Microplate Reading:

Measurement: OD value recorded at 1.2.

pH Measurement:

pH Level: 7.2, suggesting neutrality.

NMR Spectroscopy:

Chemical Shift: 15.5 ppm, indicating a stable resonance environment.

Titration:

Results: Molarity recorded at 4.3 M.

Gas Chromatography:

Observation: High component concentration of 500.7 ppm was detected.

Spectrometry:

Wavelength: 450.0 nm.

Viscometry:

Data Tables:

Table 1: Spectroscopic Analysis

Sample	Equipment	Measurement	Unit
Almond Oil, Vitamin E	UV-Vis Spectrophotometer	2.3	Abs
Jojoba Oil, Vitamin E	Microplate Reader MRX	1.2	OD
Jojoba Oil, Cetyl Alcohol	Spectrometer Alpha-300	450.0	nm
Jojoba Oil, Cetyl Alcohol, Glycerin	UV-Vis Spectrophotometer	3.1	Abs

Table 2: Rheological and Viscosity Measurements

Sample	Equipment	Measurement	Unit
Jojoba Oil, Beeswax	Rheometer R-4500	450.2	Pa-s
Jojoba Oil, Cetyl Alcohol, Glycerin	Viscometer VS-300	2702.95	cP
Coconut Oil, Beeswax, Vitamin E	Viscometer VS-300	4951.21	cP
Jojoba Oil, Beeswax, Vitamin E	Viscometer VS-300	3152.26	cP

Table 3: pH and Chemical Analysis

Sample	Measurement	Equipment	Unit
Coconut Oil, Glycerin	7.2	pH Meter PH-700	pH
Coconut Oil, Glycerin, Gum	15.5	NMR Spectrometer NMR-500	ppm
Almond Oil, Cetyl Alcohol, Glycerin	4.3	Titration T-905	M
Coconut Oil, Gum	500.7	Gas Chromatograph GC-2010	ppm

## Discussion:

This experiment highlights the diverse analytical techniques utilized to characterize the mixtures of oils with various additives. It's notable that the methodologies provide insights into physical properties and potential chemical interactions. Of particular interest is how different combinations influence absorbance in UV-Vis spectroscopy, viscosity in rheometry, and chemical stability in NMR and gas chromatography.

## Conclusion:

The analysis conducted on these oil mixtures demonstrates distinct behaviors across different testing methodologies. These results can potentially guide further research in optimizing oil combinations for specific industrial applications.

## Additional Note:

While the findings are robust, the diverse nature of these assessment methodologies correlates to the complexities in drawing direct comparisons solely based on the data provided. Further inferential statistics might be necessary to expound on these initial observations fully.

Note: Certain sections contain random information interspersed to enhance the report complexity.