Laboratory Analysis Report

Report ID: 1612

Overview

This report details the tests conducted on various formulations using advanced analytical instrumentation. The main components tested includeAlmond Oil,Coconut Oil, andJojoba Oil, among others. Each formulation was analyzed for its physical and chemical properties using multiple sophisticated techniques such as FTIR, NMR, HPLC, Mass Spectrometry, and more.

I. Sample Formulations

The formulations comprised different combinations of key ingredients including Cetyl Alcohol, Glycerin, Gum, Beeswax, and Vitamin E. These combinations were treated as individual test samples.

II. Analytical Techniques

1. FTIR Spectroscopy Analysis

Observations: The characteristic absorption at 1425 cm^-1 suggests the presence of esters and possibly unsaturated compounds indicative of fatty acid chains.

Almond Oil, Vitamin E

2. NMR Spectroscopy

3. HPLC Analysis

III. Physical Characterization

1. Viscosity Measurements

Instrument: Viscometer VS-300

Almond Oil, Gum

2. Rheology

IV. Additional Measurements

1. pH Analysis

2. Ion Chromatography

3. Thermal Profile

4. Centrifuge Results

5. Mass Spectrometry Analysis

Spectrometer: MS-20

Coconut Oil, Gum

V. Conclusion

The analytical techniques employed provided a comprehensive understanding of the physicochemical properties and interactions within the mixtures tested. The data will facilitate informed decisions on formulation stability, application feasibility, and potential product enhancements.

Appendices

Table 1: Summary of Core Analytical Data  
 | Sample Combination | Technique | Measurement | Unit |  
 |-------------------------------------|------------------|-------------------|----------|  
 | Almond Oil, Cetyl Alcohol, Glycerin | FTIR Spectroscopy| 1425 | 1/cm |  
 | Almond Oil, Gum | NMR Spectroscopy | 8.6 | ppm |  
 | Coconut Oil, Gum | HPLC Analysis | 250.5 | mg/L |  
 | Almond Oil, Cetyl Alcohol, Vitamin E| Mass Spectrometry| 185.3 | m/z |  
 | Jojoba Oil, Cetyl Alcohol | Ion Chromatography| 0.15 | mM |

Table 2: Physical Properties Overview  
 | Sample Combination | Method | Result | Unit |  
 |------------------------------|---------------|----------|-------|  
 | Jojoba Oil, Beeswax, Glycerin| pH Measurement| 6.8 | pH |  
 | Jojoba Oil, Gum | Thermal Profile| 35 | °C |  
 | Jojoba Oil, Beeswax, Vitamin E| Centrifuge | 12000 | RPM |

(Please note that some information unrelated to this report has been deliberately included for complexity but does not contribute to the analysis conclusions.)