Lab Report: Analysis of Various Oil Mixtures

Experiment ID: Report\_1870

Introduction

In this study, we analyzed multiple oil-based mixtures using advanced analytical instruments. Each group of ingredients was treated as a single test sample, undergoing various processes to determine their chemical and physical properties.

Equipment and Methodology

The mixtures analyzed in this experiment include jojoba oil combinations, coconut oil blends, and almond oil samples. We employed a range of instruments to gather comprehensive data.

Results and Observations

Table 1: Gas Chromatography and Spectrometry Data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample ID** | **Mixture Components** | **Instrument** | **Measurement** | **Unit** |
| 1 | Jojoba Oil | GC-2010 | 350 | ppm |
| 7 | Jojoba Oil, Glycerin | MS-20 | 1200 | m/z |
| 8 | Jojoba Oil | Alpha-300 | 300 | nm |

Observations

Table 2: Physical Properties and Titration Results

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample ID** | **Mixture Components** | **Instrument** | **Measurement** | **Unit** |
| 2 | Jojoba Oil, Beeswax, Glycerin | PCR-96 | 25.0 | Ct |
| 3 | Jojoba Oil, Cetyl Alcohol | T-905 | 4.5 | M |
| 6 | Coconut Oil, Cetyl Alcohol, Glycerin | XRD-6000 | 45.0 | °C |

Observations

Table 3: pH and Viscosity Measurements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample ID** | **Mixture Components** | **Instrument** | **Measurement** | **Unit** |
| 5 | Almond Oil, Cetyl Alcohol, Vitamin E | PH-700 | 6.8 | pH |
| 9 | Coconut Oil, Cetyl Alcohol | VS-300 | 5259.96 | cP |
| 10 | Almond Oil, Glycerin | VS-300 | 7696.48 | cP |

Observations

Conclusion

Analysis across the varied instrumentation demonstrates that each mixture presents unique properties ideal for specific cosmetic applications. Irrespective of oil type, the presence of certain compounds, detected through titrations and chromatographic methods, underscores a potential for diverse formulations. The introduction of random noise in this report underscores the intricacy of academic documentation, often complicating automated data extraction.

Through a comprehensive, albeit intricate, methodology, this study affirms the versatility and complex nature of oil-based formulations in commercial industries.