Lab Report 1472

Objective:This report details the analytical testing of various oils and mixtures, specifically Almond Oil, Jojoba Oil, and Coconut Oil, with different additives. The tests were conducted using a combination of spectrometric, chromatographic, and other analytical techniques to determine the presence and concentrations of components.

Equipment and Methods:The following equipment was used across various tests:1. Gas Chromatograph GC-20102. pH Meter PH-7003. Mass Spectrometer MS-204. Centrifuge X1005. Liquid Chromatograph LC-4006. NMR Spectrometer NMR-5007. FTIR Spectrometer FTIR-84008. Viscometer VS-300

Each group of ingredients was treated as a single test sample and evaluated accordingly.

Observations and Measurements

Table 1: Gas Chromatography and pH Analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Equipment** | **Sample** | **Component** | **Measurement** | **Units** |
| 1472-GC-01 | Gas Chromatograph GC-2010 | Almond Oil | Cetyl Alcohol | 250.0 | ppm |
| 1472-PH-01 | pH Meter PH-700 | Almond Oil | Glycerin | 7.5 | pH |

Observations:

Table 2: Mass Spectrometry and Centrifugation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Equipment** | **Sample** | **Component** | **Measurement** | **Units** |
| 1472-MS-01 | Mass Spectrometer MS-20 | Jojoba Oil | Vitamin E | 1000 | m/z |
| 1472-CF-01 | Centrifuge X100 | Jojoba Oil | Cetyl Alcohol | 12000 | RPM |

Observations:

Table 3: Liquid Chromatography, NMR, and FTIR Analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Equipment** | **Sample** | **Component** | **Measurement** | **Units** |
| 1472-LC-01 | Liquid Chromatograph LC-400 | Almond Oil | Glycerin | 300 | ug/mL |
| 1472-NMR-01 | NMR Spectrometer NMR-500 | Jojoba Oil | Gum | 15 | ppm |
| 1472-FTIR-01 | FTIR Spectrometer FTIR-8400 | Jojoba Oil | Beeswax | 1500 | 1/cm |

Observations:

Table 4: Viscosity Analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test ID** | **Equipment** | **Sample** | **Components** | **Measurement** | **Units** |
| 1472-VS-01 | Viscometer VS-300 | Coconut Oil | Cetyl Alcohol, Vitamin E | 4847.55 | cP |
| 1472-VS-02 | Viscometer VS-300 | Coconut Oil | Gum, Vitamin E | 5132.5 | cP |

Observations:

Conclusion:

Through diverse analytical techniques, the various oils combined with different substances exhibit unique properties applicable to cosmetic and therapeutic industries. The results bolster potential formulation developments focusing on stability, texture, and user compatibility.