

Test Report

Sample Name SFTY-2504-001
Product Form Oil
Physical Characteristics Viscous liquid
Sample Received Date April 21, 2025



Procedure

Total Viable Aerobic Count

The total viable aerobic count was determined following the method described by FAO (1992). Sample 10 g (or 10 mL) portion of the sample was aseptically transferred into a sterile containing 90 mL of sterile water and homogenized using a stomacher for 1–2 minutes. Serial ten-fold dilutions were prepared using sterile water.

One milliliter of each appropriate dilution was pour-plated into sterile Petri dishes. Approximately 15–20 mL of molten Plate Count Agar (PCA) (cooled to 45–50°C) was added to each plate, mixed gently, and allowed to solidify. Plates were incubated at 35±1°C for 48±2 hours. After incubation, colonies were counted and recorded as colony-forming units per gram or milliliter (CFU/g or CFU/mL).

Total Yeast and Mold Count

The total yeast and mold count was analyzed using the method outlined by FAO (1992). Sample 10 g (or 10 mL) sample was homogenized in 90 mL of sterile water using a stomacher for 1–2 minutes. Serial dilutions were prepared similarly.

One milliliter from each suitable dilution was pour-plated on Potato Dextrose Agar (PDA), with Streptomycin sulfate, in order to suppress bacterial growth. Plates were poured with 15–20 mL of cooled PDA (45–50°C), mixed gently, and left to solidify. The plates were incubated at 25±1°C for 5–7 days. Colonies of yeast and mold were counted separately and reported as colony-forming units per gram or milliliter (CFU/g or CFU/mL).

The Refractive index measurement

The refractive index was measured using the Refractometer RX-9000i (Figure 1) at a temperature of 20°C (referencing the test for the refractive index of essential oils according to Thai Industrial Standard (TIS)

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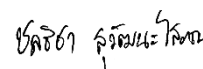
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2785-2560 and ISO 280:1998(E)). The reported values is the Refractive Index (RI), with three repetitions conducted for the experiment.



Figure 1 Refractometer RX-9000i

Specific gravity and Density measurement

The density and specific gravity were measured using the Density Meter DA-100M (Figure 2) at a temperature of 20°C (referencing the test for the density of essential oils according to Thai Industrial Standard (TIS) 2784-2560 and ISO 279:1998(E)). The reported values are the density (g/cm³) and specific gravity, with three repetitions conducted for the experiment.



Figure 2 Density Meter (DA-100M)

Optical rotation measurement

The optical rotation was measured using the Automatic Polarimeter (Figure 3) at a wavelength of 589 nm, with the sample placed in a 100 mm measurement tube. The measurement was conducted at a temperature of 20°C (referencing the test for the optical rotation of essential oils according to Thai Industrial Standard (TIS) 2786-2560 and ISO 592:1998(E)). The reported value is the optical rotation ($\pm \alpha^\circ$), with three repetitions conducted for the experiment.



Figure 3 Automatic Polarimeter

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Results and Conclusion

The Total Viable Aerobic Count and Total Yeast and Mold Count tests performed on sample SFTY-2504-001 detected no microbial contamination.

Table 1 Enumeration of microbial contaminants in the tested samples.

	Test Results (CFU/g) Sample	
	Total viable aerobic count	Total yeast and mold count
Sample R1	ND	ND
Sample R2	ND	ND
Sample R3	ND	ND

Note: ND = Not Detected

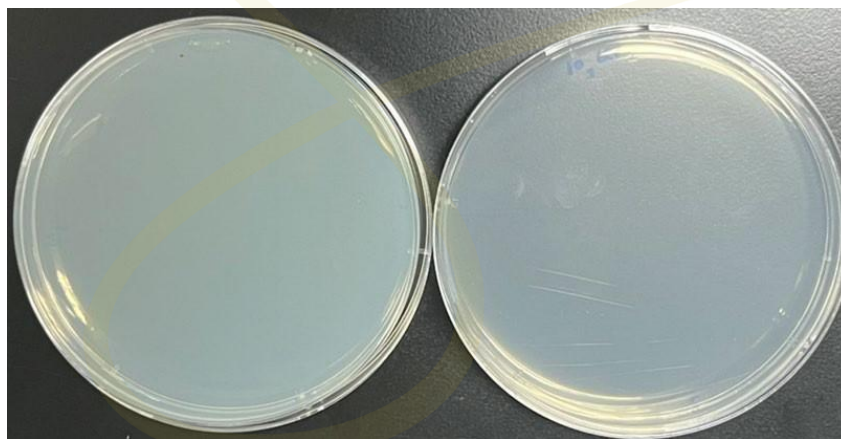


Figure 4 No microbial contamination was detected in the sample on both Plate Count Agar (PCA) and Potato Dextrose Agar (PDA).

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The analysis of physicochemical properties tests of the SFTY-2504-001 sample, including Refractive Index, Specific Gravity, Density and Optical Rotation are presented in Table 2.

Table 2 Physicochemical properties of SFTY-2504-001 at a temperature of 20°C

Physicochemical properties	SFTY-2504-001			
	Replication 1	Replication 2	Replication 3	Average
Refractive index	1.515408	1.515592	1.515540	1.515513
Specific gravity	0.998	0.997	0.998	0.998
Density (g/cm ³)	1.000	0.999	1.000	1.000
Optical rotation (°)	-15.03°	-15.66°	-15.71°	-15.47°

The physical and microbiological quality tests of sample SFTY-2504-001 showed no microbial contamination. The average measured values were: refractive index = 1.515513, specific gravity = 0.998, density = 1.000 g/cm³ and optical rotation = -15.47°.

Remark

This test report is only applicable to the samples tested in the laboratory.

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