



TROPICAL BIOESSENCE SDN. BHD.

No ST 519, Jalan Tunas Baru,
Seksyen 1/4, Kawasan MIEL
Masjid Tanah Phase 1,
78300 Masjid Tanah Melaka
Tel: +606-3842800, Fax: +606-3842900
email: admin@tropical bioessence.com.my

CERTIFICATE OF ANALYSIS

Product : Grapefruit Essential oil
Botanical name : Citrus Paradisi Fruit (Origin South African)
Product Code : GRF 01
Mfg Date : May 2025 Exp Date : May 2028 Batch no: 052531B
Method : Steam Distillation

TEST	RESULT	STANDARD
Appearance	Orange to Dark Yellowish	Confirm
Odour	Pleasant Orange like with a rich Neroli	Confirm
Refractive index (25°C)	1.473	1.460 - 1.480
Specific gravity (25°C)	0.850	0.830 - 0.880
Optical Rotation	+81.87°	+60.0° - +85.0°
Solubility	Complies	Soluble in Alcohol
Heavy Metals Content		
Arsenic (mg/kg)	N.D (<0.1ppm)	BP 2013, Appendix IID, ICP-AES
Lead (mg/kg)	N.D (<0.5ppm)	BP 2013, Appendix IID, ICP-AES
Cadmium (mg/kg)	N.D (<0.1ppm)	BP 2013, Appendix IID, ICP-AES
Mercury (mg/kg)	N.D (<0.1ppm)	BP 2013, Appendix IID, ICP-AES
Microbial Content		
<i>Pseudomonas aeruginosa</i>	Absent in 1g	BP 2013, Appendix XVIB, 1
<i>Staphylococcus aureus</i>	Absent in 1g	BP 2013, Appendix XVIB, 1
<i>Total Combined Yeast and Mould</i>	ND(<10) CFU/g	BP 2013, Appendix XVIB, 2
<i>Total Aerobic Microbial Count</i>	ND(<10) CFU/g	BP 2013, Appendix XVIB, 2
Assay by GC		
Limonene	91.00%	85.0 - 95.0%
Myrcene	1.80%	1.0 - 2.0%

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