

## CERTIFICATE OF ANALYSIS

Product: Ginger Organic Essential Oil  
 Lot No.: 50012B11120  
 Best Before: May,2025

Store in air tight containers; in a cool dry area; away from direct sunlight.

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to brownish-yellow liquid.	Complies
Odor:	Characteristic spicy somewhat pungent ginger odor.	Complies
Solubility:	Miscible in fat soluble organic solvents and fatty oils. Insoluble in water.	Complies
Specific Gravity:	0.8600 to 0.8900 @ 20°C	0.8785
Optical Rotation:	-47° to +20° @ 20°C	-35.16°
Refractive Index:	1.4800 to 1.5500 @ 25°C	1.4945
α-Zingiberene:	25 - 40 %	32.84
Bisabolene:	4.0 - 10.0 %	6.46

### Disclaimer & Caution

Please refer to all relevant technical information specific to the product, prior to use. The information contained in this document is obtained from current and reliable sources. New Directions Aromatics Inc. provides the information contained herein, but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of the products, including intellectual property rights of third parties. As the ordinary or otherwise use(s) of this product is outside the control of New Directions Aromatics Inc., no representation or warranty, expressed or implied, is made as to the effect(s) of such use(s), (including damage or injury), or the results obtained. The liability of New Directions Aromatics Inc. is limited to the value of the goods and does not include any consequential loss. New Directions Aromatics Inc. shall not be liable for any errors or delays in the content, or for any actions taken in reliance thereon. New Directions Aromatics Inc. shall not be responsible for any damages resulting from use of or reliance upon this information. In the event of any dispute, the Customer hereby agrees that Jurisdiction is limited to the province of Ontario.

CERTIFICATE OF ANALYSIS

Product: Ginger Organic Essential Oil

Lot No.: 50012A11020

Best Before: May,2025

Store in air tight containers; in a cool dry area; away from direct sunlight.

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to yellow liquid.	Complies
Odor:	Characteristic spicy somewhat pungent ginger odor.	Complies
Solubility:	Miscible in fat soluble organic solvents and fatty oils. Insoluble in water.	Complies
Specific Gravity:	0.8600 to 0.8900 @ 30°C	0.8791
Optical Rotation:	-47° to -20° @ 20°C	-32.79°
Refractive Index:	1.4800 to 1.5500 @ 25°C	1.4880
α-Zingiberene:	25 - 40 %	29.40
Bisabolene:	4.0 - 10.0 %	6.43

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CERTIFICATE OF ANALYSIS

Product: Ginger Organic Essential Oil

Lot No.: 50012F161

Best Before: February, 2023

Store in air tight containers; in a cool dry area; away from direct sunlight.

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to yellow liquid.	Complies
Odor:	Characteristic spicy somewhat pungent ginger odor.	Complies
Solubility:	Miscible in fat soluble organic solvents and fatty oils. Insoluble in water.	Complies
Specific Gravity:	0.8680 to 0.8830 @ 30°C	Complies
Optical Rotation:	-45° to -29° @ 27°C	Complies
Refractive Index:	1.4840 to 1.4920 @ 25°C	Complies
α-Zingiberene:	29 - 37 %	Complies
Bisabolene:	4.0 - 9.0 %	Complies

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CERTIFICATE OF ANALYSIS

Product: Ginger Organic Essential Oil  
Lot No.: 50012 - A16,B16,C16,D16,E16,F16,G16,H16  
Best Before: February, 2022

Store in air tight containers; in a cool dry area; away from direct sunlight.

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to yellow liquid.	Complies
Odor:	Characteristic spicy somewhat pungent ginger odor.	Complies
Solubility:	Miscible in fat soluble organic solvents and fatty oils. Insoluble in water.	Complies
Specific Gravity:	0.8680 to 0.8830 @ 30°C	0.8798
Optical Rotation:	-45° to -29° @ 27°C	-36.85°
Refractive Index:	1.4840 to 1.4920 @ 25°C	1.4880
$\alpha$ -Zingiberene:	29 - 37 %	33.84
Bisabolene:	4.0 - 9.0 %	7.55

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CERTIFICATE OF ANALYSIS

Product: Ginger Organic Essential Oil

Lot No.: 50012 – A15, B15, C15, D15

Best Before: February, 2022

Store in air tight containers; in a cool dry area; away from direct sunlight

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to yellow liquid.	Complies
Odor:	Characteristic spicy somewhat pungent ginger odor.	Complies
Solubility:	Miscible in fat soluble organic solvents and fatty oils. Insoluble in water.	Complies
Specific Gravity:	0.8680 to 0.8830 @ 30°C	0.8798
Optical Rotation:	-45° to -29° @ 27°C	-36.85°
Refractive Index:	1.4840 to 1.4920 @ 25°C	1.4880
α-Zingiberene:	29 – 37 %	33.84
Bisabolene:	4.0 – 9.0 %	7.55

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CERTIFICATE OF ANALYSIS

Product: Ginger Organic Essential Oil

Lot No.: 50012 - A14

Best Before: January, 2022

Store in air tight containers; in a cool dry area; away from direct sunlight

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to yellow liquid.	Complies
Odor:	Characteristic spicy somewhat pungent ginger odor.	Complies
Solubility:	Miscible in fat soluble organic solvents and fatty oils. Insoluble in water.	Complies
Specific Gravity:	0.8680 to 0.8830 @ 30°C	0.885
Optical Rotation:	-45° to -29° @ 27°C	-35.42°
Refractive Index:	1.4840 to 1.4920 @ 25°C	1.4902
$\alpha$ -Zingiberene:	29 - 35 %	33.86
Bisabolene:	4.0 - 9.0 %	6.68

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