

CERTIFICATE OF ANALYSIS

Product: Marula Carrier Oil

Lot No.: 15063B108191

Best Before: August, 2022

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

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to golden yellow liquid.	Complies
Odor:	Characteristic mild odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Relative Density:	0.905 - 0.923 @ 20°C	Complies
Refractive Index:	1.464 - 1.474 @ 20°C	Complies
Acid Value:	< 10	Complies
Free Fatty Acids:	< 5 (gm Oleic acid/100 gm oil)	Complies

FATTY ACID PROFILE

Palmitic acid (C:16:0):	9 - 12 %	Complies
Stearic acid (C:18:0):	4 - 8 %	Complies
Cisoleic acid (C:18:1):	70 - 80 %	Complies
Cislinoleic acid (C:18:2):	4 - 10 %	Complies
Arachidic acid (C:20:0):	< 2 %	Complies

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: Marula Carrier Oil

Lot No.: 15063A107191

Best Before: July, 2022

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

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to golden yellow liquid.	Complies
Odor:	Characteristic mild odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Relative Density:	0.905 - 0.923 @ 20°C	Complies
Refractive Index:	1.464 - 1.474 @ 20°C	Complies
Acid Value:	< 10	Complies
Free Fatty Acids:	< 5 (gm Oleic acid/100 gm oil)	Complies

FATTY ACID PROFILE

Palmitic acid (C:16:0):	9 - 12 %	Complies
Stearic acid (C:18:0):	4 - 8 %	Complies
Cisoleic acid (C:18:1):	70 - 80 %	Complies
Cislinoleic acid (C:18:2):	4 - 10 %	Complies
Arachidic acid (C:20:0):	< 2 %	Complies

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CERTIFICATE OF ANALYSIS

Product: Marula Carrier Oil

Lot No.: 15063B10819

Best Before: August, 2021

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

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to golden yellow liquid.	Complies
Odor:	Characteristic mild odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Relative Density:	0.905 - 0.923 @ 20°C	0.9119
Refractive Index:	1.464 - 1.474 @ 20°C	1.4677
Acid Value:	< 10	1.36
Free Fatty Acids:	< 5 (gm Oleic acid/100 gm oil)	0.68

FATTY ACID PROFILE

Palmitic acid (C:16:0):	9 - 12 %	11.47
Stearic acid (C:18:0):	4 - 8 %	7.58
Cisoleic acid (C:18:1):	70 - 80 %	75.79
Cislinoleic acid (C:18:2):	4 - 10 %	3.51
Arachidic acid (C:20:0):	< 2 %	0.60

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CERTIFICATE OF ANALYSIS

Product: Marula Carrier Oil

Lot No.: 15063A10719

Best Before: July, 2021

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

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to golden yellow liquid.	Complies
Odor:	Characteristic mild odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Relative Density:	0.905 - 0.923 @ 20°C	0.9113
Refractive Index:	1.464 - 1.474 @ 20°C	1.4679
Acid Value:	< 10	1.97
Free Fatty Acids:	< 5 (gm Oleic acid/100 gm oil)	0.99

FATTY ACID PROFILE

Palmitic acid (C:16:0):	9 - 12 %	11.01
Stearic acid (C:18:0):	4 - 8 %	7.19
Cisoleic acid (C:18:1):	70 - 80 %	74.55
Cislinoleic acid (C:18:2):	4 - 10 %	5.42
Arachidic acid (C:20:0):	< 2 %	0.71

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CERTIFICATE OF ANALYSIS

Product: Marula Carrier Oil

Lot No.: 15063A10519

Best Before: May, 2021

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

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to golden yellow liquid.	Complies
Odor:	Characteristic mild odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Relative Density:	0.905 - 0.923 @ 20°C	0.9117
Refractive Index:	1.464 - 1.474 @ 20°C	1.4680
Acid Value:	< 10	0.85
Free Fatty Acids:	< 5 (gm Oleic acid/100 gm oil)	0.427

FATTY ACID PROFILE

Palmitic acid (C:16:0):	9 - 12 %	10.51
Stearic acid (C:18:0):	4 - 8 %	7.09
Cisoleic acid (C:18:1):	70 - 80 %	76.57
Cislinoleic acid (C:18:2):	4 - 10 %	4.30
Arachidic acid (C:20:0):	< 2 %	0.45

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CERTIFICATE OF ANALYSIS

Product: Marula Carrier Oil
 Lot No.: 15063A191
 Best Before: May, 2021

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

<u>Properties</u>	<u>Specifications</u>	<u>Results</u>
Appearance:	Pale yellow to golden yellow liquid.	Complies
Odor:	Characteristic mild odor.	Complies
Solubility:	Soluble in alcohol and oils. Insoluble in water.	Complies
Relative Density:	0.905 - 0.923 @ 20°C	Complies
Refractive Index:	1.464 - 1.474 @ 20°C	1.4724
Acid Value:	< 10	Complies
Free Fatty Acids:	< 5 (gm Oleic acid/100 gm oil)	Complies

FATTY ACID PROFILE

Palmitic acid (C:16:0):	9 - 12 %	Complies
Stearic acid (C:18:0):	4 - 8 %	Complies
Cisoleic acid (C:18:1):	70 - 80 %	Complies
Cislinoleic acid (C:18:2):	4 - 10 %	Complies
Arachidic acid (C:20:0):	< 2 %	Complies

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