

## Technical description

04/2018

TECHNICAL DESCRIPTION	
<b>Product</b>	Syrup obtained by concentrating 100% natural raw sap, or "maple water." Extraction of maple sap, concentration by osmosis and boiling to a sugar density of 66 °Brix.
<b>Advantages</b>	100% pure product, harvested exclusively from Canadian forests. No added preservatives. Natural product and from renewable sources. Maple industry means Quebec and Canadian forests are protected.
<b>Potential certifications</b>	Organic. Kosher. To be confirmed by each producer.
<b>Origin</b>	Quebec, Canada.
<b>Declaration in the list of ingredients</b>	Maple syrup.
<b>Codes</b>	Provided by the processor.
<b>Compliance</b>	Meets the requirements of the Règlement sur les aliments [Food regulations] (P-29, r. 1) administered by the Ministry of Agriculture, Fisheries and Food of Quebec; the Règlement des producteurs acéricoles sur les normes de qualité et le classement [Maple Syrup producer regulations on quality standards and classification] (chapter M-35.1, r. 18) administered by the Federation of Quebec Maple Syrup Producers; and the Maple Products Regulations (C.R.C., c.289) administered by the Canadian Food Inspection Agency.
<b>Commercial sterility</b>	Yes, by heat treatment (canning).
<b>GMOs</b>	None.
<b>Pesticides</b>	No pesticide residue Maple syrup production does not require the use of products such as antibiotics, antiparasitics, pesticides, herbicides, growth promoters or similar. The risk of finding residues of these substances in maple syrup is therefore practically zero, in line with the recommendations in force in Quebec.
<b>Allergens</b>	None added at the sugar bush.
<b>Colour classes</b>	According to regulations in force, maple syrup colour classes are determined by the degree of light transmission at a wavelength of 560 nm according to the following scale: Golden, Delicate Taste (between 100 and 75%*); Amber, Rich Taste (between 74.9 and 50%); Dark, Robust Taste (between 49.9 and 25%); Very Dark, Strong Taste (between 24.9 and 0%). The analysis is made using a spectrophotometer and is a common optical technique used in maple syrup production. * The percentages refer to the syrup as light transmission.

COMPOSITION	
<b>Ingredients</b>	Maple syrup.
<b>Brix</b>	66.0 to 68.9 °Brix
<b>pH</b>	5.5 to 8.0

SPECIFICATIONS	
<b>Organoleptic properties</b>	Syrupy liquid ranging in colour from light to dark depending on its class. Has a characteristic maple flavour and taste. Free of foreign flavours or odours.
<b>Sweetness</b>	0.6 (sucrose = 1) 0.91 (glucose = 1)



# Analysis

DETAILED PHYSICOCHEMICAL ANALYSIS					
	Average	Number of samples	Minimum	Maximum	Method
Total solids (%)	66.8	21	66.4	68.9	AOAC, vacuum, 70 °C
Soluble solids (° Brix)	66.6	21	66.2	67.3	Refractometer
Water activity	0.848	21	0.841	0.855	AW meter
Dextrose equivalent	2	21	0	14	Titrimetry
Transmittance at 560 nm (%)	55.46	612	2.85	87.80	Spectrophotometer
<b>Colour classes</b>					
Golden, Delicate Taste ( $\geq 75\%$ )	79.82	81	75.10	87.80	
Amber, Rich Taste ( $< 75\%$ and $\geq 50\%$ )	61.73	318	50.05	74.85	
Dark, Robust Taste ( $< 50\%$ and $\geq 25\%$ )	40.85	176	25.30	49.90	
Very Dark, Strong Taste ( $< 25\%$ )	17.75	37	2.85	24.80	
<b>Density (g/ml)</b>					
25 °C	1.33	21	1.32	1.33	Densimeter
4 °C	1.34	21	1.33	1.35	Densimeter
-20 °C	1.35	21	1.35	1.35	Densimeter
<b>Viscosity (Cp)</b>					Brookfield viscometer
25 °C	135	21	120	182	SC4-31, 60 rpm
4 °C	618	21	519	880	SC4-31, 12 rpm
-20 °C	3,668	21	2,909	5,409	SC4-31, 3 rpm

MICROBIOLOGICAL ANALYSIS AFTER 18 MONTHS COMMERCIAL STERILITY		
MICROBIOLOGY	Result	Analysis method
Yeasts (CFU/g)	<5	MFHPB-22
Molds (CFU/g)	<5	MFHPB-22
Aerobic mesophilic bacteria (CFU/g)	<150	MFHPB-18
<i>Pseudomonas aeruginosa</i> (CFU/g)	<10	ILMA-017
<i>Bacillus cereus</i> (CFU/g)	<25	MFLP-42
Total coliforms (CFU/g)	<10	MFHPB-34
<i>Clostridium</i> spp (CFU/g)	Not detected	ILMA-61/MFHPB-23
<i>Staphylococcus aureus</i> (CFU/g)	<10	MFLP-21

## Nutritional Values

NUTRIENTS	Typical values for 100 g (75 ml)				
	Average	Number of observations	Minimum	Maximum	Method
<b>CARBOHYDRATES</b>					
Sucrose (g)	64.18	491	60.75	67.67	HPLC-RI
Glucose (g)	0.11	458	BQL*	0.39	HPLC-RI
Fructose (g)	0.14	581	BQL*	0.67	HPLC-RI
Total sugar (g)	65.89	497	62.47	69.04	HPLC-RI
Complex sugars (g)	1.35	471	0.467	2.27	HPLC-RI
<b>Total carbohydrates</b>	<b>67.24 g</b>				
<b>MINERALS</b>					
Aluminum (mg)	0.48	446	BQL*	2.88	ICP-MS
Calcium (mg)	78.53	1112	11.32	166.0	ICP-MS
Copper (mg)	0.19	424	BQL*	0.99	ICP-MS
Iron (mg)	0.44	453	BQL*	2.16	ICP-MS
Magnesium (mg)	20.22	1151	1.02	37.98	ICP-MS
Manganese (mg)	2.05	1159	0.03	6.0	ICP-MS
Potassium (mg)	240.42	586	97.31	396.03	ICP-MS
Selenium (mg)	BQL*	391	BQL*	BQL*	ICP-MS
Sodium (mg)	1.44	511	BQL*	9	ICP-MS
Zinc (mg)	0.44	1058	BQL*	1.21	ICP-MS
<b>Total minerals</b>	<b>344.21 mg</b>				
<b>VITAMINS</b>					
Niacin (mg)	0.21	551	BQL*	0.56	HPLC-DAD
Riboflavin (mg)	0.44	532	0.03	1.25	HPLC-DAD
Thiamin (mg)	0.07	90	0.02	0.60	HPLC-DAD
<b>Total vitamins</b>	<b>0.72 mg</b>				
<b>AMINO ACIDS</b>					
Arginine + Threonine (mg)	45.15	496	BQL*	93.21	HPLC-FL
Leucine (mg)	1.67	472	BQL*	7.30	HPLC-FL
Proline (mg)	44.61	474	10.38	81.05	HPLC-FL
Histidine (mg)	0.83	472	BQL*	2.37	HPLC-FL
<b>Total amino acids</b>	<b>92.26 mg</b>				

\* BQL = Below Quantifiable Limit



## Nutritional Values (cont'd.)

NUTRIENTS	Typical values for 100 g (75 ml)				
	Average	Number of observations	Minimum	Maximum	Method
ORGANIC ACIDS					
Acetic (mg)	25.41	451	3.68	56.15	HPLC-UV
Citric (mg)	26.16	106	11.57	46.57	HPLC-UV
Fumaric (mg)	6.03	443	1.44	18.04	HPLC-UV
Gluconic (mg)	10.80	397	BQL*	30.01	HPLC-UV
Lactic (mg)	10.45	470	BQL*	25.35	HPLC-UV
Malic (mg)	459.93	489	172.33	768.41	HPLC-UV
Oxalic (mg)	1.07	325	BQL*	2.72	HPLC-UV
Pyruvic (mg)	15.12	494	BQL*	56.48	HPLC-UV
Quinic (mg)	7.46	316	BQL*	20.73	HPLC-UV
Shikimic (mg)	BQL*	312	BQL*	BQL*	HPLC-UV
Succinic (mg)	18.03	458	4.44	39.44	HPLC-UV
Tartaric (mg)	BQL*	257	BQL*	0.16	HPLC-UV
<b>Total organic acids</b>	<b>580.46 mg</b>				

ANTIOXIDANT	Average	Number of observations	Minimum	Maximum	Method
Antioxidant capacity					
<b>All classes combined</b>	<b>590.89 µmol TE</b>	45	312	1,566	ORAC
<b>Colour classes</b>					
Golden, Delicate Taste (≥75%) (µmol TE)	391	9	312	472	ORAC
Amber, Rich Taste (<75% et ≥50%) (µmol TE)	469	23	317	756	ORAC
Dark, Robust Taste (<50% et ≥25%) (µmol TE)	750	8	620	915	ORAC
Very Dark, Strong Taste (<25%) (µmol TE)	1,260	5	796	1,566	ORAC

\* BQL = Below Quantifiable Limit

## Nutritional Values (cont'd.)

NUTRIENTS	Typical values for 100 g (75 ml)				
	Average	Number of observations	Minimum	Maximum	Method
POLYPHENOLS 67 phenolic compounds counted to date					
<b>All classes combined</b>	<b>97.7 mg</b>	481	34.0	212.4	Folin-Ciocalteu and UFLC-MS/MS
<b>Colour classes</b>					
Golden, Delicate Taste (≥75%) (mg)	64.5	60	34.0	173.3	Folin-Ciocalteu and UFLC-MS/MS
Amber, Rich Taste (<75% et ≥50%) (mg)	87.8	253	40.8	199.1	Folin-Ciocalteu and UFLC-MS/MS
Dark, Robust Taste (<50% et ≥25%) (mg)	118.3	135	48.8	212.4	Folin-Ciocalteu and UFLC-MS/MS
Very Dark, Strong Taste (<25%) (mg)	150.7	33	71.0	210.9	Folin-Ciocalteu and UFLC-MS/MS

PHYTOHORMONES	Average	Number of observations	Minimum	Maximum	Method
Abscisic acid ABA (µg)	16.64	88	2.15	84.51	UPLC/ESI-MS/MS
Phaseic acid PA (µg)	183.33	88	64.22	786.33	UPLC/ESI-MS/MS
Other phytohormones (µg)	95.26	88	51.87	164.14	UPLC/ESI-MS/MS
<b>Total phytohormones</b>	<b>295.23 µg</b>				

ENERGY VALUE	Average	Number of observations	Minimum	Maximum	Method
	<b>268.96 kcal</b>				Calculations

# Nutrition Facts Tables

CANADA

## GENERAL INFORMATION

Nutrition Facts tables may change depending on use:

- If the product is for industrial use, packagers must use the Nutrition Facts table for 100 g
- If the product is for consumers, packagers must use the Nutrition Facts table for 80 g

These tables are presented for information purposes only.

**Format must be confirmed for your packaging.**

**Consult a specialist to ensure compliance with Food and Drug Regulations (c.r.c., c.870).**

### MAPLE SYRUP 100 g

#### Nutrition Facts Valeur nutritive

pour 100 g  
Per 100 g

<b>Calories 270</b>	% valeur quotidienne* % Daily Value*
<b>Lipides / Fat</b> 0 g	0 %
saturés / Saturated 0 g	0 %
+ trans / Trans 0 g	0 %
<b>Glucides / Carbohydrate</b> 67 g	
Fibres / Fibre 0 g	0 %
Sucres / Sugars 66 g	66 %
<b>Protéines / Protein</b> 0 g	
<b>Cholestérol / Cholesterol</b> 0 mg	
<b>Sodium</b> 0 mg	0 %
Potassium 250 mg	5 %
Calcium 75 mg	6 %
Fer / Iron 0,4 mg	2 %
Thiamine 0,075 mg	6 %
Riboflavine / Riboflavin 0,45 mg	35 %
Niacine / Niacin 0,2 mg	1 %
Magnésium / Magnesium 20 mg	5 %
Zinc 0,4 mg	4 %
Cuivre / Copper 0,19 mg	21 %
Manganèse / Manganese 2,05 mg	89 %

\* 5% ou moins c'est **peu**. 15% ou plus c'est **beaucoup**  
\* 5% or less is **a little**. 15% or more is **a lot**

#### Nutrition Facts Valeur nutritive

pour 100 g  
Per 100 g

<b>Calories 270</b>	% valeur quotidienne* % Daily Value*
<b>Lipides / Fat</b> 0 g	0 %
<b>Glucides / Carbohydrate</b> 67 g	
Sucres / Sugars 66 g	66 %
<b>Protéines / Protein</b> 0 g	
Potassium 250 mg	5 %
Calcium 75 mg	6 %
Fer / Iron 0,4 mg	2 %
Riboflavine / Riboflavin 0,45 mg	35 %
Cuivre / Copper 0,19 mg	21 %
Manganèse / Manganese 2,05 mg	89 %

Source négligeable de lipides saturés, lipides trans, cholestérol, sodium et fibres.

Not a significant source of saturated fat, trans fat, cholesterol, sodium or fibre.

\* 5% ou moins c'est **peu**. 15% ou plus c'est **beaucoup**  
\* 5% or less is **a little**. 15% or more is **a lot**

### MAPLE SYRUP 80 g

#### Nutrition Facts Valeur nutritive

pour 1/4 tasse (60 ml)  
Per 1/4 cup (60 ml)

<b>Calories 220</b>	% valeur quotidienne* % Daily Value*
<b>Lipides / Fat</b> 0 g	0 %
saturés / Saturated 0 g	0 %
+ trans / Trans 0 g	0 %
<b>Glucides / Carbohydrate</b> 54 g	
Fibres / Fibre 0 g	0 %
Sucres / Sugars 53 g	53 %
<b>Protéines / Protein</b> 0 g	
<b>Cholestérol / Cholesterol</b> 0 mg	
<b>Sodium</b> 0 mg	0 %
Potassium 200 mg	4 %
Calcium 75 mg	6 %
Fer / Iron 0,4 mg	2 %
Thiamine 0,05 mg	4 %
Riboflavine / Riboflavin 0,35 mg	27 %
Niacine / Niacin 0,2 mg	1 %
Magnésium / Magnesium 15 mg	4 %
Zinc 0,3 mg	3 %
Cuivre / Copper 0,15 mg	17 %
Manganèse / Manganese 1,65 mg	72 %

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\* 5% or less is **a little**. 15% or more is **a lot**

#### Nutrition Facts Valeur nutritive

pour 1/4 tasse (60 ml)  
Per 1/4 cup (60 ml)

<b>Calories 220</b>	% valeur quotidienne* % Daily Value*
<b>Lipides / Fat</b> 0 g	0 %
<b>Glucides / Carbohydrate</b> 54 g	
Sucres / Sugars 53 g	53 %
<b>Protéines / Protein</b> 0 g	
Potassium 200 mg	4 %
Calcium 75 mg	6 %
Fer / Iron 0,4 mg	2 %
Riboflavine / Riboflavin 0,35 mg	27 %
Cuivre / Copper 0,15 mg	17 %
Manganèse / Manganese 1,65 mg	72 %

Source négligeable de lipides saturés, lipides trans, cholestérol, sodium et fibres.

Not a significant source of saturated fat, trans fat, cholesterol, sodium or fibre.

\* 5% ou moins c'est **peu**. 15% ou plus c'est **beaucoup**  
\* 5% or less is **a little**. 15% or more is **a lot**



## Potential Claims in Canada

(In accordance with new Health Canada standards)

- Nutrient content claims are based on rounded values as per the new Food and Drug Regulations, Article B.01.401 (1.2) “The percentage of the daily value for a mineral nutrient shown in the nutrition facts table for a prepackaged product in accordance with subsection (1) shall be established on the basis of the amount, by weight, of the mineral nutrient per serving of stated size for the product, rounded off in the applicable manner set out in column 4 of the table to this section.”
- Claims are based on the sizes of reference. As such, the reference amount for any syrup, including maple syrup, must be 60 ml.

*Legende:*

*RA: Reference Amount*

*MM: Metric Measurement*

*HM: Home Measurement*

Products Category	Reference Amount (RA)	A. Criteria to determine the serving of stated size for multiple serving prepackaged products	B. Units for expressing the serving of stated size for multiple serving prepackaged products HM (MM)
Syrups used as toppings, such as pancake syrups, maple syrup, fruit syrups, and ice cream sundae syrups	60 ml	<ul style="list-style-type: none"> <li>• MM: RA</li> <li>• HM: 4 tablespoons or 1/4 cup</li> </ul>	4 tbsp (60 ml) 1/4 cup (60 ml)

Source: Food and Drug Regulations

## VITAMINS AND MINERALS

	Content by Reference Amount and Stated Size of 60 ml (80 g)*		Vitamin and Mineral Claims
Calcium	75 mg	6%	Source of calcium
Riboflavin	0.35 mg	27%	Excellent source of riboflavin
Copper	0.15 mg	17%	Good source of copper
Manganese	1.65 mg	72%	Excellent source of manganese



## Potential Claims in Canada (cont'd.)

(In accordance with new Health Canada standards)

### POLYPHENOLS

Only quantitative statements are permitted (as in the table below), and only outside of the NFT. Note that words such as “contains” are not permitted.

Quantitative Statements Listed Outside of NFT
78.19 mg of polyphenols per Stated Serving Size of 60 ml (80 g)*

#### Notes:

- The data used correspond to the URI findings LESS outliers, based on the quantity obtained for the median and calculated for 80 g (60 ml).
- There is currently no recommended daily intake of polyphenols.



## **Packaging - Varies by Manufacturer**

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## **Storage and Shelf Life**

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Room temperature if airtight; once opened, cover and store in the refrigerator or freezer to prevent evaporation.

More than 2 years at room temperature.

## **Freezing**

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Possible.

## **Copyright**

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The information contained in this sheet is provided for information purposes only and is the result of generic analyses of maple syrup conducted by external laboratories based on current knowledge. However, it is important to remember that the product may vary depending on numerous factors, conditions and harvests. This sheet is a practical guide and as such shall not, in any case, be considered a legal opinion on the matter, and the Federation of Quebec Maple Syrup Producers makes no commitment in this regard. You are strongly advised to consult a lawyer for a legal opinion regarding labelling rules. Although the information contained in this sheet was obtained from reliable sources and the Federation of Quebec Maple Syrup Producers has every reason to believe it accurate, its accuracy and completeness are not guaranteed and it is intentionally presented in a summarized, generalized manner. The Federation of Quebec Maple Syrup Producers makes no guarantee or representation either explicit or implicit regarding the accuracy, integrity or usefulness of this sheet, and disclaims all liability resulting from its use or the information contained herein. Anyone who chooses to use this sheet in any way whatsoever, to rely on it or to make a decision based on its contents assumes full responsibility for such choice. It is important to remember that claims and statements must be based on facts and must not be false, misleading, deceptive or likely to create an erroneous impression, as required in paragraph 5(1) of Canada's Food and Drugs Act and article 7 of the Consumer Packaging and Labelling Act.