

793775

JUNGBUNZLAUER CANADA INC.

1555 Elm Street

Port Colborne, ON L3K 5V5

Canada

Phone: +1-905-835 5444

www.jungbunzlauer.com

Univar Dorval
2200 Chemin St-Francois
Dorval QC H9P 1K2

Jungbunzlauer

Certificate of Analysis

Material / Product / Description

106999 / 793775 / Citric Acid Anhydrous fine F5020 in 25 kg bags

Delivery plant

Jungbunzlauer Canada Inc. 1555 Elm Street L3K 5V5 Port Colborne

Batch	Quantity	Date of production	Date of expiry	Origin
	7,875 KG	02/05/2017	02.2020	Port Colborne, Canada

Parameter	Unit	Specification	Value
Characteristics			conforms
colourless crystals or a white, crystalline powder,			
very soluble in water, freely soluble in ethanol (96%), sparingly soluble in ether, has a strong acid taste			
Appearance of solution			conforms
Odour			conforms
typical, practically odourless			
Identification			conforms
Clarity of solution			conforms*
Colour of solution			conforms*
Assay	%	99.70 - 100.30	100.00
Water	%	<= 0.50	0.06
Readily carbonisable substances			conforms*
Calcium	mg/kg	<= 30	conforms*
Heavy metals	mg/kg	<= 5	conforms*
Iron	mg/kg	<= 3	conforms*
Arsenic	mg/kg	<= 1	conforms*
Lead	mg/kg	<= 0.5	conforms*
Mercury	mg/kg	<= 0.5	conforms
Chloride	mg/kg	<= 5	conforms*
Oxalic acid / oxalate	mg/kg	<= 100	conforms*
Sulphate (< 100 mg/kg)			conforms*
Residue on ignition	%	<= 0.05	conforms*
Sulphated ash	%	<= 0.05	conforms*
Particles on 0,50 mm	%	0.00 - 5.00	0.26
Particles on Mesh 35 (0,50mm)	%	0.00 - 5.00	conforms
Particles < 0.20 mm	%	0.00 - 5.00	3.83
Particles < Mesh 100 (0,150mm)	%	0.00 - 5.00	conforms

*) analysis is confirmed based on In-Process-Control or by random testing.

We herewith confirm that this product meets the requirements of the latest edition of the European Pharmacopoeia (Ph. Eur.), the United States Pharmacopeia (USP), the Food Chemical Codex (FCC) and of Commission Regulation (EU) No. 231/2012. All analytical methods are in accordance with

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QUALITY ASSURANCE MANAGER

William Jamieson

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Richmond BC V6X 1W5

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Certificate of Analysis

Material / Product / Description

106999 / 793775 / Citric Acid Anhydrous CAA F5020 in 25 kg bags

Delivery plant

Jungbunzlauer Canada Inc. 1555 Elm Street L3K 5V5 Port Colborne

Batch	Quantity	Date of production	Date of expiry	Origin
	17,500 KG	04/13/2017	04.2020	Port Colborne, Canada

Parameter	Unit	Specification	Value
Characteristics			conforms
colourless crystals or a white, crystalline powder,			
very soluble in water, freely soluble in ethanol (96%), sparingly soluble in ether, has a strong acid taste			
Appearance of solution			conforms
Odour			conforms
typical, practically odourless			
Identification			conforms
Clarity of solution			conforms*
Colour of solution			conforms*
Assay	%	99.70 - 100.30	100.05
Water	%	<= 0.50	0.06
Readily carbonisable substances			conforms*
Calcium	mg/kg	<= 30	conforms*
Heavy metals	mg/kg	<= 5	conforms*
Iron	mg/kg	<= 3	conforms*
Arsenic	mg/kg	<= 1	conforms*
Lead	mg/kg	<= 0.5	conforms*
Mercury	mg/kg	<= 0.5	conforms
Chloride	mg/kg	<= 5	conforms*
Oxalic acid / oxalate	mg/kg	<= 100	conforms*
Sulphate (< 100 mg/kg)			conforms*
Residue on ignition	%	<= 0.05	conforms*
Sulphated ash	%	<= 0.05	conforms*
Particles on 0,50 mm	%	0.00 - 5.00	0.78
Particles on Mesh 35 (0,50mm)	%	0.00 - 5.00	conforms
Particles < 0,20 mm	%	0.00 - 5.00	3.10
Particles < Mesh 100 (0,150mm)	%	0.00 - 5.00	conforms

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Delivery plant

Jungbunzlauer Canada Inc. 1555 Elm Street L3K 5V5 Port Colborne

Batch	Quantity	Date of production	Date of expiry	Origin
	19,250 KG	10/11/2017	10.2020	Port Colborne, Canada

Parameter	Unit	Specification	Value
Characteristics			conforms
colourless crystals or a white, crystalline powder,			
very soluble in water, freely soluble in ethanol (96%), sparingly soluble in ether, has a strong acid taste			
Appearance of solution			conforms
Odour			conforms
typical, practically odourless			
Identification			conforms
Clarity of solution			conforms*
Colour of solution			conforms*
Assay	%	99.70 - 100.30	100.23
Water	%	<= 0.50	0.06
Readily carbonisable substances			conforms*
Calcium	mg/kg	<= 30	conforms*
Heavy metals	mg/kg	<= 5	conforms*
Iron	mg/kg	<= 3	conforms*
Arsenic	mg/kg	<= 1	conforms*
Lead	mg/kg	<= 0.5	conforms*
Mercury	mg/kg	<= 0.5	conforms
Chloride	mg/kg	<= 5	conforms*
Oxalic acid / oxalate	mg/kg	<= 100	conforms*
Sulphate (< 100 mg/kg)			conforms*
Residue on ignition	%	<= 0.05	conforms*
Sulphated ash	%	<= 0.05	conforms*
Particles on 0,50 mm	%	0.00 - 5.00	0.00
Particles on Mesh 35 (0,50mm)	%	0.00 - 5.00	conforms
Particles < 0.20 mm	%	0.00 - 5.00	0.52
Particles < Mesh 100 (0,150mm)	%	0.00 - 5.00	conforms

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Delivery plant

Jungbunzlauer Canada Inc. 1555 Elm Street L3K 5V5 Port Colborne

Quantity	Date of production	Date of expiry	Origin
9,625 KG	11/30/2017	11.2020	Port Colborne, Canada

Parameter	Unit	Specification	Value
Characteristics			conforms
colourless crystals or a white, crystalline powder,			
very soluble in water, freely soluble in ethanol (96%), sparingly soluble in ether, has a strong acid taste			
Appearance of solution			conforms
Odour			conforms
typical, practically odourless			
Identification			conforms
Clarity of solution			conforms*
Colour of solution			conforms*
Assay	%	99.70 - 100.30	99.94
Water	%	<= 0.50	0.06
Readily carbonisable substances			conforms*
Calcium	mg/kg	<= 30	conforms*
Heavy metals	mg/kg	<= 5	conforms*
Iron	mg/kg	<= 3	conforms*
Arsenic	mg/kg	<= 1	conforms*
Lead	mg/kg	<= 0.5	conforms*
Mercury	mg/kg	<= 0.5	conforms
Chloride	mg/kg	<= 5	conforms*
Oxalic acid / oxalate	mg/kg	<= 100	conforms*
Sulphate (< 100 mg/kg)			conforms*
Residue on ignition	%	<= 0.05	conforms*
Sulphated ash	%	<= 0.05	conforms*
Particles on 0,50 mm	%	0.00 - 5.00	0.00
Particles on Mesh 35 (0,50mm)	%	0.00 - 5.00	conforms
Particles < 0.20 mm	%	0.00 - 5.00	1.55
Particles < Mesh 100 (0,150mm)	%	0.00 - 5.00	conforms

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