

Analytical services for juices/ fruit purees

status: March 2024

1. NMR- analytics by SGF Profiling™ (4.0 specifications, please see attachment)

code	Description (fruit)	explanation
601	Apple ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin China, Poland/Germany, Turkey, Brazil, Spain, Italy, Hungary
602	Orange/ Mandarin ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin (orange only) Spain, Greece, Brazil, Belize, Costa Rica, Cuba, Mexico, USA, Argentina, Uruguay, Paraguay, Italy 3. Detection of mixture Orange/ Mandarin
635	Peach/ Apricot ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin (peach only) Greece, Turkey 2. Detection of mixture Peach/ Apricot
604	Lemon ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin Argentina, Spain, Italy
605	Pineapple ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin Philippines, Thailand, Costa Rica, Brazil
606	Sour Cherry ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin Turkey, Poland
607	Mango ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin Mexico, India, Peru, Columbia
630	Banana ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin Ecuador, Guatemala
631	Grape ^{a)}	1. Quality parameters compliance with specifications of SGF

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		Profiling™ and AIJN COP 2. Confirmation of geogr. origin Spain
632	Grapefruit ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin Cuba, South Africa
633	Passion Fruit ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin Ecuador, Peru
634	Strawberry ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP 2. Confirmation of geogr. origin Poland, Spain
600	further fruit juices/purees by SGF profiling™ ^{a)}	1. Quality parameters compliance with specifications of SGF Profiling™ and AIJN COP

2. Fruit packages according to SGF conformity matrix (basic) and AIJN (full)

<p>The packages listed here are examples of the most frequently ordered items, please send us a short inquiry (to info@foodqs.de) for our other available packages/fruits and we will promptly send you an attractive offer.</p>		
code	Description	explanation
610	Apple package – basic (SGF) (without SGF food safety parameters ⁴)	SGF Profiling™ for apple juice ^{a)} (Code 601) Complementary parameters ^{aU)} : relative density; Brix (only for concentrates); titrat. acidity (as citric acid pH 8.1); citric acid; calcium; nitrate; phosphate/total phosphorus; sorbitol
611	Orange package – basic (SGF) (without SGF food safety parameters ⁴)	SGF Profiling™ for orange juice ^{a)} (Code 602) Complementary parameters ^{aU)} : relative density; Brix (only for concentrates); titrat. acidity (as citric acid pH 8.1); isocitric acid; L-ascorbic acid; sodium; calcium

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612	Blood orange package – basic (SGF) (without SGF food safety parameters ⁴)	SGF Profiling™ for blood orange juice ^{a)} (Code 600) Complementary parameters ^{aU)} : relative density; Brix (only for concentrates); titrat. acidity (as citric acid pH 8.1); isocitric acid; L-ascorbic acid; sodium; calcium; anthocyanin fingerprint
613	Sour cherry package – basic (SGF) (without SGF food safety parameters ⁴)	SGF Profiling™ for sour cherry juice ^{a)} (Code 606) Complementary parameters ^{aU)} : relative density; Brix (only for concentrates); titrat. acidity (as citric acid pH 8.1); citric acid; sodium; calcium; magnesium; nitrate; sorbitol; anthocyanin fingerprint
614	Apple package – full (AIJN) ^{aU) 5)}	Titrateable acidity; sensory evaluation; relative density; sugar profile (glucose, fructose, sucrose); L-malic acid; D-malic acid; citric acid; D/L-lactic acid; ethanol; volatile acids; D-sorbitol; ash; minerals (Na, K, Ca, Mg, P); nitrate; sulphate; formol number; HMF; fumaric acid; patulin; maltose/maltotriose/isomaltose and oligosaccharides (according to Low); heavy metals and arsenic (As, Pb, Cu, Zn, Fe, Sn, Hg, Cd); ¹³ C-sugar-isotope analysis; amino acids; ¹⁸ O-isotope analysis (water) ⁵⁾ ; (does not include ¹³ C-ethanol, D/H-ethanol)
615	Orange package – full (AIJN) ^{aU) 5)}	Titrateable acidity; sensory evaluation; relative density; sugar profile (glucose, fructose, sucrose); L-malic acid; D-malic acid; citric acid; D-isocitric acid; lactic acid; ethanol; volatile acids; essential oils; D-sorbitol; ash; minerals (Na, K, Ca, Mg, P); nitrate; sulphate; formol number; proline; L-ascorbic acid; HMF; water-soluble pectins; pulp; flavonoids; carotenoids total and 3 fractions; maltose/maltotriose/isomaltose and oligosaccharides (according to Low); heavy metals and arsenic (As, Pb, Cu, Zn, Fe, Sn, Hg, Cd); ¹³ C-sugar-isotope analysis; ¹⁸ O-isotope analysis (water) ⁵⁾ ; amino acids, phlorin (does not include ¹³ C-ethanol, D/H-ethanol)

3. residues

code	description	technology	LOQ
518	Pesticides XXL(>700 substances) ^{aU) 3)}	GC-MS/MS, LC-MS/MS	0,01mg/kg

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4. metals / elements

code	description	technology	LOQ
50000	sample preparation ¹⁾	acid hydrolysis	---
code	description	technology	LOQ
719	3 metals/elements (incl. Code 50000)	ICP-MS	0,01 mg/kg
720	5 metals/elements (incl. Code 50000)	ICP-MS	0,02 mg/kg
721	7 metals/elements (incl. Code 50000)	ICP-MS	0,02 mg/kg
722	9 metals/elements (incl. Code 50000)	ICP-MS	0,005 mg/kg
	packages	description	
723	Heavy metals (Juice)	lead, cadmium, mercury, arsenic incl. sample preparation	

Further metals/ elements on request

5. microbiology

description	technology	LOQ
sample preparation ^{aU) 2)}	---	---
description	technology	LOQ
aerobic mesophilic organisms per g ^{aU) 2)}	§ 64 LFGB L 00.00-88-1:2015-06 (complies with ISO 4833-1)	---
lactic acid bacteria per g ^{aU) 2)}	BAV-IM-5.4-15-04:2019-10 (validated against ISO 15214)	---
acetic acid bacteria per g ^{aU) 2)}	BAV-IM-5.4-121:2019-10	---
<i>Enterobacteriaceae</i> per g ^{aU) 2)}	§ 64 LFGB L 00.00-133/2:2019-12 (complies with ISO 21528-8)	---
<i>E. coli</i> , qualitative in 1 g ^{aU) 2)}	DIN EN ISO 16649-3:2018-01	---
yeasts/moulds per g ^{aU) 2)}	ISO 21527-1:2008-07	---
acid-tolerant yeasts/moulds per g ^{aU) 2)}	BAV-IM-5.4-120:2019-10	---
packages	description	
germs harmful to beverages in 100 ml (in 20 ml for concentrates) incl. sample preparation ^{aU) 2)}	sample preparation, lactic acid bacteria, acetic acid bacteria yeast/moulds per g ^{aU)}	---
BAV-IM-5.4-122:2019-10		

Further microbiological analyses on request

a) accredited method

^{aU)} accredited method by sub-order lab

¹⁾ for metal/element analysis, it is important to do the sample preparation first. Afterwards it is possible to analyze up to 10 different metals/elements per sample.

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²⁾ for microbiological analyses, it is important to do the sample preparation first. Furthermore, please send a separate, sealed sample (minimum of 100 ml) to prevent contamination.

³⁾ a complete list of all substances tested is available on request.

⁴⁾ the following food safety parameters can be analysed at extra cost: heavy metals, patulin, ochratoxin A, gluconic acid, glycerol, ethephon, pesticide screening

⁵⁾ ¹⁸O-isotope analysis (water) is only performed as part of full package analyses (AIJN) of direct juices, otherwise a discount of 120 Euro is granted

Further analyses on request

Sample amount: - minimum 200 ml per sample for NMR/SGF-Profiling™, additional 1000 ml per sample for further analyses (exceptions are possible after consultation)

Processing time: - normally 2-3 days for NMR, metals
- normally up to 12 days for other parameters

Storage: - samples will be stored for 3 weeks at 4°C
- concentrates will be stored for 3 months at 4°C



SPECIFICATION SHEET

Specification Sheet Juice-Profiling 4.0

Type of Fruit models

Following fruit and vegetables juices can be tested

Acerola	Blood Orange	Lemon	Pear
Apple	Carrot	Lime	Pineapple
Apricot	Cranberry	Mandarin	Pomegranate
Aronia	Elderberry	Mango	Raspberry
Banana	Grape	Orange	Sour Cherry
Beetroot	Grapefruit	Passion Fruit	Strawberry
Black Currant	Guava	Peach	Tomato

Country of Origin models

Following fruit and vegetables juices can be tested

Apple	Banana	Grape	Grapefruit	Lemon	Mango
Brazil	Ecuador	Spain	Cuba	Argentina	Columbia
China	Guatemala		South Africa	Italy	India
Germany/Poland				Spain	Mexico
Hungary					Peru
Italy					
Spain					
Turkey					

Orange	Passion Fruit	Peach	Pineapple	Sour Cherry	Strawberry
Argentina	Ecuador	Greece	Brazil	Poland	Poland
Belize	Peru	Turkey	Costa Rica	Turkey	Spain
Brazil			Philippines		
Costa Rica			Thailand		
Cuba					
Greece					
Italy					
Mexico					
Paraguay					
Spain					
Uruguay					
USA					



Type of Product models (FC vs NFC*)

Following fruit and vegetables juices can be tested

Apple	Grapefruit	Orange	Pineapple
Black Currant	Lemon	Passion Fruit	Sour Cherry
Grape			

FC = From Concentrate

NFC = Not From Concentrate

Fruit Content models

Following fruit and vegetables juices can be tested

Apple	Grapefruit	Orange	Raspberry
Aronia	Lemon	Passion Fruit	Sour Cherry
Black Currant	Lime	Pineapple	Strawberry
Blood Orange	Mandarin	Pomegranate	

Mixture detection models

Following mixtures can be tested

Mandarin in Orange	Orange in Mandarin
Apricot in Peach	Peach in Apricot



Quantitative parameters

	All	Apple	Apricot	Black Currant	Blood Orange	Carrot	Cranberry	Elderberry	Grape (red)	Grape (white)	Grape (white, red)	Grapefruit (pink)	Grapefruit (white)	Guava	Lemon	Lime	Mandarin	Mango	Nectarine	Orange	Passion Fruit	Peach	Pear	Pineapple	Pomegranate	Raspberry	Red Currant	Sour Cherry	Strawberry
4-aminobutanoic acid				x	x				x	x	x	x	x		x		x	x		x	x					x	x	x	
Acetaldehyde		x	x		x							x	x				x		x	x	x	x	x					x	
Acetoin		x																			x		x	x					
Alanine	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Arbutin		x																						x					
Arginine					x												x				x								
Benzaldehyde		x		x	x							x	x		x	x	x	x		x			x	x		x	x	x	
Benzoic acid		x	x	x	x							x	x		x	x	x	x	x	x	x	x	x	x	x		x		
Chlorogenic acid		x																						x					
Citramalic acid		x																											
Citric acid		x	x	x	x		x	x				x	x	x	x	x	x	x		x	x	x	x		x	x	x	x	
Ethanol	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Formic acid		x	x	x	x				x	x	x	x	x		x	x	x	x	x	x	x	x	x				x	x	
Formol Number		x																			x								
Fructose	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Fumaric acid		x																											
Galacturonic acid		x		x	x		x	x	x	x	x	x		x	x	x				x		x	x		x	x	x	x	
Gluconic acid									x	x	x																		
Glucose	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
5-hydroxymethylfurfural	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Isocitric acid															x	x													
Lactic acid	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Magnesium		x																			x								
Malic acid		x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x		x		x	x	
Methanol		x	x	x	x				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x	
Phlorin					x							x	x		x	x	x				x								
Potassium		x																			x								
Proline		x			x							x	x				x				x	x		x					
Pyruvic acid		x																						x					
Quinic acid		x					x													x				x					
Shikimic acid																											x		
Sorbic acid		x	x	x	x				x	x	x	x	x		x	x	x	x	x	x			x	x		x	x		
Succinic acid		x	x		x	x		x	x	x	x	x			x	x	x	x	x	x			x	x			x	x	
Sucrose	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Xylose		x																						x					
Tit. Acidity (pH 7, malic acid)		x																			x								
Tit. Acidity (pH 7, tartaric acid)		x																			x								
Tit. Acidity (pH 8.1, citric acid)		x																			x								
Tit. Acidity pH 7		x																			x								
Tit. Acidity pH 8.1		x																			x								
Glucose/fructose ratio	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Malic-/quinic acid ratio		x																						x					
Malic/quinic ratio		x																											
% Sucrose	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Total sugar	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	