FoodQS GmbH

food analytics & quality control

Analytical services for syrups (agave)

status: February 2023

1. chemical-physical parameters

code	description	technology	LOD
70203	ash [aU)]	gravimetry	0,01%
11204	aw- value	hygrometry	---
11102	Brix- value	refractometry	---
15102	citric acid	enzymatic	20 mg/kg
10206	colour [a)]	hanna	1-150mm
10503	conductivity/pH-value	electrode	---
13603	ethanol	enzymatic	30 mg/kg
11006	fructose + glucose [a)]	LC	1%
11604	glycerine	enzymatic	30 mg/kg
10006	HMF [a)]	LC	1 mg/kg
10410	moisture/ dry matter [a)]	gravimetry	1%
11005	sugar spectrum (4 substances) [a)] fructose, glucose, sucrose, maltose	LC	1%
10410	water-insoluble content	gravimetry	1%
	packages	**description**	
191	Quality- package 1 Agave (NOM parameter) (Art. 10410, 10503, 70203)	Ash, water-insoluble content, conductivity/pH-value	

2. residues

code	description	technology	LOD
39007	aflatoxins B1, G1, B2, G2	LC-MS/MS	0,5 µg/kg
421	chlorate/ perchlorate [a)]	LC-MS/MS	0,01mg/Kg
46031	Polycyclic aromatic hydrocarbons (PAHs) [a)] (16 substances, EPA-method) [a)] Acenaphthalene, Acenaphthylene, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Chrysene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene	GC-MS	0,1µg/kg; 0,3µg/kg Naphthalene
70201	quaternary ammonium compounds [a)] (9 substances) BAC 8, BAC 10, BAC 12, BAC14, BAC 16, BAC 18, DDAC 8, DDAC 10, DDAC 12	LC-MS/MS	0,01mg/Kg
39052	Ochratoxin	LC-MS/MS	0,5 µg/kg
503	Pesticides XXL (>700 substances) [aU)]	GC-MS/MS + LC- MS/MS	depending on the analyt

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3. authenticity/ adulteration

code	description	technology	LOD
37027	13C isotopic analytics, total sugar content (e.g. agave syrup)	EA-IRMS (based on AOAC 998.12)	---
37028	13C isotopic analytics, fructose, glucose, difference f-g (agave syrup)	LC-IRMS	---
37045	13C isotopic analytics (maple syrup)	EA-IRMS (AOAC 984.23)	---
37024	activity of ß-Fructofuranosidase [a)]	LC	pos./neg.
37021	activity of ß-Amylase [a)]	LC	pos./neg.
37020	activity of gamma-Amylase [a)]	LC	pos./neg.
37029	activity of amylase	enzymatic	pos./neg.
38202	activity of heatstable Amylases	enzymatic	pos./neg.
38211	Addition of foreign oligosaccharides in agave syrup (starch based)	LC-HRMS	pos./neg.
37014	Caramel colouring (E150c/d) [a)]	LC-MS/MS	pos./neg.
38402	Difructoseanhydride [a)]	LC-MS/MS	1 mg/kg
37033	inulin [a)]	LC	1%
38222	mannose [a)]	LC	0,05mg/kg
37034	mannitol [a)]	LC	0,5%
198	NMR-authenticity, NMR-quality analytes fructose, glucose, sucrose, maltose, mannose, NMR- authenticity [a)]	NMR	---
37015	oligosaccharides [a)] oligosaccharides/ psicose	LC	pos./neg., 0,05% psicose
37010	Rice-syrup-marker (RSM) [a)] and sugar beet syrup marker (SMB) [a)] Glycosylisomaltol, 3-Methoxytyramin	LC-MS/MS	RSM: 5 mg/kg SMB: 0,005 mg/kg
	packages	**description**	
178	Adulteration 1 Agave (Art. 37024, 37021, 37020, 37015, 37014)	activity of ß-Fructofuranosidase, ß-Amylase, gamma-Amylase, oligosaccharides, E150	
180	Adulteration 2 Agave (Art. 37024, 37021, 37020)	activity of ß-Fructofuranosidase, ß-Amylase, gamma-Amylase	
181	Adulteration 3 Agave (Art. 37024, 37021, 37020, 37015)	activity of ß-Fructofuranosidase, ß-Amylase, gamma-Amylase, oligosaccharides, psicose	
194	Adulteration 8 Agave (Art. 37015, 37033)	oligosaccharides, psicose, inulin	
195	Adulteration 9 Agave (Art. 37015, 37033, 37034)	oligosaccharides, psicose, inulin, mannitol	
922	Adulteration “authenticity regarding 13C isotopes” (Art. 37001, 37027)	EA/LC-IRMS: 13C-syrup (total sugars), 13C-fructose, 13C-glucose, 13C-difference fructose-glucose	

4. metals /elements

code	description	technology	LOD
51003	sample preparation [2)]	acid hydrolysis	---
code	**description**	**technology**	**LOD**

50202	arsenic	ICP-MS	0,01 mg/kg
50304	lead	ICP-MS	0,02 mg/kg
50402	cadmium	ICP-MS	0,02 mg/kg
50602	mercury	ICP-MS	0,005 mg/kg
	packages	**description**	
703	Heavy metals 1 (code: 50302, 50402, 50602, 51003)	lead, cadmium, mercury incl. acid hydrolysis	

Further metals/ elements on request

5. microbiology

code	**description**	**technology**	**LOD**
70150	sample preparation [3)]	---	---
code	**description**	**technology**	**LOD**
70156	Coliform bacteria	microbiology	10 cfu/g
70154	E-Coli	microbiology	10 cfu/g
70152	yeasts	microbiology	100 cfu/g
70151	Total aerobic mesophyll bacteria count	microbiology	100 cfu/g
70155	salmonella [aU)]	microbiology	pos./neg.
70153	mold	microbiology	100 cfu/g
	packages	**description**	
400	mibi-package 1 Agave(NOM parameter) (Art. 70151, 70154, 70156, 70152, 70153, 70155)	mesophyll total bacteria count, e-Coli, coliforms, mold, yeasts, salmonella	

Further analyses on request

a) accredited method **aU)** accredited method by sub-order lab

2) for metal analysis, it is important to make the sample preparation first. Afterwards it is possible to analyze up to 10 different metals per sample.

3)) for microbiologic analysis, it is important to make the sample preparation first. Afterwards it is possible to analyze further different microbiologic analysis per sample.

Further analyses on request

All prices in EURO excluding VAT

Conditions of payment: 14 days from date of invoice

Sample amount: minimum 100g per sample, for GMO analysis additionally min. 100g per sample.

Processing time: - normally 2-3 days for trade analysis
- normally up to 5 days for residues, NMR, metals and microbiology

Storage: samples will be stored until 6 months