aokin *ReferenceMatrixMaterial*

AFLA OTA

for analysis of Aflatoxin total (AFLA)
and Ochratoxin A (OTA) in Cocoa
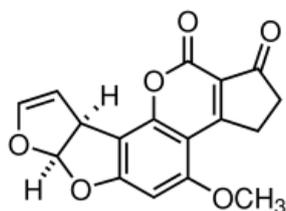
Aflatoxin B1 (AFLA)
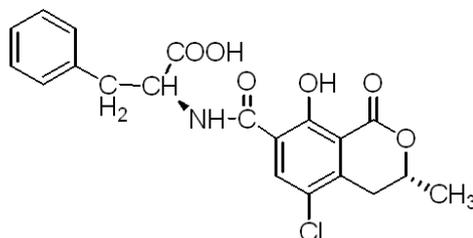
Ochratoxin A (OTA)

Specification

Lot No.	343501230921275
Matrix Type	Cocoa
Analyte	Aflatoxin total (AFLA), Ochratoxin A (OTA)
Weight/Volume	50 g
Storage	-18 °C
Retest	09/2026

	Concentration x_{PT} [µg/kg]	data points n	satisfactory range $x_{PT} \pm 2\,\sigma_{PT}$ [µg/kg]	uncertainty* $2\,u(x_{PT})$ [µg/kg]
Aflatoxin B1	3,38	17	1,41 - 5,35	1,02
Aflatoxin B2	0,59	16	0,16 - 1,01	0,14
Aflatoxin G1	1,82	16	0,78 - 2,85	0,50
Aflatoxin G2	0,28	11	0,08- 0,48	0,12
Aflatoxin total	5,48	16	2,63 - 8,32	1,50
Ochratoxin A	4,09	19	2,04 - 6,13	0,74

*Expanded uncertainty with k=2 for approximately 95% level of confidence (PA/PH/OMCL(18)153R1 CORR
Evaluation of Measurement Uncertainty - Annex 2.5).

Comments

aokin reference matrix material is naturally contaminated and homogenized. Concentration of the analyte is determinate in a proficiency round. Unweighted mean value of the means of accepted sets of data, each set being obtained in a different laboratory and/or with a different method of determination such as HPLC-MS/MS, HPLC/FLD, LC-MS/MS, ELISA, aokin.
The certified value and its uncertainty are traceable to the International System of Units (SI) as chemical mass fraction as µg/kg. The assigned value, the satisfactory range and the expanded uncertainty are given.
The minimum amount of sample to be used is 10 g.

Calculation of the assigned value x_{PT}

The Assigned Value is the value attributed to a particular property of interlaboratory proficiency test (definition from ISO13528:2016). x_{PT} is derived from participants quantitative results obtained with confirmatory analysis. The procedure for determining is from the Algorithm A (ISO 13528:2016) or from the median.

The standard uncertainty is expanded by a factor f = 1,25 and is calculated as:
$$u(x_{PT}) = f \, {\sigma_{PT}}/{\sqrt{n}}$$ (uncertainty of the characterization)
where:
- σ_{PT} is the robust estimate of the participant standard deviation;
- $\sigma_{PT} = b \cdot x_{PT}$ where b is the relative robust estimate of the participant standard deviation
- n is the number of participants used in calculating the robust assigned values.

The satisfactory range is calculated from the expanded (k=2) standard deviation of the proficiency assessment:
The satisfactory range equals $x_{PT} \pm 2\,\sigma_{PT}$.