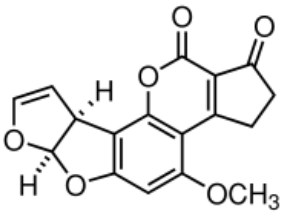
aokin ReferenceMatrixMaterial

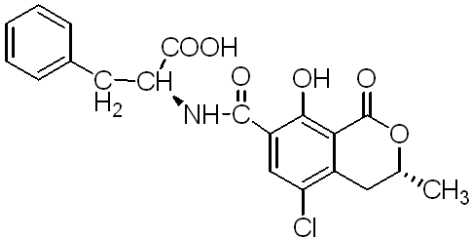
AFLA OTA FUM

Order No.: RMM-345-1500r

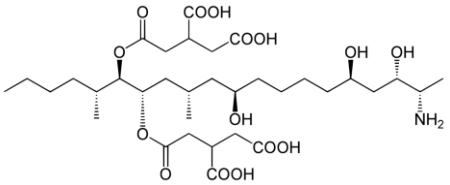
for analysis of Aflatoxin total (AFLA), Ochratoxin A (OTA)
and Fumonisin total (FUM) in Corn



Aflatoxin B1 (AFLA)



Ochratoxin A (OTA)



Fumonisin B1 (FUM)

Specification

Lot No.	3451500AB210907275
Matrix Type	Corn
Analyte	Aflatoxin total (AFLA), Ochratoxin A (OTA), Fumonisin total (FUM)
Weight/Volume	40 g
Storage	-18 °C
Retest	09/2024

	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	10,77	33	3,96 - 17,59	0,94
Aflatoxin B2	0,67	26	0,37 - 0,96	0,06
Aflatoxin G1	0,47	18	0,24 - 0,69	0,10
Aflatoxin G2	presence**	7	nd	nd
Aflatoxin total	12,15	30	4,60 - 19,70	1,14
Ochratoxin A	6,29	25	3,52 - 9,06	0,72
Fumonisin B1	1536,00	15	921,60 - 2150,40	231,44
Fumonisin B2	444,00	15	242,62 - 645,38	94,94
Fumonisin total	2010,00	17	1206,00 - 2814,00	285,22

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

**It was not possible to assign a value or an uncertainty due to a bimodal distribution of data. Arithmetic mean was 0,31 µg/kg.

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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, HPLC-MS/MS, HPLC/FLD, HPLC/MS, HPLC/UV, HPTLC, LC-MS/MS.
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:
$u(x_{PT}) = \mathrm{f}\ {}^{\sigma_{PT}}/_{\sqrt{n}}$ (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 $x_{PT} \pm 2\ \sigma_{PT}$.

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