aokin ReferenceMatrixMaterial
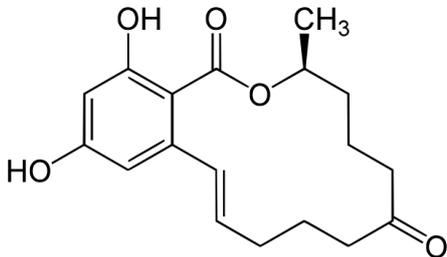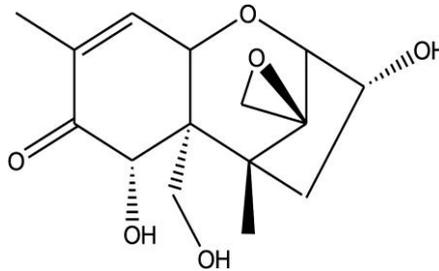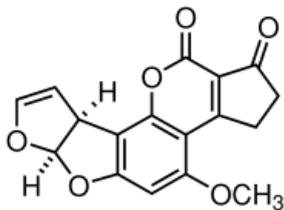
ZON DON AFLA OTA FUM

Order No.: RMM-12345-5600r

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

Zearalenone (ZON)
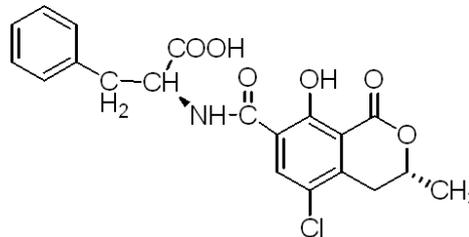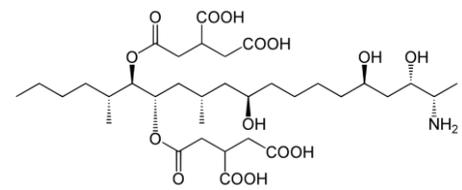

Deoxynivalenol (DON)

Aflatoxin B1 (AFLA)

Ochratoxin A (OTA)

Fumonisin B1 (FUM)

Specification

Lot No.	123455600250827275
Matrix Type	Corn
Analyte	Zearalenone (ZON), Deoxynivalenol (DON), Aflatoxin total (AFLA), Ochratoxin A (OTA), Fumonisin total (FUM)
Weight/Volume	40 g
Storage	-15/-25 °C
Shipping	ambient
Retest	02/2029

	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]
Zearalenone	185,48	28	103,86 - 267,10	22,04
Deoxynivalenol	689,06	23	400,54 - 977,57	85,28

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Aflatoxin B1	23,15	35	10,09 - 36,21	2,42
Aflatoxin B2	5,91	32	3,31 - 8,51	0,74
Aflatoxin G1	4,88	31	1,96 - 7,80	0,70
Aflatoxin G2	presence**	32	nd	nd
Aflatoxin total	32,41	28	15,03 - 49,79	4,14
Ochratoxin A	5,14	26	2,56 - 7,72	0,68
Fumonisin B1	2855,00	21	1450,77 - 4259,23	817,14
Fumonisin B2	696,43	20	417,85 - 975,01	63,92
Fumonisin total	3731,48	16	1925,75 - 5537,22	1016,3

*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 results below LOD for Aflatoxin G2 at < 0,5 μg/kg.

***If u(x_{PT}) ≥ 0.3 σ_{PT} the standard uncertainty of the assigned value is included in the assessments.

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/DAD, HPLC/MS, HPLC/UV, HPLC/MS, HPLC/FLD, HPTLC-MS/MS, UHPTLC-MS/MS, 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:
$$u(x_{PT}) = f\,{}^{\sigma_{PT}}\!/\!{}_{\sqrt{n}}\ \text{(uncertainty of the characterization)}$$
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 $x_{PT} \pm 2\,\sigma_{PT}$. If u($x_{PT}$) ≥ 0.3 σ_{PT} the standard uncertainty of the assigned value is included in the assessments.