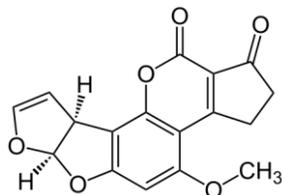


Standard solution

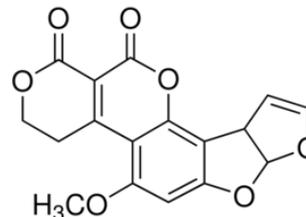
known concentration of Mycotoxin

Order-No: CH-03-L1-205

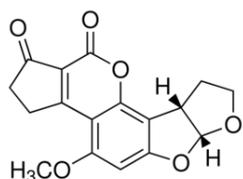
Lot: xxx xxx xxx xxx



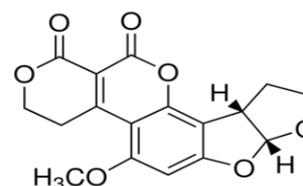
Aflatoxin B1 (AFLA B1)



Aflatoxin G1 (AFLA G1)



Aflatoxin B2 (AFLA B2)



Aflatoxin G2 (AFLA G2)

Specification:

Substance / Concentration/
CAS-No.:

Aflatoxin B1 2 µg/mL,
CAS-No.: 1162-65-8
Aflatoxin B2 0.5 µg/mL,
CAS-No.: 7220-81-7
Aflatoxin G1 2 µg/mL,
CAS-No.: 1165-39-5
Aflatoxin G2 0.5 µg/mL,
CAS-No.: 7241-98-7

Diluted in:

Acetonitrile, CAS-No.: 75-05-8

Volume:

1 ml

Storage conditions:

dark, at 2-8°C

Expiry date:

1 year after delivery

Certification:

Values are based on weight amount, purity and dilution steps, and confirmed by Kinetic Fluorescence Polarization.

Uncertainty in accordance with ISO Guide 31, ISO Guide 35 and Eurachem/CITAG Guides.

AFLA B1: ± 0.12 µg/mL

AFLA B2: ± 0.03 µg/mL

AFLA G1: ± 0.12 µg/mL

AFLA G2: ± 0.03 µg/mL

Calculation of uncertainty: (After the concentration of the gravimetric prepared solution was confirmed by kinetic fluorescent polarization, the uncertainty of the calibrant solution will be calculated on the basis of preparation)	Uncertainty components	Description	Standard uncertainty (u)	
	Purity (P) of solid Aflatoxin B1	P = 99.0% ± 0.3%	u(P) = 0.3%	a
Purity (P) of solid Aflatoxin B2	P = 99.99% ± 0.02%	u(P) = 0.2%		
Purity (P) of solid Aflatoxin G1	P = 99.8% ± 0.2%	u(P) = 0.3%		
Purity (P) of solid Aflatoxin G2	P = 99.72 ± 0.3%	u(P) = 0.1%		
Weighting procedure weighted samples: m _{ws} AFLA B1 = 1 mg m _{ws} AFLA B2 = 1 mg m _{ws} AFLA G1 = 1 mg m _{ws} AFLA G2 = 1 mg	repeatability: 0.03 mg linearity: 0.01 mg	u(m) = 0.03 mg	b	
Dilution procedure Performed by volume V _i = 500 o. 2000 ml	calibration: 100 mL ± 0.01 mL repeatability: 0.01 mL volume expansion solvent	u(cal) = 0.1 mL u(rep) = 0.1 mL u(Vol.exp.) = 0.205 mL u(V) = 0.24 mL	c d e f	

^a Maximum tolerance of purity (rectangular distribution) was divided by $\sqrt{3}$

^b Estimation of this u-value is based upon the values for repeatability and linearity described in the user manual of the microbalance

^c A triangular distribution (division by $\sqrt{6}$) was chosen for the calculation of u(cal)

^d Based on a series of ten weigh experiments; the value was used directly as a standard deviation

^e Based on the density of 0.7857 g/cm³ at temperature T = 20°C and a maximum temperature variation of ± 3°C, of volume expansion, relative volume expansion coefficient of acetonitrile is 1370 * 10⁻⁶/°C, volume expansion term (rectangular distribution) was divided by $\sqrt{3}$

^f The three contributions are combined to give the u (V) = $\sqrt{u(cal)^2 + u(rep)^2 + u(Vol.exp.)^2}$

Calculation of the combined uncertainty u_c and the expanded standard uncertainty U:

$$c_{toxin} = \frac{m_{ws} \times P}{V_f}$$

$$\frac{u_c(c_{toxin})}{c_{toxin}} = \sqrt{\left[\frac{u(P)}{P}\right]^2 + \left[\frac{u(m)}{m_{ws}}\right]^2 + \left[\frac{u(V)}{V_f}\right]^2}$$

$$u_c(c_{toxin}) \text{ AFLA B1} = c_{toxin} \times 0.03 = 2 \mu\text{g/ml} \times 0.03 = 0.06 \mu\text{g/ml}$$

$$u_c(c_{toxin}) \text{ AFLA B2} = c_{toxin} \times 0.03 = 0.5 \mu\text{g/ml} \times 0.03 = 0.015 \mu\text{g/ml}$$

$$u_c(c_{toxin}) \text{ AFLA G1} = c_{toxin} \times 0.03 = 2 \mu\text{g/ml} \times 0.03 = 0.06 \mu\text{g/ml}$$

$$u_c(c_{toxin}) \text{ AFLA G2} = c_{toxin} \times 0.03 = 0.5 \mu\text{g/ml} \times 0.03 = 0.015 \mu\text{g/ml}$$

Calculation of expanded standard uncertainty U using a coverage factor k = 2

$$U(c_{toxin}) = u_c(c_{toxin}) \times 2$$

Discussion of traceability:

This calibrant is certified on the basis of gravimetric preparation. Thus the certified value (mass concentration) of is based on the weighed amount of the starting material and are therefore traceable to the stated purity of the solid mycotoxin. High purity material represents a practical realization of concentration units, through conversion of mass to molar quantity.

Danger

Contains: Aflatoxin B1, B2, G1, G2, Acetonitrile

H225-H302-H312-H319-H332

Volume: 1 mL

P210-P280-P305 + P351 + P338



Danger

Highly flammable liquid and vapour. Harmful if swallowed. Harmful in contact with skin. Causes serious eye irritation. Harmful if inhaled.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Normal laboratory safety should be observed.

Aokin AG - 13125 Berlin
Tel: +49 (0) 3094892160