

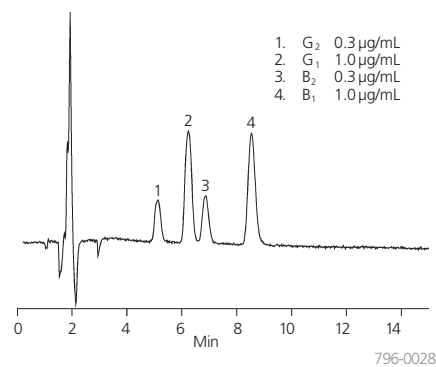
# Aflatoxin Standards Available from Supelco

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**As of June 25, 1997, Supelco is registered with the Centers for Disease Control and Prevention (CDC) for handling toxins in accordance with 42 CFR 72.6. Our compliance with this regulation ensures Supelco will use the most stringent processes for packaging, labeling, shipping, and handling aflatoxin standards.**

**Figure A. Reversed Phase HPLC Separation of Aflatoxins (UV Detection)**

column: SUPELCOSIL LC-18,  
25 cm x 4.6 mm I.D., 5  $\mu$ m particles  
(58298)  
mobile phase: deionized water:  
acetonitrile:methanol (60:20:20)  
flow rate: 1 mL/min.  
temp.: 30 °C  
det.: UV, 365nm fluorescence at 360 nm  
excitation and 440 nm emission  
injection: Aflatoxin Mix (Cat. No. 46304-U),  
20  $\mu$ L

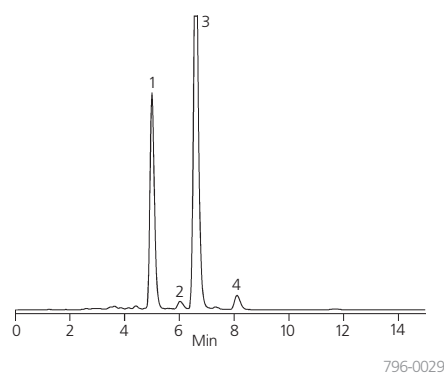


For over two decades Supelco has supplied aflatoxin B, G, and M standards to the food industry for monitoring toxins in grains and dairy foods. Our quantitative standards are prepared with attention to solvent selection and packaging procedures, to prolong stability. We guarantee precision and uniformity by testing with spectroscopy and high pressure liquid chromatography (HPLC) against known standards and previous lots.

The preferred chromatographic method for measuring aflatoxin levels is by HPLC, using reversed phase and/or normal phase

**Figure B. Reversed Phase HPLC Separation of Aflatoxins (Fluorescence Detection)**

column: SUPELCOSIL LC-18,  
25 cm x 4.6 mm I.D., 5  $\mu$ m particles  
(58298)  
mobile phase: deionized water:  
acetonitrile:methanol (60:20:20)  
flow rate: 1 mL/min.  
temp.: 30 °C  
det.: UV, 365 nm fluorescence at 360 nm  
excitation and 440 nm emission  
injection: Aflatoxin Mix (Cat. No. 46304-U),  
10  $\mu$ L



chromatography. Aflatoxins B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub>, and G<sub>2</sub> can be separated on a SUPELCOSIL LC-18 column and detected by UV (Figure A). However, the sensitivity is not sufficient to detect these compounds if they are in the ppb range, as is often the case with food samples.

By switching to a fluorescence detector, an increased response is obtained for aflatoxins B<sub>2</sub> and G<sub>2</sub> as they fluoresce more intensely than aflatoxins B<sub>1</sub> and G<sub>1</sub> (Figure B). To resolve all compounds well at ppb levels, prepare TFA derivatives of the aflatoxins and use a fluorescence detector to enhance their fluorescence.

For analytical protocols requiring confirmation that an analyte of interest is present, our normal phase SUPELCOSIL™ LC-Si column, with either a UV or a fluorescence detector, is the best choice for the confirmation column. Normal phase columns elute the aflatoxins in reverse order, compared to C18 columns, and the two-column combination more reliably confirms the toxins' presence.

When working with a normal phase column, it is beneficial to dissolve the aflatoxins in a benzene:acetonitrile mobile phase, thereby eliminating miscibility problems.

## Ordering Information:

Description	Cat. No.
<b>SUPELCOSIL HPLC Columns</b>	
25 cm x 4.6 mm I.D., 5 $\mu$ m particles	
LC-18	<b>58298</b>
LC-Si	<b>58295</b>

## Aflatoxin B and G Mixes

Each ampul contains 1  $\mu$ g B<sub>1</sub>, 1  $\mu$ g G<sub>1</sub>, 0.3  $\mu$ g B<sub>2</sub>, and 0.3  $\mu$ g G<sub>2</sub>.

### In Benzene:Acetonitrile (98:2)

5 x 1 mL **46300-U**■

### In Methanol

5 x 1 mL **46304-U**  
5 mL **46303**

## Aflatoxin B and G Standards

Each 3  $\mu$ g/mL in  
1 mL benzene:acetonitrile (98:2).

Aflatoxin B <sub>1</sub>	<b>46323-U</b>
Aflatoxin B <sub>2</sub>	<b>46324-U</b>
Aflatoxin G <sub>1</sub>	<b>46325-U</b>
Aflatoxin G <sub>2</sub>	<b>46326-U</b>

## Aflatoxin M Standard

At indicated concentrations in  
1 mL acetonitrile.

Aflatoxin M<sub>1</sub>, 10  $\mu$ g/mL **46319-U**

■ Intended for use in accordance with AOAC Method 971.22.

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