

MERCK

Mycotoxin Standards

Single- and Multi-Component Standards
¹³C Isotopically Labeled Standards
Matrix Certified Reference Materials
Dried Down Standards

Our high standards meet yours

The life science business of Merck operates as MilliporeSigma in the U.S. and Canada.

Supelco®
Analytical Products

For a accurate detection of all regulated mycotoxins

Some fungal genera such as *Aspergillus*, *Fusarium* and *Penicillium* produce mycotoxins. These toxic secondary metabolites are harmful to animal and human health if they enter the food chain via contaminated crops and fruits or through processed food and feed products. Therefore, in at least 100 countries, limits are set for mycotoxin levels in food and feed. For a precise detection of all regulated mycotoxins, we offer a comprehensive range of standards, including mixture solutions, ¹³C isotopically labeled standards, certified reference materials (CRM) and dried down standards.

Find our products at: [SigmaAldrich.com/mycotoxins](https://www.sigmaaldrich.com/mycotoxins)

Mycotoxin Reference Materials (Neats)

For accurate and reliable results, we currently offer 5 mg neat reference materials for various mycotoxins. Try our reference materials for the calibration of your analytical instruments and recovery experiments.



Cat. No.	Product Description	Pkg
32927	3-Acetyldeoxynivalenol	5 mg
32928	15-Acetyldeoxynivalenol	5 mg
32754	Aflatoxin B ₁	5 mg
32755	Aflatoxin B ₂	5 mg
32756	Aflatoxin G ₁	5 mg
32757	Aflatoxin G ₂	5 mg
32943	Deoxynivalenol	5 mg
32936	Fumonisin B ₁	5 mg

Cat. No.	Product Description	Pkg
33438	Fusarenon-X	5 mg
32932	Neosolaniol	5 mg
32929	Nivalenol Hydrate	5 mg
32937	Ochratoxin A	5 mg
32759	Patulin	5 mg
32609	Sterigmatocystin	5 mg
33947	T-2 Toxin	5 mg
32939	Zearalenone	5 mg

Mycotoxin Single-Component Standard Solutions

For precise quality control of food and feed, we offer single-component standard solutions of the most commonly tested mycotoxins in various concentrations and different solvents.

Cat. No.	Product Description	Concentration	Solvent	Pkg
34132	3-Acetyldeoxynivalenol	100 µg/mL	Acetonitrile	2 mL
34133	15-Acetyldeoxynivalenol	100 µg/mL	Acetonitrile	2 mL
34129	Acetyl-Deoxynivalenol-D ₃	100 µg/mL	Acetonitrile	2 mL
34029	Aflatoxin B ₁	2 µg/mL	Acetonitrile	2 mL
34034	Aflatoxin B ₂	0.5 µg/mL	Acetonitrile	2 mL
34032	Aflatoxin G ₁	2 µg/mL	Acetonitrile	2 mL
34033	Aflatoxin G ₂	0.5 µg/mL	Acetonitrile	2 mL
34031	Aflatoxin M ₁	0.5 µg/mL	Acetonitrile	2 mL
35405	α-Zearalanol	10 µg/mL	Acetonitrile	1 mL
35406	α-Zearalanol	10 µg/mL	Acetonitrile	1 mL
35407	β-Zearalanol	10 µg/mL	Acetonitrile	1 mL
35409	β-Zearalanol	10 µg/mL	Acetonitrile	1 mL
35410	Citrinin	100 µg/mL	Acetonitrile	1 mL
34155	Deoxynivalenol-D ₁	100 µg/mL	Acetonitrile	2 mL
34135	Deepoxy-deoxynivalenol	50 µg/mL	Acetonitrile	2 mL
34124	Deoxynivalenol	100 µg/mL	Acetonitrile	2 mL
32911	Deoxynivalenol-3-glucoside	50 µg/mL	Acetonitrile	1 mL
34137	Diacetoxyscirpenol	100 µg/mL	Acetonitrile	2 mL
37017	Fumagillin	100 µg/mL	Acetonitrile	1 mL
34139	Fumonisin B ₁	50 µg/mL	Acetonitrile/Water	2 mL
34142	Fumonisin B ₂	50 µg/mL	Acetonitrile/Water	2 mL
32606	Fumonisin B ₃	50 µg/mL	Acetonitrile/Water	1 mL

Cat. No.	Product Description	Concentration	Solvent	Pkg
34130	Fusarenon-X	100 µg/mL	Acetonitrile	2 mL
34136	HT-2 Toxin	100 µg/mL	Acetonitrile	2 mL
37013	Moniliformin	100 µg/mL	Acetonitrile/Water	1 mL
34138	Neosolaniol	100 µg/mL	Acetonitrile	2 mL
34131	Nivalenol	100 µg/mL	Acetonitrile	2 mL
34037	Ochratoxin A	10 µg/mL	Acetonitrile	2 mL
32411	Ochratoxin B	10 µg/mL	Acetonitrile	2 mL
34127	Patulin	100 µg/mL	Acetonitrile	2 mL
32986	Sterigmatocystin	50 µg/mL	Acetonitrile	1 mL
32914	T-2 Tetraol	50 µg/mL	Acetonitrile	1 mL
34071	T-2 Toxin	100 µg/mL	Acetonitrile	2 mL
32913	T-2 Triol	50 µg/mL	Acetonitrile	1 mL
32193	Zearalenone	10 µg/mL	Acetonitrile	1.2 mL
34126	Zearalenone	100 µg/mL	Acetonitrile	2 mL

Mycotoxin Multi-Component Standard Solutions

For a detailed analysis of individual mycotoxins in multitoxin samples, we offer several mixtures of mycotoxin groups which often occur naturally in various proportions in food and feed samples.

Cat. No.	Product Description	Components	Concentration	Solvent	Pkg
34036	Aflatoxin Mix 4	B ₁ , G ₁ , B ₂ , G ₂	2 µg/mL 0.5 µg/mL	Acetonitrile	1,2 mL
33415	Aflatoxin Mix 4	B ₁ , G ₁ , B ₂ , G ₂	20 µg/mL (each)	Acetonitrile	2 mL
34143	Fumonisin Mix	FB ₁ , FB ₂	50 µg/mL (each)	Acetonitrile/Water	2 mL
32926	Trichothecene Mix	3-AcDON, DON, NIV, FusX, HAT-2, T-2, DAS, ZON	10 µg/mL (each)	Acetonitrile	1 mL
34134	B-Trichothecene Mix	DON, NIV, 3 - AcDON, 15 - AcDON	100 µg/mL	Acetonitrile	2 mL



¹³C Isotopically Labeled Internal Standard Solutions for LC-MS

Fully ¹³C isotope-labeled mycotoxin standards (e.g, Aflatoxin B₁-¹³C₁₇; **Figure 1**) are stable, non-radioactive isotopically labeled versions of the target analyte with the same physicochemical properties and thus the same behaviour in work-up procedure and chromatography. These internal standards provide an accurate detection, as they show an optimal mass unit difference between the analyte and the standard, which prevents interference. They also account for variations during sample preparation, cleanup and ionization. We offer labeled Aflatoxins (B1, B2, G1 and G2), Fumonisin (B1, B2, B3), Deoxynivalenol and six other mycotoxin standards.

Cat. No.	Product Description	Concentration	Solvent	Pkg
32764	Aflatoxin B ₁ - ¹³ C ₁₇	0.5 µg/mL	Acetonitrile	1 mL
32771	Aflatoxin B ₂ - ¹³ C ₁₇	0.5 µg/mL	Acetonitrile	1 mL
32772	Aflatoxin G ₁ - ¹³ C ₁₇	0.5 µg/mL	Acetonitrile	1 mL
32777	Aflatoxin G ₂ - ¹³ C ₁₇	0.5 µg/mL	Acetonitrile	1 mL
34128	Deoxynivalenol- ¹³ C ₁₅	25 µg/mL	Acetonitrile	1 mL
33621	Fumonisin B ₁ - ¹³ C ₃₄	25 µg/mL	Acetonitrile/Water	1 mL
32915	Fumonisin B ₂ - ¹³ C ₃₄	10 µg/mL	Acetonitrile/Water	1 mL
32916	Fumonisin B ₃ - ¹³ C ₃₄	10 µg/mL	Acetonitrile/Water	1 mL
32491	Griseofulvin- ¹³ C ₁₇	25 µg/mL	Acetonitrile	1.2 mL
33842	HT-2 Toxin- ¹³ C ₂₂	25 µg/mL	Acetonitrile	1 mL
32192	Nivalenol- ¹³ C ₁₅	25 µg/mL	Acetonitrile	1.2 mL
33416	Ochratoxin A- ¹³ C ₂₀	10 µg/mL	Acetonitrile	1 mL
35516	Patulin- ¹³ C ₇	25 µg/mL	Acetonitrile	1.2 mL
33892	T-2 Toxin- ¹³ C ₂₄	25 µg/mL	Acetonitrile	1 mL
32758	Zearalenone- ¹³ C ₁₈	25 µg/mL	Acetonitrile	1 mL

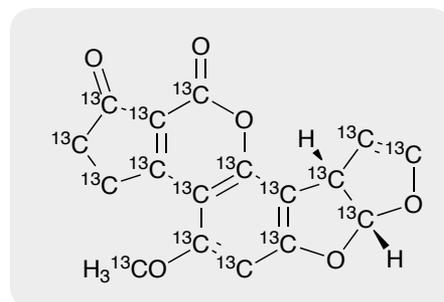


Figure 1. Molecular structure of a fully ¹³C isotope-labeled Aflatoxin B₁-¹³C₁₇



Dried Down Mycotoxin Standards (RMs)

We offer a series of reference materials as dried down standards which are packaged in amber ampoules to ensure stability. The convenient reconstitution of these standards, made possible by the addition of an appropriate solvent, is described in the Certificate of Analysis enclosed with the product.

Cat. No.	Product Description	Concentration	Pkg
35758	Alternariol	100 µg/mL	0.1 mg
35762	Alternariol-9-methyl ether	100 µg/mL	0.1 mg
37012	Beauvericin (BEA)	100 µg/mL	0.1 mg
37025	Retrorsine	50 µg/mL	0.05 mg
35976	Stachybotrylactam	100 µg/mL	0.1 mg
35977	Tentoxin	100 µg/mL	0.1 mg
37018	Tenuazonic acid	100 µg/mL	0.1 mg

Certified Matrix Reference Materials (CRMs) for Mycotoxin Analysis

CRMs released from JRC and distributed by MilliporeSigma are produced with raw materials to more accurately resemble actual samples in their natural state. For performance control of mycotoxin analysis, we offer compound feed, maize, wheat and peanut butter reference materials. The Mycotoxin Matrix Reference Materials are part of our offering of Food Matrix Materials for various analytes. Please visit SigmaAldrich.com/foodmatrix for a complete overview.

Cat. No.	Product Description	Component	Concentration	Pkg
BCR375	Compound Feed (Aflatoxin blank)	Aflatoxin B ₁	<1 µg/mL	50 mL
ERMBE375	Compound Feedingstuff (Aflatoxins, very low level)	Aflatoxin B ₁	2.6 µg/mL	2×75 mL
		Aflatoxin B ₂	0.20 µg/mL	-
		Aflatoxin G ₁	0.4 µg/mL	-
		Aflatoxin G ₂	<0.2 µg/mL	-
ERMBE376	Compound Feedingstuff (Aflatoxins, high level)	Aflatoxin B ₁	12.9 µg/mL	2×75 mL
		Aflatoxin B ₂	0.68 µg/mL	-
		Aflatoxin G ₁	5.2 µg/mL	-
BCR262R	Defatted Peanut Meal (Aatoxin B1, blank)	Aflatoxin B ₁	<3.0 µg/mL	100 mL
ERMBC716	Maize (Zearalenone, very low level)	Zearalenone	<5 µg/mL	60 mL
ERMBC717	Maize (Zearalenone, low level)	Zearalenone	83 µg/mL	60 mL
BCR377	Maize Flour (Deoxynivalenol, blank)	Deoxynivalenol	<50 µg/mL	150 mL
BCR401R	Peanut Butter (Aflatoxin, low level)	Aflatoxin B ₁	<0.2 µg/mL	100 mL
		Aflatoxin B ₂	(each)	-
		Aflatoxin G ₁	-	-
		Aflatoxin G ₂	-	-
BCR471	Wheat (Ochratoxin A, blank)	Ochratoxin A	<0.6 µg/mL	55 mL

PRODUCT HIGHLIGHT

Marine Biotoxins

Phycotoxins, marine biotoxins produced by certain species of marine algae can accumulate in fish and marine invertebrates such as mussels. To assure safety of sea food, several new regulations have entered into force recommending LC-MS or LC-MS/MS as a detection method.

For the accurate calibration of these methods, we provide certified reference materials (CRMs) in solution.

For more information and an up to date product list please visit SigmaAldrich.com/marinetoxins



Mycotoxin Solution CRMs from JRC

The mycotoxin CRM solutions from JRC provide an accurate determination of detection limits as well as validation of analytical methods. All mycotoxins are dissolved in acetonitrile and solutions are placed in 4 mL amber glass ampules. We offer Aflatoxin M1 dissolved in chloroform.



Cat. No.	Components	Concentration	Solvent	Pkg
ERMAC057	Aflatoxin B ₁	3.79 µg/mL	Acetonitrile	4 mL
ERMAC058	Aflatoxin B ₂	3.80 µg/mL	Acetonitrile	4 mL
ERMAC059	Aflatoxin G ₁	3.78 µg/mL	Acetonitrile	4 mL
ERMAC060	Aflatoxin G ₂	3.80 µg/mL	Acetonitrile	4 mL
IRMM315	4-Deoxynivalenol	25.1 µg/mL	Acetonitrile	4 mL
IRMM316	Nivalenol	24.0 µg/mL	Acetonitrile	4 mL
ERMAC699	Zearalenone	9.95 µg/mL	Acetonitrile	4 mL

TraceCERT® Certified Reference Material (CRM) Solutions

Proper calibration of the HPLC instrument is critical to ensure accurate measurement of the mycotoxins present in the samples due to the toxicity of these materials. Our CRM mixtures are produced in a doubly accredited laboratory fulfilling ISO/IEC 17025 and ISO 17034. The standards are certified analytically using direct spectrophotometry and/or HPLC with UV detection. A Certificate of Analysis fulfilling ISO Guide 31 requirements is shipped with each product.

Cat. No.	Components	Concentration	Solvent	Pkg
CRM46323	Aflatoxin B ₁	3 µg/mL	Benzene:Acetonitrile (98:2)	1 mL
CRM44647	Aflatoxin B ₁	20 µg/mL	Methanol	1 mL
CRM46324	Aflatoxin B ₂	3 µg/mL	Benzene:Acetonitrile (98:2)	1 mL
CRM46325	Aflatoxin G ₁	3 µg/mL	Benzene:Acetonitrile (98:2)	1 mL
CRM46326	Aflatoxin G ₂	3 µg/mL	Benzene:Acetonitrile (98:2)	1 mL
CRM46319	Aflatoxin M ₁	10 µg/mL	Acetonitrile	1 mL
CRM46304	Aflatoxin Mix B ₁ & G ₁ B ₂ & G ₂	1 µg/mL (each) 0.3 µg/mL (each)	Methanol	5x1 mL
CRM46303	Aflatoxin Mix B ₁ & G ₁ B ₂ & G ₂	1 µg/mL (each) 0.3 µg/mL (each)	Methanol	1 mL
CRM46300	Aflatoxin Mix B ₁ & G ₁ B ₂ & G ₂	1 µg/mL (each) 0.3 µg/mL (each)	Benzene:Acetonitrile (98:2)	5x1 mL
CRM46911	Deoxynivalenol	200 µg/mL	Ethyl acetate:Methanol (95:5)	1 mL
CRM40139	Japanese Aflatoxin Mixture B ₁ , G ₁ , B ₂ & G ₂	25 µg/mL (each)	Acetonitrile	5x1 mL
CRM46912	Ochratoxin A	50 µg/mL	Benzene:Acetic Acid (99:1)	1 mL
CRM46914	Patulin	100 µg/mL	Chloroform	1 mL
CRM46916	Zearalenone	50 µg/mL	Acetonitrile	1 mL

Supelco®

Analytical Products

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SigmaAldrich.com

Our standards match yours

For a precise detection of all regulated mycotoxins, we offer a comprehensive range of standards, including mixture solutions, ¹³C-isotopically labeled standards, certified reference materials (CRM) and dried down standards.

To Place an order or receive technical assistance:

[SigmaAldrich.com/customer-support](https://www.sigmaaldrich.com/customer-support)

[SigmaAldrich.com/techservice](https://www.sigmaaldrich.com/techservice)

To talk to a standards specialist,

standards@sial.com

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