



Food Safety I:

Highly Purified Natural Toxins for Food Analysis

Chiron has built up a strong track record of supplying new reference standards during the past 28 years of operation. We are proud to announce our extended offer of Highly Purified Natural Toxins for Food Analysis:

Mycotoxins

Plant toxins

Marine toxins



The basis of a good analytical method is the availability of appropriate standards of defined purity and concentration.

Our mission is to market highly purified toxin calibrates in crystalline as well as standardized solutions for chemical analysis, including internal standards.

Your benefits using our standards include:

- ◇ Fast turnover time due to excellent service.
- ◇ Guaranteed high and consistent quality.
- ◇ Sufficient capacity to serve the market, and bulk quantities available on request.
- ◇ Custom solutions on request.

Reference materials (RM) play an important role as they build the link between measurement results in the laboratory and international recognized standards in the traceability chain. Our standards are made according to the general requirements of ISO 9001. In 2011 we started to implement ISO 17025 and ISO guides 30-35.

Other relevant food analysis literature:

Food Safety I (BMF 29): Natural Toxins; Mycotoxins, Plant toxins and Marine toxins.

Food Safety II (BMF 30): Food Contaminants.

Food Safety III (BMF 31): Food Colours and Aroma.

Allergens: BMF 47.

Glycidyl fatty acid esters: BMF 56.

Melamine: BMF 48.

3-Monochloropropanediol esters (3-MCPD esters): BMF 49.

Plasticizers, Phthalates and Adipates: BMF 32 and BMF 50.

PFCs (Perfluorinated compounds) including PFOS and PFOA: BMF 20.

PCBs: BMF 14.

PBDEs (flame retardants): BMF 15.

Pesticides: BMF 33 and 34, and the Chiron catalogue 2008.

(“The Biomarker Catalogue - The Collection of Reference Standards 2008”): Pages 367-372.

Fatty acid and FAME's; see the Chiron catalogue 2008, page 425-428.



Mycotoxins

Calibrant solutions, Neat standards, Matrix reference materials.



| | | | | | |
|--------------------|---|--------------|----------------------|--------------|-------|
| 2240.17-100-AN * | 3-Acetyldeoxynivalenol | 3-AcDON | 100µg/mL | acetonitrile | 1mL |
| 3630.17-25-AN * | U{13C17}-3-Acetyl- | | 25µg/mL | acetonitrile | 1.2mL |
| 2247.17-100-AN | 15-Acetyldeoxynivalenol | 15-AcDON | 100µg/mL | acetonitrile | 1mL |
| 2233.17-2-AN * | Aflatoxin B1 | AFB1 | 2µg/mL | acetonitrile | 1mL |
| 8634.17-05-AN | U{13C17}-Aflatoxin B1 | | 0.5µg/mL | acetonitrile | 1.2mL |
| 2234.17-050-AN * | Aflatoxin B2 | AFB2 | 0.5 µg/ml | acetonitrile | 1mL |
| 9262.17-050-AN | U{13C17}-Aflatoxin B2 | | 0.5µg/mL | acetonitrile | 1.2mL |
| 2235.17-2-AN * | Aflatoxin G1 | AFG1 | 2µg/mL | acetonitrile | 1mL |
| 9263.17-050-AN | U{13C17}-Aflatoxin G1 | | 0.5µg/ml | acetonitrile | 1.2mL |
| 2236.17-050-AN * | Aflatoxin G2 | AFG2 | 0.5µg/ml | acetonitrile | 1mL |
| 9264.17-050-AN | U{13C17}-Aflatoxin G2 | | 0.5µg/ml | acetonitrile | 1.2mL |
| 2237.17-050-AN | Aflatoxin M1 | AFM1 | 0.5 µg/ml | acetonitrile | 1mL |
| 2237.17-050-5AN | Aflatoxin M1 | AFM1 | 0.5 µg/ml | acetonitrile | 5mL |
| 3769.17-1MG | Aflatoxin M2 | AFM2 | neat | neat | 1mg |
| 8516-100-5dried | Agroclavine | | 100µg/ml, dried | dried down | 5mL |
| 9248.14-100-dried | Alternariol | | 100µg/mL | dried down | 1mL |
| 9249.15-100-dried | Alternariol methyl ether | | 100µg/mL | dried down | 1mL |
| 9251.13-100-AN | Citrinin | | 100µg/mL | acetonitrile | 1mL |
| 9250.23-100-dried | Citreoviridin | | 100µg/mL | dried down | 1mL |
| 2245.15-50-AN | Deepoxy-deoxynivalenol, quantity | DOM-1 | 50µg/mL | acetonitrile | 1mL |
| 2245.15-50-5AN | Deepoxy-deoxynivalenol, quantity | DOM-1 | 50µg/mL | acetonitrile | 5mL |
| 2239.15-100-AN * | Deoxynivalenol | DON | 100µg/mL | acetonitrile | 1mL |
| 3629.21-50-AN | Deoxynivalenol-3-glucoside | | 50µg/mL | acetonitrile | 1mL |
| 3627.15-25-AN | U{13C15}-Deoxynivalenol | | 25µg/mL | acetonitrile | 1.2mL |
| 3802-100G | Maize flour, Deoxynivalenol 474 | | 474 +/- 30µg/kg | | 100g |
| 8531-100G | Wheat flour, Deoxynivalenol 1062+/-116µg/kg | | 1062+/- 116µg/kg | | 100g |
| 2249.19-100-AN | Diacetoxyscirpenol | DAS | 100µg/mL | acetonitrile | 1mL |
| 2249.19-100-5AN | Diacetoxyscirpenol | DAS | 100µg/mL | acetonitrile | 5mL |
| 9252.35-100-5dried | Dihydroergocristine | | 100µg/mL | dried down | 5mL |
| 9253.32-25-5dried | Ergocorninine | Isoergocor- | 25µg/mL | dried down | 1mL |
| 8518.35-100-5dried | Ergocristine | | 100µg/mL, dried down | dried down | 5mL |
| 9254.35-25-5dried | Ergocristinine | Iso- | 25µg/mL | dried down | 5mL |
| 3765.32-100-ME | Ergocryptine | | 100µg/mL | methanol | 1mL |
| 3765.32-100-5dried | Ergocryptine | | 100µg/mL, dried down | dried down | 5mL |
| 9255.32-25-5dried | Ergocryptinine | Isoergocryp- | 25µg/mL | dried down | 5mL |
| 8519.19-100-5dried | Ergometrine | | 100µg/mL, dried down | dried down | 5mL |
| 8520.30-100-5dried | Ergosine | | 100µg/mL, dried down | dried down | 5mL |
| 8521.33-100-5dried | Ergotamine | | 100µg/mL, dried down | dried down | 5mL |
| 9256.33-25-5dried | Ergotaminine | Isoergota- | 25µg/mL | dried down | 5mL |
| 8522-100-AN | Fumagillin | | 100µg/mL | acetonitrile | 1mL |

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|-------------------|----------------------------|------------|------------------|----------------------------|-------|
| 2244.34-50-MX * | Fumonisin B1 | FB1 | 50µg/mL | acetonitrile/water (50/50) | 1mL |
| 2246.34-50-MX | Fumonisin B2 | FB2 | 50µg/mL | acetonitrile/water (50/50) | 1mL |
| 2246.34-50-5MX | Fumonisin B2 | FB2 | 50µg/mL | acetonitrile/water (50/50) | 5mL |
| 3626.34-50-MX | Fumonisin B3 | FB3 | 50µg/mL | acetonitrile/water (50/50) | 1mL |
| 3625.34-25-AN | U{13C34}-Fumonisin B1 | | 25µg/mL | acetonitrile | 1.2mL |
| 8535.34-10-AN | U{13C34}-Fumonisin B2 | | 10µg/mL | acetonitrile | 1.2mL |
| 8536.34-10-AN | U{13C34}-Fumonisin B3 | | 10µg/mL | acetonitrile | 1.2mL |
| 2243.17-100-AN * | Fusarenon-X | FusX | 100µg/mL | acetonitrile | 1mL |
| 8523.13-100-AN | Gliotoxin | | 100µg/mL | acetonitrile | 1mL |
| 2248.22-100-AN | HT-2 Toxin | HT-2 | 100µg/mL | acetonitrile | 1mL |
| 2248.22-100-5AN | HT-2 Toxin | HT-2 | 100µg/mL | acetonitrile | 5mL |
| 3635.22-25-AN | U{13C22}-HT-2 Toxin | | 25µg/mL | acetonitrile | 1.2mL |
| 9258.6-100-dried | Kojic acid | | 100µg/mL | dried down | 1mL |
| 9259.23-100-dried | Meleagrins | | 100µg/mL | dried down | 1mL |
| 2968.23-25-AN | U{15N5}-Meleagrins | | 25µg/mL | acetonitrile | 1.2mL |
| 8524.4-100-MX | Moniliformin | | 100µg/mL | acetonitrile/water (50/50) | 1mL |
| 8376.17-100-AN | Mycophenolic acid | | 100µg/mL | acetonitrile | 1mL |
| 8376.17-100-5AN | Mycophenolic acid | | 100µg/mL | acetonitrile | 5mL |
| 9265.17-100-AN | U{13C17}-Mycophenolic acid | | 100µg/mL | acetonitrile | 1.2mL |
| 2242.19-100-AN * | Neosolaniol | NEO | 100µg/mL | acetonitrile | 1mL |
| 2230.15-100-AN * | Nivalenol | NIV | 100µg/mL | acetonitrile | 1mL |
| 2231.20-10-AN * | Ochratoxin A | | 10 µg/mL | acetonitrile | 1mL |
| 3638.20-10-AN | U{13C20}-Ochratoxin A | | 10µg/mL | acetonitrile | 1.2mL |
| 8533-100G | Wheat Flour, Ochratoxin A | | 2.7 +/- 1.0µg/kg | | 100g |
| 8525.20-10-AN | Ochratoxin B | | 10µg/mL | acetonitrile | 1mL |
| 8526.11-10-AN | Ochratoxin-alpha | | 10µg/mL | acetonitrile | 1mL |
| 2232.7-100-AN * | Patulin | | 100µg/mL | acetonitrile | 1mL |
| 8876.7-25-AN | U{13C7}-Patulin | | 25µg/mL | acetonitrile | 1.2mL |
| 8527.27-100-AN | Paxilline | | 100µg/mL | acetonitrile | 1mL |
| 8528.8-100-AN | Penicillic acid | | 100µg/mL | acetonitrile | 1mL |
| 9260.22-100-dried | Roquefortine C | | 100µg/mL | dried down | 1mL |
| 9267.22-25-AN | U{13C22}-Roquefortine C | | 25µg/mL | acetonitrile | 1.2mL |
| 8378.18-50-AN * | Sterigmatocystine | | 50µg/mL | acetonitrile | 1mL |
| 9266.18-25-AN | U{13C18}-Sterigmatocystine | | 25µg/mL | acetonitrile | 1.2mL |
| 3633.15-50-AN | T-2 Tetraol | | 50µg/mL | acetonitrile | 1mL |
| 2241.25-100-AN * | T-2 Toxin | T-2 | 100 µg/mL | acetonitrile | 1mL |
| 3634.24-25-AN | U{13C24}-T-2 Toxin | | 25µg/mL | acetonitrile | 1.2mL |
| 3632.20-50-AN | T-2 Triol | | 50µg/mL | acetonitrile | 1mL |
| 9261.22-100-dried | Tentoxin | | 100µg/mL | dried down | 1mL |
| 9262.10-100-dried | Tenuazonic acid | | 100µg/mL | dried down | 1mL |
| 8376.15-25-AN | Verrucarol | | 25µg/mL | acetonitrile | 1mL |
| 8529.27-100-AN | Verrucologen | | 100µg/mL | acetonitrile | 1mL |
| 8530.23-100-AN | Wortmannin | | 100µg/mL | acetonitrile | 1mL |
| 8517.18-10-AN | α-Zearalanol | Zeranol | 10 µg/mL | | 1mL |
| 2250.18-10-5AN | α-Zearalenol | | 10 µg/mL | acetonitrile | 1mL |
| 2796.18-10-AN | β-Zearalanol | Talera-nol | 10 µg/mL | acetonitrile | 1mL |
| 2251.18-10-AN | β-Zearalenol | | 10 µg/mL | acetonitrile | 1mL |
| 2252.18-10-AN | Zearalanone | | 10 µg/mL | acetonitrile | 1mL |
| 2238.18-100-AN * | Zearalenone | ZON | 100µg/mL | acetonitrile | 1mL |
| 8635.18-25-AN | U{13C18}-Zearalenone | | 25µg/mL | acetonitrile | 1.2mL |
| 3803-100G | Maize flour, zearalenone | | 60 +/- 9 µg/kg | | 100g |

* Also delivered in 5mL and 5 MG neat.

* Also delivered in 5 mL, and 5 MG / 10 MG neat.





Mycotoxin calibrant mixtures

| | | |
|----------------------------------|--|--|
| S-4296-ASS-AN/ S-4296-ASS-5AN | MIX 1 Aflatoxins mixture; AFB1&AFG1, AFB2&AFG2; 2 µg/mL; 0,5 µg/mL | Mixture in acetonitrile, available in 1 mL and 5 mL |
| S-4297-100-AN/ S-4297-100-5AN | MIX 2 B-Trichothecenes mixture, DON, NIV, 3AcDON & 15-DON; | 100 µg/mL each in acetonitrile, available in 1 mL and 5 mL |
| S-4298-50-MX/ S-4298-50-5MX | MIX 3 Fumonisin mixture, FB1&FB2 | 50 µg/mL in acetonitrile/water, available in 1 mL and 5 mL |
| S-4531-10-AN/ S-4531-10-5AN | MIX 4 A+B-Trichothecenes+Zearalenone 3AcDON, DON, NIV, FusX, HT-2, T-2, DAS, ZON | 10 µg/mL each in acetonitrile, available in 1 mL and 5 mL |
| S-4532-025-AN/ S-4532-025-6AN | MIX 5 Aflatoxins mixture, AF- B1&AFG1; AFB2&AFG2 | 0,25 µg/mL each in acetonitrile, available in 1 mL and 6 mL |
| S-4533-100-5dried | MIX 6 Ergotalkaloids mixture of Ergocornine, Er- gocristine, Ergocryptine, Ergometrine, Ergosine, Er- gotamine | 100 µg/mL, 5 mL dried down |



Plant and other natural toxins in food

| | <i>Toxic pyrrolizidine alkaloids</i> | | |
|----------------|--------------------------------------|---------------|---------------------------------|
| 3914.16-100-ME | Crotaline | Monocrotaline | 100 µg/mL in methanol, 1 mL |
| 8021.16-100-ME | Heliotrine | | 100 µg/mL in methanol, 1 mL |
| 8035.21-100-ME | Lasiocarpine | | 100 µg/mL in methanol, 1 mL |
| 3817.18-100-ME | Retrocine | | 100 µg/mL in methanol, 1 mL |
| 3818.18-100-ME | Senecionine | | 100 µg/mL in methanol, 1 mL |
| 3819.18-100-ME | Seneciphylline | | 100 µg/mL in methanol, 1 mL |
| | <i>Solanine</i> | | |
| 3865.45-2MG | Solanine | | 2 mg neat |
| 3865.45-100-AC | Solanine | | 100 µg/mL in acetonitrile, 1 mL |
| 3866.27-10MG | Solanidine | | 10 mg neat |
| | <i>Coumarin</i> | | |
| 3867.9-K-ME | Coumarin | | 1000 µg/mL in methanol, 1 mL |
| 3868.9-K-ME | Coumarin-d4 | | 1000 µg/mL in methanol, 1 mL |
| 8941.10-100MG | Coniferaldehyde | | 100 mg neat |
| 3869.9-1ML | Cinnamaldehyde | | 1 mL neat |
| 3870.7-1ML | Benzaldehyde | | 1 mL neat |
| 3900.10-1ML | Eugenol | | 1 mL neat |
| 3872.6-KIT | Coumarin Kit | | One of each above |



Marine toxins



| | Algae and shellfish toxins | | |
|------------------|--|---------------|---|
| | <i>Amnesic shellfish (ASP) toxins</i> | | |
| 3692.15-100-05MX | Domoic acid | CRM-DA-e | 99.4 µM in acetonitrile/water, 0.5 mL |
| 3693.15-40-8G | <i>Mytilus edulis</i> , homogenized (Domoic acid) | CRM-ASP-Mus-c | 41 µg/g, homogenized mussel, 8 g |
| 3694-100-15G | <i>Mytilus edulis</i> , homogenized (Domoic acid) | RM-ASP-Mus | 98 µg/g, homogenized mussel, 15 g |
| | <i>Diarrhetic shellfish (DSP) and lipophilic toxins</i> | | |
| 3695.44-20-05ME | Okadaic acid | CRM-OA-c | 17.7 µM in methanol, 0.5 mL |
| 3696.44-10-4G | Blue mussel, homogenized (Okadaic acid) | CRM-DSP-Mus-b | 10.1 µg/g, homogenized blend, 4 g |
| 3697.45-100UG | Dinophysis toxin 1 | | 100 µg neat |
| 3698.X-10-05ME | Pectenotoxin | CRM-PTX2 | 10.0 µM in methanol, 0.5 mL |
| 3700.42-10-05ME | 13-Desmethyl spirrolide C | CRM-SPX1 | 10.2 µM in methanol, 0.5 mL |
| 3701.32-10-05ME | Gymnodimine | CRM-GYM | 9.9 µM in methanol, 0.5 mL |
| 3702.55-5-05ME | Yessotoxin | CRM-YTX | 4.6 µM in methanol, 0.5 mL |
| 8202.X-1-05ME | Azaspirazide 1 | CRM-AZA1 | 1.47 µM/L in methanol, 0.5 mL |
| 9884.X-1-05ME | Azaspirazide 2 | CRM-AZA2 | 1.5 µmol/L in methanol, 0.5 mL |
| 9885.X-1-05ME | Azaspirazide 3 | CRM-AZA3 | 1.25 µmol/L in methanol, 0.5 mL |
| | <i>Paralytic shellfish (PSP) toxins</i> | | |
| 3703.10-60-05HC | Saxitoxin dihydrochloride | CRM-STX-e | 65 µM in 10 ⁻³ M HCl, 0.5 mL |
| 9976.10-65-05HC | Neosaxitoxin | CRM-NEO-b | 65 µM in 10 ⁻³ M HCl, 0.5 mL |
| 3705.-60-05HC | Descarbamoylsaxitoxin | CRM-dcSTX | 62 µM in 10 ⁻³ M HCl, 0.5 mL |
| 3706.10-05HC | Gonyautoxin-1 and -4 | CRM-GTX1&4-b | 106+35 µM HCl/acetic acid, 0.5 mL |
| 3707.10-05HC | Gonyautoxin-2 and -3 | CRM-GTX2&3-b | 118+39 µM in HCl/acetic acid, 0.5 mL |
| 3708.10-60-05HC | Gonyautoxin-5 (akaB1) | CRM-GTX5-b | 65 µM in HCl(aq) pH5, 0.5 mL |
| 3710.X-30-05W | Descarbamoylneosaxitoxin | CRM-dcNEO | 30 µM in water |
| 3711.X-140-05HC | <i>N</i> -Sulfocarbamoyl-gonyautoxin-2 and -3 | CRM-C1&2 | 114+35 µM in HCl(aq) pH5, 0.5 ml |
| | <i>Freshwater / cyanobacterial toxins</i> | | |
| 3712.15-30-05W | Cylindrospermopsin | CRM-CYN | 30 µM in water, 0.5 mL |
| 2552.10-1MG | (+/-)-Anatoxin A, fumarate | | 1 mg neat |