If only testing matrices that are included in the FM MG1 Group, fold the Multi Matrix Barcode Card in half and only scan the FM MG1 barcode; this allows the software to skip the step which prompts users to select a Matrix Group.

<table>
<thead>
<tr>
<th>Matrix Group ID</th>
<th>Matrices</th>
<th>Sample Extractant</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM MG1</td>
<td>Corn</td>
<td>Water</td>
</tr>
<tr>
<td>FM MG2</td>
<td>Corn flour</td>
<td>Water</td>
</tr>
<tr>
<td></td>
<td>DDGS</td>
<td>1X EB18 (not included, see page 2)</td>
</tr>
<tr>
<td>FM MG3</td>
<td>Corn germ</td>
<td>1X EB18 (not included, see page 2)</td>
</tr>
<tr>
<td></td>
<td>Corn germ meal</td>
<td>1X EB18 (not included, see page 2)</td>
</tr>
<tr>
<td>FM MG4</td>
<td>Sorghum</td>
<td>1X EB18 (not included, see page 2)</td>
</tr>
</tbody>
</table>

Table A on page 7 is provided as a Summary Guide for testing each matrix. More details for each step in the process are described below, and are important for achieving optimal, accurate results.
**Contents of Kit:**
- 50 QuickTox Strips packed in a moisture-resistant canister
- 100 reaction vials
- 100 pipette tips
- DB6 Buffer
- Multi-Matrix Barcode Card, kit lot specific

**Items Not Provided:**
- QuickScan System*
- Bunn grinder or equivalent
- 20-mesh screen
- Extraction cups with lids (for 20g samples)*
- Graduated cylinder*
- Orbital/rotary shaker
- Pipette to deliver 200 µL*
- Tubes and pipettes for centrifugation*
- Microcentrifuge*
- Vials for additional dilution of high samples*
- Pipette + tips to deliver larger volumes for dilutions*
- Timer
- Scissors
- EB18 Extraction Buffer* for certain matrices
- Distilled, deionized or bottled water

**Available Accessories:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Catalog No.</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>QuickScan™ System</td>
<td>ACC 131</td>
<td>10050+</td>
</tr>
<tr>
<td>50 Sample cups/lids (for 20g samples)</td>
<td>ACC 012-50</td>
<td>11224</td>
</tr>
<tr>
<td>Graduated cylinder (100mL)</td>
<td>ACC 068</td>
<td>11207</td>
</tr>
<tr>
<td>MiniPet pipette 200µL (one/location free)</td>
<td>ACC 067</td>
<td>11206</td>
</tr>
<tr>
<td>Centrifugation Set: Disposables for 50 tests</td>
<td>ACC 010</td>
<td>11214</td>
</tr>
<tr>
<td>Microcentrifuge</td>
<td>ACC 064 E</td>
<td>11204</td>
</tr>
<tr>
<td>EB18 Extraction Buffer 10X Concentrate</td>
<td>KR 270-530</td>
<td>11930</td>
</tr>
<tr>
<td>See instructions under 'Precautions &amp; Notes'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QuickTox Dilution Set (200 vials, 300 tips)</td>
<td>ACC 080</td>
<td>11219</td>
</tr>
<tr>
<td>1 mL adjustable pipette</td>
<td>ACC 1303-PRO-1000</td>
<td>11964</td>
</tr>
<tr>
<td>Pipette tips for 1 mL pipette (50)</td>
<td>20-0107</td>
<td>12243</td>
</tr>
</tbody>
</table>

*Available as Accessories

**Intended Use**
The QuickTox Kit for QuickScan Fumonisin Flex is designed to quickly provide quantitative results for the presence of total fumonisins.
- Limit of detection (LOD) = less than 0.20 ppm
- Assay range = up to 3.0 ppm in standard assay, and up to 18 ppm with additional dilution

Rev. 02-02-16
How the Test Works
A composite sample is first collected, then extracted to solubilize any fumonisin present. Each sample should be ground to a fineness of 20 mesh and extracted using the specified extractant. This extract is further diluted for testing with the QuickTox Kit.

Each QuickTox Strip has an absorbent pad at each end. The protective tape with the arrow indicates which end of the strip to insert into the reaction vial. The sample extract travels up the membrane strip and is absorbed into the larger pad at the top of the strip. At the end of the test time, the strip is cut off at the top of the arrow tape, the bottom pads are discarded, and the strip is inserted into the QuickScan reader to obtain quantitative results.

Assay Preparation
Table A on page 7 is provided as a Summary Guide for testing each matrix. More details for each step in the process are described below, and are important for achieving optimal, accurate results.

Preparation of the Sample
Make sure all reagents including samples, strips, buffer, and sample extractant are at room temperature and ready for use before starting the assay. The sample extract should be tested shortly after dilution with buffer.

Determine number and size of sub-samples and weigh out
1. Collect a composite sample according to your own sampling plan or USDA/GIPSA guidelines. Consult USDA/GIPSA reference documents to help design a plan that fits your needs.
2. Grind samples using a Bunn grinder or mill which provides a sample such that ≥95% passes through a 20-mesh sieve. Mix ground material thoroughly before sub-sampling.
3. Weigh samples into containers that will allow enough head room for the liquid to move forcefully when shaken vigorously.

Extract samples with appropriate Extractant
1. Consult the Summary Guide Table A to determine the volume and type of Extractant that has been validated for the matrix. To calculate the volume of liquid to add:
   Multiply the sample weight (in grams) x ratio (in milliliters, mLs)
   For example, 20 grams x 5 = 100mL (water) to add to corn
2. Make sure the grain is completely wet, and then mix thoroughly as stated in the table. Liquid should be moving forcefully through the matrix to extract the fumonisins.
3. The order of addition has been optimized. Please follow this order.
4. Samples that are not thoroughly mixed and fully wetted may adversely affect test results due to inconsistent extraction.

Clarify extracts (again, adhere to the Summary Guide table for optimal performance)
1. **Centrifugation**: Fill a microcentrifuge tube with extract and centrifuge for the specified time at 2000 x g (not rpm). The top layer is the extract that will be used in the testing.
2. **Settling**: Allow the sample to sit undisturbed until a top layer forms that can easily be pipetted. This top layer is the extract that will be used in the testing.

Add reagents to reaction vials
1. Take care not to contaminate the DB6 Buffer. Keep Buffer covered when not in use, and use a new pipette tip for each test. **Please note**: DB6 Buffer is matched with specific Fumonisins kit lot numbers; be sure to use the DB6 that is provided with the kit (do not mix and match buffers with different kit lots). There is a “use with” label on the DB6 that will indicate the matching Fumonisins Flex lot number.
2. Follow the table instructions for Buffer and extract order of addition.
3. Use two pipette tips (one for Buffer, one for extract) for each sample.
4. Mix Buffer and sample extract thoroughly by stirring or drawing the liquids up and down in the pipette tip. Samples that are not thoroughly mixed and/or accurately pipetted will adversely affect test results.

5. Do not reuse diluted samples. Use a new reaction vial for each sample.

For testing samples at levels greater than 3.0 ppm
1. If after running and reading the test, the initial result is greater than 3.0 ppm (“>3.0 ppm” on QuickScan), samples can be retested by further dilution of the sample extract.
2. Combine extract with the diluent noted (not with DB6 Buffer) in the summary guide table to create a 1:6 dilution (example: 1 part clarified extract + 5 parts diluent; 100µL + 500µL diluent). Measure carefully and mix well.
3. Rerun assay as before, adding DB6 Buffer + diluted extract into the reaction vial, and adding the strip for the time specified. Example: for corn, premix 1.5mL Buffer + 0.200mL diluted extract (extract 1:6 in water), pipette 0.200mL into a reaction vial and add strip for 5 min.
4. Follow the instructions under How to Run. Choose 1:6 under the dilution tab on the QuickScan Results Screen – the System will calculate and record the fumonisin level in diluted samples.

How to Run the QuickTox Strip Test
1. Allow refrigerated canisters to come to room temperature before opening. Remove the QuickTox Strips to be used. Avoid bending the strips. Reseal the canister immediately.
2. Place the strip into the reaction vial containing the Buffer and sample extract. The arrow tape on the end of the strip should point into the reaction vial.
3. The sample extract will travel up the strip (flow may not be visible immediately—this is normal). Reaction vials will stand on their own.
4. Allow the strip to develop for the time noted in the summary table.
5. Immediately cut off and discard the bottom section of the strip covered by the arrow tape. Insert strip into the QuickScan reader for quantitation.

Use of the QuickScan System
Detailed instructions for use of the QuickScan System are supplied with each unit, and can also be found at www.envirologix.com/support/quickscan. When testing matrices outside the On Strip Matrix Group (MG1), QuickScan Software Version 4.5 Update 2 or later is required and the lot-specific Multi-Matrix Barcode Card must be scanned into the system prior to testing.

In summary, a strip is inserted face down in the carrier with the barcoded end closest to the handle. The carrier is inserted into the reader and the strips are read by touching or clicking on the “Read Test” area of the screen. The “Select Matrix Groups” screen will appear. Select the group that displays the matrix run for each device. Results are then recorded in an electronic worksheet, allowing each user to report and track data easily.

Results are reported up to 3.0 ppm. The result "<LOD" (less than Limit of Detection) will be reported for results lower than the assay’s LOD (which is less than 0.20 ppm) and results greater than 3.0 ppm are reported as “>3.0 ppm.” If quantification of a sample above 3.0 ppm is desired, a further dilution of the sample extract can be performed (see “For testing samples at levels greater than 3.0 ppm” above).

Kit Storage
This QuickTox Kit should be stored refrigerated. Note the shelf life on the kit box. Prolonged exposure to high temperatures may adversely affect the test results. Do not open the desiccated canister until ready to use the strips.

Cross-reactivity
The following mycotoxins have been tested with this kit and no false positive results occurred at the 200 ppm level: Aflatoxin B1, DON (deoxynivalenol), Ochratoxin A, Zearalenone.
Precautions and Notes

- IMPORTANT: If used, the 10X EB18 Extraction Buffer should be considered an irritant (MSDS available at www.envirologix.com/SDS-10XEB18.pdf). Avoid contact with the skin, eyes, or clothing. Wear personal protective equipment including safety glasses, gloves, and a lab coat when handling.
  - To prepare 1X EB18 Buffer Solution: Mix 1 part 10X EB18 Extraction Buffer with 9 parts of water. 1X solution expires one week from date of mixing when stored at room temperature, or 4 weeks when stored at 2-8°C
- Strips must be read wet promptly at the specified time for the matrix run to ensure accurate results.
- This product is currently not applicable for use in testing any other crops beyond those specified in this Product Insert.
- The corn assay is calibrated against samples with Fumonisin levels determined by a 3rd party using UHPLC/MS/MS with 13C isotopic internal Fumonisin standards (Biopure ILM003, ILM004 and ILM005, Romer Labs). Performance in other sample matrices has been validated using fortified samples.
- As with all screening tests, it is recommended that results be confirmed by an alternate method when necessary.
- The assay has been optimized for use with the protocols provided in the kit. Deviation from these protocols may invalidate the results of the test. Room-temperature components, proper and thorough mixing, accurate pipetting, and using the correct corresponding DB6 Buffer provided in the kit are essential to accurate results.
- The results generated through the proper use of this diagnostic tool reflect the condition of the working sample directly tested. Extrapolation as to the condition of the originating lot, from which the working sample was derived, should be based on sound sampling procedures and statistical calculations which address random sampling effects, non-random sampling effects and assay system uncertainty. A negative result obtained when properly testing the working sample does not necessarily mean the originating lot is entirely negative for the analyte in question.
- Protect all components from hot or cold extremes of temperature when not in use. Do not leave in direct sunlight or in vehicle.
- Observe any applicable regulations when disposing of samples and extracts.
LIMITED WARRANTY

EnviroLogix Inc. ("EnviroLogix") warrants the products sold hereunder ("the Products") against defects in materials and workmanship when used in accordance with the applicable instructions for a period not to extend beyond a product’s printed expiration date. If the Products do not conform to this Limited Warranty and the customer notifies EnviroLogix in writing of such defects during the warranty period, including an offer by the customer to return the Products to EnviroLogix for evaluation, EnviroLogix will repair or replace, at its option, any product or part thereof that proves defective in materials or workmanship within the warranty period.

ENVIROLOGIX MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty provided herein and the data, specifications and descriptions of EnviroLogix products appearing in EnviroLogix published catalogues and product literature are EnviroLogix’ sole representations concerning the Products and warranty. No other statements or representations, written or oral, by EnviroLogix’ employees, agents or representatives, except written statements signed by a duly authorized officer of EnviroLogix Inc., are authorized; they should not be relied upon by the customer and are not a part of the contract of sale or of this warranty.

EnviroLogix does not warrant against damages or defects arising in shipping or handling, or out of accident or improper or abnormal use of the Products; against defects in products or components not manufactured by EnviroLogix, or against damages resulting from such non-EnviroLogix made products or components. EnviroLogix passes on to customer the warranty it received (if any) from the maker thereof of such non-EnviroLogix made products or components. This warranty also does not apply to Products to which changes or modifications have been made or attempted by persons other than pursuant to written authorization by EnviroLogix.

THIS WARRANTY IS EXCLUSIVE. The sole and exclusive obligation of EnviroLogix shall be to repair or replace the defective Products in the manner and for the period provided above. EnviroLogix shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, shall EnviroLogix be liable for incidental, special, or consequential damages.

This Limited Warranty states the entire obligation of EnviroLogix with respect to the Products. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

License

EnviroLogix has developed this kit using proprietary reagents.

EnviroLogix, the EnviroLogix logo, QuickTox, and QuickScan are trademarks of EnviroLogix Inc.

© EnviroLogix 2016
QuickTox Kit for QuickScan Fumonisin Flex

Material Safety Data Sheet

1.1.Generated by

1.2. Edition/Date

1.3. Classification of the substance and the preparations

1.3.1. Physical/Chemical Properties

1.3.1.1. Physical Form

1.3.1.2. Odor

1.3.1.3. Odor Threshold

1.3.1.4. Vapors

1.3.1.5. Taste

1.3.1.6. Taste Threshold

1.3.1.7. Water Solubility

1.3.1.8. pH

1.3.1.9. Specific Gravity

1.3.1.10. Flash Point

1.3.1.11. Flammability

1.3.1.12. Reactivity

1.3.1.13. Combustion Products

1.3.1.14. Extinguishing Media

1.3.1.15. Fire Fighting Procedures

1.3.2. Health Information

1.3.2.1. Short-term Health Effects

1.3.2.2. Long-term Health Effects

1.3.3. Ecological Information

1.3.3.1. Acute Toxicity

1.3.3.2. Chronic Toxicity

1.3.3.3. Ecotoxicity

1.3.3.4. Persistence and Bioaccumulation

1.3.3.5. Other Ecological Effects

1.3.4. Transport Information

1.3.4.1. Transportation Risk phrases

1.3.4.2. Transportation SafetyPhrases

1.3.4.3. UN Number

1.3.4.4. Transported as Materiel

1.3.4.5. Training Requirements

1.3.5. Handling and Storage

1.3.5.1. Handling

1.3.5.2. Storage

1.3.5.3. Spillage/Release Mitigation

1.3.5.4. Waste Management

1.3.5.5. Regulatory Information

1.3.5.6. Export Information

1.3.5.7. Emergency Response

1.3.5.8. Personal Protective Equipment

1.3.5.9. Other Protective Measures
<table>
<thead>
<tr>
<th>Date</th>
<th>Rev.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>02-02-16</td>
<td>02-02-16</td>
<td>1</td>
</tr>
</tbody>
</table>

**QuickTox Kit for QuickScan Fumonisin Flex**

**Page 8 of 9**

---

<table>
<thead>
<tr>
<th>EU Safety, Health, and Environmental Regulations</th>
<th>US Federal Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>None.</td>
<td>None.</td>
</tr>
</tbody>
</table>

**US State Regulations**

- California: None applicable

**European/International Regulations**

- Conformity: None applicable
- Fortification: None applicable

---

**Declaration of Conformity**

- This declaration is based on our present knowledge. However, neither guarantee nor representation of the accuracy or completeness.
- For the customer, this information may vary from the packaging label. To determine the product’s safety and suitability, we recommend:
- The customer shall not consider a guarantee for any specific product feature and shall not establish legally valid contractual relationships.

**CDS Department**

- Evonik Corp. Inc.

**Code**

- HIV: May damage fertility in the unborn child.
Table A: Validated Matrices

<table>
<thead>
<tr>
<th>Table A: Validated Matrices</th>
<th>Matrix Group</th>
<th>Add Grain to Vessel First</th>
<th>Add Extractant</th>
<th>Clarify</th>
<th>Add to reaction vial</th>
<th>Add strip for</th>
<th>For testing &gt;3 ppm, dilute extract 1:6 in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>FM MG1</td>
<td>20g or 50g</td>
<td>5x vol water*</td>
<td>Settle</td>
<td>1.5mL buffer + 0.200mL extract</td>
<td>Run Vol 200 µL</td>
<td>5 min water</td>
</tr>
<tr>
<td>Corn Flour</td>
<td>FM MG2</td>
<td>20g or 50g</td>
<td>5x vol water*</td>
<td>Centrifuge 1 min x 2000g</td>
<td>1.5mL buffer + 0.200mL extract</td>
<td>Run Vol 200 µL</td>
<td>5 min water</td>
</tr>
<tr>
<td>Corn Germ</td>
<td>FM MG3</td>
<td>20g or 50g</td>
<td>5x vol 1X EB18 Buffer†</td>
<td>Centrifuge 1 min x 2000g</td>
<td>1.5mL buffer + 0.200mL extract</td>
<td>Run Vol 200 µL</td>
<td>5 min 1X EB18 Buffer</td>
</tr>
<tr>
<td>Corn Germ Meal</td>
<td>FM MG3</td>
<td>20g or 50g</td>
<td>5x vol 1X EB18 Buffer†</td>
<td>Centrifuge 1 min x 2000g</td>
<td>1.5mL buffer + 0.200mL extract</td>
<td>Run Vol 200 µL</td>
<td>5 min 1X EB18 Buffer</td>
</tr>
<tr>
<td>DDGS</td>
<td>FM MG2</td>
<td>20g or 50g</td>
<td>5x vol 1X EB18 Buffer†</td>
<td>Centrifuge 1 min x 2000g</td>
<td>1.5mL buffer + 0.200mL extract</td>
<td>Run Vol 200 µL</td>
<td>5 min 1X EB18 Buffer</td>
</tr>
<tr>
<td>Sorghum</td>
<td>FM MG4</td>
<td>20g or 50g</td>
<td>5x vol 1X EB18 Buffer†</td>
<td>Centrifuge 1 min x 2000g</td>
<td>1.5mL buffer + 0.200mL extract</td>
<td>Run Vol 200 µL</td>
<td>5 min 1X EB18 Buffer</td>
</tr>
</tbody>
</table>

Notes:
*Use distilled, deionized, or flat (non-carbonated) bottled water.
†See instructions in "Precautions & Notes" for preparation & storage conditions.