ABSTRACT

The objective of this study was to independently validate an analytical method for the determination of mefentrifluconazole (BAS 750 F) and its metabolites M750F003, M750F005, M750F006, M750F007 and M750F008 in surface and in drinking water, according to Technical Procedure L0359/01 (see Reference 1). The target limit of quantification (LOQ) is 0.03 µg/L per analyte, using LC-MS/MS with two mass transitions per analyte.

Principle of the method

Specimens are extracted with ethyl acetate. The mixture is shaken intensively and an aliquot of the organic extract is evaporated by a gentle stream of nitrogen and re-dissolved in acetonitrile/water (1/1, v/v), followed by LC-MS/MS analysis.

Test conditions

The independent validation was performed at two fortification levels (0.030 and 0.30 µg/L), each with at least 5 replicates and 2 untreated control samples. The used matrices were drinking water and surface water.

The matrix effect was tested for each matrix. No significant matrix effects (i.e. > 20% suppression or enhancement) on LC-MS/MS response were observed for both matrices. The calibration standards in solvent were used for the evaluation of the results. The following mass transitions were used for the analysis:

BAS 750 F:	398 m/z -> 70 m/z proposed for quantification
	400 m/z -> 70 m/z proposed for qualification
M750F003:	288 m/z -> 70 m/z proposed for quantification
	288 m/z -> 43 m/z proposed for qualification
M750F005:	380 m/z -> 70 m/z proposed for quantification
	380 m/z -> 109 m/z proposed for qualification
M750F006:	356 m/z -> 259 m/z proposed for quantification
	356 m/z -> 217 m/z proposed for qualification
M750F007:	338 m/z -> 241 m/z proposed for quantification
	338 m/z -> 269 m/z proposed for qualification
M750F008:	356 m/z -> 259 m/z proposed for quantification
	356 m/z -> 241 m/z proposed for qualification

Limit of Quantification (LOQ) and Limit of Detection (LOD)

The limit of quantification (LOQ) of the analytical method is 0.030 µg/L for all analytes. The limit of detection (LOD) of the method was defined as the lowest analyte concentration injected as a calibration solution, resulting in an LOD of 0.009 µg/L (30 % of the LOQ).

Selectivity

The highly selective and sensitive LC-MS/MS method was used for determination of BAS 750 F, M750F003, M750F005, M750F006, M750F007 and M750F008 monitoring two characteristic mass transitions per analyte. Consequently, no further confirmatory method is required.

The interferences/residues of the analyte measured in the control samples were below 20 % of the limit of quantification (LOQ) for each matrix and each mass transition.

Linearity

Linear calibration curves in the range of 0.03 to 1.0 ng/mL were calculated and plotted by regression analysis. Correlation coefficients (r) were always ≥ 0.993.

Standard Stability

BAS 750 F and its five metabolites indicated sufficient stability (less than 10 % difference) in stock solution (acetonitrile) for 16 days as well as in acetonitrile/water (1/1, v/v) solutions used for fortification and calibration (less than 20 % difference for BAS 750 F or less than 10 % difference for the five metabolites) when stored refrigerated in the dark.

Extract stability

Final sample extracts in acetonitrile/water (1/1, v/v) were re-injected after 7 (for M750F006 in surface water), 11 (for surface water except of M750F006) or 15 days (for drinking water) of storage under refrigerated conditions. No significant decrease (80.4 to 98.6 % of initial value) or increase (101 to 114 % of initial value) in recovery in the stored final extracts was observed when the results were evaluated with freshly prepared calibration solutions in solvent. Thus stability of final extracts is considered sufficiently proven for at least 7, 11 or 15 days under refrigerated storage conditions.

Matrix Effect

The matrix effect was tested for each matrix and analyte. No significant matrix effect was observed.

1 INTRODUCTION

1.1 Scope of the Study

The objective of this study was to independently validate an analytical method for the determination of mefentrifluconazole (BAS 750 F) and its metabolites M750F003, M750F005, M750F006, M750F007 and M750F008 in surface and in drinking water, according to Technical Procedure L0359/01 (see Reference 1). The target limit of quantification (LOQ) is 0.03 µg/L per analyte, using LC-MS/MS with two mass transitions per analyte.

The method was developed at BASF SE, Limburgerhof, Germany.

The independent laboratory validation was performed at two fortification levels (0.03 µg/L and 0.30 µg/L), each with at least 5 replicates and 2 untreated control samples per matrix.

The highly selective and sensitive LC-MS/MS method was used for determination of BAS 750 F, M750F003, M750F005, M750F006, M750F007 and M750F008 monitoring two characteristic mass transitions per analyte. Consequently, no further confirmatory method is required.

The interferences/residues of the analyte measured in the control samples were tested for each matrix and mass transition. The target interference was to be below 20% of the limit of quantification (LOQ).

For each matrix, matrix-matched and solvent-based standards were analyzed within this study to assess potential matrix effects. No significant matrix effects were observed.

1.2 Principle of the Method

Specimens are extracted with ethyl acetate. The mixture is shaken intensively and an aliquot of the organic extract is evaporated by a gentle stream of nitrogen and re-dissolved in acetonitrile/water (1/1, v/v), followed by LC-MS/MS analysis.

Quantitation was achieved by liquid chromatography using tandem mass spectrometric detection (LC-MS/MS), monitoring two mass transitions, one proposed for quantification and one for confirmation for each analyte.

1.3 Specificity

The highly selective and sensitive LC-MS/MS method was used for determination. Two characteristic mass transitions were monitored for each analyte.

The interferences for each mass transition were below 20% of LOQ for BAS 750 F and its five metabolites and each matrix.

2 MATERIALS AND METHODS

2.1 Test systems

The following test systems were considered in this study for validation:

Test Matrix 1: Drinking water (obtained locally from Labor Alpha)
Test Matrix 2: Surface water (obtained locally from river Brenz, Herbrechtingen)

2.2 Test and Reference Item

Table 1: Test and Reference Item Reg. No. 5834378

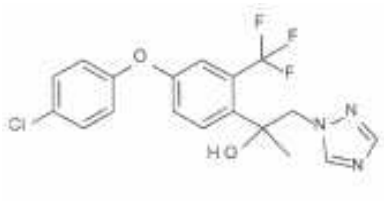
BAS Code	BAS 750 F	
Common Name	Mefentrifluconazole	
IUPAC Name	(2RS)-2-[4-(4-chlorophenoxy)-2-(trifluoromethyl)phenyl]-1-(1H-1,2,4-triazol-1-yl)propan-2-ol	
BASF Reg.No.	5834378	
CAS-No.	1417782-03-6	
Molecular Formula	C18H15ClF3N3O2	
Molecular Weight	397.8 g/mol	
BASF Standard		
Batch	L85-124	
Purity	99.7 %	
Expiration date	01-Jul-2017	

Table 2: Test and Reference Item Reg. No. 5924326

Metabolite Code	M750F003
Common Name	na
IUPAC Name	4-[2-hydroxy-1-(1H-1,2,4-triazol-1-yl)propan-2-yl]-3-(trifluoromethyl)phenol
BASF Reg.No.	5924326
CAS-No.	na
Molecular Formula	C12H12F3N3O2
Molecular Weight	287.2 g/mol
BASF Standard	
Batch	L84-250
Purity	99.6 %
Expiration date	01-May-2017

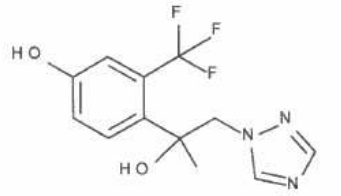


Table 3: Test and Reference item Reg. No. 6003433

Metabolite Code	M750F005
Common Name	na
IUPAC Name	4-{4-[2-hydroxy-1-(1H-1,2,4-triazol-1-yl)propan-2-yl]-3-(trifluoromethyl)phenoxy}phenol
BASF Reg.No.	6003433
CAS-No.	na
Molecular Formula	C18H16F3N3O3
Molecular Weight	379.3 g/mol
BASF Standard	
Batch	L87-34
Purity	99.4 %
Expiration date	01-Oct-2018

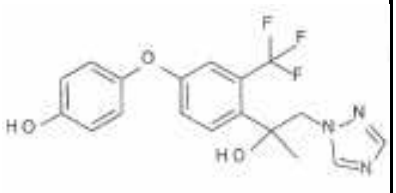


Table 4: Test and Reference Item Reg. No. 5863469

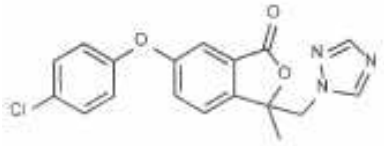
Metabolite Code	M750F006	
Common Name	na	
IUPAC Name	6-(4-chlorophenoxy)-3-methyl-3-(1H-1,2,4-triazol-1-ylmethyl)-2-benzofuran-1(3H)-one	
BASF Reg.No.	5863469	
CAS-No.	na	
Molecular Formula	C18H14ClN3O3	
Molecular Weight	355.8 g/mol	
BASF Standard		
Batch	L85-170	
Purity	95.6 %	
Expiration date	01-Feb-2018	

Table 5: Test and Reference Item Reg. No. 6003432

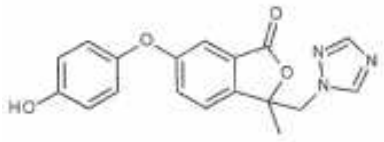
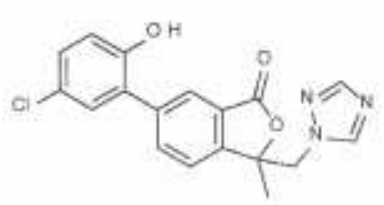
Metabolite Code	M750F007	
Common Name	na	
IUPAC Name	6-(4-hydroxyphenoxy)-3-methyl-3-(1H-1,2,4-triazol-1-ylmethyl)-2-benzofuran-1(3H)-one	
BASF Reg.No.	6003432	
CAS-No.	na	
Molecular Formula	C18H15N3O4	
Molecular Weight	337.3 g/mol	
BASF Standard		
Batch	L87-32-1	
Purity	94.4 %	
Expiration date	01-Jan-2019	

Table 6: Test and Reference Item Reg. No. 6010286

Metabolite Code	M750F008
Common Name	na
IUPAC Name	6-(5-chloro-2-hydroxyphenyl)-3-methyl-3-(1H-1,2,4-triazol-1-ylmethyl)-2-benzofuran-1(3H)-one
BASF Reg.No.	6010286
CAS-No.	na
Molecular Formula	C18H14ClN3O3
Molecular Weight	355.8 g/mol
BASF Standard	
Batch	L85-94
Purity	90.4 %
Expiration date	01-Jan-2019



2.2.1 Stability of Test and Reference Item in Standard Solutions

Stock (1.0 mg/mL) solutions prepared in acetonitrile of BAS 750 F and its metabolites were tested after 16 days of storage under refrigerated conditions and were found to be stable.

Calibration solutions (0.10 ng/mL) prepared in acetonitrile/water (1/1, v/v) were tested after 16 days of storage under refrigerated conditions and were found to be stable.

Stability data are presented in the results (section 3.1).

2.2.2 Stability of Extracts

Finale sample extracts in acetonitrile/water (1/1, v/v) were re-injected after 7 (for M750F006 in surface water), 11 (for surface water except of M750F006) or 15 days (for drinking water) of storage under refrigerated conditions and found to be stable under these conditions. The calibration standards in solvent were used for the evaluation of stored samples.

Recovery data for each matrix and analyte/mass transition are presented in the results section (section 3.2) for final sample extracts.

2.3 Equipment

Equipment	Size, Description	Manufacturer
Balance	Analytical, XS205 DU	Mettler Toledo (Switzerland)
Vortex mixer	REAX top	Heidolph (Germany)
Ultrasonic bath	Transonic 460	Elma Hans Schmidbauer
Horizontal shaker	HS 501 D	IKA (Germany)
N2-Evaporator		Thermo Scientific (USA)
Glass tubes	10 mL, 15 mL	Roth (USA)
Measuring flask	Various sizes	Hirschmann EM Techcolor
Glass beaker	Various sizes	Fisherbrand, Eberstadt
Glass bottle	500 mL, 1 L	Schott, Mainz (Germany)
Amber vials with screw caps	20 mL	Labsolute (Germany)
Rainin Pipet-Lite XLS	L-10ML L-1000 L-200 L-20	Rainin (USA)
RC-L Tips for Pipet-Lite XLS	RC-L10ML RC-L1000 RC-L200 RC-L20	Rainin (USA)
Glass pipettes	10 mL, 5 mL	
Autosampler Vials	1.5 mL, ND 8	Labsolute (Germany)
Vial caps	PTFE-lined screw-caps, ND 8	Labsolute (Germany)

2.4 Reagents

2.4.1 Chemicals

Chemical	Grade	Manufacturer/Supplier
Acetonitrile	HPLC grade	Promochem (Germany)
Ethyl acetate	For Pesticide Residue Analysis	Promochem (Germany)
Ultrapure Water	High Purity	Prepared with Millipore Milli Q direct 8 (PTRL Europe, Germany)
Formic acid	99 %	Promochem (Germany)
Acetonitrile	≥ 99.9 %	Honeywell (Germany)
Water	LC-MS grade	Honeywell(Germany)

2.4.2 Solutions and Solvent Mixtures

Description	Code	Composition
Final Volume	FV	Acetonitrile/water (1/1, v/v) Add 250 mL of acetonitrile and 250 mL of ultra-pure water into a 500 mL SCHOTT glass bottle, and mix well to ensure complete homogeneous solution.
HPLC mobile phase A	LCSS1	0.1% Formic acid in water Add 1000 mL of water and 1.0 mL of concentrated formic acid into a 1 L SCHOTT glass bottle, and mix well to ensure complete homogeneous solution.
HPLC mobile phase B	LCSS2	0.1% Formic acid in acetonitrile Add 1000 mL of acetonitrile and 1.0 mL of concentrated formic acid into a 1 L SCHOTT glass bottle, and mix well to ensure complete homogeneous solution.

2.4.3 Standard and Fortification Solutions

2.4.3.1 Stock Solutions

1.0 mg/mL stock solutions were prepared by weighing an appropriate amount of BAS 750 F or its respective metabolites into a flask and adding the required volume of acetonitrile.
For example, to prepare 10 mL of 1.0 mg/mL stock solution of BAS 750 F in acetonitrile, 10 mg (purity taken into account) BAS 750 F were weighed into a 10 mL volumetric flask, dissolved and diluted to mark with acetonitrile. A complete homogeneous solution was ensured by e.g. sonicating and/or vortexing.

2.4.3.2 Fortification Solutions

Mixed fortification solutions were prepared by dilution series using the stock solutions (see above) and the appropriate solvent, as shown in the following table.
For example, fortification solutions were prepared at levels of e.g. 100, 10, 1.0, 0.10, 0.03 and 0.003 µg/mL as exemplified in the table below. A complete homogeneous solution was ensured by e.g. vortexing.

Preparation of Fortification solutions

Take solution (µg/mL)	Aliquot Volume (mL)	Dilute with acetonitrile to a final volume of (mL)	Final Concentration per analyte (µg/mL)
1000 (Stock)	1.0	10	100
100	1.0	10	10
10	1.0	10	1.0
Take solution (µg/mL)	**Aliquot Volume (mL)**	**Dilute with FV to a final volume of (mL)**	**Final Concentration per analyte (µg/mL)**
1.0	1.0	10	0.10
0.10	3.0	10	0.03
0.03	1.0	10	0.003

2.4.3.3 Calibration Solutions

Mixed calibration standard solutions were prepared by dilution series using the stock solutions (see above) and the appropriate solvent, as shown in the following table. A complete homogeneous solution was ensured by e.g. vortexing.

Preparation of calibration standard solutions

Take solution (ng/mL)	Aliquot Volume (mL)	Dilute with acetonitrile to a final volume of (mL)	Final Concentration per analyte (ng/mL)
1000000 (Stock)	1.0	10	100000
100000	1.0	10	10000
10000	1.0	10	1000
Take solution (ng/mL)	**Aliquot Volume (mL)**	**Dilute with FV to a final volume of (mL)**	**Final Concentration per analyte (ng/mL)**
1000	1.0	10	100
100	1.0	10	10
10	1.0	10	1.0
10	0.50	10	0.50
10	0.25	10	0.25
10	0.10	10	0.10
10	0.050	10	0.050
10	0.030	10	0.030

2.4.3.4 Matrix-Matched Standards

Preparation of matrix-matched standards
Matrix-matched calibration standard solutions were prepared by dosing calibration solutions prepared in solvent into final extracts of untreated control samples (carried through the entire analytical procedure) to obtain 0.20 mL total volume. Matrix-matched standards were prepared in a way that the matrix load is at least 90% of the matrix load in the unknown samples.

Take solution (ng/mL)	Aliquot Volume (mL)	Dilute with untreated control sample to a final volume of (mL)	Final Concentration per analyte (ng/mL)
10	0.020	0.20	1.0
1.0	0.020	0.20	0.10

2.4.3.5 Stability of Standard Solutions

Stability of standard solutions was assessed for 16 days at refrigerated conditions for the analyte using diluted stock solutions.

Test / Reference Item	Concentration [mg/mL]	Solvent(s)	Storage conditions	Time Interval [days]
BAS 750 F	1.0	ACN	Refrigerated (≤ 8°C)	16
M750F003	1.0	ACN	Refrigerated (≤ 8°C)	16
M750F005	1.0	ACN	Refrigerated (≤ 8°C)	16
M750F006	1.0	ACN	Refrigerated (≤ 8°C)	16
M750F007	1.0	ACN	Refrigerated (≤ 8°C)	16
M750F008	1.0	ACN	Refrigerated (≤ 8°C)	16

2.5 Analytical Procedure

2.5.1 Sample Preparation and Storage

Drinking and surface water, obtained locally, were stored at room temperature before use. No homogenization was necessary. For detailed information see Appendix 6.7.

2.5.2 Weighing and Fortification

For fortified samples, 5.0 mL of the control sample were transferred into a 15 mL glass tube and appropriate amounts of the fortification solutions were added to the matrix as shown in the following table:

For Drinking and Surface Water:

Sample Type	Sample Aliquot (mL)	Concentration of Spiking Solution [µg/mL]	Volume of Spiking Solution [mL]	Level of Fortification [mg/kg]
Control	5.0	-	-	-
Fortification (LOQ)	5.0	0.003	0.050	0.03
Fortification (10xLOQ)	5.0	0.03	0.050	0.3

2.5.3 Extraction of Sample Material

5.0 mL of water sample were transferred into a 15 mL glass tube. For fortification samples, an appropriate amount of fortification solution was added. 6.0 mL of EtAc were added to the sample.
The sample was shaken for 10 sec. by hand and then on a mechanical shaker at 225 rpm for 1 min.

2.5.4 Sample Work-up

An aliquot of 4 mL from the organic phase was transferred into a 10 mL glass tube and evaporated to dryness using a gentle stream of nitrogen at 40°C. The sample was re-dissolved in 1 mL of ACN/H2O (1/1, v/v).

2.5.5 Preparation for Measurement

For higher level samples (> 9xLOQ):
Dilution DF 10: 0.10 mL of the extract were transferred into an autosampler vial containing 0.90 mL acetonitrile/water (1/1, v/v).

2.5.6 Influence of Matrix Effects on Analysis

In order to test the influence of matrix on analysis, the response of the analytes in matrix compared to pure standards was studied. Therefore, calibration standard solutions were compared with their respective calibration standards prepared in blank matrix extracts (matrix-matched standards). For detailed information see section 3.4.

2.5.7 Set-up of the Analytical Run

Blanks were injected as necessary. Each injection series began and ended with an injection of a calibration standard. Standards were interspersed with samples. At least five calibration levels were injected and at least every ninth injection was a standard solution (except for M750F006 in surface water with at least every tenth injection).

2.6 Instrumental Analysis

2.6.1 Instrumentation and Conditions

	Parameter		
Chromatographic System	Agilent 1290 infinity series LC system (vacuum solvent degasser, binary LC pump, Maylab MistraSwitch column oven), eksigent HTC-xt-Pal Autosampler.		
Analytical column	Waters XBridge C_{18}, 50 mm x 2.1 mm ID; 2.5 µm.		
Column Temperature	30°C.		
Injection Volume	10 µL.		
Mobile Phase A Mobile Phase B	Water + 0.1 % formic acid. ACN + 0.1 % formic acid.		
Flow Rate	0.800 mL/min.		
Gradient (including wash and equilibration)	Time [min]	% A	% B
	0.00	95	5
	0.25	95	5
	1.50	60	40
	2.50	1	99
	3.45	1	99
	3.50	95	5
	4.00	95	5
Detection System	Applied Biosystems MDS Sciex API 6500 triple quadrupole LC-MS/MS system with TurboIonspray (ESI) source		
Ionisation	Source temperature: 350°C Gas supply (GS 1): 60 (arbitrary units) Gas supply (GS 2) 60 (arbitrary units) Curtain gas: 35 (arbitrary units) CAD gas: 10 (arbitrary units) Entrance potential: 10 V IonSpray voltage: 3500 V Resolution Q1: unit Resolution Q3: unit Polarity: positive		
Analyte	**Transitions**	**Dwell time**	**Expected Retention Time**
BAS 750 F	398 m/z -> 70 m/z*	25 msec	2.4 min
	400 m/z -> 70 m/z	25 msec	2.4 min
M750F003	288 m/z -> 70 m/z*	25 msec	1.5 min
	288 m/z -> 43 m/z	25 msec	1.5 min
M750F005	380 m/z -> 70 m/z*	25 msec	2.0 min
	380 m/z -> 109 m/z	25 msec	2.0 min
M750F006	356 m/z -> 259 m/z*	25 msec	2.2 min
	356 m/z -> 217 m/z	25 msec	2.2 min
M750F007	338 m/z -> 241 m/z*	25 msec	1.8 min
	338 m/z -> 269 m/z	25 msec	1.8 min
M750F008	356 m/z -> 259 m/z*	25 msec	2.1 min
	356 m/z -> 241 m/z	25 msec	2.1 min

* Proposed as quantification transition.

2.6.2 Calibration Procedures

Calculation of results for BAS 750 F and its five metabolites was based on peak area measurements using a calibration curve. At least 5 calibration levels (or three in at least duplicates for stability in extracts) were injected per calibration curve. The calibration curve was obtained by injection of calibration standards prepared in solvent for LC-MS/MS in the range of 0.030 ng/mL to 1.0 ng/mL. In a given injection series, the same injection volume was used for all samples and standards.

2.6.3 Calculation of Residues and Recoveries

Calculation of results was based on area measurements.

For the procedural recoveries, a sample volume of 5.0 mL was considered in the final calculation of residues [µg/mL].
The recovery is the percentage of the fortified amount (µg or ng), which is recovered after the entire sample work-up steps.

Calculation is described by the equation given below:
The residues of BAS 750 F and its metabolites in µg/L were calculated as shown in equations **I** and **II**:

I. **Concentration [ng/mL]** $= \frac{\text{Response} - \textit{Intercept}}{\textit{Slope}} = C_A$

II. **Residue [µg/L]** $= \frac{V_{end} \times DF \times C_A}{V \times A_F}$

V_{end} = Final volume of the extract after all dilution steps [mL]
C_A = Concentration of analyte as read from the calibration curve [ng/mL]
V = Volume of the sample extracted [mL]
A_F = Aliquotation factor
DF = Dilution factor (only for higher level samples)

Molecular weight conversion: Only required if transformation products are expressed as parent equivalents.

The recoveries of spiked compound were calculated according to equation **III**:

III. **Recovery (%)** $= \frac{\text{Residue found in fortified sample} \times 100}{\text{Concentration of analyte fortified}}$

Example:
BAS 750 F (Mass transition 398 m/z -> 70 m/z) in drinking water fortified at 0.030 µg/L (LOQ):

The following values were used in this calculation:

Peak area of fortified sample (P4262-57)	6060
Slope	66400
Intercept	-15.5
Sample Volume (V)	5 mL
Final Volume (V_{End})	1.0 mL
Aliquotation Factor A_F	0.6667 (66.67%)
Dilution factor (DF)	na

Concentration of fortified sample (C_{End}) $= \frac{6060 + 15.5}{66400} = 0.0915\ ng/mL$

Residue (fortified sample) $= \frac{1.0\ \text{mL} \times 0.0915\ \text{ng/mL}}{5.0\ mL \times 0.6667} = 0.0274\ \text{ng/mL} = 0.0274\ \mu\text{g/L}$

Recovery [%] $= \frac{0.0274\ \mu\text{g/L}}{0.03\ \mu\text{g/L}} \times 100 = 91.3\ \%$ (91.5 % in Table 31)

Results were calculated with full precision. The values reported in the tables are calculated with full precision, but displayed with rounding. Minor / insignificant discrepancies may be observed when recalculated.

Example:
BAS 750 F (Mass transition 398 m/z -> 70 m/z) in surface water fortified at 0.030 µg/L (LOQ):

The following values were used in this calculation:

Peak area of fortified sample (P4262-104)	9410
Slope	96100
Intercept	-107
Sample Weight (G)	5 mL
Final Volume (V_{End})	1.0 mL
Aliquotation Factor A_F	0.6667 (66.67%)
Dilution factor (DF)	na

Concentration of fortified sample (C_{End}) $= \frac{9410 + 107}{96100} = 0.0990\ ng/mL$

Residue (fortified sample) $= \frac{1.0\ \text{mL} \times 0.0990\ \text{ng/mL}}{5.0\ mL \times 0.6667} = 0.0297\ \text{ng/mL} = 0.0297\ \mu\text{g/L}$

Recovery [%] $= \frac{0.0297\ \mu\text{g/L}}{0.03\ \mu\text{g/L}} \times 100 = 99.0\ \%$

Results were calculated with full precision. The values reported in the tables are calculated with full precision, but displayed with rounding. Minor / insignificant discrepancies may be observed when recalculated.

3.7 Summary of Method

Type of method: LC-MS/MS

Test systems: Drinking water
Surface water

Analyte and selected mass transitions:

BAS 750 F	398 mz -> 70 m/z (proposed for quantification) 400 mz -> 70 m/z (proposed for qualification)
M750F003	288 mz -> 70 m/z (proposed for quantification) 288 mz -> 43 m/z (proposed for qualification)
M750F005	380 mz -> 70 m/z (proposed for quantification) 380 mz -> 109 m/z (proposed for qualification)
M750F006	356 mz -> 259 m/z (proposed for quantification) 356 mz -> 217 m/z (proposed for qualification)
M750F007	338 mz -> 241 m/z (proposed for quantification) 338 mz -> 269 m/z (proposed for qualification)
M750F008	356 mz -> 259 m/z (proposed for quantification) 356 mz -> 241 m/z (proposed for qualification)

Analytical procedure: Take 5 mL of drinking or surface water, add 6 mL of EtAc shake, take 4 mL of the organic phase, evaporate to dryness, re-dissolve and dilute if necessary.

Confirmatory technique: Due to the high selectivity and specificity of LC-MS/MS an additional confirmatory technique was not necessary.

The quantification was based on the monitoring of two mass transitions for each analyte. Recovery data were reported for each analyte, mass transition and matrix considered.

Limit of detection (LOD): 0.009 µg/L, corresponding to a concentration in the extract of 0.03 ng/mL.

Limit of quantification (LOQ): The limit of quantification (LOQ) was defined by the lowest fortification level successfully tested. LOQ is 0.03 µg/L, corresponding to a concentration in the extract of 0.10 ng/mL.

6.2 Additional Information on the Method

Figure 7: Method Flowchart