



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C., 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

PC Code: 268800
DP Barcode: 436967

MEMORANDUM

DATE: December 15, 2016

SUBJECT: Dimethomorph – Upgrading of environmental chemistry method and associated independent laboratory validation in water (PC code: 268800)

TO: Nathan Sell, Chemical Review Manager
Avivah Jakob, Team Leader
Kelly Sherman, Branch Chief
Risk Management and Implementation Branch III
Pesticide Re-Evaluation Division (7508P)

FROM: Ibrahim Abdel-Saheb, Ph.D., Environmental Scientist
Environmental Risk Branch 6
Environmental Fate and Effects Division (7507P)

Ibrahim Abdel-Saheb
12/15/2016

THROUGH: Mark Corbin, Branch Chief
Monica Wait, Risk Assessment Process Leader
Environmental Risk Branch 6
Environmental Fate and Effects Division (7507P)

Mark Corbin 12-15-16
Monica Wait 12/15/16

The registrant of dimethomorph, BASF, previously submitted an environmental chemistry method (ECM, MRID 49822602) and associated independent laboratory validation (ILV, MRID 49822601) in water, as required by the registration review data call-in. Those studies were previously reviewed by the Environmental Fate and Effects Division (8/3/2016, DP 432604) and were classified as “supplemental / upgradable” and “unacceptable / upgradable”, respectively.

BASF recently submitted an Amended Final Report for the independent laboratory validation in water (MRID 50093001, to replace MRID 49822601). EFED evaluated all the information submitted and concluded that the amended ILV study can be upgraded to acceptable. The results are summarized in the table below. The previous data evaluation record for the dimethomorph water ECM and ILV has been appended to document this change.

Table 1. Environmental fate data requirements for dimethomorph

MRID	Guideline	Study Type	Study Classification ¹	Remarks
50093001 (This amended report replaces MRID 49822601.)	835.6100	Independent Laboratory Validation Method (water)	Acceptable	In the original ILV report (MRID 49822601; classified as unacceptable 8/3/2016, DP 432604), only one ion transition was monitored and quantified. The amended report (MRID 50093001) provided the required data about the two ion transitions that were monitored and quantified in the ECM (MRID 49822602).

¹OPPIN Classifications:

Acceptable; Acceptable/Guideline; Acceptable/Non-Guideline; Cited; Confirmatory; Decision Deferred; Extraneous submission; Guideline; In Review; minimum; No Decision; Partially Acceptable; Satisfactory; Screened-acceptable for review; Screened-not acceptable; Supplemental; Supplemental/Non-Guideline; Unacceptable; Unacceptable/Guideline; Unacceptable/Non-Guideline; Upgradeable.

Test Material: Dimethomorph

MRID: 49822602

Title: Validation of Method D1410 (L0257/01): “Method for the Determination of the Geometric Isomers of Dimethomorph (BAS 550 F; Reg. No. 4110868, 4110869) in Water at LOQ of 0.05 ppb using LC/MS/MS”

MRID: 49822601

Title: Independent Laboratory Validation of BASF Analytical Method L0257/01 (D1410): “Method for the determination of the geometric isomers of Dimethomorph (BAS 550 F; Reg. No. 4110868, 4110869) in water at LOQ of 0.05 ppb using LC/MS/MS”

EPA PC Code: 268800

OCSPP Guideline: 850.6100

For CDM Smith

Primary Reviewer: Lisa Muto

Signature: 

Date: 7/28/16

Secondary Reviewer: Kathleen Ferguson

Signature: 

Date: 7/28/16

QC/QA Manager: Joan Gaidos

Signature: 

Date: 7/28/16

Analytical method for the geometric isomers (E/Z) of dimethomorph in water

Reports: ECM: EPA MRID No. 49822602. Gordon, B. 2015. Validation of Method D1410 (L0257/01): "Method for the Determination of the Geometric Isomers of Dimethomorph (BAS 550 F; Reg. No. 4110868, 4110869) in Water at LOQ of 0.05 ppb using LC/MS/MS". BASF Study No.: 724058. BASF Registration Document No.: 2014/7003705. Report prepared by BASF Crop Protection, Research Triangle Park, North Carolina; and sponsored and submitted by BASF Corporation, Research Triangle Park, North Carolina; 77 pages. Final report issued May 26, 2015.

ILV: EPA MRID No. 49822601. Davis, P.P. 2015. Independent Laboratory Validation of BASF Analytical Method L0257/01 (D1410): "Method for the determination of the geometric isomers of Dimethomorph (BAS 550 F; Reg. No. 4110868, 4110869) in water at LOQ of 0.05 ppb using LC/MS/MS". BASF Study No.: 724059. CRO Study Identification No.: S14-05282. BASF Registration Document No.: 2014/7004121. Report prepared by Eurofins Agroscience Services, Inc., East Brunswick, New Jersey; sponsored and submitted by BASF Crop Protection, Research Triangle Park, North Carolina; 49 pages. Final report issued February 12, 2015.

Document No.: MRIDs 49822602 & 49822601

Guideline: 850.6100


Statements: ECM: The study was not conducted with the restriction of compliance with USEPA FIFRA FIFRA Good Laboratory Practice (GLP) standards, 40 CFR, Part 160 (p. 3 of MRID 49822602). Signed and dated No Data Confidentiality, GLP, Quality Assurance and Certification of Authenticity statements were provided (pp. 2-5).

ILV: The study was conducted in accordance with the USEPA FIFRA GLP standards (40 CFR Part 160; p. 3 of MRID 49822601). Signed and dated No Data Confidentiality, GLP, Quality Assurance and Certification of Authenticity statements were provided (pp. 2-5).

Classification: This ECM study is classified as supplemental (The estimations of the LOQ and LOD were not based on scientifically acceptable procedures as defined in 40 CFR Part 136. The ILV study is classified as unacceptable (only the quantitative ion transition was monitored and quantified by the ILV; two ion transitions were monitored and quantified in the ECM. Both studies could be upgraded upon submission of data resolving the issues mentioned above.

PC Code: 268800

Reviewer: **Ibrahim Abdel-Saheb, Ph.D.**
Environmental Scientist

Signature: 
Date: 8/2/2016

Executive Summary

This analytical method, BASF Analytical Method No. D1410 (L0257/01), is designed for the quantitative determination of the geometric isomers (E/Z) of dimethomorph (BAS 550 F; Reg. No. 4110868, 4110869) in water at the LOQ of 0.05 µg/kg (0.05 µg/L, 0.05 ng/mL) using LC/MS/MS. The exact same water matrices, drinking (tap) water and surface water, were used in the ECM and ILV. The same two parent-daughter ion transitions of the ECM were reported in the ILV analytical parameters; however, only one ion transition was monitored and quantified in the ILV. A confirmatory method is not usually required when LC/MS and GC/MS is the primary method; however, the reviewer noted that the ILV should validate all portions of the ECM. No major issues were discovered by the independent laboratory; the method was validated with the first trial with minor modifications of the analytical method.

Table 1. Analytical Method Summary

Analyte(s) by Pesticide	MRID		EPA Review	Matrix	Method Date (dd/mm/yyyy)	Registrant	Analysis	Limit of Quantitation (LOQ)
	Environmental Chemistry Method	Independent Laboratory Validation						
Dimethomorph (BAS 550 F)	49822602	49822601		Water ^{1,2}	26/05/2015	BASF Corporation	LC/MS/MS	0.05 µg/kg 0.05 ppb

1 In the ECM, drinking (tap) water (Sample No. 710640-01TW; pH 7.3, total dissolved solids 126 ppm) and surface water (Sample No. 710640-02PW; pH 6.9, total dissolved solids 114 ppm) were used (p. 12; Appendix G, pp. 76-77 of MRID 49822602). The source of the surface water was not specified. Waters were fully characterized by Agvise Laboratories, Northwood, North Dakota.

2 In the ILV, drinking (tap) water (Sample No. 710640-01TW; pH 7.3, total dissolved solids 126 ppm) and surface water (Sample No. 710640-02PW; pH 6.9, total dissolved solids 114 ppm) were used (p. 11; Appendix 10.3, pp. 47-48 of MRID 49822601). The source of the surface water was not specified. Waters were fully characterized by Agvise Laboratories, Northwood, North Dakota. Based on the water characterization report, the reviewer determined that the water matrices which were used by the ILV were identical to those used by the ECM.

I. Principle of the Method

Samples (1 mL; stored unfiltered and refrigerated in the dark until analysis) were transferred to a screw-top injection vial with PTFE-lined caps for analysis and filtered, if necessary, during transfer through a filter (pp. 16-17; Appendix B, Figure 1, p. 28 of MRID 49822602). Samples were fortified, as necessary, with a mixed fortification solution and analyzed directly by LC/MS/MS. Higher fortifications or cases of significant matrix effects may require appropriate dilution with water. The method noted that the analytes in water were stable when held under refrigeration.

Samples were analyzed for analytes using an Acquity UPLC System with autosampler coupled to an AB Sciex API 5500 mass spectrometer (p. 18 of MRID 49822602). The HPLC/MS conditions consisted of an Atlantis T3 column (2.1 x 100 mm, 3- μ m; column temperature 45°C), a mobile phase gradient of (A) water:formic acid (1000:1, v:v) and (B) methanol:formic acid (1000:1, v:v) [percent A:B (v:v) at 0.00-0.25 min. 66:34, 2.0 min. 30:70, 5.75-6.4 min. 1:99, 6.5-7.0 min. 66:34] and MS/MS detection in ESI positive ion mode (ionization temperature 550°C). Two parent-daughter ion transitions (quantitative and confirmatory, respectively) were monitored: m/z 388 \rightarrow 301 and m/z 388 \rightarrow 165 for E-dimethomorph and Z-dimethomorph. Approximate retention times were *ca.* 3.15 min. for E-dimethomorph and *ca.* 3.27 min. for Z-dimethomorph. Injection volume was 50 μ L (the method noted that this could be modified based on instrument sensitivity).

In the ILV, the ECM method was performed as written with the following exceptions to the analytical parameters: a Shimadzu Nexera UHPLC System coupled to an AB Sciex 6500 mass spectrometer was used; positive TurboIonSpray™ ionization mode; injection volume reduced to 15 μ L (pp. 16-17 of MRID 49822601). The HPLC column, mobile phases and mobile gradient were identical to that of the ECM. The same two parent-daughter ion transitions were reported; however, only one ion transition was monitored and quantified in the ILV (p. 17; Tables 1-2, pp. 19-20). Approximate retention times were *ca.* 3.21 min. for E-dimethomorph and *ca.* 3.33 min. for Z-dimethomorph (p. 17).

In both the ECM and ILV, the Limit of Quantification (LOQ) and Limit of Detection (LOD) were reported as 0.05 μ g/kg (0.05 μ g/L, 0.05 ng/mL) and 0.01 μ g/kg (0.01 μ g/L, 0.01 ng/mL), respectively (pp. 7, 22 of MRID 49822602; pp. 21-22 of MRID 49822601).

II. Recovery Findings

ECM (MRID 49822602): Mean recoveries and relative standard deviations (RSD) were within guidelines (mean 70-120%; RSD \leq 20%) for analysis of E-dimethomorph and Z-dimethomorph in water matrices at 0.05 μ g/kg (0.05 μ g/L, LOQ) and 0.5 μ g/kg (0.05 μ g/L, 10 \times LOQ; Table 1, p. 20). Two parent-daughter ion transitions were monitored. Quantitative ion and confirmatory ion results were comparable. Drinking (tap) water (Sample No. 710640-01TW; pH 7.3, total dissolved solids 126 ppm) and surface water (Sample No. 710640-02PW; pH 6.9, total dissolved solids 114 ppm) were used in the study (p. 12; Appendix G, pp. 76-77). The source of the surface water was not specified. Waters were fully characterized by Agvise Laboratories, Northwood, North Dakota.

ILV (MRID 49822601): Mean recoveries and RSDs were within guidelines for analysis of E-dimethomorph and Z-dimethomorph in water matrices at 0.05 μ g/kg (0.05 μ g/L, LOQ) and 0.5

µg/kg (0.05 µg/L, 10×LOQ; Tables 1-2, pp. 19-20). The same two parent-daughter ion transitions of the ECM were reported in the ILV analytical parameters; however, only one ion transition was monitored and quantified in the ILV (p. 17; Tables 1-2, pp. 19-20). A confirmatory method is not usually required when LC/MS and GC/MS is the primary method. Drinking (tap) water (Sample No. 710640-01TW; pH 7.3, total dissolved solids 126 ppm) and surface water (Sample No. 710640-02PW; pH 6.9, total dissolved solids 114 ppm) were used in the study (p. 11; Appendix 10.3, pp. 47-48). The source of the surface water was not specified. Waters were fully characterized by Agvise Laboratories, Northwood, North Dakota. Based on the water characterization report, the reviewer determined that the water matrices which was used by the ILV was identical to that used by the ECM. The method was validated with the first trial with minor modifications of the analytical method (pp. 16-17, 22).

Table 2. Initial Validation Method Recoveries for Dimethomorph (E- and Z-Isomers) in Water^{1,2}

Analyte	Fortification Level (µg/kg)	Number of Tests	Recovery Range (%)	Mean Recovery (%)	Standard Deviation (%)	Relative Standard Deviation (%)
Drinking Water (Tap Water)						
Quantitative ion						
E-Dimethomorph	0.05 (LOQ)	5	92-96	94	2	2
	0.5	5	93-96	95	1	1
Z-Dimethomorph	0.05 (LOQ)	5	94-97	95	1	1
	0.5	5	93-98	95	2	2
Confirmatory ion						
E-Dimethomorph	0.05 (LOQ)	5	91-98	95	3	3
	0.5	5	91-97	95	2	3
Z-Dimethomorph	0.05 (LOQ)	5	93-97	94	2	2
	0.5	5	93-98	95	2	3
Surface Water (Pond Water)						
Quantitative ion						
E-Dimethomorph	0.05 (LOQ)	5	92-95	93	1	1
	0.5	5	96-98	97	1	1
Z-Dimethomorph	0.05 (LOQ)	5	92-97	95	2	2
	0.5	5	97-99	98	1	1
Confirmatory ion						
E-Dimethomorph	0.05 (LOQ)	5	90-98	94	3	3
	0.5	5	96-100	97	2	2
Z-Dimethomorph	0.05 (LOQ)	5	93-96	94	2	3
	0.5	5	95-98	97	1	1

Data (uncorrected recovery results, Appendix B, Figure 2, p. 29; Appendix C, pp. 32-39) were obtained from Table 1, p. 20 of MRID 49822602.

1 Drinking (tap) water (Sample No. 710640-01TW; pH 7.3, total dissolved solids 126 ppm) and surface water (Sample No. 710640-02PW; pH 6.9, total dissolved solids 114 ppm) were used in the study (p. 12; Appendix G, pp. 76-77). The source of the surface water was not specified. Waters were fully characterized by Agvise Laboratories, Northwood, North Dakota.

2 Two daughter ion transitions (quantitative and confirmatory, respectively) were monitored: m/z 388 → 301 and m/z 388 → 165 for E-dimethomorph and Z-dimethomorph (p. 18).

Table 3. Independent Validation Method Recoveries for Dimethomorph (E- and Z-Isomers) in Water^{1,2}

Analyte	Fortification Level (µg/L)	Number of Tests	Recovery Range (%)	Mean Recovery (%)	Standard Deviation (%)	Relative Standard Deviation (%)				
Drinking Water (Tap Water)										
Quantitative ion										
E-Dimethomorph	0.05 (LOQ)	5	101.6-108.8	103.5	3.0	2.9				
	0.5	5	96.4-102.0	97.8	2.4	2.4				
Z-Dimethomorph	0.05 (LOQ)	5	103.0-107.8	104.4	2.0	1.9				
	0.5	5	97.8-103.2	99.4	2.2	2.2				
Confirmatory ion										
E-Dimethomorph	0.05 (LOQ)	5	Not monitored or quantified							
	0.5	5								
Z-Dimethomorph	0.05 (LOQ)	5								
	0.5	5								
Surface Water (Pond Water)										
Quantitative ion										
E-Dimethomorph	0.05 (LOQ)	5	104.0-106.0	104.8	0.9	0.9				
	0.5	5	101.6-103.8	102.5	0.9	0.9				
Z-Dimethomorph	0.05 (LOQ)	5	104.6-106.6	105.7	1.0	0.9				
	0.5	5	102.2-104.2	103.2	0.9	0.8				
Confirmatory ion										
E-Dimethomorph	0.05 (LOQ)	5	Not monitored or quantified							
	0.5	5								
Z-Dimethomorph	0.05 (LOQ)	5								
	0.5	5								

Data (uncorrected recovery results, pp. 17-18; Tables 1-2, pp. 19-20) were obtained from Tables 1-2, pp. 19-20 of MRID 49822601.

1 Drinking (tap) water (Sample No. 710640-01TW; pH 7.3, total dissolved solids 126 ppm) and surface water (Sample No. 710640-02PW; pH 6.9, total dissolved solids 114 ppm) were used in the study (p. 11; Appendix 10.3, pp. 47-48). The source of the surface water was not specified. Waters were fully characterized by Agvise Laboratories, Northwood, North Dakota. Based on the water characterization report, the reviewer determined that the water matrices which were used by the ILV were identical to those used by the ECM.

2 Only one ion transition was monitored and quantified (quantitative): m/z 388 \rightarrow 301 for E-dimethomorph and Z-dimethomorph (p. 17; Tables 1-2, pp. 19-20).

III. Method Characteristics

In both the ECM and ILV, the LOQ and LOD were reported as 0.05 µg/kg (0.05 µg/L, 0.05 ng/mL) and 0.01 µg/kg (0.01 µg/L, 0.01 ng/mL), respectively (pp. 7, 22 of MRID 49822602; pp. 21-22 of MRID 49822601). In the ILV, the LOQ was defined as the lowest fortification level which was successfully tested. In the ECM, the LOD was set at 20% of the LOQ. No calculations or comparison to background levels was provided for the LOQ or LOD.

Table 4. Method Characteristics

		E-Dimethomorph	Z-Dimethomorph
Limit of Quantitation (LOQ)		0.05 µg/kg (0.05 µg/L)	
Limit of Detection (LOD)		0.01 µg/kg (0.01 µg/L)	
Linearity (calibration curve r^2 and concentration range)	ECM ¹	$r^2 = 0.9958$ (Q) $r^2 = 0.9954$ (C)	$r^2 = 0.9950$ (Q) $r^2 = 0.9952$ (C)
	ILV ²	$r^2 = 0.9960$ (Q)	$r^2 = 0.9952$ (Q)
Repeatable	ECM ³	Yes at LOQ and 10×LOQ.	
	ILV ⁴	Yes at LOQ and 10×LOQ.	
Reproducible		Yes at LOQ and 10×LOQ.	
Specific	ECM	Yes, no matrix interferences were observed. A slight overlap of the analyte peaks was observed at their base.	
	ILV	Yes, no matrix interferences were observed.	

Data were obtained from pp. 7, 22; Table 1, p. 20; Appendix E, Figures 3-6, pp. 46-49 (calibration curves); Appendix F, Figures 13-18, pp. 57-62 (E-dimethomorph chromatograms); Appendix G, Figures 24-29, pp. 68-73 (Z-dimethomorph chromatograms) of MRID 49822602; p. 21-22; Tables 1-2, pp. 19-20; Appendix 10.1, Figures 10.1.2-10.1.3, pp. 26-27 (calibration curves); Appendix 10.1, Figures 10.1.10-10.1.20, pp. 34-44 (chromatograms) of MRID 49822601; DER Attachment 2. Q = quantitative ion transition; C = confirmation ion transition.

1 ECM r^2 values are reviewer-generated from reported r values of 0.9975-0.9979 (Q) and 0.9976-0.9977 (C; analytes combined; Appendix E, Figures 3-6, pp. 46-49 of MRID 49822602; DER Attachment 2).

2 ILV r^2 values are reviewer-generated from reported r values of 0.9976-0.9980 (Q; analytes combined; Figures 10.1.2-10.1.3, pp. 26-27 of MRID 49822601; DER Attachment 2). Only one ion transition was monitored and quantified (quantitative) for each isomer.

3 In the ECM, drinking (tap) water (Sample No. 710640-01TW; pH 7.3, total dissolved solids 126 ppm) and surface water (Sample No. 710640-02PW; pH 6.9, total dissolved solids 114 ppm) were used (p. 12; Appendix G, pp. 76-77 of MRID 49822602). The source of the surface water was not specified. Waters were fully characterized by Agvise Laboratories, Northwood, North Dakota.

4 In the ILV, drinking (tap) water (Sample No. 710640-01TW; pH 7.3, total dissolved solids 126 ppm) and surface water (Sample No. 710640-02PW; pH 6.9, total dissolved solids 114 ppm) were used (p. 11; Appendix 10.3, pp. 47-48 of MRID 49822601). The source of the surface water was not specified. Waters were fully characterized by Agvise Laboratories, Northwood, North Dakota. Based on the water characterization report, the reviewer determined that the water matrices which were used by the ILV were identical to those used by the ECM.

IV. Method Deficiencies and Reviewer's Comments

1. The same two parent-daughter ion transitions of the ECM were reported in the ILV analytical parameters; however, only one ion transition was monitored and quantified in the ILV (p. 17; Tables 1-2, pp. 19-20 of MRID 49822601). A confirmatory method is not usually required when LC/MS and GC/MS is the primary method; however, the reviewer noted that the ILV should validate all portions of the ECM.
2. The estimations of the LOQ and LOD in the ECM were not based on scientifically acceptable procedures as defined in 40 CFR Part 136. In the ILV, the LOQ was defined as the lowest fortification level which was successfully tested (pp. 21-22 of MRID 49822601). In the ECM, the LOD was set at 20% of the LOQ (pp. 7, 22 of MRID 49822602). No calculations or comparison to background levels was provided for the LOQ or LOD.

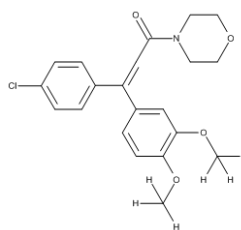
Detection limits should not be based on the arbitrarily selected lowest concentration in the spiked samples. Additionally, the lowest toxicological level of concern in water was not reported. An LOQ above toxicological level of concern results in an unacceptable method classification.

3. In the ECM, a reagent blank was not included (p. 17 of MRID 49822602).
4. Based on the water characterization reports, the reviewer determined that the water matrices which were used by the ILV were identical to those used by the ECM (p. 12; Appendix G, pp. 76-77 of MRID 49822602; p. 11; Appendix 10.3, pp. 47-48 of MRID 49822601). The source of the surface water was not specified.
5. The representative calculations in the ECM and ILV allowed for sample correction; however, no residues were quantified in the controls (Appendix B, Figure 2, p. 29; Appendix C, pp. 32-39 of MRID 49822602; pp. 17-18; Tables 1-2, pp. 19-20 of MRID 49822601).
6. The stability of dimethomorph in the standard solutions was evaluated in "previous studies"; dimethomorph solutions in methanol were determined to be stable for 3 months when held under refrigeration (p. 22 of MRID 49822602).
7. Matrix effects were evaluated in the ECM and determined to be insignificant (p. 21; Appendix D, pp. 41-44 of MRID 49822602).
8. It was reported for the ILV that a set consisting of 13 samples required approximately 4 hours of work (p. 21 of MRID 49822601).
9. Communications between the ILV study authors and study sponsor were reported in the ILV (Appendix 10.4, p. 49 of MRID 49822601). Communication mainly involved study progress. It was also reported that no communication occurred between the ILV and the originating laboratory (ECM).

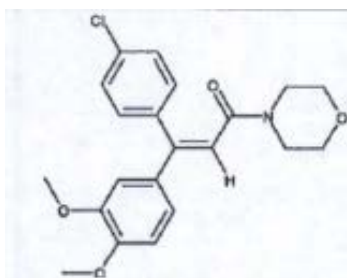
V. References

U.S. Environmental Protection Agency. 2012. Ecological Effects Test Guidelines, OCSPP 850.6100, Environmental Chemistry Methods and Associated Independent Laboratory Validation. Office of Chemical Safety and Pollution Prevention, Washington, DC. EPA 712-C-001.

40 CFR Part 136. Appendix B. Definition and Procedure for the Determination of the Method Detection Limit-Revision 1.11, pp. 317-319.

Attachment 1: Chemical Names and Structures**Dimethomorph; BAS 550 F; Reg. No. 4110868, 4110869****IUPAC Name:** (EZ)-4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl]morpholine**CAS Name:** 4-[3-(4-Chlorophenyl)-3-(3,4-dimethoxyphenyl)-1-oxo-2-propen-1-yl]morpholine**CAS Number:** 110488-70-5**SMILES String:** c1cc(Cl)ccc1C(c2cc(OC)c(OC)cc2)=CC(=O)N3CCOCC3

E-Dimethomorph; BAS 550 F; Reg. No. 4110868

IUPAC Name: (E)-4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl]morpholine**CAS Name:** Not reported**CAS Number:** 113210-97-2**SMILES String:** Not found

Z-Dimethomorph; BAS 550 F; Reg. No. 4110869

IUPAC Name: (Z)-4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl]morpholine**CAS Name:** Not reported**CAS Number:** 113210-98-3**SMILES String:** Not found