Safety data sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

ORVEGO

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: crop protection product, fungicide

1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Operating Division Crop Protection

Telephone: +49 621 60-27777
E-mail address: Produktinformation-Pflanzenschutz@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4 (oral)
Aquatic Chronic 3

According to Directive 67/548/EEC or 1999/45/EC
Possible Hazards:
Harmful if swallowed.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System, EU (GHS)

Pictogram:

Signal Word:
Warning

Hazard Statement:
H302 Harmful if swallowed.
H412 Harmful to aquatic life with long lasting effects.
EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary Statements (Prevention):
P264 Wash with plenty of water and soap thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Precautionary Statements (Response):
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.

Precautionary Statements (Disposal):
P501 Dispose of contents/container to hazardous or special waste collection point.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: DIMETHOMORPH

According to Directive 67/548/EEC or 1999/45/EC

EEC Directives

Hazard symbol(s)
Xn Harmful.
R-phrase(s)
R22 Harmful if swallowed.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)
S2 Keep out of the reach of children.
S13 Keep away from food, drink and animal feeding stuffs.
S20/21 When using do not eat, drink or smoke.
S46 If swallowed, seek medical advice immediately and show this container or label.

Hazard determining component(s) for labelling: DIMETHOMORPH

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

See section 12 - Results of PBT and vPvB assessment.

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature
crop protection product, fungicide, suspension concentrate (SC)

Contains: Ametoctradin (Content (W/W): 27 %)

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

4-(3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl)morpholine
Content (W/W): 20.3 % Aquatic Chronic 2
CAS Number: 110488-70-5 H411
EC-Number: 404-200-2
INDEX-Number: 613-102-00-0

Propane-1,2-diol
**Hazardous ingredients**

according to Directive 1999/45/EC

4-(3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl)morpholine

Content (W/W): 20.3 %
CAS Number: 110488-70-5
EC-Number: 404-200-2
INDEX-Number: 613-102-00-0
Hazard symbol(s): N
R-phrase(s): 51/53

Propane-1,2-diol

Content (W/W): < 20 %
CAS Number: 57-55-6
EC-Number: 200-338-0
REACH registration number: 01-2119456809-23

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

### SECTION 4: First-Aid Measures

**4.1. Description of first aid measures**

Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.. Further important symptoms and effects are so far not known.
4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
- water spray
- carbon dioxide
- foam
- dry powder

5.2. Special hazards arising from the substance or mixture
- carbon monoxide
- Carbon dioxide
- nitrogen oxides
- organochloric compounds
The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters
Special protective equipment:
- Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
- In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions
Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up
- For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).
- For large amounts: Dike spillage. Pump off product.
Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling
No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

Protection against fire and explosion:
The substance/product is non-combustible. Product is not explosive. No special precautions necessary.

### 7.2. Conditions for safe storage, including any incompatibilities
Segregate from foods and animal feeds.
Further information on storage conditions: Keep away from heat. Protect from direct sunlight.

Storage stability:
Storage duration: 24 Months

### 7.3. Specific end use(s)
For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

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**SECTION 8: Exposure Controls/Personal Protection**

### 8.1. Control parameters
Components with occupational exposure limits

57-55-6: Propane-1,2-diol

### 8.2. Exposure controls

**Personal protective equipment**

Respiratory protection:
Suitable respiratory protection for higher concentrations or long-term effect: Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK).

Hand protection:
Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) and other

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

**General safety and hygiene measures**
SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>suspension</td>
</tr>
<tr>
<td>Colour</td>
<td>white</td>
</tr>
<tr>
<td>Odour</td>
<td>faintly aromatic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined due to potential health hazard by inhalation.</td>
</tr>
<tr>
<td>pH value</td>
<td>approx. 6 - 8 (CIPAC standard water D, 1 %(m), 20 °C)</td>
</tr>
<tr>
<td>Freezing point</td>
<td>approx. -6.2 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>approx. 100 °C (1,013 hPa)</td>
</tr>
<tr>
<td>Flash point</td>
<td>No flash point - Measurement made up to the boiling point. (Directive 92/69/EEC, A.9)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>Based on the structure or composition there is no indication of flammability</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>463 °C (Directive 92/69/EEC, A.15)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>The product has not been tested.</td>
</tr>
<tr>
<td>Density</td>
<td>approx. 1.11 g/cm³ (approx. 20 °C)</td>
</tr>
<tr>
<td>Relative vapour density (air)</td>
<td>not determined</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>dispersible</td>
</tr>
</tbody>
</table>
Information on: 4-(3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl)morpholine
Partitioning coefficient n-octanol/water (log Kow): 2.63 - 2.73
(20 °C)

----------------------------------
Thermal decomposition: not determined
Viscosity, dynamic: approx. 81 mPa.s (20 °C, 100 l/s)
(20 °C) 
Explosion hazard: Based on the chemical structure there is no indicating of explosive properties.
Fire promoting properties: not fire-propagating (Directive 2004/73/EC, A.21)

9.2. Other information

Other Information:
If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
No hazardous reactions if stored and handled as prescribed/indicated.

10.4. Conditions to avoid
See MSDS section 7 - Handling and storage.

10.5. Incompatible materials
Substances to avoid: strong acids, strong bases, strong oxidizing agents

10.6. Hazardous decomposition products
Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Of moderate toxicity after single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation.

Experimental/calculated data:
LD50 rat (oral): > 500 - < 2,000 mg/kg (OECD Guideline 423)
LC50 rat (by inhalation): > 5.1 mg/l 4 h (OECD Guideline 403)
An aerosol was tested.
LD50 rat (dermal): > 5,000 mg/kg (OECD Guideline 402)

Irritation

Assessment of irritating effects:
Not irritating to the eyes. Not irritating to the skin.

Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)
Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:
There is no evidence of a skin-sensitizing potential.

Experimental/calculated data:
Buehler test guinea pig: Skin sensitizing effects were not observed in animal studies. (OECD Guideline 406)
Mouse Local Lymph Node Assay (LLNA) mouse: Skin sensitizing effects were not observed in animal studies. (OECD Guideline 429)

Germ cell mutagenicity

Assessment of mutagenicity:
The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity

Assessment of carcinogenicity:
The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity:
The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.
Developmental toxicity

Assessment of teratogenicity:
The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
The product has not been tested. The statement has been derived from the properties of the individual components. No substance-specific organtoxicity was observed after repeated administration to animals.

Other relevant toxicity information

Misuse can be harmful to health.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
Acutely harmful for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Toxicity to fish:
LC50 (96 h) 23.2 mg/l, Oncorhynchus mykiss (OECD 203; ISO 7346; 92/69/EEC, C.1, static)

Aquatic invertebrates:
EC50 (48 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1)

Aquatic plants:
EC50 (72 h) 74.2 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201)

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 4-(3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl)morpholine

Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria).

Information on: Ametoctradin
Assessment biodegradation and elimination (H2O):
According to OECD criteria the product is not readily biodegradable but inherently biodegradable.
12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
The product has not been tested. The statement has been derived from the properties of the individual components.

*Information on: 4-(3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl)morpholine*

Bioaccumulation potential:
No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

*Information on: Ametoctradin*

Bioaccumulation potential:
Bioconcentration factor: 197 - 202, Lepomis macrochirus
Accumulation in organisms is not to be expected.

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12.4. Mobility in soil (and other compartments if available)

Assessment transport between environmental compartments:
The product has not been tested. The statement has been derived from the properties of the individual components.

*Information on: 4-(3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl)morpholine*

Assessment transport between environmental compartments:
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

*Information on: Ametoctradin*

Assessment transport between environmental compartments:
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

----------------------------------

12.5. Results of PBT and vPvB assessment

The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Other ecotoxicological advice:
Do not discharge product into the environment without control.
SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Must be sent to a suitable incineration plant, observing local regulations.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

SECTION 14: Transport Information

**Land transport**

ADR

<table>
<thead>
<tr>
<th>UN number:</th>
<th>Not classified as a dangerous good under transport regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Transport hazard class(es):</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Packing group:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>None known</td>
</tr>
</tbody>
</table>

RID

<table>
<thead>
<tr>
<th>UN number:</th>
<th>Not classified as a dangerous good under transport regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Transport hazard class(es):</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Packing group:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>None known</td>
</tr>
</tbody>
</table>

**Inland waterway transport**

ADN

<table>
<thead>
<tr>
<th>UN number:</th>
<th>Not classified as a dangerous good under transport regulations</th>
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</thead>
<tbody>
<tr>
<td>UN proper shipping name:</td>
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</tr>
<tr>
<td>Transport hazard class(es):</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Packing group:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>None known</td>
</tr>
<tr>
<td>Transport in inland</td>
<td>Not evaluated</td>
</tr>
</tbody>
</table>
Sea transport

IMDG

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation: Not evaluated
Shipment approved: Not evaluated
Pollution name: Not evaluated
Pollution category: Not evaluated
Ship Type: Not evaluated

SECTION 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2)

15.2. Chemical Safety Assessment

Advice on product handling can be found in sections 7 and 8 of this safety data sheet.
SECTION 16: Other Information

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

N  Dangerous for the environment.

51/53  Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Acute Tox.

Aquatic Chronic  Hazardous to the aquatic environment - chronic

H411  Toxic to aquatic life with long lasting effects.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product’s properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.