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Product name	<b>Deltamethrin 25 g/l EC</b>	Revision: July 2020
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes January 2013

## SAFETY DATA SHEET

### Deltamethrin 25 g/l EC

Revision: Sections containing a revision or new information are marked with a ♣.

#### ♣ SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1. **Product identifier** ..... **Deltamethrin 25 g/l EC**  
**Contains hydrocarbons, C10, aromatics, < 1% naphthalene**
- Trade names ..... **Audace, Itaca**
- 1.2. **Relevant identified uses of the substance or mixture and uses advised against** ..... Can be used as insecticide only.
- 1.3. **Details of the supplier of the safety data sheet** ..... **FMC Agricultural Solutions A/S**  
Thyborønvej 78  
DK-7673 Harbøre  
Denmark  
[SDS.Ronland@fmc.com](mailto:SDS.Ronland@fmc.com)
- 1.4. **Emergency telephone number**  
Medical emergencies:
- |                                     |   |
|-------------------------------------|---|
| Austria: +43 1 406 43 43            | Luxembourg: +352 8002 5500                                      |
| Belgium: +32 70 245 245             | Netherlands: +31 30 274 88 88                                   |
| Bulgaria: +359 2 9154 409           | Norway: +47 22 591300   |
| Cyprus: 1401                        | Poland: +48 22 619 66 54  |
| Czech Republic: +420 224 919 293    | +48 22 619 08 97  |
| +420 224 915 402                    | Portugal: 800 250 250 (in Portugal only)                        |
| Denmark: +45 82 12 12 12            | +351 21 330 3284  |
| England and Wales: 111              | Romania: +40 21318 3606   |
| Estonia: +372 7943500               | Scotland: +8454 24 24 24  |
| Finland: +358 9 471 977             | Slovakia: +421 2 54 77 4 166                                    |
| France: +33 (0) 1 45 42 59 59       | Slovenia: +386 41 650 500                                       |
| Greece: 30 210 77 93 777            | South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.) |
| Hungary: +36 80 20 11 99            | Spain: +34 91 562 04 20   |
| Ireland (Republic): +353 1 837 9964 | Sweden: +46 08-331231   |
| Italy: +39 02 6610 1029             | 112   |
| Latvia: +371 670 42 473             | Switzerland: 145  |
| 112                                 | Turkey: 114   |
| Lithuania: +370 523 62052           | U.S.A. & Canada: +1 800 / 331 3148                              |
| +370 687 53378                      | All other countries: +1 651 / 632 6793 (Collect)                |

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For fire, leak, spill or other accident emergencies:

U.S.A.: +1 800 / 424 9300 (CHEMTREC)  
 All other countries: +1 703 / 741 5970 (CHEMTREC - Collect)

**♣ SECTION 2: HAZARDS IDENTIFICATION**

**2.1. Classification of the substance or mixture**

Eye damage: Category 1 (H318)  
 Specific target organ toxicity – single exposure: Category 3 (H336)  
 Aspiration toxicity: Category 1 (H304)  
 Hazards to the aquatic environment, acute: Category 1 (H400)  
 chronic: Category 1 (H410)

WHO classification .....

Class III: Slightly hazardous

Health hazards .....

The product has irritating properties. It may cause lung damage if swallowed.

The active ingredient **deltamethrin** is toxic by inhalation and if swallowed. The inhalation of vapour is negligible because of low vapour pressure, but inhalation of aerosol must be avoided.

Environmental hazards .....

The product is very toxic to aquatic organisms.

**2.2. Label elements**

According to EU Reg. 1272/2008 as amended

Product identifier .....

Deltamethrin 25 g/l EC  
 Contains hydrocarbons, C10, aromatics, < 1% naphthalene

Hazard pictograms (GHS05, GHS07, GHS08, GHS09)



Signal word .....

Danger

Hazard statements

H304 .....

May be fatal if swallowed and enters airways.

H318 .....

Causes serious eye damage.

H336 .....

May cause drowsiness and dizziness.

H410 .....

Very toxic to aquatic life with long lasting effects.

Supplementary hazard statements

EUH066 .....

Repeated exposure may cause skin dryness and cracking.

EUH401 .....

To avoid risks to human health and the environment, comply with the instructions of use.

Precautionary statements

P261 .....

Avoid breathing vapours.

P280 .....

Wear eye protection.

P305+P351+P338 .....

IF IN EYES: Rinse cautiously with water for several minutes. Remove

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P310 ..... contact lenses, if present and easy to do. Continue rinsing.  
 P331 ..... Immediately call a POISON CENTER or physician.  
 P501 ..... Do NOT induce vomiting.  
 Dispose of contents and container as hazardous waste.

2.3. **Other hazards** ..... None of the ingredients in the product meets the criteria for being PBT or vPvB.

### ♣ SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. **Substances** ..... The product is a mixture, not a substance.

3.2. **Mixtures** ..... See section 16 for full text of hazard statements.

#### Active ingredient

**Deltamethrin** ..... Content: 2.8% by weight  
 CAS name ..... Cyclopropanecarboxylic acid, 3-(2,2-dibromoethenyl)-2,2-dimethyl-,  
 (S)-cyano(3-phenoxyphenyl)methyl ester, (1R,3R)-  
 CAS no. .... 52918-63-5  
 IUPAC name ..... (S)-α-Cyano-3-phenoxybenzyl (1R,3R)-3-(2,2-dibromovinyl)-  
 2,2-dimethylcyclopropanecarboxylate  
 ISO name/EU name ..... Deltamethrin  
 EC no. (EINECS no.) ..... 258-256-6  
 EU index no. .... 607-319-00-X  
 Molecular weight ..... 505.20  
 Classification of the ingredient ..... Acute oral toxicity: Category 3 (H301)  
 Inhalation toxicity: Category 3 (H331)  
 Hazards to the aquatic environment, acute: Category 1 (H400)  
 chronic: Category 1 (H410)

#### Reportable ingredients

	Content (% w/w)	CAS no.	EC no.	Classification
Hydrocarbons, C10, aromatics, < 1% naphthalene Reg. no. 01-2119463583-34	92		918-811-1	STOT SE 3 (H336) Asp. Tox. 1 (H304) Aquatic Chronic 2 (H411) EUH066
Benzenesulphonic acid, C10-13-alkyl derivs., calcium salts Reg. no. 01-2119560592-37	Max. 3	None	None	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Aquatic Chronic 3 (H412)
Isobutanol Reg. no. 01-2119484609-23	Max. 2	78-83-1	EINECS no.: 201-148-0	Flam. Liq. 3 (H226) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT SE 3 (H335) STOT SE 3 (H336)

### ♣ SECTION 4: FIRST AID MEASURES

4.1. **Description of first aid measures** ..... If exposure has occurred, do not wait for symptoms to develop, but

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immediately start the procedures described below.

- |                    |   |
|--------------------|---|
| Inhalation .....   | If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.  |
| Skin contact ..... | Immediately remove contaminated clothing and footwear. Do not start with flushing with water, but wipe off with dry cloth or using talcum powder, followed by washing with water and soap. Thereafter apply lidocaine, vitamin E cream, fatty skin care oil or cream. See physician if contamination is severe or if feeling unwell.                                  |
| Eye contact .....  | Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. See physician immediately.  |
| Ingestion .....    | Let the exposed person rinse mouth and let him/her drink several glasses of water (not milk or cream or other substance containing fats, which may enhance absorption), but do not induce vomiting. If vomiting does occur, let him/her rinse mouth and drink fluids again. Never give anything by mouth to an unconscious person. Get medical attention immediately. |
- 4.2. **Most important symptoms and effects, both acute and delayed**
- If the product is swallowed or inhaled, small doses may produce non-specific symptoms (e.g. dizziness, headache, nausea, vomiting, diarrhoea). Inhalation may cause irritation of the respiratory tract. Larger doses may produce disturbance of the central nervous system (e.g. tremors, convulsions, coma).
- On contact, **deltamethrin** may cause feelings of burning, tingling or numbness in exposed areas (paraesthesia), which is harmless but can be quite painful, especially in the eye. The effect may result from splash, aerosol or transfer from contaminated gloves. It is enhanced by sweating, water and sunshine. This effect is transient, usually lasting up to 24 hours, but may in exceptional cases last longer. It may be considered as a warning that overexposure has occurred and that work practice should be reviewed.
- 4.3. **Indication of any immediate medical attention and special treatment needed**
- If any sign of poisoning occurs, call a doctor (physician), clinic or hospital immediately. Explain that the victim has been exposed to a pyrethroid insecticide. Describe his/her condition and the extent of exposure. Immediately remove the exposed person from the area where the product is present.
- As soon as a feeling of tingling is noted in any skin area (see section 11), it is recommended to immediately apply lidocaine or a vitamin E cream. For this purpose lidocaine or vitamin E cream should be available at the workplace.

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It may be helpful to show this safety data sheet to physician.

Notes to physician .....

A specific antidote against this substance is not known. Gastric lavage and administration of activated charcoal can be considered. After decontamination, treatment is symptomatic and supportive as indicated. Normally recovery is spontaneous.

The product contains petroleum distillates, which may pose an aspiration pneumonia hazard.

If allowed to penetrate the skin, **deltamethrin** may cause an irritation similar to sunburn. The substance will be drawn into a non-polar environment such as a fat based oil or cream. Vitamin E cream has been reported to be beneficial. Water is highly polar and will not decrease, but may prolong the irritation. Hot water may increase the pain.

For eye contamination, instillation of local anaesthetic can be considered.

#### ♣ SECTION 5: FIRE-FIGHTING MEASURES

- |   |  |
|---|--|
| 5.1. <b>Extinguishing media</b> .....                             | Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.   |
| 5.2. <b>Special hazards arising from the substance or mixture</b> | The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as carbon monoxide, carbon dioxide, hydrogen bromide, nitrogen oxides, sulphur dioxide and various brominated organic compounds. Traces of hydrogen cyanide may be present.  |
| 5.3. <b>Advice for firefighters</b> .....                         | Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear self-contained breathing apparatus and protective clothing. |

#### ♣ SECTION 6: ACCIDENTAL RELEASE MEASURES

- |   |   |
|---|---|
| 6.1. <b>Personal precautions, protective equipment and emergency procedures</b> | <p>It is recommended to have a plan for the avoidance of spills. If spillage does occur, it has to be removed and the area cleaned immediately according to a predetermined plan. It is recommended to clean area or equipment also if contamination is suspected.</p> <p>Empty, sealable vessels for the collection of spills should be available.</p> <p>In case of large spill (involving 10 tonnes of the product or more):</p> <ol style="list-style-type: none"> <li>1. use personal protection equipment; see section 8</li> </ol> |
|---|---|

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2. call emergency telephone no.; see section 1
3. alert authorities.

Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and rubber boots.

Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area. Avoid and reduce formation of vapour or mist as much as possible. Remove sources of ignition.

**6.2. Environmental precautions .....**

Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

**6.3. Methods and materials for containment and cleaning up**

It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. See GHS (Annex 4, Section 6).

Use non-sparking tools and equipment. If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, Fuller's earth or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with detergent and much water. Absorb wash liquid with absorbent and transfer to suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and transferred to suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

**6.4. Reference to other sections .....**

See subsection 8.2. for personal protection.  
 See section 13 for disposal.

**♣ SECTION 7: HANDLING AND STORAGE**

**7.1. Precautions for safe handling ....**

Keep away from sources of ignition and protect from exposure to fire and heat.

In an industrial environment it is important to avoid all personal contact with the product, if possible by using closed systems with remote system control. The material should be handled by mechanical means as much as possible. Adequate ventilation or local exhaust

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ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8.

Keep all unprotected persons and children away from working area.

Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes and footwear. Take a shower, using water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each use.

The work area should always be kept clean. Used personal protection equipment should either be thrown out or be cleaned immediately after use. Respirator should be cleaned and filter replaced according to instructions provided with respirator.

Inhalation of vapours can cause lowered consciousness, which increases the risks of operating machinery and driving.

Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.

**7.2. Conditions for safe storage, including any incompatibilities**

The product is stable under normal conditions of warehouse storage. Protect against strong heat and frost.

Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading “POISON” is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

**7.3. Specific end use(s) .....**

The product is a registered pesticide which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

**♣ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1. Control parameters**

Personal exposure limits .....

To our knowledge, no exposure limits have been established for the active ingredient in this product.

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**Aromatic hydrocarbons** ..... 100 ppm total hydrocarbon is recommended. The mixture contains trimethyl benzene. The ACGIH recommends a TLV-TWA of 25 ppm (123 g/m<sup>3</sup>) for trimethyl benzene.

However, other personal exposure limits defined by local regulations may exist and must be observed.

**Deltamethrin**

DNEL, systemic ..... 0.0075 mg/kg bw/day

PNEC, aquatic environment ..... 0.41 ng/l

**Aromatic hydrocarbons**

DNEL, dermal ..... 12.5 mg/kg bw/day

DNEL, inhalation ..... 150 mg/m<sup>3</sup>

PNEC, aquatic environment ..... Not applicable

**8.2. Exposure controls** .....

When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems non-hazardous before opening.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.

In cases of incidental high exposure, maximal personal protection may be necessary, such as respirator, face mask, chemical resistant coveralls.



Respiratory protection

In the event of an accidental discharge of the material which produces a heavy vapour or mist, workers must put on officially approved respiratory protection equipment with a universal filter type including particle filter.



Protective gloves .....

Wear long chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber. The breakthrough times of these materials for the product are unknown. Generally, however, the use of protective gloves will give only partial protection against dermal exposure. Small tears in the gloves and cross-contamination can easily occur. It is recommended to limit the work to be done manually and to change the gloves immediately if there is a suspicion of contamination. Be careful not to touch anything with contaminated gloves. Used gloves should be thrown out and not be reused. Wash hands with water and soap immediately after work is finished.



Eye protection .....

Wear face shield rather than goggles or safety glasses. The possibility of eye contact should be excluded.



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#### Other skin protection

Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be required.

### ♣ SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Information on physical and chemical properties

Physical state .....	Liquid
Colour .....	Colourless to light yellow
Odour .....	Of aromatic hydrocarbons
Melting point/freezing point .....	Not determined
Boiling point or initial boiling point and boiling range .....	Not determined
	<b>Deltamethrin</b> : decomposes
	<b>Aromatic hydrocarbons</b> : 160 - 220°C
Flammability .....	Ignitable
Lower and upper explosive limit ..	<b>Aromatic hydrocarbons</b> : 0.6 - 7.0 vol% (≈ 0.6 - 0.7 kPa)
Flash point .....	> 61°C
Auto-ignition temperature .....	<b>Aromatic hydrocarbons</b> : > 400°C
Decomposition temperature .....	Not determined
pH .....	Not determined
Kinematic viscosity .....	Not determined
Solubility .....	The product is emulsifiable in water. Solubility of <b>deltamethrin</b> at 20°C in:
	ethyl acetate 200 - 300 g/l
	n-heptane 2.47 g/l
	water < 0.005 mg/l
Partition coefficient n-octanol/water (log value)	<b>Deltamethrin</b> : log K <sub>ow</sub> = 4.6 at 25°C
	<b>Aromatic hydrocarbons</b> : some of the main components have log K <sub>ow</sub> = 4.1 at 25°C by model calculation
Vapour pressure .....	<b>Deltamethrin</b> : 1.2 x 10 <sup>-8</sup> Pa at 25°C
	<b>Aromatic hydrocarbons</b> : 1 kPa at 25°C
Density and/or relative density .....	Density: approx. 0.91 g/ml at 20°C
Relative vapour density .....	(Air = 1)
	<b>Aromatic hydrocarbons</b> : > 1
Particle characteristics .....	Not applicable (liquid)

#### 9.2. Other information

Evaporation rate .....	(Butyl acetate = 1)
	<b>Aromatic hydrocarbons</b> : 0.07

### SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity .....	To our knowledge, the product has no special reactivities.
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- 10.2. **Chemical stability** ..... The product is stable during normal handling and storage at ambient temperatures.
- 10.3. **Possibility of hazardous reactions** ..... None known.
- 10.4. **Conditions to avoid** ..... Heating of the product will evolve harmful and irritant vapours. The product can be ignited by e.g. flame, spark or hot surface.
- 10.5. **Incompatible materials** ..... None known.
- 10.6. **Hazardous decomposition products** ..... See subsection 5.2.

#### ♣ SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1. **Information on hazard classes as defined in Regulation (EC) No 1272/2008** ..... \* = Based on available data, the classification criteria are not met.

##### Product

Acute toxicity ..... The product is not considered harmful. \* However, it should always be treated with the usual care of handling chemical. The acute toxicity is estimated as:

Route(s) of entry	- ingestion	LD <sub>50</sub> , oral, rat: 2000 mg/kg
	- skin	LD <sub>50</sub> , dermal, rat: > 2000 mg/kg
	- inhalation	LC <sub>50</sub> , inhalation, rat: > 5.0 mg/l/4 h

Skin corrosion/irritation ..... May be slightly irritating to skin. \* May cause dry skin.

Serious eye damage/irritation ..... May be mildly to moderately irritating to eyes.

Respiratory or skin sensitisation ... Not expected to be sensitising to skin. \*

Germ cell mutagenicity ..... The product contains no ingredient known to be mutagenic. \*

Carcinogenicity ..... The product contains no ingredients known to be carcinogenic. \*

Reproductive toxicity ..... The product contains no ingredients known to have adverse effects on reproduction. \*

STOT – single exposure ..... If inhaled, the product may cause irritation of airways and disturbance of central nervous system.

STOT – repeated exposure ..... The following is measured on the active ingredient deltamethrin:  
 Target organ: nervous system  
 Lowest relevant NOAEL: 25 ppm (1 mg/kg bw/day) in a 2-year rat study. \*

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Aspiration hazard ..... The product presents an aspiration pneumonia hazard.

**Deltamethrin**

Toxicokinetics, metabolism and distribution

After oral intake the substance is rapidly absorbed in the body and widely distributed. Excretion is also rapid, within a few days. It is moderately metabolised. There is no evidence of accumulation.

Acute toxicity ..... Deltamethrin is very toxic by inhalation and toxic if swallowed. Toxicity by skin contact is less severe. The acute toxicity is measured as:

Route(s) of entry      - ingestion      LD<sub>50</sub>, oral, rat: 87 mg/kg  
                                  - skin              LD<sub>50</sub>, dermal, rat: > 2000 mg/kg \*  
                                  - inhalation      LC<sub>50</sub>, inhalation, rat: 0.6 mg/l/4 h (dust particulate aerosol)

Skin corrosion/irritation ..... Not irritating to skin. \*

Serious eye damage/irritation ..... Not irritating to eyes. \*

Respiratory or skin sensitisation ... Not a skin sensitizer. \*

**Hydrocarbons, C10, aromatics, < 1% naphthalene**

Acute toxicity ..... The substance is not considered as harmful. \* The acute toxicity as measured on similar products is:

Route(s) of entry      - ingestion      LD<sub>50</sub>, oral, rat: > 5000 mg/kg (method similar to OECD 401)  
                                  - skin              LD<sub>50</sub>, dermal, rat: > 2000 mg/kg (method similar to OECD 402)  
                                  - inhalation      LC<sub>50</sub>, inhalation, rat: > 4.7 mg/l/4 h  
                                  (vapour, method similar to OECD 403)

Skin corrosion/irritation ..... Can cause skin dryness (method similar to OECD 404).

Serious eye damage/irritation ..... May cause mild, short-lasting discomfort to eyes (method similar to OECD 405). \*

Respiratory or skin sensitisation ... To our knowledge, no indications of allergenic properties have been recorded. Measured on a similar substance: not a skin sensitizer (method similar to OECD 406). \*

Aspiration hazard ..... Aromatic hydrocarbons present an aspiration hazard.

**Benzenesulphonic acid, C10-13-alkyl derivs., calcium salts**

Acute toxicity ..... The substance is not considered as harmful by skin contact, ingestion and inhalation. \* The following has been measured on the substance:

Route(s) of entry      - ingestion      LD<sub>50</sub>, oral, rat (female): 4445 mg/kg  
                                  - skin              LD<sub>50</sub>, dermal, rat: > 2000 mg/kg

Skin corrosion/irritation ..... Irritating to skin (method OECD 404)

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Serious eye damage/irritation .....	Severely irritating to eyes with the potential to cause permanent eye damage (method OECD 405).
Respiratory or skin sensitisation ...	Not sensitising to guinea pigs (method OECD 406). *
<u><i>Isobutanol</i></u>	
Acute toxicity .....	Isobutanol is not considered as harmful by single exposure. *
Skin corrosion/irritation .....	Not irritating to rabbit skin (method OECD 404), but the classification of isobutanol is harmonised.
Serious eye damage/irritation .....	Severely irritating to eyes (method OECD 405).
Respiratory or skin sensitisation ...	Not sensitising to guinea pigs (method OECD 406). To our knowledge, no indications of allergenic properties have been recorded. *

11.2. **Information on other hazards ....** No more relevant information is available.

## ♣ SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity .....** **Deltamethrin** is highly toxic to fish, aquatic invertebrates, aquatic life stages of amphibians and insects. It is not considered as harmful to birds and soil micro- and macro-organisms. It has not been possible to reach a concentration harmful to green algae in water.

On the active ingredient deltamethrin the following data have been measured:

- Fish	Rainbow trout .....	96-h LC <sub>50</sub> : 0.91 µg/l 28-day NOEC: < 32 ng/l
	Bluegill sunfish .....	96-h LC <sub>50</sub> : 1.4 µg/l
- Invertebrates	Daphnids ( <i>Daphnia magna</i> ) .....	48-h EC <sub>50</sub> : 0.56 µg/l 21-day NOEC: 4.1 ng/l
- Algae	Green algae ( <i>Scenedesmus subspicatus</i> ) .....	72-h IC <sub>50</sub> : > 9.1 mg/l
- Birds	Bobwhite quail ( <i>Colinus virginianus</i> ) .....	LD <sub>50</sub> : > 2250 mg/kg
	Mallard duck ( <i>Anas platyrhynchos</i> ) .....	LD <sub>50</sub> : > 4640 mg/kg
- Earthworms	<i>Eisenia foetida</i> .....	14-day LC <sub>50</sub> : > 1290 mg/kg soil
- Insects	Bees ( <i>Apis mellifera</i> ) .....	LD <sub>50</sub> , contact: 0.0015 µg/bee LD <sub>50</sub> , oral: 0.079 µg/bee

12.2. **Persistence and degradability ....** **Deltamethrin** is not readily biodegradable. However, it undergoes degradation in the environment and in waste water treatment plants. Primary degradation half-lives are usually 2-3 weeks (primary degradation) in different soil types and depending on circumstances.

**Aromatic hydrocarbons** are not readily biodegradable. However,

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they are expected to be degraded in the environment at a moderate rate.

The product contains minor amounts of not readily biodegradable ingredients which may not be degradable in waste water treatment plants,

12.3. **Bioaccumulative potential** ..... See section 9 for information on octanol-water partition coefficients.

**Deltamethrin** has a potential to bioaccumulate. The bioaccumulation factor (BCF) has been measured as 1400. However, the risk of bioaccumulation is low because of very low solubility in water, resulting in rapid removal from the water phase. Therefore, bioavailability is low.

**Aromatic hydrocarbons** have a moderate potential to bioaccumulate if continuous exposure is maintained. Most components can be metabolised by many organisms, bacteria, fungi, etc. Bioaccumulation factors of some of the main components are 715 - 810 (by model calculation).

12.4. **Mobility in soil** ..... **Deltamethrin** is not mobile in soil. It is strongly absorbed to soil particles and there is only a small risk of leaching.

**Aromatic hydrocarbons** are not mobile in the environment, but they are highly volatile and will rapidly evaporate to the air if released onto water or on the surface of soil. They float and can migrate to sediment.

12.5. **Results of PBT and vPvB assessment** ..... None of the ingredients meets the criteria for being PBT or vPvB.

12.6. **Endocrine disrupting properties** ..... None of the ingredients is known to have endocrine disrupting properties.

12.7. **Other adverse effects** ..... Other relevant hazardous effects in the environment are not known.

## ♣ SECTION 13: DISPOSAL CONSIDERATIONS

13.1. **Waste treatment methods** ..... Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.

Disposal of waste and packagings must always be in accordance with all applicable local regulations.

Disposal of product ..... According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.

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Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Disposal of packaging .....

It is recommended to consider possible ways of disposal in the following order:

1. Reuse or recycling should first be considered. Reuse is prohibited except by the authorisation holder. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.
2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
3. Delivery of the packaging to a licensed service for disposal of hazardous waste.
4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill, containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

#### ♣ SECTION 14: TRANSPORT INFORMATION

##### ADR/RID/IMDG/IATA/ICAO classification

- |   |   |
|---|---|
| 14.1. UN number .....   | 3082  |
| 14.2. UN proper shipping name .....                           | Environmentally hazardous substance, liquid, n.o.s. (deltamethrin and alkyl(C3-C5)benzenes)                                 |
| 14.3. Transport hazard class(es) .....                        | 9   |
| 14.4. Packing group .....                                     | III   |
| 14.5. Environmental hazards .....                             | Marine pollutant  |
| 14.6. Special precautions for user .....                      | Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not discharge to the environment. |
| 14.7. Maritime transport in bulk according to IMO instruments | The product is not transported in bulk by ship.   |

#### SECTION 15: REGULATORY INFORMATION

- |  |   |
|--|---|
| 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture | Seveso category (Dir. 2012/18/EU): dangerous for the environment<br><br>All ingredients are covered by EU chemical legislation. |
| 15.2. Chemical safety assessment .....   | A chemical safety assessment is not required to be included for this product.   |

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## ♣ SECTION 16: OTHER INFORMATION

Relevant changes in the safety data sheet	Several changes have been made to adapt the format of the safety data sheet, but these do not involve new information on hazardous properties.	
List of abbreviations .....	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS	Chemical Abstracts Service
	Dir.	Directive
	DNEL	Derived No Effect Level
	EC	Emulsifiable Concentrate, or European Community
	EC <sub>50</sub>	50% Effect Concentration
	EINECS	European INventory of Existing Commercial Chemical Substances
	GHS	Globally Harmonized classification and labelling System of chemicals, Seventh revised edition 2017
	IMO	International Maritime Organisation
	IC <sub>50</sub>	50% Inhibition Concentration
	ISO	International Organisation for Standardization
	IUPAC	International Union of Pure and Applied Chemistry
	LC <sub>50</sub>	50% Lethal Concentration
	LD <sub>50</sub>	50% Lethal Dose
	NOAEL	No Observed Adverse Effect Level
	NOEC	No Observed Effect Concentration
	n.o.s.	Not otherwise specified
	OECD	Organisation for Economic Cooperation and Development
	PBT	Persistent, Bioaccumulative, Toxic
	PNEC	Predicted No Effect Concentration
	Reg.	Registration, or Regulation
	STOT	Specific Target Organ Toxicity
	TLV	Threshold Limit Value
	TWA	Time Weighted Average
	vPvB	very Persistent, very Bioaccumulative
	WHO	World Health Organisation
References .....	Data on ingredients are available from published literature and can be found several places.	
Method for classification .....	Calculation rules	
Used hazard statements .....	H226	Flammable liquid and vapour.
	H301	Toxic if swallowed.
	H304	May be fatal if swallowed and enters airways.
	H315	Causes skin irritation.
	H318	Causes serious eye damage.
	H331	Toxic if inhaled.
	H335	May cause respiratory irritation.



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- H336 May cause drowsiness and dizziness.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.
- EUH066 Repeated exposure may cause skin dryness and cracking.
- EUH401 To avoid risks to human health and the environment, comply with the instructions of use.

Advice on training ..... This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and situations unforeseen by FMC Corporation may exist. The user has to check the validity of the information under local circumstances.

Prepared by: FMC Agricultural Solutions A/S / GHB