

Material group	5790	Page 1 of 17
Product name	Imidacloprid 430 g/l + Gamma-cyhalothrin 30 g/l ZC	Revision: August 2020
Safety data sheet according to EU Reg. 1907/2006 as amended		Supersedes September 2015

SAFETY DATA SHEET

Imidacloprid 430 g/l + Gamma-cyhalothrin 30 g/l ZC

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** **Imidacloprid 430 g/l + Gamma-cyhalothrin 30 g/l ZC**
Contains imidacloprid, gamma-cyhalothrin and 1,2-benzisothiazol-3(2H)-one
- 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 Harboøre
Denmark
SDS.Ronland@fmc.com
- 1.4. **Emergency telephone number**
Medical emergencies:
- | | |
|--|---|
| Austria: +43 1 406 43 43 | Malta: 112 |
| 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
+48 22 619 08 97 |
| Czech Republic: +420 224 919 293
+420 224 915 402 | Portugal: 800 250 250 (in Portugal only)
+351 21 330 3284 |
| Denmark: +45 82 12 12 12 | Romania: +40 21318 3606 |
| England and Wales: 111 | Scotland: +8454 24 24 24 |
| Estonia: +372 7943500 | Slovakia: +421 2 54 77 4 166 |
| Finland: +358 9 471 977 | Slovenia: +386 41 650 500 |
| France: +33 (0) 1 45 42 59 59 | South Africa: +27 83 123 3911 (Bateleur Emergency Response Co.) |
| Greece: 30 210 77 93 777 | Spain: +34 91 562 04 20 |
| Hungary: +36 80 20 11 99 | Sweden: +46 08-331231
112 |
| Ireland (Republic): +353 1 837 9964 | Switzerland: 145 |
| Italy: +39 02 6610 1029 | Turkey: 114 |
| Latvia: +371 670 42 473
112 | U.S.A. & Canada: +1 800 / 331 3148 |
| Lithuania: +370 523 62052
+370 687 53378 | All other countries: +1 651 / 632 6793 (Collect) |
| Luxembourg: +352 8002 5500 | |

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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	<p>Acute oral toxicity: Category 4 (H302) Sensitisation – skin: Category 1B (H317) Specific target organ toxicity – repeated exposure: Category 2 (H373) Hazards to the aquatic environment, acute: Category 1 (H400) chronic: Category 1 (H410)</p>
WHO classification	Class II: Moderately hazardous
Health hazards	<p>The product is harmful by ingestion.</p> <p>The active ingredient gamma-cyhalothrin is very toxic by inhalation. In this formulation it is present in microencapsulated form, which will lower its toxicity, but inhalation of spray or mist must be avoided.</p> <p>Eye and skin contact may cause paraesthesia, see section 4.</p>
Environmental hazards	The product is very toxic to aquatic organisms.
2.2. Label elements	
<u>According to EU Reg. 1272/2008 as amended</u>	
Product identifier	Imidacloprid 430 g/l + Gamma-cyhalothrin 30 g/l ZC Contains imidacloprid, gamma-cyhalothrin and 1,2-benzisothiazol-3(2H)-one
Hazard pictograms (GHS07, GHS08, GHS09)	
Signal word	Warning
Hazard statements	
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H373	May cause damage to nervous system through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
Supplementary hazard statement	
EUH401	To avoid risks to human health and the environment, comply with the instructions of use.
Precautionary statements	
P261	Avoid breathing vapours.

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P280	Wear protective gloves.
P301+P312	IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P362+P313	Take off contaminated clothing and wash it before reuse.
P501	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.
	The product is a suspension in water of porous microcapsules containing the active ingredient gamma-cyhalothrin.

Active ingredients

Imidacloprid	Content: 36% by weight
CAS name	2-Imidazolidinimine, 1-[(6-chloro-3-pyridinyl)methyl]-N-nitro-
CAS no.	138261-41-3
IUPAC name	1-(6-Chloro-3-pyridinyl)methyl-N-nitroimidazolidin-2-ylidene-amine
ISO name	Imidacloprid
EC no.	ELINCS no.: 428-040-8
EU index no.	612-252-00-4
Molecular weight	255.66
Classification of the ingredient	Acute oral toxicity: Category 4 (H302) Hazards to the aquatic environment, acute: Category 1 (H400), M-factor 10 chronic: Category 1 (H410), M-factor 10
Gamma-cyhalothrin	Content: 3% by weight (microencapsulated)
CAS name	Cyclopropanecarboxylic acid, 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethyl, cyano(3-phenoxyphenyl)methyl ester, [1R-[1α(S*),3α(Z)]]-
CAS no.	76703-62-3
IUPAC name	(S)-α-Cyano-3-phenoxybenzyl (Z)-(1R,3R)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate
ISO name/EU name	Gamma-cyhalothrin
EC no. (EINECS no.)	None
EU index no.	None
Molecular weight	449.85
Classification of the ingredient	Acute oral toxicity: Category 3 (H301) Acute dermal toxicity: Category 4 (H312) Acute inhalation toxicity: Category 1 (H330) Sensitisation – skin: Category 1A (H317) Specific target organ toxicity – repeated exposure: Category 1 (H372)

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Hazards to the aquatic environment,

acute: Category 1 (H400), M-factor 10
 chronic: Category 1 (H410), M-factor 10

<u>Reportable ingredients</u>	Content (% w/w)	CAS no.	EC no.	Classification
Glycerol	9	56-81-5	200-289-5	None Personal exposure limits exist.
Hydrocarbons, C10-C13, aromatics, < 1% naphthalene Reg. no. 01-2119451097-39	3		922-153-0	Asp. Tox. 1 (H304) Aquatic Chronic 2 (H411) EUH066
1,2-Benzisothiazol-3(2H)-one	max. 0.03	2634-33-5	EINECS no.: 220-120-9	Acute Tox. 4 (H302) Skin Irrit 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1A (H317) Aquatic Acute 1 (H400) Specific concentration limit for Skin Sens. 1A (H317): C ≥ 0.05 %

♣ SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

If exposure has occurred, do not wait for symptoms to develop, but 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	Call a doctor or get medical attention immediately. Make the exposed person rinse mouth and then drink 1 or 2 glasses of water (not milk or cream or other substance containing fats, which may enhance absorption). Induce vomiting only if: 1. a significant amount (more than a mouthful) has been ingested 2. patient is fully conscious

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3. medical aid is not readily available
 4. time since ingestion is less than one hour.
 Let the patient induce vomiting by touching the back of the throat with a finger. If vomiting occurs, take care that vomit does not enter airways. Let the exposed person rinse mouth and drink fluids again.

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

Gastrointestinal discomfort, tremors and difficulty breathing were seen after oral intake to more concentrated products. Large doses may produce disturbance of the central nervous system (e.g. tremors, convulsions).

On contact, gamma-cyhalothrin can cause feelings of burning, tingling or numbness in exposed areas (paraesthesia), which is harmless at low exposure, but can be quite painful, especially in the eye. The effect may result from splash, aerosol or transfer from contaminated gloves. The effect is transient, 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.

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.

If allowed to penetrate the skin, **gamma-cyhalothrin** 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. Extinguishing media

Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.

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- 5.2. Special hazards arising from the substance or mixture** The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, hydrogen chloride, hydrogen fluoride, carbon monoxide, carbon dioxide and various chlorinated and fluorinated organic compounds. Traces of hydrogen cyanide may be present.
- 5.3. Advice for firefighters** 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. Personal precautions, protective equipment and emergency procedures** 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.
- Empty, sealable vessels for the collection of spills should be available.
- In case of large spill (involving 10 tonnes of the product or more):
1. use personal protection equipment; see section 8
 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.
- 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).
- 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

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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.

Area or equipment can be cleaned with water/isopropanol mixture (25/75) under alkaline conditions (pH > 12). Personal protection equipment must also be used when cleaning.

- 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** 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 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.
- 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.
- 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 at temperatures of 5 to 30°C. Protect against extremes of heat and cold.

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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.

Storage of mixtures of the product with other products can increase toxicity because of extraction of the active ingredient gamma-cyhalothrin from the capsules.

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 ingredients.

Gamma-cyhalothrin An internal value of 0.02 mg/m³ (8-hr LTEL-TWA) is recommended by the manufacturer.

		Year	
Glycerol	ACGIH (USA) TLV	2015	Not established
	OSHA (USA) PEL	2015	15 mg/m ³ , total dust (mist)
	EU, 2000/39/EC as amended	2017	5 mg/m ³ , respirable fraction
	Germany, MAK	2014	Not established
	HSE (UK) WEL	2011	10 mg/m ³ , mist

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

Imidacloprid

DNEL, oral Not established
 The EFSA has established an AOEL of 0.08 mg/kg bw/day
 DNEL, inhalation 0.007 mg/kg bw/day
 PNEC, aquatic 36 µg/l

Gamma-cyhalothrin

DNEL Not established
 The EFSA has established an AOEL of 0.034 mg/kg bw/dag
 PNEC, aquatic environment 0.044 ng/l

Glycerol

DNEL, inhalation 56 mg/m³

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PNEC, freshwater 0.885 mg/l
 PNEC, marine water 0.088 mg/l

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

The product does not automatically present an airborne exposure concern during normal handling. 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.



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.

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♣ SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	Beige
Odour	Weak, characteristic
Melting point/freezing point	< 0°C
Boiling point or initial boiling point and boiling range	Approx. 100°C
Flammability	Not flammable; not expected to be ignitable
Lower and upper explosive limit ..	Not determined
Flash point	> 93°C
Auto-ignition temperature	315°C
Decomposition temperature	Not determined
pH	Undiluted: 4.82 at 20°C 1% mixture with water: 5.23 at 20°C
Kinematic viscosity	Non-Newtonian liquid, viscosity is dependent on shear rate: at shear rate 0.01 s ⁻¹ : > 0.4 x 10 ⁴ mm ² /s at shear rate 100 s ⁻¹ : 51 - 102 mm ² /s
Solubility	The product is miscible with water. Solubility of imidacloprid at 20°C in: isopropanol 1.2 g/l n-hexane < 0.1 g/l Solubility of gamma-cyhalothrin at 19°C in: ethyl acetate > 500 g/l heptane 30.7 g/l water 0.0021 mg/l at 20°C Some solvents favour the extraction of the active ingredient from the microcapsules.
Partition coefficient n-octanol/water (log value)	Imidacloprid : log K _{ow} = 0.57 at 20°C Gamma-cyhalothrin : log K _{ow} = 5.65
Vapour pressure	Imidacloprid : 4 x 10 ⁻¹⁰ Pa at 20°C Gamma-cyhalothrin : 1.03 x 10 ⁻⁷ Pa at 20°C 3.45 x 10 ⁻⁷ Pa at 25°C
Density and/or relative density	Density: 1.18 - 1.19 g/ml at 20°C
Relative vapour density	Not determined
Particle characteristics	Not applicable (liquid)

9.2. **Other information** No more relevant information is available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	To our knowledge, the product has no special reactivities.
10.2. Chemical stability	Gamma-cyhalothrin decomposes on heating. Direct local heating such as electric heating or by steam must be avoided.
10.3. Possibility of hazardous reactions	None known.

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- 10.4. **Conditions to avoid** Heating of the product will evolve harmful and irritant vapours.
- 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 harmful by ingestion. The acute toxicity of the product is measured as:

Route(s) of entry - ingestion LD₅₀, oral, rat, female: 1000 mg/kg (method OECD 423)
 - skin LD₅₀, dermal, rat: > 4000 mg/kg (method OECD 402) *
 - inhalation LC₅₀, inhalation, rat: > 7.29 mg/l/4 h (method OECD 403) *

Skin corrosion/irritation Slightly irritating to skin (method OECD 404). *

Serious eye damage/irritation Not irritating to eyes (method OECD 405). *

Respiratory or skin sensitisation ... Results measured on the product are mixed:
 Buehler test (method OECD 406): negative
 Local Lymph Node Assay (method OECD 429): positive

Germ cell mutagenicity The product contains no ingredients 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 To our knowledge, no specific effects have been observed after single exposure. *

STOT – repeated exposure The following has been measured for **imidacloprid**:
 NOAEL: 150/600 ppm, equivalent to 14.0 mg/kg bw/day for males and 83.3 mg/kg bw/day for females, based on decreased body weight gain at 600 ppm (males) and 2400 ppm (females) and functional changes in the liver at 2400 ppm in females (method OECD 408).

The following has been measured on the active ingredient **gamma-cyhalothrin**:
 Target organ: nervous system.
 Repeated exposure may cause neurotoxic effects. Changes of behaviour were seen in animal tests at exposure levels of 6 - 8 mg/kg bw/day (method OECD 408).

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Aspiration hazard The product does not present an aspiration pneumonia hazard. *

Imidacloprid

Toxicokinetics, metabolism and distribution

Imidacloprid is rapidly absorbed following oral administration. It is widely distributed in the body. The metabolism rate is high. Elimination is fast and complete. There is no indication of bioaccumulation.

Acute toxicity

The substance is harmful by ingestion, but not considered as harmful by inhalation or dermal contact. The acute toxicity of imidacloprid is measured as:

- Route(s) of entry - ingestion LD₅₀, oral, rat (male): 379 - 648 mg/kg (method OECD 401)
- skin LD₅₀, dermal, rat: > 5000 mg/kg (method OECD 402) *
- inhalation LC₅₀, inhalation, rat: > 0.069 mg/l/4 h (method OECD 403)

Skin corrosion/irritation Not irritating to skin (method OECD 404). *

Serious eye damage/irritation Not irritating to eyes (method OECD 405). *

Respiratory or skin sensitisation ... Not a skin sensitizer (method OECD 406). *

Gamma-cyhalothrin

Toxicokinetics, metabolism and distribution

Gamma-cyhalothrin is rapidly absorbed following ingestion. It is extensively metabolised. An elimination half-life of 23 days is reported from animal tests. Accumulation in fat is possible.

Acute toxicity

Gamma-cyhalothrin 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 LD₅₀, oral, rat (male): > 50 mg/kg (method OECD 401)
- skin LD₅₀, oral, rat (female): approx. 55 mg/kg
- skin LD₅₀, dermal, rat (female): approx. 1650 mg/kg (method OECD 402)
- inhalation LC₅₀, inhalation, rat (female): 0.03 mg/l/4 h (method OECD 403)

Skin corrosion/irritation Mildly irritating to skin (method OECD 404). *

Serious eye damage/irritation Not irritating to eyes (method OECD 405). *

Respiratory or skin sensitisation ... Weakly sensitising (method OECD 406).

Hydrocarbons, C10-C13, aromatics, < 1% naphthalene

Acute toxicity

The substance is not considered as harmful by single exposure. *

Skin corrosion/irritation

Can cause skin dryness (measured on similar products; method OECD 404).

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Serious eye damage/irritation	May cause mild, short-lasting discomfort to eyes (measured on similar products; method OECD 405). *
Respiratory or skin sensitisation ...	Not expected to cause respiratory or skin sensitisation (measured on similar products; method OECD 406). *
Aspiration hazard	Aromatic hydrocarbons present an aspiration hazard.
<u>1,2-Benzisothiazol-3(2H)-one</u> Acute toxicity	The substance is harmful by ingestion.
Route(s) of entry - ingestion	LD ₅₀ , oral, rat (male): 670 mg/kg LD ₅₀ , oral, rat (female): 784 mg/kg (method OPPTS 870.1100, measured on 73% solution)
Skin corrosion/irritation	Slightly irritating to skin (method OPPTS 870.2500).
Serious eye damage/irritation	Severely irritating to eyes (method OPPTS 870.2400).
Respiratory or skin sensitisation ...	Moderate dermal sensitizer to guinea pigs (method OPPTS 870.2600). The substance appears to be significantly more sensitising to humans.
11.2. Information on other hazards	No more relevant information is available.

♣ SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity	The product is an insecticide and therefore very toxic to bees and other insects. It is very toxic to fish as well. It is harmful to daphnids, birds and soil macroorganisms. It may have short-term effects on soil microorganisms, but no significant long-term effects have been observed.
The ecotoxicity of the product is measured as:	
- Fish	Zebrafish (<i>Danio rerio</i>) 96-h LC ₅₀ : 0.031 mg/l
- Invertebrates	Daphnids (<i>Daphnia magna</i>) 48-h EC ₅₀ : > 22.1 mg/l
- Algae	Green algae (<i>Selenastrum capricornutum</i>) 72-h IC ₅₀ : > 100 mg/l
- Earthworms	<i>Eisenia foetida</i> 14-day LC ₅₀ : 20 mg/kg soil
- Birds	Japanese quail (<i>Coturnix coturnix japonica</i>) LD ₅₀ : 60 mg/kg
- Insects	Bees (<i>Apis mellifera</i> africanized) 48-h LD ₅₀ , contact: 0.32 µg/bee
12.2. Persistence and degradability	Imidacloprid is not readily biodegradable. It undergoes slow degradation in the environment and in waste water treatment plants. Degradation is mainly microbiological and aerobic, but photo-degradation also occurs. Primary degradation half-lives in the environment vary much with circumstances, usually from a few months to one year.

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Gamma-cyhalothrin is not readily biodegradable. Its primary half-life in soil is measured to be 4 - 8 weeks depending on circumstances. It is not toxic to microorganisms in waste water treatment plants, but it is degraded only slowly.

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

12.3. **Bioaccumulative potential** See section 9 for octanol-water partition coefficient.

Imidacloprid is not expected to bioaccumulate.

Gamma-cyhalothrin has the potential to bioaccumulate if continuous exposure is maintained. It is excreted with a few weeks.

12.4. **Mobility in soil** In the environment, **imidacloprid** is of moderate mobility.

Gamma-cyhalothrin is not mobile in soil.

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
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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 possible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.

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

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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. (imidacloprid and microencapsulated gamma-cyhalothrin) |
| 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 | <p>Seveso category (Dir. 2012/18/EU): dangerous for the environment</p> <p>Young people under the age of 18 are not allowed to work with the substance.</p> <p>The product (imidacloprid) is subject to Reg. 689/2008 concerning export and import of dangerous chemicals (PIC procedure). See www.pic.int.</p> <p>All ingredients are covered by EU chemical legislation.</p> |
| 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

Classification for long-term health hazards has been included.

List of abbreviations

ACGIH American Conference of Governmental Industrial Hygienists
 AOEL Acceptable Operator Exposure Level
 CAS Chemical Abstracts Service
 Dir. Directive
 DNEL Derived No Effect Level
 EC European Community
 EC₅₀ 50% Effect Concentration
 EFSA European Food Safety Authority
 EINECS European INventory of Existing Commercial Chemical Substances
 ELINCS European LIst of Notified Chemical Substances
 GHS Globally Harmonized classification and labelling System of chemicals, Seventh revised edition 2017
 HSE Health & Safety Executive, UK
 IMO International Maritime Organisation
 IBC International Bulk Chemical code
 IC₅₀ 50% Inhibition Concentration
 ISO International Organisation for Standardization
 IUPAC International Union of Pure and Applied Chemistry
 LC₅₀ 50% Lethal Concentration
 LD₅₀ 50% Lethal Dose
 LTEL Long-term exposure limit
 MAK Maximale Arbeitsplatz-Konzentration
 NOAEL No Observed Adverse Effect Level
 n.o.s. Not otherwise specified
 OECD Organisation for Economic Cooperation and Development
 OPPTS Office of Prevention, Pesticides & Toxic Substances
 OSHA Occupational Safety and Health Administration
 PBT Persistent, Bioaccumulative, Toxic
 PEL Personal Exposure Limit
 PIC Prior Informed Consent
 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
 WEL Workplace Exposure Limit
 WHO World Health Organisation
 ZC A mixed heterogeneous formulation of CS (Capsule Suspension) and EW (Emulsion, oil in Water)

References

Data measured on the product are unpublished company data. Data on

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ingredients are available from published literature and can be found several places.

Method for classification Acute oral toxicity: test data
 Sensitisation – skin: test data
 Specific target organ toxicity – repeated exposure: calculation rules
 Hazards to the aquatic environment, acute: test data
 chronic: calculation method

Used hazard statements H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H304 May be fatal if swallowed and enters airways.
 H312 Harmful in contact with skin.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H330 Fatal if inhaled.
 H372 Causes damage to nervous system through prolonged or repeated exposure.
 H373 May cause damage to nervous system through prolonged or repeated exposure.
 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.
 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 Agricultural Solutions A/S may exist. The user has to check the validity of the information under local circumstances.

Prepared by: FMC Agricultural Solutions A/S / GHB