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CHEMINOVA
HELPING YOU GROW

SAFETY DATA SHEET

ACRINATHRIN 22.5 g/l + ABAMECTIN 12.6 g/l EW

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** .....

ACRINATHRIN 22.5 g/l + ABAMECTIN 12.6 g/l EW
Contains abamectin and acrinathrin

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**

CHEMINOVA A/S
P.O. Box 9
DK-7620 Lemvig
Denmark
sds@cheminova.dk

1.4. **Emergency telephone number**

Company ..... (+45) 97 83 53 53 (24 h; for emergencies only)

Medical emergencies:

Belgium: + 32 70 245 245
Bulgaria: +359 2 9154 409
Czech Republic: +420 224 919 293
+420 224 915 402
Denmark: +45 82 12 12 12
France: +33 (0) 1 45 42 59 59
Germany: +49 30 19240
Finland: +358 9 471 977
Hungary: +36 80 20 11 99
Ireland (Republic): +352 1 809 2166
Italy: +39 02 6610 1029
Lithuania: +370 523 62052
+370 687 53378
Luxembourg: +352 8002 5500
Netherlands: +31 30 274 88 88
Norway: +47 22 591300
Poland: +48 22 619 66 54
+48 22 619 08 97
Portugal: 808 250 143 (in Portugal only)
+351 21 330 3284
Romania: +40 21318 3606
Slovakia: +421 2 54 77 4 166
Slovenia: +386 41 650 500
Spain: +34 91 562 04 20
Sweden: +46 08-331231
112
Switzerland: 145
United Kingdom: 0870 600 6266 (in the UK only)
U.S.A. & Canada: +1 800 / 331-3148 (PROSAR)
All other countries: +1 651 / 632-6793 (PROSAR - Collect)

♣ SECTION 2: HAZARDS IDENTIFICATION

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

Acute oral toxicity: Category 4 (H302)
Acute inhalation toxicity: Category 4 (H332)
Eye irritation: Category 2 (H319)
Specific target organ toxicity – repeated exposure: Category 2 (H373)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)

WHO classification ..... Class II: Moderately hazardous

Health hazards ..... The preparation is hazardous to health by ingestion and by inhalation. On repeated or prolonged exposure the product can cause several serious effects. See section 11.

The active ingredient abamectin is suspected to cause adverse effects on fertility and to cause birth defects.

Abamectin is a dangerous poison if swallowed or inhaled. It is harmful in contact with skin. Inhalation of aerosol or spray mist is hazardous as well.

Environmental hazards ..... The product is very toxic to aquatic organisms.

2.2. **Label elements**

According to EU Reg. 1272/2008 as amended

Product identifier ..... Acrinathrin 22.5 g/l + Abamectin 12.6 g/l EW
Contains abamectin and acrinathrin

Hazard pictograms (GHS07, GHS08, GHS09)

Signal word ..... Warning

Hazard statements

H302 ..... Harmful if swallowed.
H319 ..... Causes serious eye irritation.
H332 ..... Harmful if inhaled
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.
P264 ..... Wash hands thoroughly after handling.
P280 ..... Wear eye protection.
P305+P351+P338 ..... IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 ..... Call a POISON CENTER or doctor/physician if you feel unwell.

P501 ..... Dispose of contents/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 ingredients

Acrinathrin Content: 2% by weight

CAS name ..... Cyclopropanecarboxylic acid, 2,2-dimethyl-3-[(1Z)-3-oxo-[2,2,2-trifluoro-1-(trifluoromethyl)ethoxy]-1-propenyl]-, (S)-cyano(3-phenoxyphenyl)methyl ester, (1R,3S)-

CAS no. 101007-06-1

IUPAC name ..... (1*R*,3*S*)-((*S*)-Cyano(3-phenoxyphenyl)methyl 3-((Z)-3-(1,1,1,3,3,3-hexafluoropropan-2-yloxy)-3-oxoprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate

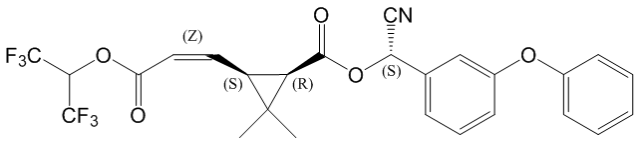
ISO name/EU name ..... Acrinathrin

EC no. (EINECS no.) ..... None

EU index no. ..... None

Classification of the ingredient ..... Acute inhalation toxicity: Category 4 (H332)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)

Structural formula .....



Abamectin ..... Content: 1% by weight

CAS name ..... Avermectin A1a, 5-O-demethyl-

CAS no. 65195-55-3

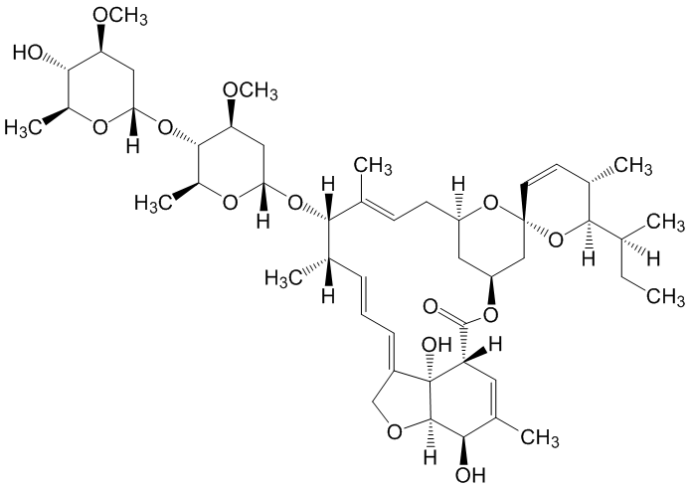
IUPAC name ..... (10*E*,14*E*,16*E*,22*Z*)-(1*R*,4*S*,5′*S*,6*S*,6′*R*,8*R*,12*S*,13*S*,20*R*,21*R*,24*S*)-= 6′-[(*S*)-*sec*-butyl]-21,24-dihydroxy-5′,11,13,22-tetramethyl-2-oxo-= 3,7,19-trioxatetracyclo[15.6.1.1^{4,8}.0^{20,24}]pentacosa-10,14,16,22-= tetraene-6-spiro-2′-(5′,6′-dihydro-2′*H*-pyran)-12-yl 2,6-dideoxy-4-= *O*-(2,6-dideoxy-3-*O*-methyl-α-L-*arabino*-hexopyranosyl)-3-*O*-= methyl-α-L-*arabino*-hexopyranoside

EC no. (EINECS no.) 265-610-3

EU index no. ..... None

Classification of the ingredient ..... Acute oral toxicity: Category 2 (H300)
Inhalation toxicity: Category 1 (H330)
Toxic to reproduction: Category 2 (H361d)
Specific target organ toxicity – repeated exposure: Category 1 (H372)
Hazards to the aquatic environment, acute: Category 1 (H400)
chronic: Category 1 (H410)

Structural formula .....



Reportable ingredients	Content (% w/w)	CAS no.	EC no. (EINECS no.)	Classification
Distillates (petroleum), hydrotreated middle Reg. no. 01-2119487077-29	6	64742-46-7	265-148-2	Asp. Tox. 1 (H304)
Octan-1-ol Reg. no. 01-2119486978-10	4	111-87-5	203-917-6	Eye Irrit. 2 (H319)
Poly(oxy-1,2-ethanediyl), α-isotridecyl-ω-hydroxy-	1.5	9043-30-5	None	Acute Tox. 4 (H302) Eye Dam. 1 (H318)
Tristyrylphenyl-polyethyleneglycol-phosphoric acid	1.5	114535-82-9	None	Eye Irrit. 2 (H319)

SECTION 4: FIRST AID MEASURES

4.1. **Description of first aid measures**

In case of exposure, do not wait for symptoms to develop. Immediately start the recommended procedures 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 or 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 if irritation develops.

Ingestion ..... Call a doctor or get medical attention immediately. Make the exposed person rinse mouth and then drink 1 or 2 glasses of water or milk. Induce vomiting only if:

1. A significant amount (more than a mouthful) has been ingested
2. Patient is fully conscious
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, let him/her rinse mouth and drink fluids again. Take care that vomit does not enter airways

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

Exposure causes symptoms of nervous system depression. High doses cause death by respiratory failure.
Acrinathrin can cause feelings of burning, tingling or numbness in exposed areas (paraesthesia).

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 an insecticide. Describe his/her condition and the extent of exposure. Immediately remove the exposed person from the area where the product is present. Perform artificial respiration if needed.

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 for exposure to this material is not known. Gastric lavage and/or the administration of activated charcoal can be considered. After decontamination, treatment should be directed at the control of symptoms and the clinical condition.

If allowed to penetrate the skin, the active ingredient **acrinathrin** in this product 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 against other pyrethroid insecticides. 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.

Since **abamectin** is believed to enhance GABA activity based on animal studies, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid).

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.

5.2. **Special hazards arising from the substance or mixture**

The essential breakdown products are carbon monoxide, carbon dioxide, nitrogen oxides and phosphorus pentoxide.

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. Spills should be removed as soon as possible. Keep unprotected persons away from the spill area. Avoid and reduce mist formation 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).

Surface water drains should be covered if appropriate. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, hydrated lime, Fuller's earth or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with much water and detergent. Absorb wash liquid onto 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** ..... 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.

Keep all unprotected persons and children away from working area.

Persons working with this material for a longer period should be careful to minimise exposure. See section 11. Pregnant women must avoid all work with the product, because it may damage the unborn child.

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

The work area should always be kept clean. Used protective clothing and 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.

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.

7.2. **Conditions for safe storage, including any incompatibilities** The product is stable at normal conditions of warehouse storage. Storage at temperatures between 5 and 30°C is recommended.

Keep in closed, labelled containers in the dark. Protect against strong heat from sunshine or other source.

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 not established for the active ingredients in this product. An internal value of 0.02 mg abamectin/m^3 is recommended by the manufacturer.

		Year	
Mineral oil mist	ACGIH (USA) TLV	2015	5 mg/m^3, inhalable fraction

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

Acrinathrin

DNEL ..... 0.007 mg/kg bw/day
PNEC ..... 0.32 ng/l

Abamectin

DNEL ..... 0.0025 mg/kg bw/dag
PNEC ..... 0.35 ng/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 following precautions are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.

Respiratory protection — The inhalation of aerosol must be avoided. 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 frequently. Be careful not to touch anything with contaminated gloves. Used gloves should be thrown out and not be reused.

Eye protection ..... Wear safety glasses or face mask. It is recommended to have an eye wash fountain immediately available in the workplace when there is a potential for eye contact.

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**

Appearance	Milky white to cream liquid
Odour	Aromatic odour
Odour threshold	Not determined
pH	Undiluted: 5.88 1% dilution in water: 5.98
Melting point/freezing point	Not determined
Initial boiling point and boiling range	Not determined **Abamectin**: decomposes
Flash point	109°C
Evaporation rate	Not determined
Flammability (solid/gas)	Not applicable (liquid)
Upper/lower flammability or explosive limits	Not determined
Vapour pressure	**Abamectin**: < 1.0 x 10^{-5} Pa at 25°C **Acrinathrin**: 3.9 x 10^{-7} Pa at 25°C
Vapour density	Not determined
Relative density	0.9607 at 20°C
Solubility(ies)	Solubility of **abamectin** at 25°C in octanol 74.3 g/l methanol 12.1 g/l hexanes 0.00443 g/l water 0.00054 g/l (at 20°C) Solubility of **acrinathrin** at 25°C in: acetone 700 g/l n-hexane 10 g/l water < 0.02 mg/l
Partition coefficient n-octanol/water	**Abamectin** : log K_{ow} = 5.5 **Acrinathrin** : log K_{ow} = 5.24 at 25°C
Autoignition temperature	383°C
Decomposition temperature	Not determined
Viscosity	Shear-thinning behaviour 58.3 mPa.s at 20°C, 40.3 mPa.s at 40°C
Explosive properties	Not explosive
Oxidising properties	Not oxidising

9.2. **Other information**

Miscibility ..... The product is miscible with water.

SECTION 10: STABILITY AND REACTIVITY

10.1. **Reactivity** ..... The product has no special reactivities.

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.
10.5.	**Incompatible materials**	None known.
10.6.	**Hazardous decomposition products**	See subsection 5.2.

♣ SECTION 11: TOXICOLOGICAL INFORMATION

11.1. **Information on toxicological effects** * = Based on available data, the classification criteria are not met.

Product

Acute toxicity		The product is hazardous to health if swallowed and by inhalation. It is not classified as harmful by skin contact, but harmful effects can occur by this route as well. The acute toxicity measured on the product is:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: 310 - 366 mg/kg (method OECD 425)
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg (method OECD 402) *
	- inhalation	LC_{50}, inhalation, rat (male): 2.12 mg/l/4 h (method OECD 403)
		LC_{50}, inhalation, rat (female): 1.31 mg/l/4 h
Skin corrosion/irritation		Moderately irritating to skin (method OECD 404). *
Serious eye damage/irritation		Irritating to eyes (method OECD 405).
Respiratory or skin sensitisation ...		Not a skin sensitizer (method OECD 406). *
Germ cell mutagenicity		The product contains no ingredient known to be mutagenic. *
Carcinogenicity		The product contains no ingredient known to be carcinogenic. *
Reproductive toxicity		Reduced mating results and birth defects were observed in animal tests with abamectin at maternal toxic doses (3 studies).
STOT – single exposure		Single exposure can cause paraesthesia, see below. *
STOT – repeated exposure		The following was found for the active ingredient abamectin: Target organ: primarily nervous system Abamectin has neurotoxic effects at prolonged exposure. In animal studies apathy and general bad condition were noted at dose levels of around 10 mg abamectin/kg bw/day. LOEL, oral: 0.5 mg/kg bw/day in an 18-week dog study (method OECD 409) LOAEC, inhalation: 0.0027 mg/l in a 30-day rat study (6 hrs/day)
Aspiration hazard		The product does not present an aspiration pneumonia hazard. *
Symptoms and effects, acute and delayed		Low exposure can cause non-specific symptoms (e.g. nausea, vomiting, diarrhoea, itching). Higher doses can cause symptoms of nervous system depression, such as pupil dilation, excitation,

incoordination, tremors, convulsions, lethargy, coma. High doses can cause death by respiratory failure.

On contact, **acrinathrin** 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.

Inhalation of the product is uncomfortable and can result in coughing and difficulty breathing. This effect should also be taken as a warning to avoid further exposure.

Acrinathrin

Toxicokinetics, metabolism and distribution		After oral intake, acrinathrin is rapidly absorbed and excreted with half-live times of less than one day. It is extensively metabolised. Acrinathrin and its metabolites are found mainly in the blood. Bioaccumulation is not likely.
Acute toxicity		Acrinathrin is harmful by inhalation. It is considered as less harmful by ingestion and skin contact. The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: > 5000 mg/kg (method OECD 401) *
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg (method OECD 402) *
	- inhalation	LC_{50}, inhalation, rat: 1.6 mg/l/4 h
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 sensitising (method FIFRA 81.06). *
Carcinogenicity		Acrinathrin is a carcinogen in rats as it caused development of tumours in the ovary (granusola-thecal cell benign and malignant tumours) and to a lesser extent the skin (squamous cell papilloma). No carcinogenic effect was observed in mice. It is not clear if the classification criteria are met.

Abamectin

Toxicokinetics, metabolism and distribution		Abamectin is rapidly absorbed and excreted with half-live times of one to two days. It is extensively metabolised. Bioaccumulation is not likely. Abamectin and its metabolites are found throughout all organs.
Acute toxicity		Abamectin is very toxic if swallowed and by inhalation. It is less toxic by skin contact. The acute toxicity is measured as:
Route(s) of entry	- ingestion	LD_{50}, oral, rat: 8.2 mg/kg (method OECD 401)
	- skin	LD_{50}, dermal, rat: > 2000 mg/kg (method OECD 402) *
	- inhalation	LC_{50}, inhalation, rat: 0.031 - 0.051 mg/l/4 h (method OECD 403)

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

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

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

Distillates (petroleum), hydrotreated middle

Acute toxicity ..... The substance is not considered as harmful by single exposure. * However, harmful effects may occur by inhalation. The acute toxicity is measured as:

Route(s) of entry - ingestion LD_{50}, oral, rat: > 5000 mg/kg (method OECD 401)

- skin LD_{50}, dermal, rabbit: > 2000 mg/kg (measured on a similar product, method OECD 402)

- inhalation LC_{50}, inhalation, rat: 4.6 mg/l/4 h (measured on a similar product, method OECD 403)

Skin corrosion/irritation ..... Irritating to skin (measured on a similar product, method OECD 404).

Serious eye damage/irritation ..... Mildly to moderately irritating to eyes (measured on a similar product, method OECD 405). *

Respiratory or skin sensitisation ... Not sensitising to skin (measured on a similar product, method OECD 406). *

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

Octan-1-ol

Acute toxicity ..... The product is not considered as harmful by inhalation, ingestion or skin contact. * The acute toxicity is measured as:

Route(s) of entry - ingestion LD_{50}, oral, rat: > 3200 mg/kg

- skin LD_{50}, dermal, guinea pig: > 1000 mg/kg

- inhalation LC_{50}, inhalation, rat: not available

Skin corrosion/irritation ..... Mildly irritating to skin. *

Serious eye damage/irritation ..... Mildly to moderately irritating to eyes. *

Respiratory or skin sensitisation ... To our knowledge, allergenic effects have not been reported. *

Poly(oxy-1,2-ethanediyl), α-isotridecyl-ω-hydroxy-

Acute toxicity ..... The product is harmful by ingestion, but is not considered as harmful by inhalation or skin contact. The acute toxicity is measured as:

Route(s) of entry - ingestion LD_{50}, oral, rat: 500 - 2000 mg/kg (method OECD 401)

- skin LD_{50}, dermal, rat: not determined

- inhalation LC_{50}, inhalation, rat: not determined

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

Serious eye damage/irritation ..... Irritating to eyes with the potential to cause permanent eye damage.

Respiratory or skin sensitisation ... Not determined. *

Tristyrylphenyl-polyethylene glycol-phosphoric acid

Acute toxicity ..... The product is not considered as harmful by inhalation, ingestion or skin contact. * The acute toxicity is measured as:

Route(s) of entry	- ingestion	LD_{50}, oral, rat: > 2000 mg/kg (method OECD 401)
	- skin	LD_{50}, dermal, rat: not determined
	- inhalation	LC_{50}, inhalation, rat: not determined

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

Serious eye damage/irritation ..... Irritating to eyes (method OECD 405).

SECTION 12: ECOLOGICAL INFORMATION

12.1. **Toxicity** ..... The product is highly toxic to aquatic invertebrates, aquatic life stages of amphibians and insects. It is very toxic to fish and harmful to aquatic plants. It is not considered as harmful to birds and soil macro- and microorganisms.

The ecotoxicity of the product is measured as:

- Fish	Rainbow trout (*Oncorhynchus mykiss*)	96-h LC_{50}: 0.307 mg/l
- Invertebrates	Daphnids (*Daphnia magna*)	48-h EC_{50}: 0.00644 mg/l
- Algae	Green algae (*Pseudokirchneriella subcapitata*)	72-h EC_{50}: 60.8 mg/l
- Birds	Japanese quail (*Coturnix coturnix japonica*)	LD_{50}: > 2000 mg/kg
- Earthworms	*Eisenia foetida*	14-day LC_{50}: 1875 mg/kg dry soil
- Insects	Honey bees (*Apis mellifera* L.)	48-h LC_{50}, contact: 0.218 µg/bee 48-h LC_{50}, oral: 0.153 µg/bee

12.2. **Persistence and degradability** .... **Abamectin** is not readily biodegradable. However, it undergoes degradation in the environment and in waste water treatment plants. Primary degradation half-lives vary with circumstances from 14 to 20 days in different soil types. Abamectin is degraded photochemically in soil and water as well.

Acrinathrin is not readily biodegradable. However, it undergoes degradation in the environment and in waste water treatment plants. Primary degradation half-lives vary from a few weeks to several months in different soil types and depending on circumstances.

The product contains minor amounts of other 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 coefficients.

Abamectin is not expected to bioaccumulate. The Bioconcentration Factor (BCF) was measured to be 54 in zebrafish (*Danio rerio*; whole fish).

Acrinathrin has a potential to bioaccumulate. The

Bioconcentration Factor (BCF) was measured to be 538 in carp. However, the risk of bioaccumulation is low, because the substance has a very low solubility in water and is rapidly removed from the water phase. Therefore, bioavailability is low. Furthermore, the substance is rapidly metabolised.

12.4. **Mobility in soil** ..... **Abamectin** is mobile in soil. **Acrinathrin** is not mobile in soil. Both are strongly absorbed to soil particles and there is no risk of leaching.

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

12.6. **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.

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. 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. (abamectin and acrinathrin)

14.3.	**Transport hazard class(es)**	9
14.4.	**Packing group**	III
14.5.	**Environmental hazards**	Marine pollutant
14.6.	**Special precautions for user**	Do not discharge to the environment.
14.7.	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code**	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. The employer shall assess any risks to the safety or health and any possible effect on the pregnancies or breastfeeding of workers and decide what measures should be taken (Dir. 92/85/EEC). The Young Worker Directive (94/33/EC) prohibits people under the age of 18 to work with this product. All ingredients in this product are covered by EU chemical legislation.
15.2.	**Chemical safety assessment**	A chemical safety assessment is not required to be included for this product.

♣ SECTION 16: OTHER INFORMATION

Relevant changes to the safety data sheet ..... Minor corrections only.

List of abbreviations .....

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
Dir.	Directive
DNEL	Derived No Effect Level
EC	European Community
EC_{50}	50% Effect Concentration
EINECS	European INventory of Existing Commercial Chemical Substances
EW	Emulsion, oil in water
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
GABA	γ-Aminobutyric acid, chief inhibitory neurotransmitter in central nervous system
GHS	Globally Harmonized classification and labelling System of chemicals, Fifth revised edition 2013
IBC	International Bulk Chemical code
ISO	International Organisation for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC_{50}	50% Lethal Concentration
LD_{50}	50% Lethal Dose
LOAEC	Lowest Observed Adverse Effect Concentration
LOEL	Lowest Observed Effect Level

MARPOL	Set of rules from the International Maritime Organisation (IMO) for prevention of sea pollution
n.o.s.	Not otherwise specified
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative, Toxic
PNEC	Predicted No Effect Concentration
Reg.	Regulation
STOT	Specific Target Organ Toxicity
TLV	Threshold Limit Value
TWA	Time Weighed Average
vPvB	very Persistent, very Bioaccumulative
WHO	World Health Organisation

References ..... Data measured on the product are unpublished company data. Data on ingredients are available from published literature and can be found several places.

Method for classification ..... Acute oral toxicity: test data
Acute inhalation toxicity: test data
Eye irritation: test data
Specific target organ toxicity – repeated: calculation method
Hazards to the aquatic environment: test data

Used hazard statements .....

H300	Fatal if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H361d	Suspected of damaging the unborn child.
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.
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 Cheminova A/S may exist. The user has to check the validity of the information under local circumstances.

Prepared by: Cheminova A/S / GHB