Hallmark Chemicals bv
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SAFETY DATA SHEET

STARTER 100 EC

SDS/GHS/ISR/V1.0 **Issue date:** 31.01.2022

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

Product identifiers

Product name:	Starter 100 EC
Chemical name:	Bifenthrin
CAS No.:	82657-04-3

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

Identified uses: Insecticide for agricultural use

Details of the supplier of the safety data sheet

Supplier:
Hallmark Chemicals b.v
Wilhelminakade 173
3072 AP Rotterdam
The Netherlands
Tel: +31 10 414 4277
Fax: +31 10 414 3023
info@hallmarkchem.com

Formulator:
Agrosmart UK LTD
Clayton West
Huddersfield
West Yorkshire
UK

Emergency telephone number

Tel: +44 20 8995 8391 (SDS support, 9.00-5.00 pm; Mon-Fri only, UK)

SECTION 2: HAZARDS IDENTIFICATION

Skin sens.1
STOT SE 3
Carc. 2
STOT RE 1
Aquatic Chronic 2

Pictogram(s):

Signal word: Danger

Hazard statement(s):

H305: May be harmful if swallowed and enters airways
H317: May cause an allergic skin reaction
H336: May cause drowsiness or dizziness
H351: Suspected of causing cancer
H372: Causes damage to organs through prolonged or repeated exposure
H411: Toxic to aquatic life with long lasting effects

Precautionary statement(s):

P260: Do not breathe fumes/ gas/ mist/vapours/ spray
P280: Wear protective gloves/clothing/eye protection/face protection
P301+P310:
IF SWALLOWED: Immediately call a POISON CENTER /doctor

P304+P340:
IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312: Call a POISON CENTER or doctor if you feel unwell
P501: Dispose of contents/container in accordance with local/regional/regulation

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Nº	g/litre	Signal word	H-statements
Bifenthrin	82657-04-3	100	Danger	H330, H300, H351, H317, H373, H400, H410
Aromatic hydrocarbons Ultra-Low Naphthalene	-	25 – 50	Danger	H304, H336, H411
Hydrotreated Light Petroleum	64742-47-8	50 - 75	Danger	H304, H315, H411
Emulsifiers	-	< 10	Danger	H332, H335, H315

See Sections 2 and 16 for full H-Statements.

SECTION 4: FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre and follow the advice given. Show this Safety Data Sheet to a doctor.

Ingestion: Do not induce vomiting. Do not give liquids of any kind. Never give anything by mouth to an unconscious person. Consult a doctor immediately.

Skin contact: Remove contaminated clothing. Wash affected area with plenty of soap and water.

Inhalation: Remove to fresh air. If breathing is difficult or discomfort occurs and persists, seek medical attention.

Eye contact: Flush eyes with water for at least 15 minutes. If irritation occurs and persists, seek medical attention.

Notes to physician: This product contains light aromatic hydrocarbons that can produce a severe pneumonitis or pulmonary oedema if aspirated during vomiting. Consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is otherwise controlled.

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing media: Water fog, fine water spray, foam, dry chemical, carbon dioxide. Do not use water jet.

Hazards from combustion Do not breathe smoke, gases or vapours generated – carbon

products:	monoxide, carbon dioxide, hydrogen chloride and hydrogen fluoride.
Advice for fire fighters:	Fire-fighters should wear full protective gear, including self-contained breathing apparatus. Keep unnecessary people away. Use water spray to cool containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions:	Wear PPE as recommended in section 8. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid contact with spilled material or contaminated surfaces. Keep people and animals away.
Environmental precautions:	Prevent product from entering drains or water courses. Warn the local water authority if water-courses become contaminated.
Clean-up methods:	Pick up and arrange disposal without creating aerosol. Contain spill and absorb with earth, sand, clay, or other absorbent material, collect and store in sealed drums for safe disposal. Decontaminate the area and equipment by washing areas with water. Keep in suitable, closed containers for disposal. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 7: HANDLING AND STORAGE

Handling:	Keep out of reach of children. Irritating to eyes. Avoid breathing vapour or spray. For product in eyes, wash immediately with water. For product on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.
Storage:	Store between 5-30°C in the closed original container, in a cool, dry, well-ventilated area, away from direct sunlight and sources of ignition.
Incompatibility:	Incompatible with acids.
Flammability:	Not flammable under normal conditions of use. The product does not sustain combustion.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure limits:

Hydrotreated Light Petroleum (as hydrocarbon vapour):
200 mg/m^3 TWA

Engineering controls:	Use only in well-ventilated areas. If necessary, use local exhaust ventilation to keep airborne concentration below exposure limits.
Personal protective equipment:	Wear face shield or goggles. Wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, heavy-duty shoes or boots. Wear elbow length butyl rubber gloves.

If working in a poorly ventilated area or if occupational exposure levels are likely to be exceeded, wear a respirator with filter for vapours.
After each day's use, wash gloves, goggles or face shield, respirator if worn, and contaminated clothing.
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

a)	Appearance:	Milky white liquid
b)	Odour:	Slightly aromatic
c)	Odour threshold:	None set
d)	pH:	6.0 (1% solution)
e)	Melting point/freezing point:	Not determined
f)	Boiling point/boiling range:	Decomposes before boiling (tech.)
g)	Flash–point:	>100°C
h)	Evaporation rate:	Not measured
i)	Flammability (solid/gas):	Not flammable
j)	Upper/lower flammability or explosive limits:	None set
k)	Vapour pressure:	0.0178 mPa (tech.)
l)	Vapour density:	7.74 x 10^{-5} Pa m^3mol^{-1} (tech.)
m)	Relative density:	0.90-0.92 g/cm^3 (25°C)
n)	Solubility:	0.001 mg/L (20°C, water) (tech.)
o)	Partition coefficient:	Log P_{ow} 6.6 (tech.)
p)	Auto-ignition temperature:	Not determined
q)	Decomposition temperature:	280°C (tech.)
r)	Viscosity:	Not relevant
s)	Explosive properties:	Not explosive
t)	Oxidising properties:	Not oxidising

SECTION 10: STABILITY AND REACTIVITY

Reactivity Stable under normal conditions of use. Will not polymerise.

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

Possibility of hazardous reactions

	No hazardous reactions when stored and handled according to instructions.
Conditions to avoid	Sources of ignition and extreme heat.
Incompatible materials	None currently known.
Hazardous decomposition Products:	Carbon monoxide, carbon dioxide, hydrogen chloride and hydrogen fluoride.

SECTION 11: TOXICOLOGICAL INFORMATION

Oral toxicity:	LD_{50} rat: >300-2000 mg/kg	(GHS Category 4)
Dermal toxicity:	LD_{50} rat: >2000- 5000 mg/kg	(GHS Category 5)
Inhalation toxicity:	LC_{50} rat (4 h) >1.01 mg/L (technical material)	
Skin irritation:	Non-irritant	
Eye irritation:	Non-irritant	
Skin sensitisation:	May cause skin sensitisation	
WHO Toxicity classification:	II, moderately hazardous	

Not classified as a carcinogen, teratogen, genotoxic or mutagen (tech. material)

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity (technical material)

Bird toxicity:	LD_{50} Bobwhite quail	1800 mg/kg
Fish toxicity:	LC_{50} 96 h rainbow trout	0.00026 mg/L
***Daphnia* toxicity:**	EC_{50} 48 h *Daphnia magna*	0.00011 mg/L
Algal toxicity:	EC_{50} 72h Green algae	0.822 mg/L

Bifenthrin is only slightly toxic to both waterfowl and upland game birds. Bifenthrin is highly toxic to fish and aquatic arthropods. However, its low water solubility and strong adsorption to soil help to minimise impact in aquatic systems under field conditions.

Bees:	LD_{50}:	(Oral)	0.1 µg/bee
		(Contact)	0.015 µg/bee

Toxic to bees

Environmental fate:	Soil DT_{50}	65 - 125 d
	Soil K_{oc}	1.31 - 3.02 x 10^5

Bifenthrin has moderate stability in soil under aerobic conditions and is stable under a wide range of pHs. Bifenthrin has a high log P_{ow} and high affinity for organic matter. It is not mobile in soil and so should not move into ground water. There is potential for bifenthrin to bioaccumulate (BCF 1703).

SECTION 13: DISPOSAL CONSIDERATIONS

Do not contaminate ponds, waterways or ditches with chemical or used containers. Empty containers should be washed and discarded. Empty containers should not be used for other purposes. Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORTATION INFORMATION

UN number:	3082		
UN Proper Shipping Name:	Environmentally hazardous substance, liquid, N.O.S. (contains bifenthrin)		
Transport hazard class:	ADR/RID: 9	IMDG: 9	IATA: 9
Packaging group:	ADR/RID: III	IMDG: III	IATA: III
Environmental hazard:	ADR/RID: Yes	IMDG: Marine pollutant: Yes	IATA: Yes

SECTION 15: REGULATORY INFORMATION

No additional regulatory information required for this product.

SECTION 16: OTHER INFORMATION

Additional relevant H-statements:
These phrases are for hazardous components in the product but are not at levels that require H statements. They provide additional information on risks.

H- statements:

H318	Causes serious eye damage
H224	Extremely flammable liquid and vapour
H300	Fatal if swallowed
H304	May be fatal if swallowed and enter airways
H315	Causes skin irritation
H330	Fatal if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

TWA: Time weighted average: average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

No liability is accepted for any injury, loss, damage or cost arising directly or indirectly from the use of the product or from the use of information contained within the safety data sheet since the customer's handling of the product is necessarily beyond our control. The supplied data are based on current knowledge and experience. This safety data sheet is intended to describe our product in terms of safety requirements. The customer should determine by appropriate trials that the product is suitable for his intended use.

Sections 9, 11 and 12 based on available EU and own data.
Self-classification of mixture
GHS SDS