

**SAFETY DATA SHEET****GULIVER 1% EC**

SDS/GHS/ISR/V 1.0

Issue date: 03.02.22

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

Product name: Guliver 1% EC
Chemical name: Forchlorfenuron
CAS No.: 68157-60-8

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

Identified uses: Plant growth regulator for agricultural use

Details of the supplier of the safety data sheet

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

Formulator:

a. Agrosmart UK LTD b. Jiangsu Institute of Ecomones
Clayton West Jiangsu
Huddersfield China
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

Flam. Liq. 2
Eye irrit. 2
Carc. 2

**Pictogram(s):****Signal word:****Danger****Hazard statement(s):**

H225: Highly flammable liquid and vapour
H319: Causes serious eye irritation
H351: Suspected of causing cancer



Precautionary statement(s):

- P210:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P271:** Use only outdoors or in a well-ventilated area
- P280:** Wear eye protection, face protection, protective clothing, protective gloves.
- P308:** IF exposed or concerned: get medical advice/attention.
- P370+P378:** In case of fire: Use water spray, foam, dry chemical or CO₂ to extinguish.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substance	CAS No	Concentration (%)	Signal word	H-Statements
Forchlorfenuron	68157-60-8	1.0	Danger	H351 (Carc.cat 2), H411
Ethyl alcohol	64-17-5	> 50 - < 65	Danger	H225

SECTION 4: FIRST AID MEASURES

If poisoning occurs, remove person to fresh air. In case of suspected poisoning, immediately call a doctor or the Poisons Control Centre and follow the advice given. Show this Safety Data Sheet to the doctor.

Inhalation: Remove patient from exposure, keep warm and at rest. Obtain medical attention.

Skin contact: Remove immediately all contaminated clothing. Wash skin with water for 15 -20 minutes, followed by soap and water to minimise contact with skin. Wash contaminated clothing before wearing again.

Eye contact: Immediately irrigate with eyewash solution or clean water, holding the eyelids apart for at least 15 minutes.

Ingestion: Wash mouth out immediately and give water to drink. Never give anything by mouth to an unconscious person. Do not induce vomiting and never give anything by mouth if the patient is unconscious or having convulsions. Call a Doctor.

Medical Advice: Observe the patient and treat symptomatically, no known specific antidote.

SECTION 5: FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Severe fire hazard. The vapour is heavier than air. Vapour or gases may ignite at distant ignition sources and flash-back. Vapour /air mixtures are explosive.

Extinguishing media: Alcohol resistant foam, CO₂, regular dry chemical. Water may be ineffective and can spread the fire. Evacuate personnel to safe area. Wear self-contained breathing apparatus. Wear full protective equipment. Use water spray.



Runoff from fire control may be a pollution hazard. Use water to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Protection:	Use appropriate personal protective equipment during clean-up.
Technical Precautions:	Initial containment: Dike spill. Prevent material from entering waterways or low areas.
Methods for cleaning:	Collect leaking liquid in sealable containers, absorb spilled liquid in sand or inert absorbent and remove as chemical disposal, do not discharge into drains, nor return to container for reuse. If spill area is on ground near valuable plants or trees remove adjacent top-soil after initial clean-up.

SECTION 7: HANDLING AND STORAGE

Handling:	Store in a cool, dry area away from excessive heat and open flame, in an area designated specifically for pesticides. Do not store near any material intended for use or consumption by humans or animals.
Storage:	Keep away from sources of ignition. Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Kept upright to prevent leakage.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational Exposure limits

Ethyl alcohol: TWA 1900 mg/m³

Engineering controls:	Maintain exposure levels below the applicable exposure limit through the use of general and local exhaust ventilation. Ventilation equipment should be explosion resistant if explosive concentrations are likely to be present.
Eye protection:	Goggles or face shield to prevent liquid from getting into the eyes.
Skin protection:	Avoid skin contact. Use chemical resistant gloves to prevent dermal exposure.
Respiratory protection:	Under normal handling conditions, no respiratory protection is needed. Where risk assessment shows respirators are appropriate use a full-face chemical cartridge respirator with organic vapour cartridge.
Additional protective measures:	Wash hands before breaks and after handling. Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing separately after use. Wash thoroughly after handling.



SECTION 9: PHYSICAL / CHEMICAL PROPERTIES

a) Appearance:	Colourless to light yellow clear liquid
b) Odour:	Mild chemical/ethanolic odour
c) Odour threshold:	none set
d) pH:	7 – 8 (1% dilution)
e) Melting point/freezing point:	-117.3°C (ethyl alcohol)
f) Boiling point/boiling range:	78°C (ethyl alcohol)
g) Flash-point:	<23°C (closed cup)
h) Evaporation rate:	not determined
i) Flammability (solid/gas):	flammable
j) Upper/lower flammability or explosive limits:	Lower flammability limit (LEL): 3.3% Upper flammability limit (UEL): 19%
k) Vapour pressure:	4.6×10^{-5} mPa (tech.)
l) Vapour density:	1.2×10^{-10} Pa m ³ mol ⁻¹ (tech. calcn)
m) Relative density:	0.7- 0.9 g/mL (20°C)
n) Solubility:	39 mg/L (water, 20°C, tech.)
o) Partition coefficient:	Log P _{ow} 3.2
p) Auto-ignition temperature:	370°C (ethyl alcohol)
q) Decomposition temperature:	not determined
r) Viscosity:	0.0012 Pa s (at 20°C, ethyl alcohol)
s) Explosive properties:	not determined
t) Oxidising properties:	Not an oxidiser

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Stable under normal storage conditions.
Chemical Stability:	Stable under normal storage conditions.
Possibility of hazardous reactions:	Polymerisation will not occur.
Conditions to avoid:	Sustained temperature above 40°C, highly alkaline conditions for extended periods of time. It may react with ketones and aldehydes.
Incompatible materials:	Halocarbons, metals, metal oxides and metal salts, oxidizing agents, halogens, peroxides, acids, bases, combustible materials.
Hazardous decomposition products:	Likely products include: oxides of carbon and nitrogen, halogenated compounds

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Oral:	LD ₅₀ rat >2000-5000 mg/kg (GHS cat 5)
Acute Dermal:	LD ₅₀ rat >2000-5000 mg/kg (GHS cat 5)
Acute inhalation:	LC ₅₀ rat: not harmful by inhalation (calculation)
Skin irritation:	Non-irritant
Eye irritation:	Irritant
Skin sensitisation:	Non-sensitiser



SECTION 12: ECOLOGICAL INFORMATION

(Technical material):

Bird toxicity:	LD ₅₀ Bobwhite quail	>2250 mg/kg
Fish toxicity:	LC ₅₀ 96 h rainbow trout	8.8 mg/L
<i>Daphnia</i> toxicity:	EC ₅₀ 48 h <i>Daphnia magna</i>	8 mg/L
Algal toxicity:	EC ₅₀ 72 h <i>Scenedesmus subspicatus</i>	3.3 mg/L

Low risk of bioaccumulation.

Very persistent in soil. DT₅₀ 578 days in laboratory and 1119 days in the field.

Ethyl alcohol:

Fish toxicity:	LC ₅₀ (96h)	Rainbow trout	13200 mg/L
<i>Daphnia</i> toxicity:	LC ₅₀ (48h)	<i>Daphnia magna</i>	12340 mg/L
Algae toxicity:	LC ₅₀ (72)	Green algae	5000 mg/L

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:	1170		
UN Proper Shipping Name:	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)		
Transport hazard class:	ADR/RID: 3 Flammable Liquid	IMDG: 3	IATA: 3
Packaging group:	ADR/RID: II	IMDG: II	IATA: II
Environmental hazard:	ADR/RID: No	IMDG: Marine pollutant: No	IATA: No

Additional information:

ADR, IMDG, IATA

Limited quantity (LQ): 1L

Excepted quantity (EQ): Code: E2

Maximum net quantity per inner packaging : 30mL

Maximum net quantity per outer packaging: 500 mL

SECTION 15: REGULATORY INFORMATION

Classification according to The Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 8th edition, 2019 (ST/SG/AC.10/30/REV.8).

SECTION 16: OTHER INFORMATION

H-statements in full:

H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation
H351	Suspected of causing cancer



H411	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 treatment 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 tests that the product is suitable for its intended use.

Sections 9, 11 and 12 based on available EU data and own studies.

Self-classification of mixture

GHS SDS