SAFETY DATA SHEET

Glean® herbicide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.2	02.08.2023	50000939	Date of first issue: 03.01.2018

Section 1: Identification

Product name : Glean® herbicide

Recommended use of the chemical and restrictions on use

Recommended use : Can be used as herbicide only.

Restrictions on use : Use as recommended by the label.

Manufacturer or supplier's details

Company : FMC New Zealand Ltd

Address : IRD number: 101-200-019
6 Clayton Street, Newmarket
1023 Auckland
New Zealand

Telephone : +640800658080

Telefax : (09)-271-2961

E-mail address : SDS-Info@fmc.com

Emergency telephone number : For leak, fire, spill or accident emergencies, call:
0800 734 607 (Ixom)

Medical emergency:
0800 764 766 (NZ Poisons Information Centre)
0800 111174 (24 hour Medical Emergency)
0800 387668 (Transport Emergency)

Section 2: Hazard identification

GHS Classification

Hazardous to the aquatic environment - acute hazard : Aquatic Acute1

Hazardous to the aquatic environment - chronic hazard : Aquatic Chronic1

Hazardous to soil organisms

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.
H423 Harmful to the soil environment.

Precautionary statements :

Prevention:

P273 Avoid release to the environment.

Response:

P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

Section 3: Composition/information on ingredients

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Chlorsulfuron Technical	64902-72-3	75
sucrose	57-50-1	>= 1 -< 10

Section 4: First-aid measures

General advice : In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

If inhaled : Move to fresh air.
If symptoms persist, call a physician.

In case of skin contact : Wash off with soap and water.
Wash contaminated clothing before re-use.
If symptoms persist, call a physician.

In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.

If swallowed : Do not induce vomiting without medical advice.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
Rinse mouth.
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed	:	None known.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing Avoid inhalation, ingestion and contact with skin and eyes.

Section 5: Fire-fighting measures

Suitable extinguishing media	:	Carbon dioxide (CO2) Dry chemical Water spray Foam
Unsuitable extinguishing media	:	High volume water jet
Hazardous combustion products	:	Hazardous combustion products Sulphur oxides Halogenated compounds Carbon oxides
Specific extinguishing methods	:	Remove undamaged containers from fire area if it is safe to do so. Use a water spray to cool fully closed containers. Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	:	Firefighters should wear protective clothing and self-contained breathing apparatus.
Hazchem Code	:	2Z

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	:	Evacuate personnel to safe areas. Use personal protective equipment. If it can be safely done, stop the leak. Do not touch or walk through the spilled material. Never return spills in original containers for re-use. For disposal considerations see section 13.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Try to prevent the material from entering drains or water courses.
Methods and materials for containment and cleaning up	:	Pick up and transfer to properly labeled containers without creating dust.

Section 7: Handling and storage

Advice on protection against	:	Normal measures for preventive fire protection.

fire and explosion

Advice on safe handling : For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
Avoid formation of respirable particles.

Hygiene measures : General industrial hygiene practice.
Avoid contact with skin, eyes and clothing.
Do not inhale aerosol.

Section 8: Exposure controls/personal protection

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sucrose	57-50-1	WES-TWA	10 mg/m3	NZ OEL
		TWA	10 mg/m3	ACGIH

Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Particulates type

Hand protection
Material : Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.

Eye protection : Safety glasses

Skin and body protection : Protective suit

Protective measures : Plan first aid action before beginning work with this product.

Section 9: Physical and chemical properties

Physical state : solid

Form : dry, free flowing, water dispersible granules

Colour : light brown

Odour	:	slight, acrid
Odour Threshold	:	No data available
pH	:	4.4 - 5.4
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	No data available
Bulk density	:	672 kg/m3
Solubility(ies)		
Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing

Section 10: Stability and reactivity

Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	Exposure to moisture Avoid extreme temperatures Avoid formation of aerosol.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

Section 11: Toxicological information

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 425 GLP: yes Assessment: The substance or mixture has no acute oral toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg Method: OECD Test Guideline 402 GLP: yes

Components:

Chlorsulfuron Technical:

Acute oral toxicity	:	LD50 (Rat, male): 5,545 mg/kg Method: OECD Test Guideline 401 LD50 (Rat, female): 6,293 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50 (Rat): > 5.2 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	:	LD50 (Rabbit): > 3,400 mg/kg Method: OECD Test Guideline 402

sucrose:

Acute oral toxicity	:	LD50 (Rat): 29,700 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
GLP	:	yes
Remarks	:	Minimal effects that do not meet the threshold for classification.

Components:

Chlorsulfuron Technical:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
GLP	:	yes
Remarks	:	Minimal effects that do not meet the threshold for classification.

Components:

Chlorsulfuron Technical:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	Directive 67/548/EEC, Annex V, B.5.
Remarks	:	May cause mild irritation. Minimal effects that do not meet the threshold for classification.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Test Type	:	Buehler Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Animal test did not cause sensitization by skin contact.
GLP	:	yes

Components:

Chlorsulfuron Technical:

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OPPTS 870.2600
Result	:	Not a skin sensitizer.

Chronic toxicity

Germ cell mutagenicity

Not classified based on available information.

Components:

Chlorsulfuron Technical:

Genotoxicity in vitro	:	Test system: Chinese hamster ovary cells Method: Regulation (EC) No. 440/2008, Annex, B.17 Result: negative
Genotoxicity in vivo	:	Test Type: dominant lethal test Method: Regulation (EC) No. 440/2008, Annex, B.22 Result: negative

Carcinogenicity

Not classified based on available information.

Components:

Chlorsulfuron Technical:

Carcinogenicity - Assessment	:	The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions., A slight increased incidence in tumors was observed in one species, but not in other species, Not classifiable as a human carcinogen.

Reproductive toxicity

Not classified based on available information.

Components:

Chlorsulfuron Technical:

Reproductive toxicity - Assessment	:	No toxicity to reproduction Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

STOT - single exposure

Not classified based on available information.

Components:

Chlorsulfuron Technical:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Not classified based on available information.

Product:

Remarks : Refer to acute toxicity and/or repeated dose toxicity data for more information on target organs if applicable.

Repeated dose toxicity

Components:

Chlorsulfuron Technical:

Species	:	Rat
NOAEL	:	161 - 217 mg/kg
Application Route	:	Oral
Exposure time	:	90 day
Method	:	Regulation (EC) No. 440/2008, Annex, B.26
Remarks	:	No toxicologically significant effects were found.

Aspiration toxicity

Not classified based on available information.

Section 12: Ecological information

Ecotoxicity

Product:

Toxicity to algae/aquatic plants : EC50 (Scenedesmus capricornutum (fresh water algae)): 0.00024 mg/l
Exposure time: 72 h

Components:

Chlorsulfuron Technical:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 250 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 370 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EbC50 (Pseudokirchneriella subcapitata (green algae)): 0.068 mg/l
Exposure time: 72 h

EC50 (Lemna gibba (duckweed)): 0.00042 mg/l

Exposure time: 14 d
Method: OPPTS 850.4400

EbC50 (Pseudokirchneriella subcapitata (green algae)): 0.05 mg/l
Exposure time: 120 h

ErC50 (Lemna gibba (gibbous duckweed)): 0.00069 mg/l
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 32 mg/l
Exposure time: 77 d
Method: US EPA Test Guideline OPP 72-4

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 12 mg/l
Exposure time: 28 d
Method: OECD Test Guideline 202

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to microorganisms : EC50 (Anabaena flos-aquae (cyanobacterium)): 0.61 mg/l

Toxicity to terrestrial organisms : LD50 (Apis mellifera (bees)): > 0.1 mg/kg
End point: Acute contact toxicity
Method: OECD Test Guideline 214

LD50 (Apis mellifera (bees)): > 0.013 mg/kg
End point: Acute oral toxicity
Method: OECD Test Guideline 213

LC50 (Anas platyrhynchos (Mallard duck)): > 5,000 mg/kg
Exposure time: 8 d
Method: US EPA Test Guideline OPP 71-1
Remarks: Dietary

sucrose:

Toxicity to fish : Remarks: No data available

Persistence and degradability

Components:

Chlorsulfuron Technical:

Biodegradability : Result: Not readily biodegradable.

sucrose:

Biodegradability : Remarks: No data available

Bioaccumulative potential

Components:

Chlorsulfuron Technical:

Bioaccumulation : Remarks: See section 9 for octanol-water partition coefficient.
Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 0.33 (25 °C)
pH: 5.0

log Pow: -0.99 (25 °C)
pH: 7

log Pow: -1.41 (25 °C)
pH: 9

Mobility in soil

Components:

Chlorsulfuron Technical:

Distribution among environmental compartments : Remarks: Moderately mobile in soil at low pH.
Very mobile at high pH.

Other adverse effects

No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14: Transport information

International Regulations

UNRTDG

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Chlorsulfuron)

Class	:	9
Subsidiary risk	:	ENVIRONM.
Packing group	:	III
Labels	:	9 (ENVIRONM.)

IATA-DGR

UN/ID No.	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Chlorsulfuron)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	956
Packing instruction (passenger aircraft)	:	956
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Chlorsulfuron)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

NZS 5433

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Chlorsulfuron)
Class	:	9
Packing group	:	III
Labels	:	9
Hazchem Code	:	2Z

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

HSNO Approval Number

HSR000231

ACVM Number: P003096

The components of this product are reported in the following inventories:

TCSI	:	Not in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. 1-(2-CHLOROPHENYLSULFONYL)-3-(4-METHOXY-6-METHYL-1,3,5-TRIAZIN-2-YL)UREA D-Glucopyranose, 4-O-.beta.-D-galactopyranosyl-, monohydrate
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

Section 16: Other information

Revision Date	:	02.08.2023
Date format	:	dd.mm.yyyy

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NZ OEL	:	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NZ OEL / WES-TWA	:	Workplace Exposure Standard - Time Weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized Sys-

tem; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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