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TRIVOLT™ HERBICIDE

Revision Date: 02/16/2022 Version 2.0 / USA 102000053674 Print Date: 02/16/2022

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

Product identifier

Trade name TRIVOLT™ HERBICIDE

Product code (UVP) 86756676

SDS Number 102000053674

EPA Registration No. 264-1211

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

Use Herbicide

Restrictions on use See product label for restrictions.

Information on supplier

Supplier Bayer CropScience LP

> 800 North Lindbergh Blvd. St. Louis, MO 63167

USA

Responsible Department Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone

Number (24hr/ 7 days)

1-800-334-7577

Product Information Telephone Number

1-866-99BAYER (1-866-992-2937)

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity(Oral, Dermal): Category 4

Reproductive toxicity, Specific target organ toxicity - repeated exposure: Category 2

Labelling in accordance with regulation HCS 29CFR §1910.1200





Signal word: Warning **Hazard statements**



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Harmful if swallowed or in contact with skin.

Suspected of damaging fertility or the unborn child.

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe mist or vapours.

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Rinse mouth.

IF ON SKIN: Wash with plenty of water/ soap.

Call a POISON CENTER/doctor/physician if you feel unwell.

Specific treatment (see supplemental first aid instructions on this label).

Take off contaminated clothing and wash before reuse.

IF exposed or concerned: Get medical advice/ attention.

Store locked up.

Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.

No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Flufenacet	142459-58-3	28.5
Isoxaflutole	141112-29-0	5.7
_Cyprosulfamide	221667-31-8	4.3
Thiencarbazone-methyl	317815-83-1	2.28
Tristyrylphenol polyethylenglycol phosphoric acid ester	114535-82-9	4.0

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice When possible, have the product container or label with you when

calling a poison control center or doctor or going for treatment.

Inhalation Move to fresh air. If person is not breathing, call 911 or an ambulance,

then give artificial respiration, preferably mouth-to-mouth if possible.

Call a physician or poison control center immediately.

Skin contactTake off contaminated clothing and shoes immediately. Wash off

immediately with plenty of water for at least 15 minutes. Call a

physician or poison control center immediately.



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Eye contact Hold eye open and rinse slowly and gently with water for 15-20

minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center

immediately.

Ingestion Call a physician or poison control center immediately. Rinse out mouth

and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim

unattended.

Most important symptoms and effects, both acute and delayed

Symptoms The absorption of this product into the body may lead to the formation

of methaemoglobine that, in sufficient concentration, causes cyanosis., Shortness of breath, Drowsiness, Headache, Tiredness, Dizziness,

Nausea

Indication of any immediate medical attention and special treatment needed

Risks Danger of formation of methaemoglobin.

Treat symptomatically. In case of ingestion gastric lavage should be

considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. In case of methaemoglobinemia, oxygen and specific antidotes (methylene blue/ toluidine blue) should be given.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon

dioxide.

Unsuitable High volume water jet

Special hazards arising from the substance or

mixture

In the event of fire the following may be released:, Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Carbon monoxide (CO), Carbon

dioxide (CO2), Nitrogen oxides (NOx), Sulphur oxides

Advice for firefighters

Special protective

equipment for firefighters

In the event of fire and/or explosion do not breathe fumes. In the event

of fire, wear self-contained breathing apparatus.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed

containers exposed to fire with water spray. Do not allow run-off from

fire fighting to enter drains or water courses.

Flash point >101 °C / 213.8 °F at 1,008 hPa

Auto-ignition temperature413 °C / 775.4 °FLower explosion limitNo data availableUpper explosion limitNo data available



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Explosivity Not explosive

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact

with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid

binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in

suitable, closed containers for disposal.

Additional advice Use personal protective equipment. If the product is accidentally

spilled, do not allow to enter soil, waterways or waste water canal. Do

not allow product to contact non-target plants.

Reference to other sections Information regarding safe handling, see section 7.

Information regarding personal protective equipment, see section 8.

Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Use only in area provided with appropriate exhaust ventilation.

Hygiene measures Wash hands thoroughly with soap and water after handling and before

eating, drinking, chewing gum, using tobacco, using the toilet or

applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean

clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage

areas and containers

Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and

feed. Store in original container and out of the reach of children, preferably in a locked storage area. Protect from freezing.

Advice on common storage Keep away from food, drink and animal feedingstuffs.



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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Flufenacet	142459-58-3	0.3 mg/m3 (SK-SEN)		OES BCS*
Isoxaflutole	141112-29-0	0.6 mg/m3 (TWA)		OES BCS*
Cyprosulfamide	221667-31-8	10 mg/m3 (TWA)		OES BCS*
Thiencarbazone-methyl	317815-83-1	10 mg/m3 (TWA)		OES BCS*

^{*}OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection When respirators are required, select NIOSH approved equipment

based on actual or potential airborne concentrations and in

accordance with the appropriate regulatory standards and/or industry

recommendations.

Hand protection Chemical resistant nitrile rubber gloves

Eye protection Safety glasses with side-shields

Skin and body protection Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures Follow manufacturer's instructions for cleaning/maintaining PPE. If

no such instructions for washables, use detergent and warm/tepid

water.

Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form suspension

Colourwhite to light beigeOdorweak characteristic

pH 1.5 - 3.0 (100 %) (23 °C)

Melting point/rangeNo data availableBoiling PointNo data available

Flash point > 101 °C / 213.8 °F (1,008 hPa)



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Flammability No data available

Auto-ignition temperature 413 °C / 775.4 °F

Minimum ignition energyNo data availableSelf-accelaratingNo data available

decomposition temperature (SADT)

Upper explosion limitNo data availableLower explosion limitNo data availableVapor PressureNo data availableEvaporation rateNo data availableRelative vapour densityNo data availableRelative densityNo data available

Density ca. 1.20 g/cm 3 (20 °C)

Water solubility No data available

Partition coefficient: n-

octanol/water

Flufenacet: log Pow: 3.2

Isoxaflutole: log Pow: 2.32 (20 °C) Cyprosulfamide: log Pow: -0.8

Thiencarbazone-methyl: log Pow: -0.13

Viscosity, dynamic 200 - 600 mPa.s (20 °C)

Velocity gradient 20 /s 100 - 400 mPa.s (20 °C) Velocity gradient 100 /s

Viscosity, kinematic No data available

Oxidizing properties No oxidizing properties

Explosivity Not explosive

Other information Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity Stable under normal conditions.

Chemical stability Stable under recommended storage conditions.

Possibility of hazardous

reactions

No dangerous reaction known under conditions of normal use.



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Conditions to avoid Extremes of temperature and direct sunlight.

Incompatible materials No incompatible materials known.

Hazardous decomposition

products

No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Inhalation, Eye contact, Skin contact

Immediate Effects

Eye Not expected to produce significant adverse effects when

recommended use instructions are followed.

Skin Harmful in contact with skin.

Ingestion Harmful if swallowed.

Inhalation Not expected to produce significant adverse effects when

recommended use instructions are followed.

Information on toxicological effects

Acute oral toxicity LD50 (female Rat) 1,030 mg/kg

Acute inhalation toxicity LC50 (Rat) > 5.1 mg/l

Exposure time: 4 h

Acute dermal toxicity

Dermal toxicity was assessed based on the result of the oral toxicity

study.

Dermal toxicity study has been waived by competent regulatory

authority.

Skin corrosion/irritation Slight irritant effect - does not require labelling. (Rabbit)

Serious eye damage/eye Slight irritant effect - does not require labelling. (Rabbit)

irritation

Respiratory or skin Skin: Non-sensitizing. (Mouse)

sensitisation OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment STOT Specific target organ toxicity – single exposure

Flufenacet: Based on available data, the classification criteria are not met. Isoxaflutole: Based on available data, the classification criteria are not met. Cyprosulfamide: Based on available data, the classification criteria are not met.

Thiencarbazone-methyl: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity - repeated exposure

Flufenacet caused neurobehavioral effects and/or neuropathological changes in animal studies.

Isoxaflutole caused specific target organ toxicity in experimental animal studies in the following organ(s):

Liver, Thyroid. The observed effects do not appear to be relevant for humans.

Cyprosulfamide did not cause specific target organ toxicity in experimental animal studies.

Thiencarbazone-methyl did not cause specific target organ toxicity in experimental animal studies.



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Assessment mutagenicity

Flufenacet was not mutagenic or genotoxic in a battery of in vitro and in vivo tests. Isoxaflutole was not mutagenic or genotoxic in a battery of in vitro and in vivo tests. Cyprosulfamide was not mutagenic or genotoxic in a battery of in vitro and in vivo tests. Thiencarbazone-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Flufenacet was not carcinogenic in lifetime feeding studies in rats and mice.

Isoxaflutole caused at high dose levels an increased incidence of tumours in the following organ(s):

Liver. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.

Cyprosulfamide caused at high dose levels an increased incidence of tumours in the following organ(s): urinary bladder, Kidney. The tumours seen with Cyprosulfamide were caused through the chronic irritation due to the presence of bladder stones. The mechanism that triggers tumours in rodents is not relevant for the low exposures encountered under normal use conditions.

Thiencarbazone-methyl was not carcinogenic in a lifetime feeding study in rats. Thiencarbazone-methyl caused at high dose levels an increased incidence of tumours in mice in the following organ(s): urinary bladder. The tumours seen with Thiencarbazone-methyl were caused through the chronic irritation due to the presence of bladder stones.

ACGIH			
None.			
NTP			
None.			
IARC			
None.			
_		_	

Assessment toxicity to reproduction

Flufenacet did not cause reproductive toxicity in a two-generation study in rats. Isoxaflutole did not cause reproductive toxicity in a two-generation study in rats. Cyprosulfamide did not cause reproductive toxicity in a two-generation study in rats. Thiencarbazone-methyl did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Flufenacet caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Flufenacet are related to maternal toxicity.

Isoxaflutole caused developmental toxicity only at dose levels toxic to the dams. Isoxaflutole caused a delayed ossification of foetuses. The developmental effects seen with Isoxaflutole are related to maternal toxicity.

Cyprosulfamide did not cause developmental toxicity in rats and rabbits.

Thiencarbazone-methyl did not cause developmental toxicity in rats and rabbits.

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

Only acute toxicity studies have been performed on the formulated product.

The non-acute information pertains to the active ingredient(s).



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SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish LC50 (Lepomis macrochirus (Bluegill sunfish)) 2.13 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient flufenacet.

LC50 (Cyprinus carpio (Carp)) 10 - 20 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient flufenacet.

LC50 (Oncorhynchus mykiss (rainbow trout)) > 1.7 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient isoxaflutole.

LC50 (Lepomis macrochirus (Bluegill sunfish)) > 4.5 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient isoxaflutole.

Toxicity to aquatic invertebrates

EC50 (Daphnia magna (Water flea)) 30.9 mg/l

Exposure time: 48 h

The value mentioned relates to the active ingredient flufenacet.

EC50 (Daphnia magna (Water flea)) > 1.5 mg/l

Exposure time: 48 h

The value mentioned relates to the active ingredient isoxaflutole.

Toxicity to aquatic plants

IC50 (Raphidocelis subcapitata (freshwater green alga)) 0.00699 mg/l

Growth rate; Exposure time: 96 h

The value mentioned relates to the active ingredient flufenacet.

ErC50 (algae) 0.138 mg/l

Growth rate; Exposure time: 72 h

The value mentioned relates to the active ingredient flufenacet.

IC50 (Raphidocelis subcapitata (freshwater green alga)) 0.33 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient isoxaflutole.

IC50 (Raphidocelis subcapitata (freshwater green alga)) 0.12 mg/l

Exposure time: 120 h

The value mentioned relates to the active ingredient isoxaflutole.

EC50 (Lemna gibba (gibbous duckweed)) 0.01439 mg/l

Growth rate; Exposure time: 216 h

The value mentioned relates to the active ingredient isoxaflutole.

NOEC (Lemna gibba (gibbous duckweed)) 0.00056 mg/l

The value mentioned relates to the active ingredient isoxaflutole.

Toxicity to bacteria

EC50 (activated sludge) > 10,000 mg/l

The value mentioned relates to the active ingredient flufenacet.



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Biodegradability Flufenacet:

Not rapidly biodegradable

Isoxaflutole:

Not rapidly biodegradable

Cyprosulfamide:

Not rapidly biodegradable Thiencarbazone-methyl: Not rapidly biodegradable

Koc Flufenacet: Koc: 202

Isoxaflutole: Koc: 112 Cyprosulfamide: Koc: 8 - 75 Thiencarbazone-methyl: Koc: 100

Bioaccumulation Flufenacet: Bioconcentration factor (BCF) 71

Does not bioaccumulate.

Isoxaflutole: Bioconcentration factor (BCF) 11

Does not bioaccumulate.

Cyprosulfamide:

Does not bioaccumulate. Thiencarbazone-methyl: Does not bioaccumulate.

Mobility in soil Flufenacet: Moderately mobile in soils

Isoxaflutole: Moderately mobile in soils

Cyprosulfamide: Mobile in soils

Thiencarbazone-methyl: Moderately mobile in soils

Results of PBT and vPvB assessment

PBT and vPvB assessment Flufenacet: This substance is not considered to be persistent,

bioaccumulative and toxic (PBT). This substance is not considered to be

very persistent and very bioaccumulative (vPvB).

Isoxaflutole: This substance is not considered to be persistent,

bioaccumulative and toxic (PBT). This substance is not considered to be

very persistent and very bioaccumulative (vPvB).

Cyprosulfamide: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be

very persistent and very bioaccumulative (vPvB).

Thiencarbazone-methyl: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

Additional ecological

information

No further ecological information is available.

Environmental precautions Do not allow to get into surface water, drains and ground water.

Do not contaminate surface or ground water by cleaning equipment or

disposal of wastes, including equipment wash water.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods



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Product Dispose in accordance with all local, state/provincial and federal

regulations.

Contaminated packaging Consult state and local regulations regarding the proper disposal of

container.

Follow advice on product label and/or leaflet.

RCRA Information Characterization and proper disposal of this material as a special or

hazardous waste is dependent upon Federal, State and local laws and

are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR Not dangerous goods / not hazardous material

IMDG

UN number 3082
Class 9
Packaging group III
Marine pollutant YES

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(FLUFENACET, ISOXAFLUTOLE SOLUTION)

IATA

UN number 3082
Class 9
Packaging group III
Environm. Hazardous Mark YES

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(FLUFENACET, ISOXAFLUTOLE SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 264-1211



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US Federal Regulations

TSCA list

Water 7732-18-5
Glycerine 56-81-5
Cyprosulfamide 221667-31-8
Tristyrylphenol polyethylenglycol 114535-82-9

phosphoric acid ester

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

Yes. Export notification needs to be made.

SARA Title III - Section 302 - Notification and Information

Not applicable.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Isoxaflutole 141112-29-0 Carcinogenic.

US State Right-To-Know Ingredients

Glycerine 56-81-5 MN, RI

Environmental

CERCLA

None.

Clean Water Section 307(a)(1)

None

Safe Drinking Water Act Maximum Contaminant Levels

None.

EPA/FIFRA Information:

This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: RESTRICTED USE PESTICIDE

Harmful if swallowed or absorbed through skin.

Causes moderate eye irritation.



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SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR Code of Federal Regulations, Title 49 **ACGIH** US. ACGIH Threshold Limit Values

ATE Acute toxicity estimate

Chemical Abstracts Service number CAS-Nr.

Comprehensive Environmental Response, Compensation, and Liability Act **CERCLA**

European inventory of existing commercial substances **EINECS**

European list of notified chemical substances **ELINCS** International Agency for Research on Cancer IARC IATA International Air Transport Association International Maritime Dangerous Goods **IMDG**

N.O.S. Not otherwise specified

NTP US. National Toxicology Program (NTP) Report on Carcinogens **OECD** Organization for Economic Co-operation and Development

TDG Transportation of Dangerous Goods

TWA Time weighted average

UN **United Nations**

WHO World health organisation

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Physical Hazard - 0 Health - 1 Flammability - 1 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: The following sections have been revised: Section 3: Composition / Information on Ingredients. Section 11: Toxicological Information. Section 15: Regulatory information. Reviewed and updated for general editorial purposes.

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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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