

SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



Zeus™ Herbicide

Version	Revision Date:	SDS Number:	Date of last issue: 10/27/2023
1.0	10/27/2023	50001715	Date of first issue: 04/17/2015

SECTION 1. IDENTIFICATION

Product identifier

Product name Zeus™ Herbicide

Other means of identification

Product code 50001715

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.

Details of the supplier of the safety data sheet

Manufacturer FMC Corporation
2929 WALNUT ST
PHILADELPHIA PA 19104
USA
(215) 299-6000
SDS-Info@fmc.com

Emergency telephone

For leak, fire, spill or accident emergencies, call:
1 800 / 424-9300 (CHEMTREC - U.S.A.)
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

Medical emergency:
U.S.A. & Canada: +1 800 / 331-3148
All other countries: +1 651 / 632-6793 (Collect)

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity : Category 2 (hematopoietic system)
- repeated exposure

GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H373 May cause damage to organs (hematopoietic system)

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through prolonged or repeated exposure.

Precautionary Statements

- : **Prevention:**
P260 Do not breathe mist or vapors.
- Response:**
P314 Get medical advice/ attention if you feel unwell.
- Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Sulfentrazone	122836-35-5	40
propane-1,2-diol	57-55-6	>= 5 - < 10
toluene	108-88-3	>= 1 - <= 5

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Wash off with soap and water.
If symptoms persist, call a physician.
Wash contaminated clothing before re-use.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

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Most important symptoms and effects, both acute and delayed	:	Exposure may result in convulsions, decreased locomotion, tearing, increased sensitivity to touch, bloody discharge from the nose and incoordination. May cause damage to organs through prolonged or repeated exposure.
Protection of first-aiders	:	Avoid inhalation, ingestion and contact with skin and eyes.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Fire may produce irritating, corrosive and/or toxic gases. Chlorinated compounds Fluorinated compounds Sulfur oxides Nitrogen oxides (NOx) Carbon oxides Hydrogen cyanide
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.
Further information	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	:	Firefighters should wear protective clothing and self-contained breathing apparatus.

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.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform

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respective authorities.

Methods and materials for containment and cleaning up : Never return spills in original containers for re-use. Collect as much of the spill as possible with a suitable absorbent material. Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

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

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

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
propane-1,2-diol	57-55-6	TWA	10 mg/m3	US WEEL

Personal protective equipment

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

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

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles

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Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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

Hygiene measures : Avoid contact with skin, eyes and clothing.
Do not inhale aerosol.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Form : liquid

Color : off-white

Odor : alcohol-like

Odor Threshold : No data available

pH : 5.3 - 6 (68 °F / 20 °C)

Boiling point/boiling range : No data available

Flash point : > 201 °F / > 94 °C
Method: closed cup

Evaporation rate : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

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Density	:	10.07 lb/gal
Solubility(ies)	:	
Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
Molecular weight	:	Not applicable
Metal corrosion rate	:	Not corrosive to metals.
Particle size	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

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

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Product:

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Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 423
Assessment: The component/mixture is minimally toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat): > 2.72 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: US EPA Test Guideline OPP 81-3
Assessment: The component/mixture is minimally toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: US EPA Test Guideline OPP 81-2
Assessment: The substance or mixture has no acute dermal toxicity

Components:

Sulfentrazone:

Acute oral toxicity : LD50 (Rat, female): 2,689 mg/kg
Symptoms: ataxia, clonic convulsions, Fatality
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): > 4.13 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: EPA OPP 81 - 3
Symptoms: ataxia, Breathing difficulties
GLP: yes
Remarks: no mortality

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: EPA OPP 81-2
GLP: yes
Assessment: The component/mixture is minimally toxic after single contact with skin.

propane-1,2-diol:

Acute oral toxicity : LD50 (Rat, male and female): 22,000 mg/kg

Acute inhalation toxicity : LC0 (Rabbit): 31.7 mg/l
Exposure time: 2 h
Test atmosphere: vapor
Remarks: no mortality

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

toluene:

Acute oral toxicity : LD50 (Rat): 5,580 mg/kg

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Acute inhalation toxicity : LC50 (Rat, male): 25.7 mg/l
Exposure time: 4 h
Test atmosphere: vapor

LC50 (Rat, female): 30 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : (Rabbit): 12,267 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Method : US EPA Test Guideline OPP 81-5
Result : No skin irritation

Components:

Sulfentrazone:

Species : Rabbit
Assessment : No skin irritation
Method : EPA OPP 81-5
Result : No skin irritation
GLP : yes

propane-1,2-diol:

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

toluene:

Species : Rabbit
Assessment : Repeated exposure may cause skin dryness or cracking.
Result : Skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species : Rabbit
Result : No eye irritation
Method : US EPA Test Guideline OPP 81-4

Components:

Sulfentrazone:

Species : Rabbit

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Result	:	No eye irritation
Assessment	:	No eye irritation
Method	:	EPA OPP 81-4
GLP	:	yes

propane-1,2-diol:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

toluene:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Test Type	:	Skin sensitization
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	US EPA Test Guideline OPP 81-6
Result	:	Does not cause skin sensitization.

Components:

Sulfentrazone:

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.

propane-1,2-diol:

Test Type	:	Maximization Test
Species	:	Guinea pig
Result	:	negative

toluene:

Test Type	:	Maximization Test
Species	:	Guinea pig
Result	:	Not a skin sensitizer.

Germ cell mutagenicity

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Components:

Sulfentrazone:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: Mouse lymphoma assay
Test system: mouse lymphoma cells
Metabolic activation: Metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

propane-1,2-diol:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Result: negative

toluene:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: Chromosome aberration test in vitro
Species: Rat
Result: negative

Carcinogenicity

Not classified based on available information.

Components:

Sulfentrazone:

Species : Rat, male and female
Application Route : Ingestion
Exposure time : 2 Years
Result : negative

Species : Mouse, male and female
Application Route : Ingestion

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Exposure time : 18 month(s)
Result : negative

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

propane-1,2-diol:

Species : Rat
Application Route : Oral
Exposure time : 2 Years
Result : negative

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:

Sulfentrazone:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
General Toxicity Parent: NOEL: 13.7 - 16.2 mg/kg bw/day
General Toxicity F1: NOEL: 13.7 - 16.2 mg/kg bw/day
Symptoms: Maternal effects.

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOEL: 25 mg/kg bw/day
Developmental Toxicity: NOEL: 10 mg/kg bw/day
Method: EPA OPP 83-3

Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: LOAEL: 50 mg/kg bw/day
Developmental Toxicity: LOAEL F1: 25 mg/kg bw/day
Symptoms: Skeletal malformations.
Target Organs: spleen
Method: EPA OPP 83-3

propane-1,2-diol:

Effects on fertility : Test Type: reproductive and developmental toxicity study

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Species: Mouse
Application Route: Oral
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 414
Result: Animal testing did not show any effects on fertility.
Remarks: Based on data from similar materials

toluene:

Effects on fetal development : Species: Rat
Application Route: Inhalation
Result: Teratogenic effects.
Remarks: Adverse developmental effects were observed

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT-single exposure

Not classified based on available information.

Components:

Sulfentrazone:

Remarks : No significant adverse effects were reported

toluene:

Assessment : May cause drowsiness or dizziness.

STOT-repeated exposure

May cause damage to organs (hematopoietic system) through prolonged or repeated exposure.

Components:

Sulfentrazone:

Target Organs : hematopoietic system
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

toluene:

Routes of exposure : Inhalation
Target Organs : inner ear
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

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Repeated dose toxicity

Components:

Sulfentrazone:

Species	: Rat, male
NOAEL	: 19.9 mg/kg
LOAEL	: 65.8 mg/kg
Application Route	: Oral - feed
Exposure time	: 90-days
GLP	: yes
Target Organs	: hematopoietic system

Species	: Mouse, male
NOAEL	: 60 mg/kg
LOAEL	: 108.4 mg/kg
Application Route	: Oral - feed
Exposure time	: 90-days
Target Organs	: hematopoietic system

Species	: Dog, male
NOAEL	: 10 mg/kg
LOAEL	: 28 mg/kg
Application Route	: Oral - feed
Exposure time	: 90-days
Target Organs	: hematopoietic system, Liver

propane-1,2-diol:

Species	: Rat, male and female
NOAEL	: 1,700 mg/kg
Application Route	: Oral
Exposure time	: 2 Years

Species	: Rat, male and female
NOAEL	: 1,000 mg/kg
LOAEL	: 160 mg/kg
Application Route	: Inhalation
Exposure time	: 90 Days

toluene:

Species	: Rat
NOAEL	: 625 mg/kg
Application Route	: Oral
Symptoms	: central nervous system effects

Species	: Rat
NOAEL	: 0.098 mg/l
Application Route	: Inhalation
Test atmosphere	: vapor

Species	: Rat
LOAEL	: 2.261 mg/l
Application Route	: Inhalation

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Test atmosphere : vapor

Aspiration toxicity

Not classified based on available information.

Components:

Sulfentrazone:

The substance does not have properties associated with aspiration hazard potential.

toluene:

May be fatal if swallowed and enters airways.

Neurological effects

Components:

Sulfentrazone:

Neurotoxicity observed in animals studies

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Sulfentrazone:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: EPA OPP 72-1

LC50 (Lepomis macrochirus (Bluegill sunfish)): 93.8 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: EPA OPP 72-1

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 60.4 mg/l
Exposure time: 48 h
Test Type: flow-through test

NOEC (Daphnia magna (Water flea)): 14.1 mg/l
Exposure time: 48 h
Test Type: flow-through test

Toxicity to algae/aquatic : EC50 (algae): 32.8 mg/l

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plants	Exposure time: 72 h
	EC50 (Pseudokirchneriella subcapitata (green algae)): 0.031 mg/l
	Exposure time: 120 h
	EC50 (Lemna gibba (duckweed)): 0.0288 mg/l
	Exposure time: 14 d
	EC50 (Navicula pelliculosa (Diatom)): 0.042 mg/l
	Exposure time: 120 h
Toxicity to fish (Chronic toxicity)	: NOEC (Fish): 5.9 mg/l
	Exposure time: 21 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Crustaceans): 0.51 mg/l
	Exposure time: 21 d
Toxicity to terrestrial organisms	: LD50 (Anas platyrhynchos (Mallard duck)): > 5,620 ppm
	End point: Acute oral toxicity
	NOEL (Anas platyrhynchos (Mallard duck)): 3,160 ppm
	End point: Acute oral toxicity
	LD50 (Colinus virginianus (Bobwhite quail)): > 5,620 ppm
	End point: Acute oral toxicity
	NOEL (Colinus virginianus (Bobwhite quail)): 5,620 ppm
	End point: Acute oral toxicity
	NOEL (Colinus virginianus (Bobwhite quail)): > 100 ppm
	End point: Reproduction Test
	NOEL (Anas platyrhynchos (Mallard duck)): > 100 ppm
	End point: Reproduction Test
	LD50 (Apis mellifera (bees)): > 25 µg/bee
	End point: Acute oral toxicity
	LD50 (Apis mellifera (bees)): > 200 µg/bee
	End point: Acute contact toxicity

Ecotoxicology Assessment

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

propane-1,2-diol:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
	Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: (Mysidopsis bahia (opossum shrimp)): 18,800 mg/l
	Exposure time: 96 h

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Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 34,100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 13,020 mg/l
Exposure time: 7 d

Toxicity to microorganisms : EC50 (Pseudomonas putida): > 20,000 mg/l
Exposure time: 18 h

toluene:

Toxicity to fish : LC50 (Fish): 5.5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50: 3.78 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : NOEC (Skeletonema costatum (marine diatom)): 10 mg/l
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus kisutch (coho salmon)): 1.4 mg/l

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia sp.): 0.74 mg/l
Exposure time: 7 d

Toxicity to microorganisms : EC50 (Bacteria): 134 mg/l
Exposure time: 3 h

Persistence and degradability

Components:

Sulfentrazone:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life (DT50): 2.22 - 9.56 h

Photodegradation : Remarks: Decomposes rapidly in contact with light.

propane-1,2-diol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 23.6 %
Exposure time: 64 d
Method: OECD Test Guideline 306

toluene:

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Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

Sulfentrazone:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
GLP: yes
Remarks: Low potential for bioaccumulation

Partition coefficient: n-octanol/water : Pow: 9.8
pH: 7

propane-1,2-diol:

Partition coefficient: n-octanol/water : log Pow: -1.07

toluene:

Bioaccumulation : Bioconcentration factor (BCF): 90

Partition coefficient: n-octanol/water : log Pow: 2.73 (68 °F / 20 °C)

Mobility in soil

Components:

Sulfentrazone:

Mobility : Medium: Water
Remarks: Predicted distribution to environmental compartments

Distribution among environmental compartments : Koc: 43 ml/g, log Koc: 1.63
Remarks: Highly mobile in soils

Stability in soil : Remarks: Very persistent in soil.

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.
Toxic to aquatic life with long lasting effects.

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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Sulfentrazone)
Class : 9
Packing group : III
Labels : 9
Environmentally hazardous : yes

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(Sulfentrazone)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964
Environmentally hazardous : yes

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Sulfentrazone)
Class : 9

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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.

Domestic regulation

49 CFR Road

UN/ID/NA number	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Sulfentrazone)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	yes(Sulfentrazone)
Remarks	:	Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

Special precautions for user

Remarks	:	49CFR: no dangerous good in non-bulk packaging
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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

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	No SARA Hazards
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SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
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Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

propane-1,2-diol	57-55-6	>= 5 - < 10 %
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Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

water	7732-18-5
Sulfentrazone	122836-35-5
propane-1,2-diol	57-55-6
Monobutyl ether of polymer of 2-methyloxirane / oxirane	9038-95-3

Maine Chemicals of High Concern

octamethylcyclotetrasiloxane [D4]	556-67-2
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Vermont Chemicals of High Concern

octamethylcyclotetrasiloxane [D4]	556-67-2
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Washington Chemicals of High Concern

Product does not contain any listed chemicals

The ingredients 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. 2',4'-DICHLORO-5'-(4-DIFLUOROMETHYL-4,5-DIHYDRO-3-METHYL-5-OXO-1H-1,2,4-TRIAZOL-1-YL)METHANESULFONANILIDE
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

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IECSC : Not in compliance with the inventory

NZIoC : Not in compliance with the inventory

TECI : Not in compliance with the inventory

TSCA list

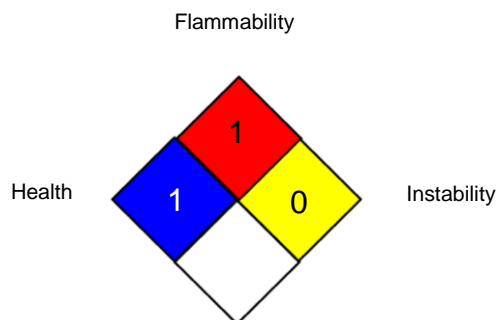
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



0 No health threat, 1 Slightly Hazardous, 2 Hazardous, 3 Extreme danger, 4 Deadly

HMIS® IV:

HEALTH	*	2
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)
US WEEL / TWA : 8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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 System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification

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System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; 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

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End of Material Safety Data Sheet