

SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



Solitare WSL Herbicide

Version	Revision Date:	SDS Number:	Date of last issue: 01/22/2026
1.2	04/09/2026	11544052-00003	Date of first issue: 07/03/2025

SECTION 1. IDENTIFICATION

Product name : Solitare WSL Herbicide
Product code : UVP: DU00000156 Specification: 102D00000459 EPA Registration No:101563-357

Manufacturer or supplier's details

Company name of supplier : Environmental Science U.S. LLC.
Address : 5000 Centregreen Way, Suite 400
Cary NC 27513
Telephone : 1-800-331-2867
Emergency telephone : +1 703-741-5970
E-mail address : uscontact@envu.com

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide
Restrictions on use : For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

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

Hazards for the product as supplied

Acute toxicity (Inhalation) : Category 4
Serious eye damage : Category 1
Reproductive toxicity : Category 1B
Specific target organ toxicity : Category 2 (hematopoietic system)
- repeated exposure (Oral)
Specific target organ toxicity : Category 2 (hematopoietic system)
- repeated exposure (Inhalation)

Other hazards

None known.

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H318 Causes serious eye damage.
H332 Harmful if inhaled.
H360D May damage the unborn child.
H373 May cause damage to organs (hematopoietic system)

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through prolonged or repeated exposure if swallowed.
H373 May cause damage to organs (hematopoietic system)
through prolonged or repeated exposure if inhaled.

Supplemental Hazard State- : Corrosive to the respiratory tract.
ments

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapors.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves, protective clothing, eye protection and face protection.
Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER.
P308 + P313 IF exposed or concerned: Get medical attention.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents and container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
3,7-Dichloroquinoline-8-carboxylic acid	84087-01-4*	5	-
Propylene glycol	57-55-6*	>= 3 - < 5	-
Ethanolamine	141-43-5*	>= 1 - < 3	-
Octylphenoxy polyethoxy ethanol	9036-19-5*	>= 1 - < 3	-
Sulfentrazone	122836-35-5*	1.6	-

* Indicates that the identifier is a CAS No.

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SECTION 4. FIRST AID MEASURES

- | | | |
|---|---|--|
| General advice | : | In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice. |
| If inhaled | : | If inhaled, remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention. |
| In case of skin contact | : | In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse. |
| In case of eye contact | : | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately. |
| If swallowed | : | If swallowed, DO NOT induce vomiting.
Get medical attention.
Rinse mouth thoroughly with water. |
| Most important symptoms and effects, both acute and delayed | : | Causes serious eye damage.
Harmful if inhaled.
May damage the unborn child.
May cause damage to organs through prolonged or repeated exposure if swallowed.
May cause damage to organs through prolonged or repeated exposure if inhaled.
Corrosive to the respiratory tract. |
| Protection of first-aiders | : | First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8). |
| Notes to physician | : | Treat symptomatically. |

SECTION 5. FIRE-FIGHTING MEASURES

- | | | |
|---------------------------------------|---|--|
| Suitable extinguishing media | : | Water spray
Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical |
| Unsuitable extinguishing media | : | High volume water jet |
| Specific hazards during fire fighting | : | Exposure to combustion products may be a hazard to health. |
| Hazardous combustion products | : | Carbon oxides
Nitrogen oxides (NO _x)
Chlorine compounds |

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Fluorine compounds
Sulfur oxides

- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
- Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g., by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
- Advice on safe handling : Do not get on skin or clothing.
Do not breathe mist or vapors.
Do not swallow.
Do not get in eyes.
Handle in accordance with good industrial hygiene and safety

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- practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:
Strong oxidizing agents
Self-reactive substances and mixtures
Organic peroxides
Explosives
Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Propylene glycol	57-55-6	TWA	10 mg/m ³	US WEEL
Ethanolamine	141-43-5	TWA	3 ppm	ACGIH
		STEL	6 ppm	ACGIH
		TWA	3 ppm 8 mg/m ³	NIOSH REL
		ST	6 ppm 15 mg/m ³	NIOSH REL
		TWA	3 ppm 6 mg/m ³	OSHA Z-1

- Engineering measures : Minimize workplace exposure concentrations.
If sufficient ventilation is unavailable, use with local exhaust ventilation.

Personal protective equipment

- Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
- Hand protection

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Material	:	Chemical-resistant gloves
Remarks	:	Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Eye protection	:	Wear the following personal protective equipment: Chemical resistant goggles must be worn. If splashes are likely to occur, wear: Face-shield
Skin and body protection	:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Hygiene measures	:	If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	amber
Odor	:	mild
Odor Threshold	:	No data available
pH	:	9.02
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	> 212 °F / > 100 °C Method: Tag closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available

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Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	1.04
Density	:	1.03 g/cm ³
Bulk density	:	1,036.5 kg/m ³
Solubility(ies)	:	
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	12.9 mm ² /s (77 °F / 25 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle characteristics	:	
Particle size	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Can react with strong oxidizing agents.
Conditions to avoid	:	None known.
Incompatible materials	:	Oxidizing agents Acids
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Ingestion
Eye contact

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Acute toxicity

Harmful if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : LC50: > 2.13 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Acute oral toxicity : LD50 (Rat): 2,680 mg/kg
Method: OECD Test Guideline 401
Remarks: The test was conducted equivalent or similar to guideline

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: The test was conducted according to guideline

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Remarks: The test was conducted according to guideline

Propylene glycol:

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

Acute inhalation toxicity : LC50 (Rat): > 44.9 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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

Ethanolamine:

Acute oral toxicity : LD50 (Rat): 1,089 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 11 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Expert judgment
Remarks: Based on national or regional regulation.

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Assessment: Not corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit, female): 1,018 mg/kg

Octylphenoxy polyethoxy ethanol:

Acute oral toxicity : LD50 (Rat): 1,900 - 5,000 mg/kg
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Remarks: Based on data from similar materials

Sulfentrazone:

Acute oral toxicity : LD50 (Mouse, female): 701.8 mg/kg
Method: OPPTS 870.1100
Remarks: The test was conducted according to guideline

Acute inhalation toxicity : LC50 (Rat): > 5.13 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OPPTS 870.1300
Remarks: The test was conducted according to guideline

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Method: OPPTS 870.1200
Remarks: The test was conducted according to guideline

Skin corrosion/irritation

Not classified based on available information.

Product:

Result : No skin irritation

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
Remarks : The test was conducted according to guideline

Propylene glycol:

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

Ethanolamine:

Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure

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Octylphenoxy polyethoxy ethanol:

Species	:	Rabbit
Result	:	No skin irritation
Remarks	:	Based on data from similar materials

Sulfentrazone:

Species	:	Rabbit
Method	:	OPPTS 870.2500
Result	:	No skin irritation
Remarks	:	The test was conducted according to guideline

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	The test was conducted according to guideline

Propylene glycol:

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

Ethanolamine:

Species	:	Rabbit
Result	:	Irreversible effects on the eye

Octylphenoxy polyethoxy ethanol:

Result	:	Irreversible effects on the eye
Remarks	:	Based on data from similar materials

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Assessment	:	Does not cause skin sensitization.
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Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Test Type	:	Maximization Test
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Routes of exposure : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : positive
Remarks : The test was conducted according to guideline

Assessment : Probability or evidence of skin sensitization in humans

Propylene glycol:

Test Type : Maximization Test
Routes of exposure : Skin contact
Species : Guinea pig
Result : negative

Ethanolamine:

Test Type : Maximization Test
Routes of exposure : Skin contact
Species : Guinea pig
Result : negative

Octylphenoxy polyethoxy ethanol:

Routes of exposure : Skin contact
Species : Guinea pig
Result : negative
Remarks : Based on data from similar materials

Sulfentrazone:

Test Type : Maximization Test
Routes of exposure : Skin contact
Species : Guinea pig
Method : OPPTS 870.2600
Result : negative
Remarks : The test was conducted according to guideline

Germ cell mutagenicity

Not classified based on available information.

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: The test was conducted according to guideline

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
Remarks: The test was conducted according to guideline

Test Type: Chromosome aberration test in vitro

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Method: OECD Test Guideline 473

Result: positive

Remarks: The test was conducted according to guideline

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Hamster
Application Route: Ingestion
Method: OECD Test Guideline 475
Result: negative
Remarks: The test was conducted according to guideline

Propylene glycol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Ethanolamine:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative

Octylphenoxy polyethoxy ethanol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on data from similar materials

Sulfentrazone:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

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Method: OPPTS 870.5100
Result: negative
Remarks: The test was conducted according to guideline

Test Type: In vitro mammalian cell gene mutation test
Method: OPPTS 870.5300
Result: negative
Remarks: The test was conducted according to guideline

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Method: OPPTS 870.5395
Result: negative
Remarks: The test was conducted according to guideline

Carcinogenicity

Not classified based on available information.

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Species : Rat
Application Route : Ingestion
Exposure time : 78 weeks
Method : OECD Test Guideline 453
Result : negative
Remarks : The test was conducted according to guideline

Propylene glycol:

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

Sulfentrazone:

Species : Mouse
Application Route : Ingestion
Exposure time : 2 Years
Method : OPPTS 870.4200
Result : negative
Remarks : The test was conducted according to guideline

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.

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Reproductive toxicity

May damage the unborn child.

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative
Remarks: The test was conducted according to guideline

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative
Remarks: The test was conducted according to guideline

Propylene glycol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Mouse
Application Route: Ingestion
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Mouse
Application Route: Ingestion
Result: negative

Ethanolamine:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative

Sulfentrazone:

Effects on fetal development : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OPPTS 870.3800

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Result: positive
Remarks: The test was conducted according to guideline

Test Type: Embryo-fetal development
Species: Rat
Application Route: Skin contact
Method: OPPTS 870.3700
Result: positive
Remarks: The test was conducted according to guideline

Reproductive toxicity - Assessment : Clear evidence of adverse effects on development, based on animal experiments.

STOT-single exposure

Corrosive to the respiratory tract.

Components:

Ethanolamine:

Assessment : May cause respiratory irritation.

STOT-repeated exposure

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

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

Components:

Ethanolamine:

Assessment : No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Sulfentrazone:

Routes of exposure : Ingestion
Target Organs : hematopoietic system
Assessment : Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

Routes of exposure : inhalation (dust/mist/fume)
Target Organs : hematopoietic system
Assessment : Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

Repeated dose toxicity

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Species : Rat
NOAEL : 930 mg/kg
Application Route : Ingestion

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Exposure time : 90 Days
Method : OECD Test Guideline 408
Remarks : The test was conducted according to guideline

Propylene glycol:

Species : Rat, male
NOAEL : $\geq 1,700$ mg/kg
Application Route : Ingestion
Exposure time : 2 y

Ethanolamine:

Species : Rat
NOAEL : > 120 mg/kg
Application Route : Ingestion
Exposure time : > 75 Days
Remarks : Based on data from similar materials

Species : Rat
NOAEL : ≥ 0.15 mg/l
Application Route : inhalation (dust/mist/fume)
Exposure time : 28 Days
Method : OECD Test Guideline 412

Sulfentrazone:

Species : Dog, male
NOAEL : 28 mg/kg
LOAEL : 57 mg/kg
Application Route : Ingestion
Exposure time : 90 Days
Method : OPPTS 870.3150
Remarks : The test was conducted according to guideline

Species : Rat
NOAEL : 0.256 mg/kg
LOAEL : 1.71 mg/kg
Application Route : inhalation (dust/mist/fume)
Exposure time : 26 Days
Method : OPPTS 870.3465
Remarks : The test was conducted according to guideline

Species : Rabbit
NOAEL : $\geq 1,000$ mg/kg
Application Route : Skin contact
Exposure time : 28 Days
Method : OPPTS 870.3200
Remarks : The test was conducted according to guideline

Aspiration toxicity

Not classified based on available information.

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 99.7 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: The test was conducted according to guideline
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: The test was conducted according to guideline
Toxicity to algae/aquatic plants	:	ErC50: 43.6 mg/l Exposure time: 96 h NOEC: 19.3 mg/l Exposure time: 96 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 31 mg/l Exposure time: 38 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 110 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	EC50 (activated sludge): > 1,000 mg/l Exposure time: 180 min Method: OECD Test Guideline 209 Remarks: The test was conducted according to guideline

Propylene glycol:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Ceriodaphnia dubia (water flea)): 18,340 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Skeletonema costatum (marine diatom)): 19,300 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Ceriodaphnia dubia (water flea)): 13,020 mg/l Exposure time: 7 d
Toxicity to microorganisms	:	NOEC (Pseudomonas putida): > 20,000 mg/l Exposure time: 18 h

Ethanolamine:

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Toxicity to fish	:	LC50 (Cyprinus carpio (Carp)): 349 mg/l Exposure time: 96 h Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 65 mg/l Exposure time: 48 h Method: Directive 67/548/EEC, Annex V, C.2.
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 2.8 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	:	NOEC (Oryzias latipes (Orange-red killifish)): 1.24 mg/l Exposure time: 41 d Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.85 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	EC10 (Pseudomonas putida): > 1,000 mg/l Exposure time: 30 min Method: OECD Test Guideline 209

Octylphenoxy polyethoxy ethanol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): > 1 - 10 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10 - 100 mg/l Exposure time: 48 h Remarks: Based on data from similar materials

Sulfentrazone:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 93.8 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 60.4 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.033 mg/l Exposure time: 120 h NOEC (Pseudokirchneriella subcapitata (green algae)): 0.03 mg/l Exposure time: 120 h

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Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 2.95 mg/l
Exposure time: 99 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.2 mg/l
Exposure time: 21 d

Persistence and degradability

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301A
Remarks: The test was conducted according to guideline

Biodegradation Simulation Tests : Environmental Compartment: Soil
Value type: DT50
Value: > 138 d
Temperature: 22 °C

Propylene glycol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 98.3 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Ethanolamine:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 21 d
Method: OECD Test Guideline 301A

Sulfentrazone:

Biodegradation Simulation Tests : Environmental Compartment: Soil
Value type: DT50
Value: 400 d

Bioaccumulative potential

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): ≤ 0.52
Remarks: No test guideline followed

Partition coefficient: n-octanol/water : log Pow: -0.74
Method: OECD Test Guideline 117
Remarks: The test was conducted according to guideline

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Propylene glycol:

Partition coefficient: n-octanol/water : log Pow: -1.07
Method: Regulation (EC) No. 440/2008, Annex, A.8

Ethanolamine:

Partition coefficient: n-octanol/water : log Pow: -2.3
Method: OECD Test Guideline 107

Octylphenoxy polyethoxy ethanol:

Partition coefficient: n-octanol/water : log Pow: < 4
Remarks: Expert judgment

Sulfentrazone:

Partition coefficient: n-octanol/water : log Pow: 0.99

Mobility in soil

Components:

3,7-Dichloroquinoline-8-carboxylic acid:

Distribution among environmental compartments : log Koc: 2.85 - 3.06
Method: OECD Test Guideline 106
Remarks: The test was conducted according to guideline

Sulfentrazone:

Distribution among environmental compartments : log Koc: 1.63

Other adverse effects

No data available

Endocrine disrupting properties

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Do not dispose of waste into sewer.
Contaminated packaging	:	Follow advice on product label and/or leaflet. Empty containers retain residue and can be dangerous. Do not re-use empty containers.

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SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as a dangerous good

Special precautions for user

Not applicable

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the 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 : Acute toxicity (any route of exposure)
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Serious eye damage or eye irritation

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.

US State Regulations

Pennsylvania Right To Know

Water	7732-18-5
3,7-Dichloroquinoline-8-carboxylic acid	84087-01-4
Propylene glycol	57-55-6
Ethanolamine	141-43-5
Toluene	108-88-3

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California Prop. 65

WARNING: This product can expose you to chemicals including Toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances

Ethanolamine 141-43-5

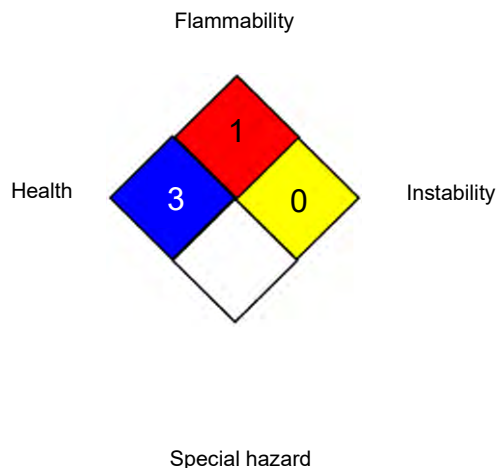
California Permissible Exposure Limits for Chemical Contaminants

Ethanolamine	141-43-5
Active substance	: 52 g/l
	3,7-Dichloroquinoline-8-carboxylic acid
	17 g/l
	Sulfentrazone

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV / CED:

HEALTH	*	3
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

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	: USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	: STEL - 15-minute TWA exposure that should not be exceeded

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	at any time during a workday
OSHA Z-1 / TWA	: 8-hour time weighted average
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 Standardization; 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 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 Organization 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, Authorization 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; TECL - 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

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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