

SAFETY DATA SHEET



GINSTAR® EC COTTON DEFOLIANT

Version 5.0 / USA
102000003984

1/13
Revision Date: 01/04/2022
Print Date: 01/05/2022

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

Product identifier

Trade name GINSTAR® EC COTTON DEFOLIANT
Product code (UVP) 05950392
SDS Number 102000003984
EPA Registration No. 264-634

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

Use Herbicide, Growth regulator
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

Serious eye damage: Category 1
Skin sensitisation: Category 1
Skin irritation: Category 2
Acute toxicity(Inhalation): Category 4

Labelling in accordance with regulation HCS 29CFR §1910.1200



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Signal word: Danger

Hazard statements

Causes serious eye damage.
May cause an allergic skin reaction.
Causes skin irritation.
Harmful if inhaled.

Precautionary statements

Wear eye protection/ face protection.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Contaminated work clothing should not be allowed out of the workplace.
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves.
Use only outdoors or in a well-ventilated area.
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/doctor/ physician.
IF ON SKIN: Wash with plenty of water/ soap.
If skin irritation or rash occurs: Get medical advice/ attention.
Specific treatment (see supplemental first aid instructions on this label).
Wash contaminated clothing before reuse.
Take off contaminated clothing and wash before reuse.
Call a POISON CENTER/doctor/physician if you feel unwell.
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 |
|--------------------------|------------|---------------------------|
| Thidiazuron | 51707-55-2 | 12.0 |
| Diuron | 330-54-1 | 6.0 |
| N-Octyl-2-pyrrolidinone | 2687-94-7 | 10.0 |
| 1-dodecyl-2-pyrrolidone | 2687-96-9 | 67.0 |
| Docosate sodium | 577-11-7 | 1.75 |

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.

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| Skin contact | Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center immediately. |
| 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 | Gastrointestinal discomfort, Skin, eye and mucous membrane irritation, Erythema, Sensitisation, Cyanosis |
| Indication of any immediate medical attention and special treatment needed | |
| Risks | Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. |
| Treatment | Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. |

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

| | |
|-------------------|--|
| Suitable | Water spray, Alcohol-resistant foam, Dry chemical, Carbon dioxide (CO ₂) |
| Unsuitable | High volume water jet |

Special hazards arising from the substance or mixture In the event of fire the following may be released:, Nitrogen oxides (NO_x), Carbon monoxide (CO), Sulphur oxides

Advice for firefighters

Special protective equipment for firefighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point 143.5 °C / 290.3 °F

Auto-ignition temperature No data available

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| | |
|------------------------------|-------------------|
| Lower explosion limit | No data available |
| Upper explosion limit | No data available |
| Explosivity | Not applicable |

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment. Keep unauthorized people away. Isolate hazard area. Do not breathe vapour.

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). Collect and transfer the product into a properly labelled and tightly closed container. Wash spill area with water containing a strong detergent. Clean contaminated floors and objects thoroughly, observing environmental regulations. Contaminated soil may have to be removed and disposed.

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 Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Advice on protection against fire and explosion Keep away from heat and sources of ignition.

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. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

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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. Keep away from direct sunlight. Protect from freezing.

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

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| Components | CAS-No. | Control parameters | Update | Basis |
|-------------|------------|-----------------------|---------|-----------|
| Thidiazuron | 51707-55-2 | 1.1 mg/m3 (TWA) | | OES BCS* |
| Diuron | 330-54-1 | 10 mg/m3 (TWA PEL) | 09 2006 | US CA OEL |
| Diuron | 330-54-1 | 10 mg/m3 (TWA) | 2008 | ACGIH |
| Diuron | 330-54-1 | 10 mg/m3 (REL) | 2005 | NIOSH |
| Diuron | 330-54-1 | 10 mg/m3 (TWA) | 06 2008 | TN OEL |
| Diuron | 330-54-1 | 0.6 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

Use tightly sealed goggles and face protection.

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Remove contaminated clothing immediately and dispose of safely. 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.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|---|--|
| Form | Liquid, clear |
| Colour | beige to brown |
| Odor | characteristic |
| Odour Threshold | No data available |
| pH | 7.0 - 8.0 (10 %) (23 °C) (deionized water) |
| Melting point/range | No data available |
| Boiling Point | No data available |
| Flash point | 143.5 °C / 290.3 °F |
| Flammability | No data available |
| Auto-ignition temperature | No data available |
| Minimum ignition energy | Not applicable |
| Self-accelarating decomposition temperature (SADT) | No data available |
| Upper explosion limit | No data available |
| Lower explosion limit | No data available |
| Vapor Pressure | No data available |
| Evaporation rate | No data available |
| Relative vapour density | No data available |
| Relative density | No data available |
| Density | 0.97 g/cm ³ (20 °C) |
| Water solubility | emulsifiable, slightly soluble |
| Partition coefficient: n-octanol/water | Thidiazuron: log Pow: 1.5 Diuron: log Pow: 2.84 |
| Viscosity, dynamic | ca. 242 mPa.s (20 °C) |
| Viscosity, kinematic | No data available |
| Explosivity | Not applicable |
| Other information | Further safety related physical-chemical data are not known. |

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SECTION 10: STABILITY AND REACTIVITY

| | |
|---|--|
| Reactivity | Stable under normal conditions. |
| Chemical stability | Stable under recommended storage conditions. |
| Possibility of hazardous reactions | No hazardous reactions when stored and handled according to prescribed instructions. |
| Conditions to avoid | Heat, flames and sparks. Extremes of temperature and direct sunlight. |
| Incompatible materials | No incompatible materials known. |
| Hazardous decomposition products | Nitrogen oxides (NO _x) Sulphur oxides Carbon oxides Aldehydes |

SECTION 11: TOXICOLOGICAL INFORMATION

| | |
|---|---|
| Exposure routes | Mist inhalation, Skin contact, Eye contact, Ingestion |
| Immediate Effects | |
| Eye | Corrosive - causes irreversible eye damage. |
| Skin | Causes skin irritation. Harmful if absorbed through skin. |
| Ingestion | Harmful if swallowed. |
| Inhalation | Harmful if inhaled. |
| Information on toxicological effects | |
| Acute oral toxicity | LD50 (male/female combined Rat) > 5,000 mg/kg |
| Acute inhalation toxicity | LC50 (male/female combined Rat) 2.0 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. (actual) |
| Acute dermal toxicity | LD50 (male/female combined Rat) > 4,000 mg/kg |
| Skin corrosion/irritation | Mild skin irritation. (Rabbit) |
| Serious eye damage/eye irritation | corrosive (Rabbit) Irritating to eyes. (Rabbit) |
| Respiratory or skin sensitisation | Skin: Sensitising (Guinea pig) OECD Test Guideline 406, Buehler test May cause sensitisation by skin contact. |

Assessment STOT Specific target organ toxicity – single exposure

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

Assessment STOT Specific target organ toxicity – repeated exposure

Thidiazuron did not cause specific target organ toxicity in experimental animal studies.
Diuron caused haemolytic anaemia in animal studies.

Assessment mutagenicity

Thidiazuron was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Diuron was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Thidiazuron was not carcinogenic in lifetime feeding studies in rats and mice.
Diuron caused at high dose levels an increased incidence of tumours in the following organ(s): urinary bladder, Mammary gland. The mechanism that triggers tumours in rodents is not relevant for the low exposures encountered under normal use conditions.

ACGIH

Diuron 330-54-1 Group A4

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Thidiazuron did not cause reproductive toxicity in a two-generation study in rats.
Diuron did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

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

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)) 14.7 mg/l

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| | |
|---|---|
| | Exposure time: 96 h The value mentioned relates to the active ingredient diuron. |
| | LC50 (Oncorhynchus mykiss (rainbow trout)) > 19 mg/l static test; Exposure time: 96 h The value mentioned relates to the active ingredient thidiazuron. |
| Toxicity to aquatic invertebrates | EC50 (Daphnia (water flea)) 1.4 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient diuron. |
| | EC50 (Daphnia magna (Water flea)) 5.7 mg/l static test; Exposure time: 48 h The value mentioned relates to the active ingredient thidiazuron. |
| Toxicity to aquatic plants | IC50 (algae) 0.022 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient diuron. |
| | IC50 (algae) 13 mg/l static test; Exposure time: 72 h The value mentioned relates to the active ingredient thidiazuron. |
| Biodegradability | Thidiazuron: Not rapidly biodegradable Diuron: Not rapidly biodegradable |
| Koc | Thidiazuron: Koc: 769 Diuron: Koc: 468 - 1666 |
| Bioaccumulation | Thidiazuron: Does not bioaccumulate. Diuron: Bioconcentration factor (BCF) 15 - 340 Does not bioaccumulate. |
| Mobility in soil | Thidiazuron: Slightly mobile in soils Diuron: Slightly mobile in soils |
| Results of PBT and vPvB assessment | |
| PBT and vPvB assessment | Thidiazuron: 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). Diuron: 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 other effects to be mentioned. |
| Environmental precautions | Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or |

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disposal of wastes, including equipment wash water.
Do not apply when weather conditions favor runoff or drift.
Drift or runoff from treated areas may adversely affect non-target plants.
Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

| | |
|-------------------------------|---|
| 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

| | |
|----------------------|--|
| UN number | 3082 |
| Class | 9 |
| Packaging group | III |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (N-(N-DODECYL)-2-PYRROLIDONE, DIURON) |
| RQ | Reportable Quantity is reached with 1,666 lb of product. |

IMDG

| | |
|----------------------|---|
| UN number | 3082 |
| Class | 9 |
| Packaging group | III |
| Marine pollutant | YES |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (N-(N-DODECYL)-2-PYRROLIDONE) |

IATA

| | |
|--------------------------|--|
| UN number | 3082 |
| Class | 9 |
| Packaging group | III |
| Environm. Hazardous Mark | YES |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (N-(N-DODECYL)-2-PYRROLIDONE) |

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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.

Freight Classification: DEFOLIANTS, PLANT, N.O.I.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 264-634

US Federal Regulations

TSCA list

| | |
|-------------------------|------------|
| 1-dodecyl-2-pyrrolidone | 2687-96-9 |
| N-Octyl-2-pyrrolidinone | 2687-94-7 |
| Diuron | 330-54-1 |
| Castor oil, ethoxylated | 61791-12-6 |
| Docosate sodium | 577-11-7 |

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

No 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

Yes

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.

| | | |
|--------|----------|---------------|
| Diuron | 330-54-1 | Carcinogenic. |
|--------|----------|---------------|

US State Right-To-Know Ingredients

| | | |
|--------|----------|------------------------|
| Diuron | 330-54-1 | CA, CT, IL, MN, NJ, RI |
|--------|----------|------------------------|

Environmental

CERCLA

Yes

| | |
|--------|----------|
| Diuron | 330-54-1 |
|--------|----------|

Listed

Clean Water Section 307(a)(1)

None.

Safe Drinking Water Act Maximum Contaminant Levels

Yes

| | |
|--------|----------|
| Diuron | 330-54-1 |
|--------|----------|

EPA/FIFRA Information:

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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: | Danger! |
| Hazard statements: | Corrosive - causes irreversible eye damage. Causes skin irritation. Harmful if inhaled or absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. |

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

| | |
|---------|---|
| 49CFR | Code of Federal Regulations, Title 49 |
| ACGIH | US. ACGIH Threshold Limit Values |
| ATE | Acute toxicity estimate |
| CAS-Nr. | Chemical Abstracts Service number |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| EINECS | European inventory of existing commercial substances |
| ELINCS | European list of notified chemical substances |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| 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 - 3 Flammability - 1 Instability - 0 Others - none

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

Health - 3 Flammability - 1 Physical Hazard - 0 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 2: Hazards Identification. Section 3: Composition / Information on Ingredients. Section 5: Fire Fighting Measures. Section 8: Exposure Controls / Personal Protection. Section 10. Stability and reactivity. Section 11: Toxicological Information. Section 12. Ecological information. Section 13. Disposal considerations. Section 15: Regulatory information.

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

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