



MSDS Number: 000000000084

MSDS Version: 1.5

Approval Date: 12/22/2004

GINSTAR® EC COTTON DEFOLIANT**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

Product Name GINSTAR® EC COTTON DEFOLIANT
Chemical Name
Common Name
MSDS Number 84
Chemical Family
Chemical Formulation
EPA Registration No. 264-634
Product Use GINSTAR EC is a defoliant used as a harvest aid on cotton.

Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or Other EMERGENCY call 1-800-334-7577 24 hours/day
For Product Information call 1-866-99BAYER (1-866-992-2937)

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS No.</u>	<u>Concentration % by Weight</u>	
		<u>Minimum</u>	<u>Maximum</u>
Thidiazuron Technical	51707-55-2	11.4000	12.6000
Diuron	330-54-1	5.7000	6.3000
1-octyl-2-pyrrolidone	2687-94-7		
1-dodecyl-2-pyrrolidone	2687-96-9		

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Danger! Corrosive - causes irreversible eye damage. Causes burns. Harmful by inhalation. Do not get in eyes, on skin, or on clothing.

Physical State Liquid
Odor Slight Amine-like
Appearance Amber to brown

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Routes of Exposure	Mist inhalation, Skin contact
Immediate Effects	
Eye	Corrosive - causes irreversible eye damage. Do not get in eyes. May cause eye irritation.
Skin	Irritating to skin. Cause moderate to severe skin irritation on prolonged contact. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.
Ingestion	Harmful if swallowed. Ingestion may cause blisters/tissue damage of the mouth, throat, and digestive tract.
Inhalation	Harmful if inhaled. Prolonged inhalation of mist may cause coughing and difficulty in breathing.
Chronic or Delayed Long-Term	This product does not contain any ingredients designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

SECTION 4. FIRST AID MEASURES

Eye	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 poison control center or doctor for treatment advice.
Skin	Take off all contaminated clothing immediately. Rinse immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.
Ingestion	Call a poison control center or doctor immediately for treatment advice. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Have person sip a glass of water if able to swallow. Never give anything by mouth to an unconscious person.
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 poison control center or doctor for further treatment advice.

Notes to Physician

Treatment	Probable mucosal damage may contraindicate the use of gastric lavage.
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SECTION 5. FIRE FIGHTING MEASURES

Flash Point	> 107 °C / > 225 °F Method: Tagliabue Closed Cup
Fire and Explosion Hazards	May decompose at high temperatures and give offpoisonous oxides.
Suitable Extinguishing Media	Foam, Sand, Dry powder, Carbon dioxide (CO2), Water spray, earth
Fire Fighting	Do not use a solid water stream as it may scatter and spread fire. Use water

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Instructions

spray cautiously. Cool closed containers exposed to fire with water spray. Keep out of smoke. Fight fire from upwind position. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated.

Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

General and Disposal

Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Land Spill or Leaks

Avoid breathing vapors and avoid skin contact. Use personal protective equipment. Dike contaminated area with absorbent granules, soil, sand, etc. Carefully sweep up absorbed spilled material. Place contaminated material in appropriate container for disposal. Wash the spill area with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up and place in a chemical container. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways or contact vegetation.

SECTION 7. HANDLING AND STORAGE

Handling Procedures

Do not get in eyes, on skin, or on clothing. Do not breathe vapours or spray mist.

Storing Procedures

Do not use, pour or store near heat or open flame.

Store in original container. Keep tightly closed. Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed.

Work/Hygienic Procedures

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. As soon as practical, wash thoroughly and change into clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Ensure adequate ventilation, especially in confined areas. Control airborne concentrations below the exposure guidelines.

Eye/Face Protection

Protective eyewear.

Hand Protection

Suitable chemical resistant gloves

Body Protection

Coveralls over long sleeved shirt and long pants. Chemical resistance footwear plus socks.

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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.

General Protection Remove contaminated, soaked clothing immediately and dispose of safely.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Follow all label instructions. Educate and train employees in safe use of the product.

Exposure Limits				
Diuron	330-54-1	ACGIH	TWA	10 mg/m3
		NIOSH	REL	10 mg/m3
		OSHA Z1A	TWA	10 mg/m3
		US CA OEL	TWA PEL	10 mg/m3

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Amber to brown
Physical State	Liquid
Odor	Slight Amine-like
Specific Gravity	0.978
Boiling Point	100 - 145 °C / 212 - 293 °F
Water Solubility	Emulsifiable Slightly soluble

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Hazardous Decomposition Products	Thermal decomposition Nitrogen oxides (NOx) Sulphur oxides Carbon oxides Aldehydes

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredients, Thidiazuron and Diuron.

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Acute Oral Toxicity Male/Female Rat: LD50: > 5,000 mg/kg

Acute Dermal Toxicity Male/Female Rat: LD50: > 4,000 mg/kg

Acute Inhalation Toxicity Male/Female Rat: LC50: 2.0 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
(actual)

Male/Female Rat: LC50: 8.0 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.
(actual)

Skin Irritation Rabbit: Mild skin irritant.

Eye Irritation Rabbit: Irritating to eyes.
Corrosive to eyes.

Sensitization Guinea pig: sensitizing

Subchronic Toxicity THIDIAZURON: In a 90-day toxicity study in rats, thidiazuron caused only general toxicity (e.g., reduced body weight gain) at dose levels below those exhibiting overt toxicity due to excessively high doses. In the dog, subchronic exposure provided no evidence of a toxicological response.

DIURON: Signs of slight hemolytic anemia and hepatic enzyme induction occurred following repeated administration of diuron in subchronic toxicity studies in rats.

Chronic Toxicity THIDIAZURON: In chronic feeding studies, thidiazuron caused only general toxicity in rats, e.g. reduced body weight gains, and transient hemolytic anemia in dogs.

DIURON: Long-term exposure to high-doses of diuron caused hemolytic anemia and/or organ effects (liver, kidney, spleen, urinary bladder) in chronic feeding studies in rats and dogs.

Assessment Carcinogenicity

THIDIAZURON: Thidiazuron was not carcinogenic in oncogenicity studies in rats and mice.

DIURON: In lifetime feeding studies, diuron was shown to cause urinary bladder tumors in rats and mammary tumors in female mice only at high exposure levels. In vitro and in vivo genotoxicity studies showed no evidence of mutagenic or genotoxic potential for diuron.

ACGIH

Diuron

330-54-1

Group A4

NTP

None

IARC

None

OSHA

None

Reproductive &

REPRODUCTION

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Developmental Toxicity	THIDIAZURON: Thidiazuron was not a reproductive toxicant in rats.
	DIURON: In a two-generation reproduction study in rats treated with diuron, pup body weights were reduced at the maternally toxic high dose.
	DEVELOPMENTAL TOXICITY THIDIAZURON and DIURON are not primary developmental toxicants in rats and rabbits. Developmental/offspring effects were observed at high doses but were considered secondary to maternal toxicity.
Mutagenicity	THIDIAZURON and DIURON are not considered genotoxic or mutagenic.

SECTION 12. ECOLOGICAL INFORMATION

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 disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Drift or runoff may adversely affect non-target plants.
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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance	Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Disposal	Do not re-use empty containers. Triple rinse containers. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.
RCRA Classification	Not Regulated under this Statute

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not regulated for transportation

FREIGHT CLASSIFICATION:
Defoliant, Plants, N.O.I.

SECTION 15. REGULATORY INFORMATION

EPA Registration No.	264-634
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US Federal Regulations

TSCA list

Diuron	330-54-1
1-octyl-2-pyrrolidone	2687-94-7
1-dodecyl-2-pyrrolidone	2687-96-9

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

None

SARA Title III - section 302 - notification and information

None

SARA Title III - section 313 - toxic chemical release reporting

Diuron	330-54-1	1.0%
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US States Regulatory Reporting

CA Prop65

This product contains a chemical known to the State of California to cause cancer.

Diuron	330-54-1
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This product does not contain any substances known to the State of California to cause reproductive harm.

US State right-to-know ingredients

Diuron	330-54-1	CA, CT, IL, MN, NJ, PA, RI
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Canadian Regulations

Canadian Domestic Substance List

Diuron	330-54-1
1-octyl-2-pyrrolidone	2687-94-7
1-dodecyl-2-pyrrolidone	2687-96-9

Environmental

CERCLA

Diuron	330-54-1	100 lbs
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Clean Water Section 307 Priority Pollutants

None

Safe Drinking Water Act Maximum Contaminant Levels

Diuron	330-54-1
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International Regulations

EU Classification

None

European Inventory of Existing Commercial Substances (EINECS)

Thidiazuron Technical	51707-55-2
Diuron	330-54-1

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SECTION 16. OTHER INFORMATION

NFPA 704: (National Fire Protection Association)

Health - 3

Flammability - 1

Reactivity - 0

Others - None

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

MSDS REVISION INDICATOR: Updated Section: 11 (Toxicological Information); Other sections as needed.

Approval Date: 12/22/2004

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