

SAFETY DATA SHEET

Preparation Date Dec. 3, 2015

Revision Date Dec 3, 2015

1. Identification of the Substance/Preparation and of the Company

Product identifier

Product Description: Clethodim 2 EC Herbicide
Synonyms Not Available
US EPA Registration number 87845-7

Recommended use of the chemical and restrictions on use

Recommended use Herbicide
Uses advised against Use contrary to label directions

Supplier of this Safety Data Sheet

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2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

(OSHA Hazard Communication Standard (29 CFR 1910.1200))
Acute toxicity oral Category 4
Acute toxicity - Dermal Category 4
Eye irritancy Category 2B

Environmental Hazards

Slightly toxic to fish and bees

Physical Hazards

Combustible

Label elements

WARNING

Hazard statements

Causes substantial but temporary eye irritation. Avoid contact with skin. Do not get in eyes, on skin, or on clothing. Harmful if swallowed or inhaled. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.



Precautionary Statements - Prevention

Do not handle until all safety precautions have been read and understood
long-sleeved shirt and long pants, chemical-resistant gloves such as Barrier Laminate or Viton ≥ 14 mils, shoes plus socks, and protective eyewear.

Precautionary Statements - Response

IF exposed: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor if you feel unwell
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
If medical advice is needed, have container and /or booklet label at hand.

Precautionary Statements - Storage

Store out of reach of children and domestic animals

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC)

OTHER INFORMATION

- toxic to aquatic life

3. Composition / information on ingredients

Chemical Name	% w/w	CAS No.	Trade secret
clethodim	26.4%	99129-21-2	N
naphthalene solvent	50 - 65%%	64742-94-5	N
nonionic surfactants	4 - 6%%	mixture	N

4. FIRST AID MEASURES

IF SWALLOWED:

- Call poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by the poison control center or doctor.
- Do not give anything by mouth to an unconscious person

IF INHALED:

- Move person 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.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water or 15 to 20 minutes.
- Remove contact lenses, if present, after the first minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 20 minutes.
- Call a poison control center or doctor for treatment advice.

If medical advice is needed, have container and /or booklet label at hand.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Any fire extinguishing media (water, foam, dry chemical, CO2) may be used .
Do not use water or water-based extinguishers.

Decomposition Products

Carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, halogenated compounds

6. ACCIDENTAL RELEASE MEASURES

LAND SPILL:

Large spill: Dyke around spill as necessary. If wet, absorb product with a clay-based absorbent. Remove dry product, absorbent and contaminated soil for disposal in accordance with applicable local regulations.

Small spill: Remove contaminated soil and place in containers for disposal in accordance with applicable local regulations.

Avoid contamination of water bodies during cleanup and disposal. Personal protective equipment is **not** needed to cleanup land spills.

SPILLAGE ONTO HARD SURFACES: Limit area of spillage by barricading if necessary. Absorb product with a clay-based absorbent. Sweep up or vacuum, and place product into containers for disposal in accordance with applicable local regulations. Clean surface with water.

SPILLAGE INTO WATER: Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the clethodim value to a negligible level.

IN ALL CASES

Wear protective equipment as needed (see section 8).

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Keep out of reach of children. Wear protective gloves/clothing and eye/face protection.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a cool, well-ventilated place.

Incompatible materials Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS (8 hour TWA, ppm):

COMPONENT	OSHA PEL	ACIGH TLV
Clethodim	Not listed	Not listed
*Trimethylbenzene	Not listed	25 ppm TWA
Napthalene	10 ppm TWA	10 ppm TWA
* minor contaminant in napthalene		

ENGINEERING CONTROLS: Enclosed Cockpits: Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)].

Mechanical Flagging Engineering Controls: Human flagging is prohibited. Flagging to support aerial application is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

PERSONAL PROTECTION:

Personal protective equipment

Eye/Face Protection Use eye protection to avoid eye contact. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields. If splashes are likely to occur, wear goggles.

Skin protection Wear protective gloves/clothing. Long sleeved clothing. Socks and footwear.

Respiratory protection When handling within enclosed areas with inadequate ventilation, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components.

General hygiene considerations

Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Amber liquid
Odor:	Pungent
Density:	1.13 g/ml
Vapor Pressure (mm/Hg):	Negligible @ 20°C
Solubility in Water:	5.4 g/L @ 20°C
Melting Point:	Not applicable
pH @ 20°C:	4.1

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (Conditions to avoid): Stable under normal conditions. Avoid extreme heat (>110°F)

INCOMPATIBILITY: Strong acids, strong oxidizing agents, water, quaternary ammonium salts, EBDC sequestering agents

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, halogenated compounds

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

The following information is available for the formulation:

INGESTION:	Oral LD ₅₀ (rat)	>2000 mg/kg
DERMAL:	Dermal LD ₅₀ (rat)	>2000 mg/kg
INHALATION:	Inhalation LC50 (rat)	> 2 mg / L
SENSITIZATION:	Skin sensitization (guinea pig)	non-sensitizer
IRRITATION:	Primary eye irritation (rat) Primary skin irritation (rat)	slight reversible irritation

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA

General: Clethodim is slightly toxic to bees and aquatic organisms.

Environmental fate: Clethodim is rapidly degraded in soil (DT50 3 - 10 days), and is mobile in soil.

Fish toxicity (96 hr LC50)

Rainbow trout: 16 mg/L
Bluegill 13 mg/L

Bird toxicity (dietary LC50)

bobwhite quail > 4000 mg/Kg
mallard duck > 4000 mg/Kg

Bee Toxicity Contact LD50 > 100 mg / bee

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Pesticide wastes are hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or 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.

Contaminated packaging Refer to product label.

14. TRANSPORTATION INFORMATION

DOT When shipped domestically by highway in non-bulk containers this product can be shipped as not regulated.

SHIPPING DESCRIPTION:

(Ground transport)

Containers < 119 gallons – Not regulated

Containers > 119 gallons – NA1993, Combustible liquid, N.O.S. (contains petroleum distillates, naphthalene), PG III, RQ (naphthalene)

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: This chemical is a pesticide product registered 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 as required on the pesticide label:

signal word WARNING

Ventilation Control PESTICIDE APPLICATORS & WORKERS THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.

Keep out of Reach of Children. Harmful if inhaled or absorbed through skin. Harmful if swallowed. May irritate eyes, nose, throat and skin.

OSHA/Cal OSHA: This SDS document meets the requirements of both OSHA (29 CFR 1910.1200 and Cal OSHA (Title 8 CCR 5194 (g)) hazard communication standards. Refer to Sections 2 and 8 for regulatory exposure limits.

CHEMICAL INVENTORY LISTING: Clethodim appears on several chemical inventory lists (including the EPA TSCA inventory, Canadian DSL, European EINECS, Japanese MITI, Australian and Korean lists) under the CAS No. 99129-21-2

SARA TITLE III DATA

Sections 311 & 312 Hazard Categories

Health Hazard: Immediate, Delayed Health Effects, Fire Hazard

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals: naphthalene

CERCLA/EHS Reportable Quantities (RQ):

Naphthalene RQ 100 lb As product 180 gal

No

STATE REGULATIONS:
CALIFORNIA (Proposition 65): not listed

16. OTHER INFORMATION

SDS Status:

Date of this Revision: Dec. 3, 2015

Date of Previous Revision: April 10, 2014

Person Responsible for Preparation: Don O'Shaughnessy, Ph.D., DABT, President
DOC Inc.

Reasons for Revision: Periodic review of data

DISCLAIMER:

This information is provided for the limited guidance to the user. While Agromarketing Company, Inc. believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

ABBREVIATIONS:

a.i.	-	Active ingredient
ACGIH	-	American Conference of Governmental Industrial Hygienists
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	-	Environmental Protection Agency
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
NTP	-	National Toxicology Program
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act
DOT	-	Department of Transportation
IMDG	-	International Maritime Dangerous Goods
IATA	-	International Air Transport Association

This is the last page of this SDS. There should be 6 pages.