

## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**COMPANY ADDRESS:**

ALBAUGH, INC.  
Ankeny, IA 50021

**EMERGENCY TELEPHONE NUMBERS:**

(800) 424-9300 (CHEMTREC, transportation and spills)

**PRODUCT NAME** : CLETHODIM 2E

**CHEMICAL NAME** : Clethodim: (E,E)-2-[1-[[[(3-Chloro-2-propenyl)oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

**CHEMICAL FAMILY** : cyclohexanedione oxime herbicide

**PRODUCT CODE** : EPA Reg. No. 42750-72

### SECTION 2 - COMPOSITION, INFORMATION OF INGREDIENTS

| COMPONENT                         | PERCENTAGE | CAS NUMBER | OSHA PEL   | ACIGH TLV  |
|-----------------------------------|------------|------------|------------|------------|
| Clethodim                         | 25 – 27    | 99129-21-2 | -          | -          |
| Petroleum distillates (contains)* | 65 – 70    | 64742-94-5 | -          | 100 ppm    |
| *Trimethylbenzene                 | 2 – 3      | -          | -          | 25 ppm TWA |
| *Naphthalene                      | 5 – 7      | 91-20-3    | 10 ppm TWA | 10 ppm TWA |

### SECTION 3 - HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

**HEALTH HAZARDS:** Moderate eye irritant.

**PHYSICAL HAZARDS:** Combustible, may release toxic fumes if burned.

**ENVIRONMENTAL HAZARDS:** Slightly toxic to fish, other water organisms and bees.

### SECTION 4 - FIRST AID MEASURES

**IF IN EYES:** 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.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 minutes. Call a poison control center or doctor for treatment advice.

**IF SWALLOWED:** Call a 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.

**NOTE TO PHYSICIAN:** Contains a petroleum distillate solvent, vomiting may cause aspiration pneumonia and may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

### SECTION 5 - FIRE FIGHTING MEASURES

**FLASHPOINT (method):** 65 C (closed cup)

**FLAMMABLE LIMITS (LFL-UFL):** Unknown.

**FIRE AND EXPLOSION HAZARD:** Combustible Liquid. Can form explosive mixtures at temperatures at or above the flashpoint. Can burn in fire, releasing irritating and toxic gases due to thermal decomposition or combustion.

**EXTINGUISHING MEDIA:** Use foam, dry chemical, carbon dioxide, or water spray when fighting fires involving this material.

**FIRE FIGHTING INSTRUCTIONS:** Evacuate nonessential persons from area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Explosive vapor could form from ruptured containers. Dike and collect water used to fight fire to prevent environmental damage due to run off. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water run off.

**FIRE FIGHTING EQUIPMENT:** Full fire fighting turn-out gear (Bunker gear) including self-contained breathing equipment.

**HAZARDOUS COMBUSTION PRODUCTS:** Oxides of nitrogen and sulfur. May produce toxic compounds of chlorine.

## **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**SMALL SPILL:** Absorb small spills on sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal.

**LARGE SPILL:** Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, and scrape up for disposal. After removal, clean contaminated area thoroughly with water. Pick up wash liquid with additional absorbent and place in a disposable container.

## **SECTION 7 - HANDLING AND STORAGE**

KEEP OUT OF REACH OF CHILDREN!

**HANDLING:** Use only in a well-ventilated area. Do not reuse this container.

**STORAGE:** Keep container closed when not in use. Keep away from food, feed and drinking water. Store in a well ventilated, dry place away from heat and other sources of ignition.

## **SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

**EXPOSURE LIMITS (8 HOUR TWA):** (Refer to Section 3)

**ENGINEERING CONTROLS:** Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

### **PERSONAL PROTECTIVE EQUIPMENT:**

EYE PROTECTION - Safety glasses or goggles.

CLOTHING - Long-sleeved shirt and long pants, Shoes plus socks,

GLOVES - Chemical-resistant gloves such as barrier laminate or viton.

RESPIRATOR - When handling in enclosed areas where exposure limits may be exceeded, use a respirator approved for pesticides.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS:** 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 PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL DESCRIPTION:** Dark amber liquid

**ODOR:** Mild aromatic

**SPECIFIC GRAVITY:** 0.93 – 0.98 g/mL @ 20 C (7.80 – 8.20 lb/gl)\*

**pH:** 4.3

**VAPOR PRESSURE:** Unknown

**VAPOR DENSITY:** Unknown

**WATER SOLUBILITY:** Emulsifies in water.

\*Listed density is an approximate value and does not necessarily represent that of a specific batch.

## **SECTION 10 - STABILITY AND REACTIVITY**

**CHEMICAL STABILITY:** Unstable when exposed to extremes of pH, elevated temperatures, oxygen or u.v. light.

**CONDITIONS TO AVOID:** Avoid temperatures above 90°F (35°C), exposure to air direct sunlight. Keep containers sealed to avoid exposure to air.

**INCOMPATIBILITY WITH OTHER MATERIALS:** Oxidizing materials.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxides of hydrogen, nitrogen and sulfur.

**HAZARDOUS POLYMERIZATION:** Product will not undergo polymerization.

## **SECTION 11 - TOXICOLOGICAL INFORMATION**

### **ACUTE TOXICITY: (technical)**

|                                   |                        |
|-----------------------------------|------------------------|
| Oral LD <sub>50</sub> (rat)       | - 5,000 mg/Kg (female) |
| Dermal LD <sub>50</sub> (rat)     | - > 5,000 mg/Kg        |
| Inhalation LC <sub>50</sub> (rat) | - > 2.0 mg/L (4 hour)  |
| Eye Irritation (rabbit)           | - Moderate             |
| Skin Irritation (rabbit)          | - Moderate             |
| Sensitization (guinea pig)        | - Non-sensitizer       |

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Exposure to vapors may increase tendency to respiratory or bronchial infections.

### **CARCINOGEN STATUS:**

|      |   |             |
|------|---|-------------|
| OSHA | - | Not listed. |
| NTP  | - | Not listed. |
| IARC | - | Not listed. |

**MUTAGENIC DATA:** No evidence of mutagenic effects during *in vivo* or *in vitro* studies.

**ADDITIONAL DATA:** Not known to exhibit reproductive effects. Some teratogenic (birth defect) effects were noted in rats tested at elevated doses of 700 mg/Kg/day.

## **SECTION 12 - ECOLOGICAL INFORMATION**

**ENVIRONMENTAL SUMMARY:** Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwater or rinsate.

### **FISH TOXICITY: (Technical)**

|                                          |            |
|------------------------------------------|------------|
| 96 hour LC <sub>50</sub> , Rainbow trout | - 65 mg/L  |
| 96 hour LC <sub>50</sub> , Bluegill      | - 120 mg/L |

### **AVIAN TOXICITY: (Technical)**

|                                           |              |
|-------------------------------------------|--------------|
| Dietary LC <sub>50</sub> , Bobwhite quail | - >6,000 ppm |
| Dietary LC <sub>50</sub> , Mallard duck   | - >6,000 ppm |

**BEE TOXICITY:** Contact LD<sub>50</sub> - >100 ug/bee

### **SECTION 13 - DISPOSAL CONSIDERATIONS**

**WASTE:** Pesticide wastes are acutely hazardous. Dispose of in accordance with applicable Federal, state and local laws and regulations.

**CONTAINER:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

### **SECTION 14 - TRANSPORT INFORMATION**

#### **DOT SHIPPING DESCRIPTION:**

Containers ≤ 119 gallons – Not regulated

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

**DOT HAZARD CLASS:** Combustible liquid  
**IDENTIFICATION NUMBER:** NA1993  
**DOT PACKING GROUP:** PG III  
**DOT PRIMARY/SECONDARY LABEL:** N/A  
**DOT PRIMARY/SECONDARY PLACARD:** Combustible (> 119 gallons)  
**DOT EMERGENCY RESPONSE GUIDE #:** 128

### **SECTION 15 - REGULATORY INFORMATION**

**CERCLA REPORTABLE QUANTITY:** 100 lb Naphthalene (180 gallons of product)

#### **SARA TITLE III STATUS:**

311/312 Hazard Categories - Immediate, Delayed Health Effects, Fire Hazard  
 313 Toxic Chemicals - Naphthalene

**CALIFORNIA PROP 65:** Not listed

### **SECTION 16 - OTHER INFORMATION**

|                           |                                                  |   |
|---------------------------|--------------------------------------------------|---|
| HMIS<br>HAZARD<br>RATINGS | HEALTH                                           | 2 |
|                           | FLAMMABILITY                                     | 2 |
|                           | PHYSICAL HAZARD                                  | 1 |
|                           | 4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal |   |

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**REVISED DATE:** September, 2008  
**REVISED FOR:** Revise DOT description in Section 14