

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**COMPANY ADDRESS:** Tenkoz, Inc.  
Alpharetta, GA 30005

**EMERGENCY TELEPHONE NUMBERS:**  
(800) 424-9300 (CHEMTREC, transportation and spills)

**PRODUCT NAME** : Volunteer Herbicide  
**CHEMICAL NAME** : Clethodim  
**PRODUCT USE** : Herbicide  
**PRODUCT CODE** : EPA Reg. No 42750-72-55467

**SECTION 2 - HAZARDS IDENTIFICATION SUMMARY**

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

Dark amber liquid

**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 3 - COMPOSITION, INFORMATION OF INGREDIENTS**

COMPONENT	PERCENTAGE	CAS NUMBER
Clethodim	25 – 27	99129-21-2
Petroleum distillates (contains)*	65 – 70	64742-94-5
*Trimethylbenzene	2 – 3	-
*Naphthalene	5 – 7	91-20-3

**SECTION 4 - FIRST AID MEASURES**

First Aid responders should use protective equipment in Section 8 if there is a potential for exposure to product.

**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:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. 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.**NOTE TO PHYSICIAN:** Contains a petroleum distillate solvent, vomiting may cause aspiration pneumonia.

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**

National Fire Protection Rating (NFPA)

HEALTH	2
FLAMMABILITY	2
REACTIVITY	1
4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	

**FLASHPOINT:** 65°C (149 F)

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

**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 such as oxides of nitrogen and sulfur or toxic compounds of chlorine due to thermal decomposition or combustion.

**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 runoff. Minimize use of water to prevent environmental contamination. Contact your State Pesticide or Environmental Control Agency, or nearest EPA Regional Office for guidance on disposal.

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

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**IN CASE OF SPILLS OR LEAKS:** 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. Minimize use of water to prevent environmental contamination

**SECTION 7 - HANDLING AND STORAGE**

KEEP OUT OF REACH OF CHILDREN!

Wear proper safety equipment specified in Section 8 when mixing, loading or otherwise handling concentrate.

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

**STORAGE:** Store in a cool, dry place in original container. Keep container closed when not in use. Keep away from food, feed and drinking water.

**SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION****EXPOSURE LIMITS (8 hour TWA, ppm):**

COMPONENT	OSHA PEL	ACIGH TLV
Clethodim	Not listed	Not listed
Petroleum distillates (contains)*	Not listed	100 ppm
*Trimethylbenzene	Not listed	25 ppm TWA
*Naphthalene	10 ppm TWA	10 ppm TWA

**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**

<b>Appearance:</b>	Dark amber liquid
<b>Odor:</b>	No data
<b>pH:</b>	3.8 – 4.8
<b>Melting Point:</b>	Not applicable
<b>Boiling Point:</b>	No data
<b>Flash Point:</b>	65°C
<b>Evaporation Rate:</b>	No data
<b>Flammability:</b>	No data
<b>Flammability Limits:</b>	No data
<b>Vapor Pressure:</b>	<1 x 10 <sup>-2</sup> mPa (20°C) (Clethodim)
<b>Vapor Density:</b>	Not applicable
<b>Density:</b>	1.15 – 1.21 g/ml (9.60 – 10.10 lb/gl)*
<b>Solubility:</b>	Emulsifies
<b>Partition Coefficient:</b>	No data
<b>Auto-Ignition Temperature:</b>	No data
<b>Decomposition Temperature:</b>	No data
<b>Viscosity:</b>	3.33 cSt (20°C); 2.15 cSt (40°C)

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

**SECTION 10 - STABILITY AND REACTIVITY**

**PRODUCT REACTIVITY:** None known

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

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

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

**INCOMPATIBLE MATERIALS:** Oxidizing materials.

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

**SECTION 11 - TOXICOLOGICAL INFORMATION****ACUTE TOXICITY:**

Oral LD <sub>50</sub> (rat)	5000 mg/kg
Dermal LD <sub>50</sub> (rat)	>5000 mg/kg
Inhalation LC <sub>50</sub> (rat)	>2.03 mg/L
Eye Irritation (rabbit)	Moderately irritating
Skin Irritation (rabbit)	Moderately irritating
Sensitization (guinea pig)	Not a contact sensitizer

**CARCINOGEN STATUS:**

OSHA	- Not listed
NTP	- Not listed
IARC	- Not listed

**TERATOGENICITY:** Not known to exhibit reproductive effects. Some teratogenic (birth defect) effects were noted in rats tested at maternally toxic doses.

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

**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.

Refer to product label for additional environmental precautions and restrictions.

**FATE:** Clethodim degrades rapidly via photolysis with a soil half-life of 3-10 days. It is very soluble in water and mobile in soil.

**FISH TOXICITY:** (Technical)

96 hour LC <sub>50</sub> , Rainbow trout	– 67 mg/L
96 hour LC <sub>50</sub> , Bluegill	- 120 mg/L

**AVIAN TOXICITY:** (Technical)

Dietary LC <sub>50</sub> , Bobwhite quail	- >4,000 ppm
Dietary LC <sub>50</sub> , Mallard duck	- >4,000 ppm

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

**SECTION 13 - DISPOSAL CONSIDERATIONS**

Do not contaminate water, food or feed by storage or disposal.

**WASTES:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER:** Non-refillable containers: Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Refer to the product label for additional and complete Container Handling instructions

**SECTION 14 - TRANSPORT INFORMATION****SHIPPING DESCRIPTION:**

(Ground transport)

Containers ≤ 119 gallons –

Containers > 119 gallons –

Not regulated

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

**SECTION 15 - REGULATORY INFORMATION**

**CERCLA REPORTABLE QUANTITY:**

100 lb Naphthalene (180 gallons of product)

**SARA TITLE III STATUS:**

311/312 Hazard Categories -

313 Toxic Chemicals -

Immediate, Delayed Health Effects, Fire Hazard

Naphthalene

**CALIFORNIA PROP 65:**

Not listed

**TSCA:**

This product is exempted from TSCA because it is solely for FIFRA regulated use.

**SECTION 16 - OTHER INFORMATION**

HMIS HAZARD RATINGS	HEALTH	2
	FLAMMABILITY	2
	PHYSICAL HAZARD	0
	4=Severe 3=Serious 2=Moderate 1=Slight 0=Minimal	

**DISCLAIMER:** The information presented herein is based on available data from reliable sources and is correct to the best of Tenkoz' knowledge. Tenkoz makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions.

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling.

It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

**REVISED DATE:** October, 2014

**REFERENCE:** Revised for GHS compliance