

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY ADDRESS:

Tenkoz Inc.
100 North Point Center East
Alpharetta, GA 30022

EMERGENCY TELEPHONE NUMBERS:

FOR 24 HOUR EMERGENCY MEDICAL ASSISTANCE CALL:
1-866-303-6952

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident call
CHEMTREC 1-800-424-9300

PRODUCT NAME: VOLUNTEER HERBICIDE

CHEMICAL NAME : [(E)-2(1-(((3-chloro-2-propenyl)oxy)imino)propyl-5-(2-(ethylthio)propyl)-3-hydroxy-2-cyclohexen-1-one)]
CHEMICAL FAMILY : cyclohexene oxime herbicide
PRODUCT CODE : EPA Reg. No. 66330-353-55467

SECTION 2 - COMPOSITION, INFORMATION OF INGREDIENTS

COMPONENT	PERCENTAGE	CAS NUMBER	OSHA PEL	ACGIH TLV
Clethodim	26.4	99129-21-2	Not listed	Not listed
Aromatic hydrocarbon(s)	61.0	64742-94-5	Not Listed	Not Listed
Including:				
Naphthalene	5-7%	91-20-3	10 ppm	10 ppm

SECTION 3 - HAZARDS IDENTIFICATION SUMMARY

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

EMERGENCY OVERVIEW: Amber liquid with aromatic odor.

- Harmful if swallowed.
- Causes moderate eye irritation.
- Avoid breathing vapor or spray mist.
- Avoid contact with eyes, skin or clothing.
- Keep out of reach of children.

Symptoms of over exposure include headache, nausea, lethargy, ataxia, irregular breathing, watering of eyes, drooling, and loose stools.

POTENTIAL HEALTH HAZARDS:

EYE – Moderately irritating to the eyes. Degree of injury will depend on the amount of material that gets into eye and the speed and thoroughness of the first aid treatment.

SKIN – Moderately irritating to the skin.

INHALATION - Vapor or spray mists may be harmful if inhaled.

INGESTATION – Harmful if swallowed.

POTENTIAL PHYSICAL HAZARDS: Can decompose at high temperatures forming toxic gases. Impact or high temperatures can cause decomposition.

ENVIRONMENTAL HAZARDS: Toxic to wildlife and domestic animals.

A component of this product contains naphthalene. Ingestion of naphthalene results in cramps, nausea, vomiting, and diarrhea, listlessness, bladder irritation and brownish urine. Inhalation of naphthalene may cause headache, confusion and excitement. Chronic overexposure to naphthalene may result in liver/kidney disorders. Hemolysis, anemia, fever, hemoglobinuria and jaundice may also occur. Those with prior blood diseases may be more severely affected.

SECTION 4 - FIRST AID MEASURES

IF SWALLOWED: Call physician or Poison Control Center immediately. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious or convulsing person.

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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 five minutes, then continue rinsing eye. However, if irritation persists, see a doctor.

IF INHALED: Remove victim from exposure area to fresh air. If not breathing start artificial respiration using a barrier device, if available. Get medical attention by calling 911 or local emergency number.

IF ON SKIN: Remove contaminated clothing and wash affected areas of skin with soap and water. Get medical attention.

NOTE TO PHYSICIAN: Treat with symptomatic and supportive care. No known specific antidote. Individuals with preexisting diseases of the liver, red blood cell or central nervous system may have increased susceptibility to the toxicity of excessive exposures. This material contains light hydrocarbon liquid and an aspiration hazard may exist.

SECTION 5 - FIRE FIGHTING MEASURES

FLASHPOINT (method): > 150 °F (TCC)

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 area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Fire exposed containers can build up pressure and should be kept cool with water spray if possible. 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: Self-contained breathing apparatus with full facepiece. Full fire fighting turn-out gear (Bunker gear).

HAZARDOUS COMBUSTION PRODUCTS: Normal combustion forms carbon dioxide, water vapor and may produce oxides of sulfur, nitrogen and toxic chlorine compounds. Incomplete combustion can produce carbon monoxide.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

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

SMALL SPILL: Absorb small spills on sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal. Rinse area with dilute soda ash and place rinsate in chemical waste container.

LARGE SPILL: Dike large spills using absorbent or impervious material such as clay, sand or fuller's earth. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, and scrape up for disposal. After removal, scrub the area with detergent and water and neutralize with dilute alkaline solutions of soda ash, or lime. Pick up wash liquid with additional absorbent and place in a chemical waste container for proper disposal. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage systems and bodies of water.

SECTION 7 - HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN!

HANDLING: Use only in a well-ventilated area. Loosen closure cautiously before opening as contents may develop pressure upon prolonged storage. 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.

CLOTHING - Long-sleeved shirt and long pants. Shoes plus socks. Chemical-resistant headgear for overhead exposure.

GLOVES - Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, or viton.

RESPIRATOR - When handling in enclosed areas where exposure limits may be exceeded, use a respirator with either an organic vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not

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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:

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Clear Amber liquid

ODOR: Aromatic solvent odor

MOLECULAR WEIGHT (technical): 359.9

MOLECULAR FORMULA (technical): C₁₇H₂₆ClNO₃S

BOILING POINT: Decomposes below boiling point

MELTING POINT: Liquid at room temperature (technical)

DENSITY: 0.96 g/mL (8.0 lbs/gallon)

pH: 4.6 (1% emulsion)

VAPOR PRESSURE: < 1 x 10⁻² mPa @ 20C (technical)

% VOLATILE: 69%

WATER SOLUBILITY: Emulsifiable.

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable, however may decompose if heated.

CONDITIONS TO AVOID: Avoid temperatures above 105°F (40°C) and below 25°F (-7°C).

INCOMPATIBILITY WITH OTHER MATERIALS: Alkaline and acidic conditions and materials. Oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Dimethyl sulfide and oxides of hydrogen, sulfur, and carbon due to thermal decomposition.

HAZARDOUS POLYMERIZATION: Product will not undergo polymerization.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral LD ₅₀ (rat) (male)	-	1630 mg/Kg
Dermal LD ₅₀ (rat)	-	> 5,000 mg/Kg
Inhalation LC ₅₀ (rat)	-	> 3.9 mg/L
Eye Irritation (rabbit)	-	Moderate
Skin Irritation (rabbit)	-	Moderate
Sensitization (guinea pig)	-	Non-sensitizer

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory conditions.

CARCINOGEN STATUS:

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

MUTAGENIC DATA: No evidence at high doses during *in vitro* studies.

ADDITIONAL DATA: Not known to exhibit reproductive or teratogenic (birth defect) effects.

SECTION 12 - ECOLOGICAL INFORMATION

ENVIRONMENTAL SUMMARY: This product is harmful to fish, aquatic invertebrates, and aquatic life stages to amphibians. Do not apply directly to water, or to areas where surface water is present. Do not contaminate water when disposing of equipment washwaters. This product is not toxic to bees exposed to direct treatment.

FISH TOXICITY: (Technical)

96 hour LC ₅₀ , Rainbow trout	-	67 mg/L
96 hour LC ₅₀ , Bluegill Sunfish	-	120 mg/L
48 hour LC ₅₀ , Daphnia magna	-	> 120 mg/L

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AVIAN TOXICITY: (Technical)

Oral LD₅₀, Bobwhite quail - > 2,000 mg/Kg

Oral LC₅₀, Bobwhite quail - > 6,000 ppm

Oral LC₅₀, Mallard duck - > 6,000 ppm

BEE TOXICITY: Not toxic, contact LD₅₀ - > 100 micrograms/bee

SECTION 13 - DISPOSAL CONSIDERATIONS

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

CONTAINER: Refer to product label.

SECTION 14 - TRANSPORT INFORMATION

DOT SHIPPING DESCRIPTION: Compounds, Weed Killing, Liquid, (Non-Regulated)

DOT HAZARD CLASS: N/A

UN NUMBER: N/A

DOT PACKING GROUP: N/A

DOT PRIMARY/SECONDARY LABEL: N/A

DOT PRIMARY/SECONDARY PLACARD: N/A

DOT EMERGENCY RESPONSE GUIDE #: N/A

REMARKS: Regulated when shipped in bulk (> 119 gallons).
(If bulk: Combustible liquid, n.o.s., [contains Naphthalene], NA1993, III, RQ)

SECTION 15 - REGULATORY INFORMATION

FIFRA: All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

OSHA HAZARD COMMUNICATION STANDARD STATUS: See section 2

CERCLA REPORTABLE QUANTITY: Product RQ = 179.7 gallons

Naphthalene RQ = 100 pounds

SARA TITLE III STATUS:

302 Extremely Hazardous Substance - No
311/312 Hazard Categories - Immediate Health, Chronic, Fire
313 Toxic Chemicals - Naphthalene

CALIFORNIA PROP 65 STATUS: Not Listed

SECTION 16 - OTHER INFORMATION

DISCLAIMER: The information presented herein is based on available data from reliable sources and is correct to the best of Tenkoz Inc.'s 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. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.

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