



SAFETY DATA SHEET (SDS) ID: EPA Reg. No. 74530-54, KENDO 22.8 CS

SECTION 1: Product and Company IDs

Product name: KENDO 22.8 CS
Product use / type: Insecticide
Restrictions on use: See product label
SDS ID: EPA Reg. No. 74530-54
Chemical name / active ingredient(s): Lambda-cyhalothrin
Manufacturer / Registrant Info:
 HELM Agro US, Inc. 401 E. Jackson St.
 Suite 1600, Tampa, FL 33602
 (813)-621-8846, info@helmagro.com
Chemical Emergency Number: 1-800-424-9300 (Chemtrec)

SECTION 2: Hazard Communication

This chemical is considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

Signal Word: Warning

Pictograms:



Skin Sensitization	Category 1
Acute Toxicity (Oral):	Category 4
Acute Toxicity (Inhalation):	Category 4
Acute Aquatic Toxicity:	Category 1
Chronic Aquatic Toxicity	Category 1

Hazard Statements:

- Harmful if swallowed
- Harmful if inhaled
- May cause an allergic skin reaction

Precautionary Statements:

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Wash hands thoroughly after handling.
- Avoid breathing mist, vapors, and spray.
- In case of inadequate ventilation wear respiratory protection.
- Contaminated work clothing must not be allowed out of the workplace.
- Do not eat, drink or smoke when using this product.
- Wear eye or face protection. Wear protective gloves.
- Use only outdoors or in a well-ventilated area.
- **IF SWALLOWED:** Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.
- **IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Immediately call a poison control center, doctor or 911.
- **IF ON SKIN:** Wash with plenty of soap and water. If skin irritation or rash occurs get medical advice. Wash contaminated clothing before reuse.
- Store locked up. Store in a cool well-ventilated place. Keep container tightly closed.
- Dispose of content and container in accordance with local and national regulations.
- Obtain special instructions before use. Collect spillage. Do not handle until all safety precautions have been read and understood.

Other Information / Potential Hazards:

- Very toxic to aquatic life with long lasting effects. Avoid release to the environment.
- May cause mild eye irritation.
- See Section 15.

SECTION 3: Ingredient Composition

Chemical Name	CAS #	% Composition (exact values may be withheld as trade secrecy)
Lambda-Cyhalothrin	91465-08-6	22.8
Acetophenone	98-86-2	8.6
Other ingredients	Proprietary**	68.6

**N/R as trade secrecy

SECTION 4: First Aid Measures

If swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. 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 person.

If on skin or clothes: Wash and remove contaminated clothing and shoes. Rinse skin with plenty of water for 15 minutes. If irritation develops, call a poison control center, or seek medical advice.

If in eyes: Hold eye open and rinse 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 inhaled: Move person to fresh air. If person is not breathing, call 911 or get medical help, then give artificial respiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison control center or seek medical advice.

First Aid Note: Have this safety data sheet, the product container or label with you when calling a poison control center or doctor or going for treatment.

Note to Physician: Treat symptomatically.

SECTION 5: Fire Fighting Measures

Flammable properties: Non-flammable. **Extinguishing media:** Water spray, alcohol resistant foam, CO₂, dry chemical. **Unsuitable extinguishing media:** High pressure water streams. **Firefighting measures:** Evacuate area. Move container from fire area if it can be done without risk. Use extinguishing media appropriate for surrounding fire. Do not allow contaminated firefighting water and spillage to enter sewers, drains and waterways. **Protective equipment and precautions for firefighters:** Wear full protective firefighting gear including self-contained breathing apparatus pressure demand (MSHA/NIOSH approved or equivalent). **Hazardous decomposition products:** Oxides of carbon and nitrogen. May release irritating and toxic vapors due to thermal decomposition.

SECTION 6: Accidental Release Measures

Personal precautions: Wear protective gloves / clothing and eye protection. Avoid contact with eyes, skin and clothing. Ensure adequate ventilation. See section 8 for personal protective equipment. **Environmental precautions:** Collect spillage. Keep out of waterways, sewers, drains and confined areas.

Methods for containment: Isolate the spill area. Contain spill with inert material (e.g., sand, silica gel, universal binder). **Methods for cleanup:** Soak up with inert absorbent material. Sweep and shovel into properly labeled containers for disposal.

SECTION 7: Handling and Storage

Precautions for safe handling: Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Avoid breathing vapors or mists. Remove contaminated clothing and clean before use. **Precautions for safe storage:** Store and handle in accordance with all current regulations and standards. Store in a tightly closed container. Store in a cool, dry place. Store in a well-ventilated area. Keep away from incompatible materials.

Incompatible storage situations: Separate pesticides during storage to prevent cross-contamination of other pesticides, fertilizers, food, water, and feed. Protect from extreme freezing temperatures.

SECTION 8: Exposure Control / Protection

The following recommendations for exposure controls and personal protection are intended for the manufacture, formulation, and packaging of this material. All forms of application should refer to the product label for personal protection equipment.

Exposure Guidelines:

Component	NIOSH – TWA / STEL	ACGIH – TWA / STEL	OSHA – TWA / STEL
Acetophenone (CAS# 98-86-2)		10 ppm	

Engineering controls: Ensure good adequate local ventilation, especially in confined areas. **Personal protective equipment: Eye / face protection:** Wear chemical-tight goggles or safety glasses and full face-shield. **Body / skin protection:** Long sleeved shirt, long pants, shoes plus socks. Wash contaminated work clothing before reuse. **Hand protection:** Wear chemical resistant gloves / hand protection. Wash outside of gloves before removing.



Respiratory protection: If handling without sufficient ventilation, or exposure limits are exceeded, or irritation is experienced, a NIOSH/MSHA approved respiratory protection with organic cartridges should be worn. **General hygiene considerations:** Handle in accordance with good industrial hygiene practice. Remove and wash contaminated clothing before reuse. Launder separate from household laundry.

SECTION 9: Physical & Chemical Properties

Physical state: Liquid, viscous. **Appearance:** Off-white to light yellow. **Odor:** Paint-like. **pH:** 3.4. **Melting point:** Not listed. **Boiling point:** No information available. **Flash point:** N/A. **Relative density:** 1.16 g/ml. **Water solubility:** Miscible. **Viscosity:** No information available. **n-Octanol / water partition coefficient:** Log pow - No information available. **Other information as commonly listed:** N/A.

SECTION 10: Stability & Reactivity

Reactivity / chemical stability: Stable under normal temperature and conditions. **Conditions / Materials to avoid:** Extreme heat, sparks, flame and fire. **Hazardous decomposition products:** Oxides of carbon, oxides of nitrogen, hydrogen chloride, hydrogen fluoride. **Hazardous reactions:** Not expected under normal conditions of handling and use.

SECTION 11: Toxicological Information

Product toxicology data: **Acute oral LD50:** Rat LD50: >1000 mg/kg. **Acute dermal LD50:** Rat LD50: >2000 mg/kg. **Acute inhalation LC50:** Rat 4-hr LC50: >2.06 mg/l. **Eye irritation:** Nonirritating to may cause eye irritation. **Skin irritation:** Nonirritating. **Sensitization:** Caused sensitization (animal test). **Component toxicology:** Lambda-cyhalothrin: CAS # 91465-08-6. **Acute oral LD50:** Rat LD₅₀: 56 mg/kg. **Acute dermal LD50:** Rat LD₅₀: 632 mg/kg. **Acute inhalation LC50:** Rat 4-hr LC50: 83 mg/m³. **Acetophenone:** CAS # 98-86-2. **Acute oral LD50:** Rat LD50: 2650 mg/kg. **Acute oral LD50:** Rat LD50: 815 mg/kg. **Acute dermal LD50:** Rat LD50: 15900 uL/kg. **Carcinogenicity:** No component of this product present at 0.1% or greater is listed by IARC, OSHA, NIOSH or NTP. **Mutagenic effects:** No information available.

SECTION 12: Ecological Information

Environmental Hazards: Very toxic to aquatic organisms with long lasting effects. Keep out of any body of water. **Component Ecotoxicity:** Acetophenone (98-86-2). **Fish:** 96-hr LC50 Pimephales promelas: 162 mg/L flow. **Fish:** 96-hr LC50 Pimephales promelas: 155 mg/L static.

SECTION 13: Disposal Information

Product disposal: Wastes resulting from the use of this product that cannot be used or chemically reprocessed must be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures. Do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. **Container disposal:** Emptied container retains vapor and product residue. Observe all labeled safeguards until container is destroyed. **Note:** Waste codes should be assigned by the user based on the application for which the product was used. RCRA U-Series: Acetophenone – U004.

SECTION 14: Transport Information

U.S. DOT: Not regulated for transport. **IMDG:** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Lambda-cyhalothrin), 9, III.

SECTION 15: Regulatory Information

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. **EPA Registration No.:** 74530-54

Hazards to Humans and Domestic Animals. May be fatal if swallowed. Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin or clothing. Avoid breathing (vapor or spray mist). Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Skin exposure may also result in a sensation described as a tingling, itching, burning, or prickly feeling. Onset may occur immediately to 4 hrs. after exposure and may last 2 – 30 hrs., without damage. Wash exposed areas once with soap and water. Relief from the skin sensation may be obtained by applying an oil-based cream. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse. **Environmental Hazards.** This product is extremely toxic to fish and other aquatic organisms. Do not contaminate water when cleaning equipment or disposing of equipment wash water. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Apply this product only as specified on this label. When making applications, care should be used to avoid household pets, particularly fish and reptile pets. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. **Physical and Chemical Hazards.** Do not use this product in or on electrical equipment due to the possibility of shock hazard. Do not use with or store near oxidizing agents. **Read product label, label advisories, and ensure all necessary precautions.**

SARA 311/312: Acute Health. Refer Section 2. **SARA 313:** Acetophenone. **CERCLA:** Acetophenone: Final RQ 5000 lbs; 2270 Kg. **California Proposition 65:** No Components listed.

State Right-to-Know Regulations:

Component	CAS No.	CA	MA	MN	NJ	PA
Lambda-cyhalothrin	91465-08-6		X		X	X
Acetophenone	98-86-2		X	X	X	X

SECTION 16: Other Information

NFPA Ratings:	NFPA Ratings: Health	NFPA Ratings: Fire	NFPA Ratings: Instability
	1	0	0

Acronyms which may or may not be referenced: ACGIH - American Conference of Governmental Industrial Hygienists; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; CST - Ceistíochas; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; FIFRA - Federal Insecticide, Fungicide and Rodenticide Act; GHS - Global Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MP - Marine Pollutant; NFPA - National Fire Protection Association; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Revision Date: September 8th, 2023. **Revision no. 5**
Reason for Revision: SDS review and truncate. Confirm/Update Section 9 (removed several 'no info available' and 'not applicable', Section 11 (eye) & vs. prior (8 current) Section 2 precautionary statements, Sections 14 (added language) & 15 (PRN 2012-1). Review and/or truncate; section is non-mandatory). Address change. Added language to Section 2 (inhalation), 8, 13.

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