

MATERIAL SAFETY DATA SHEET

Tenkoz Permethrin 3.2 EC

Revision: 4

Date Issued: 01/15/07

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company: Tenkoz Inc.
100 North Point Center East
Alpharetta, GA 30022
Product Information: www.tenkoz.com
Product Name: Tenkoz Permethrin 3.2 EC Insecticide
Product Use: Insecticide

FOR MEDICAL EMERGENCIES, contact the National Pesticide Information Center at 1-800-858-7378
FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

<u>CHEMICAL NAME</u>	<u>CAS#</u>	<u>WT. %</u>	<u>TWA, ppm</u>
Permethrin	52645-53-1	36.8	None
Hydrocarbon Solvent	8052-41-3	26.0	100 (OSHA)
Triacetin	102-76-1	25.9	None
Surfactant Blend	None	<10.0	None
Component of product ingredients include:			
1,2,4-trimethylbenzene	95-63-6	<4.0	25 (OSHA)
Ethylbenzene	100-41-4	<0.03	100 (OSHA)
Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.			

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance and Odor Amber liquid with faint mild petroleum odor.
Routes of Exposure Mist inhalation, skin contact
Immediate Effects Effects from overexposure result from ingestion or coming into contact with the skin or eyes. Symptoms of overexposure include increased hypersensitivity to touch and sound, tremors and convulsions. Contact with permethrin may produce skin sensations such as numbing, burning or tingling. These skin sensations are reversible and usually subside within 12 hours.
Medical Conditions
Aggravated by Exposure None known

SECTION 4 FIRST AID MEASURES

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

IF SWALLOWED:

Immediately call a poison control center or doctor for treatment advice. 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 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 IN EYES:

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 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 an ambulance, then give artificial respiration, preferably by mouth to mouth if possible. Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN

Reversible skin sensations (paresthesia) may occur and ordinary skin salves have been found useful in reducing discomfort. Contains aromatic hydrocarbons that may produce a severe pneumonitis if aspirated during vomiting. Consideration should be given to

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gastric lavage with an endotracheal tube in place. Treatment is otherwise controlled by removal of exposure followed by symptomatic and supportive care.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT	44 °C (111 °F)
EXTINGUISHING MEDIA	Foam, CO ₂ or dry chemical. Soft stream water fog only if necessary. Contain all runoff.
FIRE/EXPLOSION HAZARDS	Moderately combustible. When heated above the flash point, this material releases vapors which, when mixed with air, can burn or be explosive.
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon monoxide and/or carbon dioxide. Chlorine and hydrogen chloride may be formed.
FIRE FIGHTING PROCEDURES	Isolate fire area. Evacuate downwind. Wear full protective clothing and self contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8 "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area. Keep material out of lakes, streams, ponds and sewers drains. Dike to confine spill and absorb with an absorbent such as clay, sand or soil. Vacuum, shovel or pump waste into a drum and label contents for disposal.

To clean and neutralize spill area, tools and equipment, wash with a suitable solution of bleach or caustic/soda ash and an appropriate alcohol (methanol, ethanol or isopropanol). Follow this by washing with a strong soap and water solution. Absorb as above, any excess liquid and add to the drums of waste already collected. Repeat if necessary. Dispose of drummed waste according to the method outlined in Section 13 "Disposal Considerations".

SECTION 7 HANDLING AND STORAGE

HANDLING AND STORAGE PROCEDURES	Store in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Store in original containers only. Store at temperatures above 40 °F (5 °C). If crystals form, warm to room temperature 70 °F (21 °C) by room heating only for 24-48 hours, and shake occasionally until crystals dissolve and product appears uniform. Do not use external source of heat for warming container. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
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SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS	Use local exhaust at all process locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.
EYES/FACE PROTECTION	For splash, mist or spray exposure, wear chemical protective goggles or a face shield.
RESPIRATORY PROTECTION	For splash, mist or spray exposure, wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.
PROTECTIVE CLOTHING	Depending upon concentrations encountered, wear coveralls or long sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body covered barrier suit, such as a PVC suit. Leather items- such as shoes, belts and watch bands – that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).
GLOVES	Wear chemical protective gloves such as barrier laminate or butyl rubber. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.
WORK HYGIENIC PRACTICES	Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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ODOR	Faint mild petroleum odor
APPEARANCE	Amber liquid
SOLUBILITY IN WATER	Emulsifies
pH	4.8-5.0 at 20 °C (6% in water)
SPECIFIC GRAVITY	1.039 at 20 °C
WEIGHT PER VOLUME	8.65 lbs./gal.

SECTION 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY	Stable
CONDITIONS TO AVOID	Excessive heat and fire
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon monoxides, carbon dioxide, hydrogen cyanide, chlorine and hydrogen chloride
POLYMERIZATION	Will not occur

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE DERMAL LD₅₀	>2000 mg/kg (rabbit)
ACUTE ORAL LD₅₀	1030 mg/kg (rat)
ACUTE INHALATION LC₅₀	>25.7 mg/L/4 hrs (rat)
EYE IRRITATION	moderately irritating
DERMAL IRRITATION	moderately irritating
DERMAL SENSITIZATION	not a sensitizer

ACUTE EFFECTS FROM OVEREXPOSURE This product has low oral, dermal and inhalation toxicity. It is moderately irritating to the skin and eyes. Experience to date indicates that contact with permethrin has rarely produced skin sensations such as numbing, burning or tingling. These skin sensations are reversible and usually subside within 12 hours. Large, toxic doses of permethrin administered to laboratory animals have produced symptoms such as diarrhea, salivation, tremors, intermittent convulsions. Overexposure to animals via inhalation has also produced hyperactivity and hypersensitivity. Exposure to aromatic hydrocarbons can irritate the skin. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs that may result in fatal pulmonary edema.

CHRONIC EFFECTS FROM OVEREXPOSURE No data available For this product. In studies with laboratory animals, permethrin did not cause reproductive toxicity or teratogenicity. Analysis of chronic feeding studies in both mice and rats with permethrin resulted in the conclusion that permethrin's potential for induction of oncogenicity in experimental animals is low and that the likelihood of oncogenic effects in humans is nonexistent or extremely low. Long term feeding studies in animals resulted in increased liver and kidney weights, induction of the liver microsomal drug metabolizing enzyme system, and histopathological changes in the lungs and liver. An overall absence of genotoxicity has been demonstrated in mutagenicity testing with permethrin. Prolonged and/or repeated skin contact to aromatic hydrocarbons may cause dermatitis. High concentration of aromatic hydrocarbon vapors may be irritating to eyes and respiratory system and act as an anesthetic.

CARCINOGENICITY	IARC	Not listed
	NTP	Not listed
	OSHA	Not listed
	OTHER (ACGIH)	Not listed

SECTION 12 ECOLOGICAL INFORMATION

Unless indicated, the information presented below is for the active ingredient, permethrin.

PHYSICAL/ In soil, permethrin is stable over a wide range of pH values. When

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ENVIRONMENTAL PROPERTIES

applied at agricultural use rates, permethrin has a moderate rate of degradation in soil. At termiticidal use rates, permethrin degrades at a slower rate which is governed by soil characteristics such as soil type, microbial population, concentration in soil and aerobic conditions of soils. Due to its high affinity for organic matter ($K_{oc}=86,000$), there is little potential for movement in soil or entry into ground water. Permethrin has a $\text{Log } P_{ow}$ of 6.1, but a low potential to bioconcentrate ($\text{BCF} = 500$) due to the ease with which it is metabolized.

ECOTOXICOLOGICAL INFORMATION

Permethrin is extremely toxic to fish ($\text{LC}_{50} = 0.5 \mu\text{g/L}$ to $315 \mu\text{g/L}$) and aquatic arthropods ($\text{LC}_{50} = 0.02 \mu\text{g/L}$ to $7.6 \mu\text{g/L}$). Marine species are often more sensitive than the freshwater species. Bacteria, algae, mollusks and amphibians are much more tolerant of permethrin than the fish and arthropods. Care should be taken to avoid contamination of the aquatic environment. Permethrin is slightly toxic to birds and oral LD_{50} values are greater than 3600 mg/kg . Longer dietary studies showed that concentrations of up to 500 ppm in the diet had no effect on bird reproduction.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHOD

Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to instructions, an acceptable method of disposal is to incinerate in accordance with local, state and national environmental laws, rules, standards and regulations. However, because acceptable methods of disposal may vary by location and regulatory requirements may change, the appropriate agencies should be contacted prior to disposal.

EMPTY CONTAINER

Non-returnable containers which held this material should be cleaned prior to disposal, by triple rinsing. Containers which held this material may be cleaned by being triple rinsed, and recycled, with rinsate being incinerated. Do not cut or weld metal containers. Vapors that form may create an explosion hazard.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT (Department of Transportation)

Regulated only when shipped in containers 119 gallons or more.

PROPER SHIPPING NAME: flammable liquids, n.o.s. (hydrocarbon solvent, 1,2,4-trimethylbenzene)

HAZARD CLASS: 3

UN/NA NUMBER: UN1993

PACKING GROUP: III

SECTION 15 REGULATORY INFORMATION

SARA Title III (Superfund Amendments and Reauthorization Act)

Section 302 Extremely Hazardous Substances (40CFR 355)	Not listed
Section 302.4 Reportable Quantity (RQ) (40CFR 355)	None
Section 311 Hazard Categories (40 CFR 370)	Immediate, Delayed, Fire
Section 312 Threshold Planning Quantity (40 CFR 370)	The threshold planning quantity (TPQ) for this product, if treated as a mixture, is 10,000 lb. This product contains the following ingredients with a TPQ of less than 10,000 lb.: None
Section 313 (40 CFR 372)	This product contains the following ingredients subject to Section 313 reporting requirements: (permethrin) (1,2,4-trimethylbenzene) (hydrocarbon solvent) (ethylbenzene)

CERCLA Reportable Quantity (RQ) (40 CFR Table 302.4) Not listed

SECTION 16 OTHER INFORMATION

NFPA Hazard Ratings

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Health	1
Flammability	2
Instability	0

THIS INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT TENKOZ INC. TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, TENKOZ INC. EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS 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.

Revision 4 11/20/06 replaces Version 3 10/12/04. Reason for revision: add acute toxicity values, correct shipping information, correct % active ingredient.