

ENSTAR(R) II
SANDOZ AGRO, INC.
1300 East Touhy Avenue
Des Plaines, Illinois 60018
Emergency Phone:847-699-1616Transportation Emergency Phone:CHEMTREC:
1-800-424-9300
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1. CHEMICAL PRODUCT INFORMATION

Product Name: Enstar(R) II
Chemical Name/Synonym: S-Kinoprene
Chemical Family: 2-propynyl
(2E,4E)-(7S)-3,7,11-trimethyl-2,4-dodecadienoate
Formula: C18H28O2
EPA Registration No.: 55947-82

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component (chemical, common name)	CAS Number	Wt%	Exposure Limits
S-Kinoprene Tech	65733-20-2		Not established
	65.1%		
Mixed Xylenes (C9 Aromatics)		15.3%	100 ppm (vapor)
Other inert ingredients (non-hazardous)		19.6%	NA

3. HAZARD INFORMATION

PRECAUTIONARY STATEMENT

WARNING: HARMFUL IF SWALLOWED OR ABSORBED THROUGH THE SKIN. MAY CAUSE EYE

IRRITATION. MAY CAUSE SKIN SENSITIZATION REACTIONS IN CERTAIN INDIVIDUALS.

HARMFUL IF INHALED, AVOID BREATHING SPRAY MIST. AVOID CONTACT WITH SKIN,

EYES OR CLOTHING. IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES AND SKIN WITH

PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING BEFORE REUSE. GET MEDICAL

ATTENTION IF IRRITATION PERSISTS. WASH THOROUGHLY AFTER HANDLING. DO NOT

STORE NEAR OR CONTAMINATE FOOD OR FEEDSTUFFS.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Possible skin irritation, skin sensitization in sensitive individuals

PRIMARY ROUTE OF ENTRY

Dermal/Eye: No

Oral: Yes

Inhalation: Yes

ACUTE TOXICITY

Oral: LD50 (rat): 1,649 mg/kg

Dermal: LD50 (rabbit): >2,000 mg/kg (highest dose level tested)

Inhalation: LC50 (rat): >4.6 mg/l (4 hr.) (highest dose level tested)

OTHER TOXICOLOGICAL INFORMATION

Skin Irritation: Moderately irritating (rabbit)

Eye Irritation: Moderately irritating (rabbit)

Sensitizer: Positive reaction, skin (guinea pig)

4. FIRST AID MEASURES

Eye: Flush eyes thoroughly with water. See a doctor if irritation persists.

Skin: Wash the area with soap and water. Rinse thoroughly.

Ingestion: Do not induce vomiting. Get medical attention and have material removed by gastric lavage (contains hydrocarbon solvent)

Inhalation: Remove person to clear air area.

Note to Physician: Treat symptomatically

5. FIRE FIGHTING MEASURES

NFPA Rating:

Health: 2

Fire: 2

Reactivity: 0

Flammability Class: Combustible liquid

Flash Point: 108F (Pensky-Martin)

Explosive Limits (% of Volume): Lower: N/A, Upper: N/A

Extinguishing Media: Water spray, foam, dry chemical, CO2

Special Protective Equipment: Firefighters should wear full protective clothing and self contained breathing apparatus.

Fire Fighting Procedures: Normal procedures. Do not allow fire fighting water to escape into waterways or sewers.

Combustion Products: Carbon dioxide, water

Unusual Fire/Explosion Hazards: None

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken: Soak up spilled material with absorbents. Scoop into a container for disposal.

Absorbents: Cat litter, sawdust, dirt or equivalent

Incompatibles: Strong oxidizers

7. HANDLING AND STORAGE

Handling: Users should 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. Do not apply this product through any type of irrigation system.

Storage: Store in a cool, dry area away from food, feed or fertilizer

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Limits: Not established

Ventilation: Provide mechanical ventilation in storage area

Personal Protective Equipment: Applicators and handlers must wear long-sleeved shirt and long pants, chemical-resistant gloves, shoes plus socks and protective eyewear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Amber liquid, faint fruity odor

Boiling Point: 138C (280F)

Melting Point: N/A

Vapor Pressure (mm Hg): Less than 1 mm Hg (20C)

Vapor Density (Air = 1): N/A

Specific Gravity: 0.92 (20C)

Bulk Density: Not determined

Solubility: Disperses in water

Evaporation Rate: Less than Butyl Acetate

pH: 6.8

10. STABILITY AND REACTIVITY

Stability: Stable

Reactivity: Non reactive

Incompatibility with Other Materials: Strong oxidizers

Decomposition Products: N/A

Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

CHRONIC TOXICITY [Specific to Active Ingredient(s)]

In 90-day feeding studies, the no-observed effect level (NOEL) was 1000 ppm in rats and 900 ppm in dogs. The target organ was identified as the liver in rats at 5000 ppm, where both decreased body weight gains, liver

enlargement and liver pathology were seen.*

DEVELOPMENTAL/REPRODUCTIVE TOXICITY [Specific to Active Ingredient(s)]

No adverse maternal or developmental effects were seen in rats at 75 mg/kg/day; both maternal deaths and fetal toxicity were seen at higher levels.*

MUTAGENICITY [Specific to Active Ingredient(s)]

Not mutagenic when tested in either bacterial or mammalian cells.

OTHER [Specific to Active Ingredient(s)]

In hormone screening bioassays conducted in mammalian endocrine systems; no estrogenic activity, androgenic and anabolic activity, or glucocorticoid activity were identified.

* Reclassification of technical kinoprene and its formulated product (Enstar(R)) as biorational pesticides subjected these pesticides to fewer testing requirements than those for chemical pesticides (FIFRA subdivision M requirements).

U.S. EPA has evaluated this product's toxicity as part of the U.S. registration process. EPA requires extensive toxicity tests be performed before any crop protection chemical is approved for use. Based on their review of test results, they have determined that no significant risk to users, the public, or the environment exists when this product is used as indicated on the product label.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE

Hydrolysis: Slow hydrolysis

Photolysis: Rapid photodegradation

Soil half life: Short (t- 1/2 not determined)

Water solubility: Disperses in water

ECOTOXICITY (Active Ingredients Only)

Acute Toxicity: fish: LD50 (Rainbow trout): 20 mg/L (96 hour study)

Acute Toxicity: aquatic invertebrates: LC50 (Daphnia magna): 0.113 mg/L

13. DISPOSAL CONSIDERATIONS

Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of according to federal, state and local procedures. Triple rinse container, then dispose of in a sanitary landfill or by other approved state and local procedures.

14. TRANSPORTATION INFORMATION

DOT49CFR Description: Not regulated via highway in less than 119 gallons/container >= 119 gallons/container: Combustible Liquid N.O.S. (Trimethylbenzenes) NA 1993 PG III

Freight Classification: Insecticides other than poison NMFC Item 102120

Class 60

15. REGULATORY INFORMATION

CERCLA (Superfund): Not regulated

RCRA: Not regulated as hazardous

SARA 311/312 HAZARD CATEGORIES

Immediate Health: Yes (irritation)

Delayed Health: No

Fire: Yes

Sudden Pressure: No

Reactivity: No

The information presented herein, while not guaranteed, was prepared by technically knowledgeable personnel and to the best of our knowledge is true and accurate. It is not intended to be all inclusive and the manner and conditions of use and handling may involve other or additional considerations.

Enstar(R) II is a registered trademark of Sandoz Ltd.

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Product #: 23512A