

**ASTUN™**

**EPA Registration Number: 71512-23-59807**

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**Product identifier**

**Product name** . . . . . Astun™

**Chemical Family** . . . . . Thiophene amide

**Chemical Name of**

**Active Ingredient(s)** . . . . . Isofetamid; *N*-[1,1-dimethyl-2-(4-isopropoxy-*o*-tolyl)-2-oxoethyl]-3-methylthiophene-2-carboxamide (IUPAC)

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**Relevant identified uses of the substance or mixture and uses advised against**

**Recommended Use** . . . . . Agricultural industry:  
Fungicide

**Restrictions on Use** . . . . . See product label for any restrictions on the use of this product.

**Company information** . . . . . OHP, Inc.  
PO Box 746  
Bluffton, SC 29910-0746  
(800) 659-6745

**Emergency telephone number**

**FOR TRANSPORTATION EMERGENCY, SPILLS, LEAK, FIRE OR ACCIDENT (24 hours a day) call** . . . . . Chemtrec: 1-800-424-9300

**FOR MEDICAL EMERGENCIES AND HEALTH AND SAFETY INQUIRIES CONTACT (24 hours a day) and Product Information call** . . . . . 1-800-356-4647

**SDS Information or Request** . . . . . ohp.com

**2. HAZARD(S) IDENTIFICATION\***

**Hazard Classification:** . . . . . Acute aquatic toxicity (Category 3)  
Chronic aquatic toxicity (Category 2)

**Signal Word** . . . . . **WARNING**

**Hazard Symbols:** . . . . .



**Hazard Statement(s)** . . . . . Toxic to aquatic life with long lasting effects.

**Precautionary**

**Statement(s):** . . . . . Avoid release to the environment. Collect spillage. Dispose of contents and container in accordance with the product label.

\* According to OSHA criteria. For FIFRA criteria, see section 15.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name:	CAS #:	% by Weight:	TLV/PEL:
Active Ingredient: Isofetamid*	875915-78-9	36.0	Not established

\* *N*-[1,1-dimethyl-2-[2-methyl-4-(1-methylethoxy)phenyl]-2-oxoethyl]-3-methyl-2-thiophenecarboxamide (CA)

**4. FIRST AID MEASURES**

**Ingestion** . . . . . Call a poison control center or doctor immediately for treatment advice. 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 to an unconscious person.

**Skin Contact** . . . . . 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.

**Eye Contact** . . . . . 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.

**Inhalation** . . . . . 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.

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

**5. FIREFIGHTING MEASURES**

**Extinguishing Media** . . . . . **SMALL FIRE:** Use water spray, dry chemicals, foam or carbon dioxide.

**LARGE FIRE:** Use water spray, fog or foam. DO NOT use water jet.

**Unusual Fire and Explosion**

**Hazards** . . . . . May decompose under fire conditions emitting gases and vapors such as hydrogen sulfide, nitrous vapors, carbon monoxide and carbon dioxide which may be toxic and irritating to the respiratory tract.

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### Fire Fighting

**Instructions** . . . . .: Wear full firefighting turnout gear and self-contained breathing apparatus.

### 6. ACCIDENTAL RELEASE MEASURES

**Precautionary Measures** . . . : Use protective equipment and engineering controls identified in section 8 of this document.

**Containment and Clean-Up** : Contain spill. Remove as much as possible and place in a closed, labeled container to await proper disposal. Wash spillage area with water. Do not allow wash water to enter drains or surface waters.

### 7. HANDLING AND STORAGE

**Precautions** . . . . .: Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

**Storage** . . . . .: Store in original container, in a secured, dry and cool place separate from other pesticides, fertilizer, food, and feed.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

The recommendations in this section for exposure controls and Personal Protection are intended for industrial settings (such as formulation or packaging facilities) or for other non-application situations.

For additional information, refer to the precautions/warnings on the product label. Always follow the label instructions when handling and using this product.

**Exposure Limits** . . . . .: Not established.

**Engineering Controls** . . . . .: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Ensure that eyewash stations and safety showers are near work areas.

#### Personal Protection:

**Ingestion** . . . . .: Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

**Eye Contact** . . . . .: Where eye contact is possible, use protective eyewear (such as chemical splash goggles or a face shield).

**Skin Contact** . . . . .: Where contact is likely, wear waterproof gloves, long-sleeved shirt and long pants, socks and chemical-resistant footwear.

**Inhalation** . . . . .: A respirator is not normally required when handling sealed containers. Use effective engineering controls to comply with facility occupational exposure limits. In case of emergency spills, use a NIOSH-approved respirator with particulate filter.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical Appearance** . . . . .: Off-white liquid

**Odor** . . . . .: None

**pH** . . . . .: 7.3 (1% suspension in water)

**Boiling Point** . . . . .: 99°C (210°F)

**Melting Point** . . . . .: Not available

**Freezing Point** . . . . .: Not applicable

**Flash Point** . . . . .: Not flammable

**Evaporation Rate** . . . . .: Not available

**Flammability** . . . . .: Not flammable

**Flammable Limits** . . . . .: Not applicable

**Vapor Pressure** . . . . .: Not available

**Vapor Density** . . . . .: Not available

**Density** . . . . .: 1.10 g/mL @ 20°C

**Solubility** . . . . .: Suspensible in water

**N-Octanol/Water** . . . . .: 350 (Log  $P_{ow}$  = 2.5) (Isofetamid)

#### Auto-Ignition

**Temperature** . . . . .: > 400°C (752°F)

#### Decomposition

**Temperature** . . . . .: Not available

**Volatility** . . . . .: Not available

### 10. STABILITY AND REACTIVITY

**Reactivity** . . . . .: No evidence of reactivity.

**Stability** . . . . .: This product is stable at normal temperatures over 12 months.

#### Possibility of Hazardous

**Reactions** . . . . .: None known.

**Conditions to Avoid** . . . . .: Extremes of temperature.

**Incompatible Materials** . . . . .: Strong oxidizing agents, strong acids or bases.

#### Hazardous Decomposition

**Products** . . . . .: Hydrogen sulfide, nitrous vapors, carbon monoxide and carbon dioxide.

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**11. TOXICOLOGICAL INFORMATION**

**Acute Toxicity** . . . . .: Acute oral toxicity (LD<sub>50</sub>): > 2000 mg/kg [Rat].  
Acute dermal toxicity (LD<sub>50</sub>): > 2000 mg/kg [Rabbit].  
Acute inhalation toxicity (LC<sub>50</sub>): > 5.13 mg/L [actual airborne concentration]; > 120 mg/L (nominal) 4 hour(s) [Rat].

**Skin Irritation** . . . . .: Non-irritating. Primary dermal irritation index = 0.0 [Rabbit]

**Eye Irritation** . . . . .: Non-irritating. Mean Draize score = 0.0 [Rabbit]

**Sensitization** . . . . .: Not a contact sensitizer.

**Mutagenicity** . . . . .: No evidence of mutagenicity.

**Carcinogenicity** . . . . .: No adverse effects were seen in male mice ingesting up to 4,000 ppm (503 mg/kg bw/day) of isofetamid or female mice ingesting up to 3,000 ppm (431 mg/kg bw day). Dietary exposure to rats at up to 5,000 ppm showed no carcinogenic effects.

**Reproductive Toxicity** . . . . .: Animal studies show no significant evidence of reproductive toxicity at doses of up to 10,000 ppm of isofetamid.

**Target Organ Effects** . . . . .: 90-day feeding studies with the active ingredient showed increased liver weight and thyroid effects in rats exposed to extreme doses of 10,000 ppm. At 1,000 ppm, increased liver weight was observed but the frequency of thyroid effects decreased significantly. 1-year and 2-year feeding studies on rats showed effects to liver and thyroid at doses of 5,000 ppm.

**Aspiration** . . . . .: No data available.

**12. ECOLOGICAL INFORMATION**

**Summary of Effects** . . . . .: Toxic to aquatic life with long lasting effects. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with local or regional permits.

**Ecotoxicity Data:**

Fish (Carp) 96-hour LC<sub>50</sub> = 100 mg/L (35 mg a.i./L)  
Invertebrate (*Daphnia magna*) 48-hour EC<sub>50</sub> = 25 mg/L (8.5 mg a.i./L)  
Algae (*Pseudokirchneriella subcapitata*) 96-hour E<sub>r</sub>C<sub>50</sub> = 940 mg/L  
Bobwhite Quail Acute LD<sub>50</sub> > 2,000 mg a.i./kg body weight (practically non-toxic)  
Sub-Acute Dietary Bird LD<sub>50</sub> > 5,000 ppm a.i. in diet for both Quail and Mallard

**Persistence /**

**Degradability** . . . . .: Astun has low to medium persistence in aerobic soil (DT<sub>50</sub> 22 – 55 days) with much slower degradation under anaerobic conditions (DT<sub>50</sub> 572 days). It does not show hydrolytic degradation at pH of 4 – 9 but degrades rapidly under photolytic conditions (DT<sub>50</sub> 1.4 – 1.8 days).

**Bioaccumulative Potential** . . . . .: Not expected to be bioaccumulative based on organic absorption coefficient (K<sub>oc</sub> 489) and *n*-octanol/water partition coefficient (Log P<sub>ow</sub> 2.5).

**Mobility in Soil** . . . . .: Astun exhibits low to medium mobility in soil (K<sub>foc</sub> = 274 – 597 mL/g; K<sub>foc</sub> arithmetic mean = 489 mL/g).

**13. DISPOSAL CONSIDERATIONS**

**Waste Disposal** . . . . .: Pesticide wastes may be hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal** . . . . .: Non-refillable container. DO NOT reuse or refill empty container. Triple rinse container promptly after emptying according to label instructions. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**14. TRANSPORT INFORMATION**

**US DOT Classification** . . . . .: CLASS 9. Not regulated when shipped in non-bulk packaging by highway or rail.

**Non-bulk (Ground Transport)**  
**Proper Shipping Name** . . . . .: Not regulated

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**EPA Registration Number: 71512-23-59807**

**Hazard Class** . . . . .: Not regulated  
**Identification Number** . . . . .: Not regulated  
**Packing Group** . . . . .: Not regulated  
**Hazardous Substances Reportable Quantity** . . . . .: Not applicable.  
**Special Provisions for Transport** . . . . .: Class 9 placard not required for non-bulk packaging transported by highway or rail within the U.S. [49CFR 172.504(f)(9)].

	<b>IATA (Air Transport)</b>	<b>IMDG (Ocean Transport)</b>
<b>Proper Shipping Name:</b>	Environmentally Hazardous Substance, Liquid, N.O.S. (Isofetamid)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ISOFETAMID)
<b>Hazard Class:</b>	Class 9	Class 9
<b>Identification Number:</b>	UN 3082	UN 3082
<b>Packing Group:</b>	PG III	PG III

**15. REGULATORY INFORMATION**

**U.S. Federal and State Regulations:**

**SARA 313 Inventory**

**Ingredients** . . . . .: Not Listed

**SARA 312 Hazards**

**Classification** . . . . .: Not Listed

**Listed as carcinogen by:**

**IARC** . . . . .: Not Listed

**NTP** . . . . .: Not Listed

**OSHA** . . . . .: Not Listed

**CA Prop 65** . . . . .: Not Listed

**TSCA** . . . . .: Exempt from TSCA, subject to FIFRA.

**FIFRA:**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law (FIFRA). FIFRA requirements differ from the OSHA classification criteria and hazard information required for safety data sheets in Section 2 above, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required by FIFRA on the pesticide label:

**CAUTION**

Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. This pesticide is toxic to oysters. 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 contaminate waters when disposing of equipment washwaters or rinsate. Do not apply when weather conditions favor drift from the treated areas. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

**Canada (WHMIS)** . . . . .: Exempt

**EU (Directives 67/548/EEC, 1999/45/EC and 2006/8/EC)** . . . . .: R51/53: Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

**16. OTHER INFORMATION**

**NFPA Hazard Ratings**

**Health:** . . . . .: 1

**Flammability:** . . . . .: 0

**Instability:** . . . . .: 0

Minimal	Slight	Moderate	Serious	Extreme
0	1	2	3	4

**Notice to Reader**

All information contained in this Safety Data Sheet is furnished free of charge and is intended for your evaluation. In our opinion, the information as of the date of the Safety Data Sheet is reliable; however, it is your responsibility to determine the suitability of the information for your use. You are advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional or variable conditions or circumstances exist or because of applicable laws or government regulations. Therefore, you should use this information only as a supplement to other information gathered by you; and you must make independent determinations of the suitability and completeness of the information from all sources to assure both proper use of the material described herein and the safety and health of employees. Accordingly, no guarantee expressed or implied is made by OHP, Inc. as to the results to be obtained based upon your use of the information, nor does OHP, Inc. assume any liability arising out of your use of the information.

Conforms to UN Globally Harmonized System and OSHA Hazard Communication Standard 29 CFR 1910.1200(g)

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