ISK BIOSCIENCES

Safety Data Sheet

Conforms to UN Globally Harmonized System and WHMIS Hazard Communication requirements

Kabuto™ 400SC Fungicide

SECTION 1. IDENTIFICATION

Product Name:	Kabuto™ 400SC Fungicide
Synonyms:	IKF-5411 400SC; Isofetamid Turf Fungicide
Chemical Name:	Isofetamid; *N*-[1,1-dimethyl-2-(4-isopropoxy-*o*-tolyl)-2-oxoethyl]-3-methylthiophene-2-carboxamide (IUPAC)
Chemical Family:	Thiophene amide
Recommended Uses:	Agricultural industry: Fungicide
PMRA Registration No.:	31759
SDS No.:	-
Company Identification:	ISK Biosciences Corporation 7470 Auburn Road, Suite A Concord, OH 44077-9703 (440) 357-4640
24 Hour Emergency Number:	For Transportation emergency, spills, leak, fire or accident call: CHEMTREC 1-800-424-9300 For Medical emergency call: 1-888-484-7546

SECTION 2. HAZARDS IDENTIFICATION

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

Signal Word: **WARNING**

Hazard Symbols:

Hazard Statements:
Toxic to aquatic life with long lasting effects.

Precautionary Statements:
Avoid release to the environment. Collect spillage. Dispose of contents and container in accordance with the product label.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	CAS #:	% by Weight:	TLV/PEL:
Isofetamid	875915-78-9	36.0	Not established
Propylene glycol*	57-55-6	5 - 10	Not established
*Material listed in the Ingredient Disclosure List under the Hazardous Products Act.			

SECTION 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.	

SECTION 5. FIRE-FIGHTING 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.
Fire Fighting Instructions:	Wear full firefighting turn-out gear and self-contained breathing apparatus.

SECTION 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.

SECTION 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.

SECTION 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.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)

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.

SECTION 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

SECTION 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.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	Acute oral toxicity (LD_{50}):	> 2000 mg/kg [Rat].
	Acute dermal toxicity (LD_{50}):	> 2000 mg/kg [Rabbit].
	Acute inhalation toxicity (LC_{50}):	> 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 4000 ppm (503 mg/kg bw/day) of isofetamid or female mice ingesting up to 3000 ppm (431 mg/kg bw day). Dietary exposure to rats at up to 5000 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 1000 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 5000 ppm.	
Aspiration:	No data available.	

SECTION 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_{50} = 100 mg/L (35 mg a.i./L)

Invertebrate (*Daphnia magna*) 48-hour EC_{50} = 25 mg/L (8.5 mg a.i./L)

Algae (*Pseudokirchneriella subcapitata*) 96-hour E_rC_{50} = 940 mg/L

Bobwhite Quail Acute LD_{50} > 2000 mg a.i./kg body weight (practically non-toxic)

Sub-Acute Dietary Bird LD_{50} > 5000 ppm a.i. in diet for both Quail and Mallard

Persistence / Degradability:	Isofetamid has low to medium persistence in aerobic soil (DT_{50} 22 – 55 days) with much slower degradation under anaerobic conditions (DT_{50} 572 days). It does not show hydrolytic degradation at pH of 4 – 9 but degrades rapidly under photolytic conditions (DT_{50} 1.4 – 1.8 days).
Bioaccumulative Potential:	Not expected to be bioaccumulative based on organic absorption coefficient (K_{oc} 489) and *n*-octanol/water partition coefficient (Log P_{ow} 2.5).
Mobility in Soil:	Isofetamid exhibits low to medium mobility in soil (K_{foc} = 274 – 597 mL/g; K_{foc} arithmetic mean = 489 mL/g).

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal:	For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

SECTION 13. DISPOSAL CONSIDERATIONS (Continued)

Container Disposal:	Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank. Follow provincial instruction for any required additional cleaning of the container prior to its disposal. Make the empty container unsuitable for further use. Dispose of the container in accordance with provincial requirements.

SECTION 14. TRANSPORT INFORMATION

US DOT Classification:	CLASS 9. Not regulated when shipped in non-bulk packaging by highway or rail.	
	Non-bulk (Ground Transport)	**Bulk (Ground Transport)**
Proper Shipping Name:	Not regulated	Environmentally Hazardous Substance, Liquid, N.O.S. (Isofetamid)
Hazard Class:	Not regulated	Class 9
Identification Number:	Not regulated	UN 3082
Packing Group:	Not regulated	PG III
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)].	
	IATA (Air Transport)	**IMDG (Ocean Transport)**
Proper Shipping Name:	Environmentally Hazardous Substance, Liquid, N.O.S. (Isofetamid)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ISOFETAMID)
Hazard Class:	Class 9	CLASS 9
Identification Number:	UN 3082	UN 3082
Packing Group:	PG III	PG III

SECTION 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, regulated by FIFRA
Canada (PMRA):	Registered under PCP No. 31759

This chemical is a pesticide product registered by the Pest Management Regulatory Agency and is subject to certain labeling requirements under federal law. PMRA requirements can differ from GHS classification criteria and hazard information required for safety data sheets in Section 2. Following is the hazard information as required by PMRA on the pesticide label:

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 product is toxic to aquatic organisms, oysters, birds and small wild mammals. Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Do not use in residential areas.

SECTION 15. REGULATORY INFORMATION (Continued)

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.

SECTION 16. OTHER INFORMATION

NFPA Hazard Ratings			
Health:	1	**0**	**Minimal**
Flammability:	0	**1**	**Slight**
Instability:	0	**2**	**Moderate**
		3	**Serious**
		4	**Extreme**

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 ISK Biosciences Corporation as to the results to be obtained based upon your use of the information, nor does ISK Biosciences Corporation assume any liability arising out of your use of the information.

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