SAFETY DATA SHEET
KALIDA™ FUNGICIDE

SDS # : 50002363-A
Revision date: 2021-01-22
Format: NA
Version 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name KALIDA™ FUNGICIDE

Formula code FO004332

Other means of identification

Product Code(s) 50002363-A

Legacy Product Code F4406-1

Synonyms FLUINDAPYR:
3-(difluoromethyl)-N-[(3RS)-7-fluoro-2,3-dihydro-1,1,3-trimethyl-1H-inden-4-yl]-1-methyl-1H-pyrazole-4-carboxamide (IUPAC name)
3-(difluoromethyl)-N-(7-fluoro-2,3-dihydro-1,1,3-trimethyl-1H-inden-4-yl)-1-methyl-1H-pyrazole-4-carboxamide (CAS name),

, FLUTRIAFOL:
α-(2-fluorophenyl)-α-(4-fluorophenyl)-1H-1,2,4-triazole-1-ethanol (CAS name);
(RS)-2,4'-difluoro-α-(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol (IUPAC name)

Active Ingredient(s) Fluindapyr, Flutriafol

Chemical Family Pyrazole fungicide
Triazole

Recommended use of the chemical and restrictions on use

Recommended Use: Fungicide

Restrictions on Use: Use as recommended by the label.

Supplier Address

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
SDS-Info@fmc.com (E-Mail General Information)

Emergency telephone number

For leak, fire, spill, or accident emergencies, call:
800 / 424 9300 (CHEMTREC - U.S.A.)
703 / 741-5970 (CHEMTREC - International)
703 / 527 3887 (CHEMTREC - Alternate)

Medical Emergencies:
1 800 / 331-3148 (U.S.A. & Canada)
1 651 / 632-6793 (All Other Countries - Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Signal Word: Warning

Hazard Statements
H302 - Harmful if swallowed
H332 - Harmful if inhaled

Precautionary Statements - Prevention
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
Precautionary Statements - Response
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth

Precautionary Statements - Disposal
P501 - Dispose of contents/container according to label directions

Hazards not otherwise classified (HNOC)
No hazards not otherwise classified were identified.

Other Information
Toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Pyrazole fungicide,
, Triazole.

Chemical name	CAS-No	Weight %
Fluindapyr	1383809-87-7	20.9
Flutriafol	76674-21-0	20.9
Propylene glycol	57-55-6	5 - 10
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt	68186-36-7	1 - 5

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

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 further treatment advice.

Inhalation

Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Ingestion

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. Never give anything by mouth to an unconscious person. Call a poison control center or doctor immediately for treatment advice

Most important symptoms and effects, both acute and delayed

Irritation and possibly allergic reactions.

Indication of immediate medical attention and special treatment needed, if necessary

Immediate medical attention is required in case of ingestion or eye contact.

It may be helpful to show this safety data sheet to physician.

There is no specific antidote against this substance. Gastric lavage and/or administration of activated charcoal can be considered. After decontamination, treatment is supportive and symptomatic as for a general chemical.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Small Fire

Dry chemical. Carbon dioxide (CO_2).

Large Fire

Water spray. Foam.

Unsuitable extinguishing media

None known. Avoid heavy hose streams.

Specific Hazards Arising from the Chemical

None known

Hazardous Combustion Products

The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, hydrogen fluoride, sulphur dioxide, carbon monoxide, carbon dioxide and various fluorinated organic compounds.

Explosion data

Sensitivity to Mechanical Impact

No information available.

Sensitivity to Static Discharge

No information available.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus and full protective gear. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

In case of spill, avoid contact. Isolate area and keep out animals and unprotected persons. Wear suitable protective clothing, gloves and eye/face protection.

Other

For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

Environmental Precautions

Do not release to the environment. Do not contaminate any water by cleaning of equipment or disposal of waste.

Methods for Containment

Prevent further leakage or spillage if safe to do so. Dike to prevent runoff. It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping.

Methods for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Nearby surface water drains should be covered. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with detergent and water. Do not let wash liquid enter drains or waterways. Absorb wash liquid with an inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.

7. HANDLING AND STORAGE

Handling

Handle in accordance with good industrial hygiene and safety practice. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8.

Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.

Storage

Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

Packaging material

Must only be kept in original packaging.

Incompatible products

None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Propylene glycol (57-55-6)	-	-	TWA: 10 mg/m^3 aerosol only TWA: 50 ppm aerosol and vapor TWA: 155 mg/m^3 aerosol and vapor	-

Appropriate engineering controls

Engineering measures

Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	For dust, splash, mist or spray exposure, wear chemical protective goggles. Provide emergency on-site eyewash.
Skin and Body Protection	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Hand Protection	Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.
Respiratory Protection	The product does not automatically present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material which produces a heavy vapour or mist, workers should put on officially approved respiratory protection equipment with a universal filter type including particle filter.
Hygiene measures	Clean water should be available for washing in case of eye or skin contamination. Remove and wash contaminated clothing before re-use. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Launder work clothing separately from regular household laundry.
General information	If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquid suspension
Physical State	Liquid
Color	No information available
Odor	No information available
Odor threshold	No information available
pH	6.42 (0.93% solution in water)
Melting point/freezing point	No information available
Boiling Point/Range	No information available
Flash point	> 100 °C / > 212 °F
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	Fluindapyr : 2.85 x 10^{-8} Pa at 20°C Flutriafol : log Kow = 2.29
Vapor density	No information available
Relative density	9.5722 lbs/gal (1.1470 g/mL) @ 22.7ºC
Specific gravity	No information available
Water solubility	Dispersible in water
Solubility in other solvents	No information available
Partition coefficient	Fluindapyr : log Kow = 4.12 at 20°C Flutriafol : log Kow = 2.29
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	365.0 centistokes at 21.5ºC 295.8centistokes at 41.5ºC
Viscosity, dynamic	No information available
Explosive properties	Not explosive
Oxidizing properties	Non-oxidizing
Molecular weight	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity None under normal use conditions

Chemical Stability The product is stable during normal handling and storage at ambient temperatures.

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Heating can release hazardous gases

Incompatible materials None known.

Hazardous Decomposition Products See Section 5 for more information.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral 550 mg/kg (rat)
LD50 Dermal > 5000 mg/kg (rat)
LC50 Inhalation (dust) > 2.12 mg/L (mist) 4 hr

Serious eye damage/eye irritation Minimally irritating (rabbit).
Skin corrosion/irritation Slightly irritating (rabbit).
Sensitization Non-sensitizing.

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation (vapor)
Fluindapyr (1383809-87-7)	2000 mg/kg (Rat)(method OECD 423)	> 2000 mg/kg(Rat)(method OECD 402)	= >5.19 mg/L (Rat) 4 h (method OECD 403)
Flutriafol (76674-21-0)	= 1140 mg/kg (Rat)		
Propylene glycol (57-55-6)	20000 mg/kg (Rat)	20800 mg/kg (Rabbit)	

Information on toxicological effects

Symptoms Irritation and possibly allergic reactions.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Mutagenicity No known mutagenic or teratogenic effects.
Carcinogenicity Contains no ingredient listed as a carcinogen
Reproductive toxicity This product does not contain any known or suspected reproductive hazards.
Developmental toxicity Contains no known teratogenic components.
STOT - single exposure Not classified.
STOT - repeated exposure Not classified.
Aspiration hazard The product does not present an aspiration pneumonia hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No data are available for the product. It is expected to be toxic to aquatic organisms and to have adverse long-term effects in the aquatic environment.

Fluindapyr (1383809-87-7)				
Active Ingredient(s)	Duration	Species	Value	Units
	LC50	Oncorhynchus mykiss (rainbow trout)	0.121	mg/L
	LC50	Sheepshead minnow	0.43	mg/L
	EC50	Daphnia	0.414	mg/L

	LC50	Mysid shrimp	0.33	mg/L
	EC50	Algae	>4.83	mg/L
	EC50	Lemna gibba (duckweed)	>2	mg/L
	LD50	Bobwhite quail	>2250	mg/kg
	LD50	Honey bees	>32.8	µg/bee
	NOEC	Pimephales promelas	0.031	mg/L
	NOEC	Daphnia	0.12	mg/L
	NOEC	Mysid shrimp	0.062	mg/L

Flutriafol (76674-21-0)				
Active Ingredient(s)	Duration	Species	Value	Units
	96 h LC50	Oncorhynchus mykiss (rainbow trout)	61	mg/L
	48 h LC50	Daphnia magna	>78	mg/L
	96 h IC50	Selenastrum capricornutum	12	mg/L
	72 h IC50	Scenedesmus subspicatus	1.9	mg/L
	LD50	Mallard duck	>5000	mg/kg
	oral	Honey bees	>2	µg/bee
	contact	Honey bees	>50	µg/bee
	NOEC	Oncorhynchus mykiss (rainbow trout)	6.2	mg/L
	NOEC	Daphnia magna	0.31	mg/L

Chemical name	**Toxicity to algae**	**Toxicity to fish**	**Toxicity to daphnia and other aquatic invertebrates**
Glyoxal 107-22-2	96 h EC50: <= 348.59 mg/L (Pseudokirchneriella subcapitata) static 72 h EC50: > 500 mg/L (Desmodesmus subspicatus) 96 h EC50: > 500 mg/L (Desmodesmus subspicatus)	96 h LC50: 460 - 680 mg/L (Leuciscus idus) static 96 h LC50: = 215 mg/L (Pimephales promelas) static	48 h EC50: = 404 mg/L (Daphnia magna)
Sodium Hydroxide 1310-73-2		96 h LC50: = 45.4 mg/L (Oncorhynchus mykiss) static	
Dipropylene glycol 25265-71-8		24 h LC50: > 5000 mg/L (Carassius auratus) static	
Polyethylene glycol 25322-68-3		24 h LC50: > 5000 mg/L (Carassius auratus)	
Formaldehyde 50-00-0		96 h LC50: 0.032 - 0.226 mL/L (Oncorhynchus mykiss) flow-through 96 h LC50: 100 - 136 mg/L (Oncorhynchus mykiss) static 96 h LC50: 22.6 - 25.7 mg/L (Pimephales promelas) flow-through 96 h LC50: 23.2 - 29.7 mg/L (Pimephales promelas) static 96 h LC50: = 1510 µg/L (Lepomis macrochirus) static 96 h LC50: = 41 mg/L (Brachydanio rerio) static	48 h EC50: 11.3 - 18 mg/L (Daphnia magna) Static 48 h LC50: = 2 mg/L (Daphnia magna)
Cyclomethicone 556-67-2		96 h LC50: > 1000 mg/L (Lepomis macrochirus) 96 h LC50: > 500 mg/L (Brachydanio rerio)	24 h EC50: = 25.2 mg/L (Daphnia magna)
Sodium sulfate 7757-82-6		96 h LC50: 13500 - 14500 mg/L (Pimephales promelas) 96 h LC50: 3040 - 4380 mg/L (Lepomis macrochirus) static 96 h LC50: = 13500 mg/L (Lepomis macrochirus) 96 h LC50: > 6800 mg/L (Pimephales promelas) static	48 h EC50: = 2564 mg/L (Daphnia magna) 96 h EC50: = 630 mg/L (Daphnia magna)
Naphthalene 91-20-3	72 h EC50: = 0.4 mg/L (Skeletonema costatum)	96 h LC50: 0.91 - 2.82 mg/L (Oncorhynchus mykiss) static 96 h LC50: 5.74 - 6.44 mg/L (Pimephales promelas) flow-through 96 h LC50: = 1.6 mg/L	48 h EC50: 1.09 - 3.4 mg/L (Daphnia magna) Static 48 h EC50: = 1.96 mg/L (Daphnia magna) Flow through 48 h LC50: = 2.16 mg/L (Daphnia magna)

		(Oncorhynchus mykiss) flow-through 96 h LC50: = 1.99 mg/L (Pimephales promelas) static 96 h LC50: = 31.0265 mg/L (Lepomis macrochirus) static	

Persistence and degradability Fluindapyr, Flutriafol: Not readily biodegradable. Persistent in soil.

Bioaccumulation Fluindapyr. Bioaccumulative potential.
Flutriafol. Not expected to bioaccumulate.

Mobility Fluindapyr. Low mobility in soil.
Flutriafol. Moderately mobile.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

Contaminated containers and packages Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. TRANSPORT INFORMATION

DOT This material is not a hazardous material as defined by U.S. Department of Transportation 49 CFR Parts 100 through 185, unless shipped in bulk packaging. The classification below pertains to the shipment in bulk packaging (>119 gal/882 lb).

UN/ID no	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.(fluindapyr)
Hazard class	9
Packing Group	III
Marine Pollutant	Yes.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (fluindapyr), Marine Pollutant

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

UN/ID no	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.(fluindapyr)
Hazard class	9
Packing Group	III
Marine Pollutant	Yes.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (fluindapyr), Marine Pollutant

ICAO/IATA

UN/ID no	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.(fluindapyr)
Hazard class	9
Packing Group	III
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (fluindapyr), Marine Pollutant

IMDG/IMO

UN/ID no	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.(fluindapyr)
Hazard class	9
Packing Group	III
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (fluindapyr), Marine Pollutant

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

Clean Water Act

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Hydroxide 1310-73-2	1000 lb			X
Formaldehyde 50-00-0	100 lb			X
Naphthalene 91-20-3	100 lb	X	X	X

CERCLA

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Sodium Hydroxide 1310-73-2	1000 lb 454 kg	
Formaldehyde 50-00-0	100 lb 45.4 kg	100 lb
Naphthalene 91-20-3	100 lb 45.4 kg	

FIFRA 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:

CAUTION
Harmful if swallowed. Wash thoroughly with soap and water after handling and beforeeating, drinking, chewing gum, using tobacco, or using the toilet.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Propylene glycol 57-55-6	X		X

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Propylene glycol 57-55-6	X	X	X	X	X	X	X	X
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt 68186-36-7	X	X			X	X	X	X

CANADA
Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazards** 2	**Flammability** 1	**Instability** 0	**Special Hazards** -
HMIS	**Health Hazards** 2*	**Flammability** 1	**Physical hazard** 0	**Personal Protection** X

**Indicates a chronic health hazard.*

NFPA/HMIS Ratings Legend Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

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Reason for revision: Initial Release

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Prepared By:

FMC Corporation

End of Safety Data Sheet