SAFETY DATA SHEET

Flutriafol Xyway 3D MUP

SDS # : FO004358-A
Revision date: 2020-04-13
Format: NA
Version 1.01

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Flutriafol Xyway 3D MUP

Other means of identification

Product Code(s) FO004358-A

Synonyms 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) Flutriafol:

Chemical Family Triazole

Recommended use of the chemical and restrictions on use

Recommended Use: For manufacturing use only

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

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

For leak, fire, spill or accident emergencies, call:
1 800 / 424-9300 (CHEMTREC - U.S.A.)
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A

Skin sensitization	Category 1B

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements
H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H332 - Harmful if inhaled

Precautionary Statements - Prevention
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor if you feel unwell
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth

Precautionary Statements - Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

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
May be harmful in contact with skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Triazole.

Chemical name	CAS-No	Weight %
Flutriafol	76674-21-0	38.75
Glycerin	56-81-5	5 - 10
Propylene glycol	57-55-6	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 — Immediate medical attention is required. 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 by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed — When fed to animals at high dosage, similar products caused salivation, depression of activity, muscle spasms, ataxia and increased body temperature.

Indication of immediate medical attention and special treatment needed, if necessary — Treatment is symptomatic and supportive

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 — 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. Hydrogen fluoride. Nitrogen oxides (NOx). Carbon oxides (COx). various chlorinated and 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 — Use water spray to cool fire exposed surfaces and protect personnel. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Dike to prevent runoff. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. As in any fire, wear self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions — Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.

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

Environmental Precautions — Keep people and animals away from and upwind of spill/leak. Keep material out of lakes,streams, ponds, and sewer drains. Keep out of waterways.

Methods for Containment — Wear the full Personal Protection Equipment, avoiding inhalation or contact with skin or eyes. Dike to contain spill with inert material which is absorbent and non-combustible (clay,

sand or soil). Then soak up with absorbent material inward from the edges. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with strong industrial detergent and much water. Absorb wash liquid onto a suitable absorbent such as hydrated lime, universal binder, attapulgite, bentonite or other absorbent clays and transfer contaminated absorbent to 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. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling.

Storage

To maintain quality, maximum storage temperatures should not exceed 25°C. Protect from frost, heat and sunlight. Keep container tightly closed in a dry and well-ventilated place. Keep out of reach of children and animals. Keep away from food, drink and animal feedingstuffs. Keep/store only in original container. Keep in properly labeled containers.

Packaging material

Must only be kept in original packaging.

Incompatible products

Oxidizing agents, Copper Copper alloys

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Glycerin (56-81-5)	-	TWA: 15 mg/m³ TWA: 5 mg/m³	-	Mexico: TWA 10 mg/m³
Chemical name	**British Columbia**	**Quebec**	**Ontario TWAEV**	**Alberta**
Glycerin (56-81-5)	TWA: 10 mg/m³ TWA: 3 mg/m³	TWA: 10 mg/m³	-	TWA: 10 mg/m³
Propylene glycol (57-55-6)	-	-	TWA: 10 mg/m³ aerosol only TWA: 50 ppm aerosol and vapor TWA: 155 mg/m³ 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

If splashes are likely to occur, wear. Safety glasses with side-shields. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and Body Protection

Wear suitable protective clothing. Protective shoes or boots. Minimize skin contamination by following good industrial hygiene practices.

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 Must have clean water available for washing in case of eye or skin contamination. Wash skin before eating, drinking, chewing gum, or using snuff. Shower after work. Remove contaminated clothing and wash before reuse. Wash all work clothing separately; do not mix with 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	White Liquid
Physical State	Liquid
Color	White
Odor	No information available
Odor threshold	No information available
pH	5.91
Melting point/freezing point	No information available
Boiling Point/Range	No information available
Flash point	> 100 °C / > 212 °F (Based on a similar product)
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	No information available
Vapor density	No information available
Relative density	1.1
Specific gravity	1.11 g/mL
Water solubility	Miscible with water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	820 cP
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 Stable under recommended storage conditions.

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 Oxidizing agents, Copper. Copper alloys.

Hazardous Decomposition Products See Section 5 for more information.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral Approximately 1030 mg/kg (rat) (Based on a similar product)
LD50 Dermal > 5000 mg/kg (rat) (Based on a similar product)
LC50 Inhalation (dust) > 2.08 mg/L 4 hr (mist) (rat) (Based on a similar product)

Serious eye damage/eye irritation Moderately irritating (rabbit). (Based on a similar product).
Skin corrosion/irritation Moderately irritating (rabbit). (Based on a similar product).
Sensitization Sensitizer (mice-LLNA) (Based on a similar product)

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation (vapor)
Flutriafol (76674-21-0)	= 1140 mg/kg (Rat)		
Glycerin (56-81-5)	= 12600 mg/kg (Rat)	> 10 g/kg (Rabbit)	> 570 mg/m³ (Rat) 1 h
Propylene glycol (57-55-6)	20000 mg/kg (Rat)	20800 mg/kg (Rabbit)	

Information on toxicological effects

Symptoms When fed to animals at high dosage, similar products caused salivation, depression of activity, muscle spasms, ataxia and increased body temperature.

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

Mutagenicity Flutriafol:: Not mutagenic
Carcinogenicity Flutriafol: No evidence of carcinogenicity from animal studies
Neurological effects No information available
Reproductive toxicity Flutriafol:. No toxicity to reproduction in animal studies.
STOT - single exposure No specific effects after single exposure have been observed.
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. See listed target organs below.
Target organ effects Liver
Neurological effects No information available
Aspiration hazard The product does not present an aspiration pneumonia hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
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	
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)
Glycerin		96 h LC50: 51 - 57 mL/L	24 h EC50: > 500 mg/L (Daphnia

56-81-5		(Oncorhynchus mykiss) static	magna)
Propylene glycol 57-55-6	96 h EC50: = 19000 mg/L (Pseudokirchneriella subcapitata)	96 h LC50: 41 - 47 mL/L (Oncorhynchus mykiss) static 96 h LC50: = 51400 mg/L (Pimephales promelas) static 96 h LC50: = 51600 mg/L (Oncorhynchus mykiss) static 96 h LC50: = 710 mg/L (Pimephales promelas)	48 h EC50: > 1000 mg/L (Daphnia magna) Static 24 h EC50: > 10000 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)
Methyl ethyl ketone 78-93-3		96 h LC50: 3130 - 3320 mg/L (Pimephales promelas) flow-through	48 h EC50: 4025 - 6440 mg/L (Daphnia magna) Static 48 h EC50: = 5091 mg/L (Daphnia magna) 48 h EC50: > 520 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 (Oncorhynchus mykiss) flow-through 96 h LC50: = 1.99 mg/L (Pimephales promelas) static 96 h LC50: = 31.0265 mg/L (Lepomis macrochirus) static	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)

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

Bioaccumulation Flutriafol:. Not expected to bioaccumulate.

Mobility Flutriafol:. Moderately mobile.

Ozone Not applicable

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.(flutriafol)
Hazard class 9
Packing Group 3
Marine Pollutant Flutriafol:.
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (flutriafol), 9, III,Marine Pollutant

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.(flutriafol)
Hazard class 9

Packing Group	III
Marine Pollutant	Flutriafol:.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (flutriafol), 9, III, MarinePollutant

UN/ID no	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.(flutriafol)
Hazard class	9
Packing Group	III
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (flutriafol), 9, III, MarinePollutant
UN/ID no	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.(flutriafol)
Hazard class	9
Packing Group	III
EmS No.	F-A, S-F
Marine Pollutant	Flutriafol:
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (flutriafol), 9, III, MarinePollutant

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 contains a chemical or 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
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

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
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

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
Methyl ethyl ketone 78-93-3	5000 lb 2270 kg	

Naphthalene* 91-20-3	100 lb 45.4 kg	

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
Glycerin 56-81-5	X	X	X
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)
Glycerin 56-81-5	X	X	X	X	X	X	X	X
Propylene glycol 57-55-6	X	X	X	X	X	X	X	X

CANADA

This Safety Data Sheet is for a pesticide product registered by the Pest Management Regulatory Agency (PMRA), and is therefore also subject to certain requirements under Canadian pesticide laws, including the Pest Control Products Act (PCPA). These requirements differ from the classification criteria and hazard information required by the Hazardous Product Regulations (HPR) and WHMIS 2015 for safety data sheets, and for workplace labels of non-pesticide chemicals. The following information is determined by PMRA.

The approved pest control product label (the label), under the Pest Control Products Act, needs to be followed at all times and in cases where there are any discrepancies between the approved label and an SDS for that product it is the label information that prevails.

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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Prepared By:

FMC Corporation

End of Safety Data Sheet