1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier**

**Product Name**
Lucento Fungicide

**Other means of identification**

**Product Code(s)**
FO004038-A

**Legacy Product Code**
F9654-1

**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),

BIXAFEN: 
N-(3',4'-dichloro-5-fluoro[1,1'-biphenyl]-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide (IUPAC name); 
N-(3',4'-dichloro-5-fluorobiphenyl-2-yl)-3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxamide (CAS name)

**Chemical Family**
Triazole, Pyrazolecarboxamide

**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)
msdsinfo@fmc.com (E-Mail General Information)

**Emergency telephone number**

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)

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 |
| Serious eye damage/eye irritation | Category 2 |

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements
H302 - Harmful if swallowed
H319 - Causes serious eye irritation
H332 - Harmful if inhaled

Precautionary Statements - Prevention
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
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
P301 + P312 - IF SWALLOWED: 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
May be harmful if swallowed.
Toxic to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family
Triazole, Pyrazolecarboxamide.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flutriafol</td>
<td>76674-21-0</td>
<td>26.47</td>
</tr>
<tr>
<td>Bixafen</td>
<td>581809-46-3</td>
<td>15.55</td>
</tr>
<tr>
<td>Glycerin</td>
<td>56-81-5</td>
<td>5-10</td>
</tr>
<tr>
<td>Acetic acid ethenyl ester, polymer with oxirane</td>
<td>25820-49-9</td>
<td>1-5</td>
</tr>
</tbody>
</table>
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
Immediately call a poison control center or doctor. 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 (CO₂).

Large Fire
Water spray, Foam.

Unsuitable extinguishing media
Avoid heavy hose streams.

Specific Hazards Arising from the Chemical Hazardous Combustion Products
None known

The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as: Hydrogen fluoride, Nitrogen oxides (NOx), Carbon monoxide, 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. Isolate fire area. Evaluate upwind. As in any fire, wear self-contained breathing apparatus and full protective gear. Dike to prevent runoff.

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
Prevent further leakage or spillage if safe to do so. Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. To clean the floor and all objects contaminated by this material, use damp cloth. Place used cleaning materials into closed receptacles.

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.

Storage
Keep away from open flames, hot surfaces and sources of ignition. Keep in a dry, cool and well-ventilated place. Keep out of reach of children and animals. Keep/store only in original container.

Incompatible products
None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin (56-81-5)</td>
<td>-</td>
<td>TWA: 15 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>British Columbia</th>
<th>Quebec</th>
<th>Ontario TWAEV</th>
<th>Alberta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin (56-81-5)</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>-</td>
<td>TWA: 10 mg/m³</td>
</tr>
</tbody>
</table>

Appropriate engineering controls
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. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and Body Protection
Wear suitable protective clothing. Protective shoes or boots.

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
In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

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
Lucento Fungicide

Appearance
Suspension, Soluble concentrate

Physical State
Liquid

Color
No information available

Odor
No information available

Odor threshold
No information available

pH
5.27 @23.5°C (1% dilution in water)

Melting point/freezing point
142.9 °C / 289.2 °F

Boiling Point/Range
Decomposes @210°C (410°F)

Flash point
> 100 °C / > 212 °F

Evaporation Rate
No information available

Flammability (solid, gas)
Not highly flammable

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
9.9010 lb/gal (1.1864 g/mL)

Specific gravity
No information available

Water solubility
Miscible with water

Solubility in other solvents
The product label will not carry instructions for dilution with any organic liquid.

Partition coefficient
No information available

Autoignition temperature
>403 °C

Decomposition temperature
No information available

Viscosity, kinematic
897.1 centistokes @23.1°C
732.3 centistokes @ 43.1°C

Viscosity, dynamic
897.1 centistokes @23.1°C
732.3 centistokes @ 43.1°C

Explosive properties
No information available

Oxidizing properties
Based on known chemistry, neither the active ingredients nor the inert ingredients are considered to be either strong oxidizing or reducing agents.

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
None known

Incompatible materials
None known.

Hazardous Decomposition Products
See Section 5 for more information.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral 1030 mg/kg (rat)
LD50 Dermal > 5000 mg/kg (rat)
LC50 Inhalation > 2.14 mg/L 4 hr (rat)

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flutriafol</td>
<td>= 1140 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(76674-21-0)</td>
<td>(Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerin</td>
<td>= 12600 mg/kg</td>
<td>&gt; 10 g/kg</td>
<td>&gt; 570 mg/m³</td>
</tr>
<tr>
<td>(56-81-5)</td>
<td>(Rat)</td>
<td>(Rabbit)</td>
<td>(Rat) 1 h</td>
</tr>
</tbody>
</table>
Information on toxicological effects

Symptoms
To our knowledge, adverse effects in humans have not been reported. When fed to animals at high dosage, the substance 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
The product contains no ingredients known to be mutagenic

Carcinogenicity
Contains no ingredient listed as a carcinogen

Reproductive toxicity
The product contains no ingredients known to have adverse effects on reproduction.

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

Aspiration hazard
The product does not present an aspiration pneumonia hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Very toxic to aquatic life

Persistence and degradability
Flutriafol, Bixafen: Not readily biodegradable.

Bioaccumulation
Flutriafol: Not expected to bioaccumulate. Bixafen has a small potential to bioaccumulate, but is metabolized relatively rapidly.

Mobility
Flutriafol, Bixafen: Low mobility; not expected to reach groundwater.

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 Packaging
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
NOT REGULATED

TDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

IMDG/IMO
NOT REGULATED

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

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute health hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Chronic health hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Fire hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

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):

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium hydroxide</td>
<td>1000 lb</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1336-21-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetic Acid</td>
<td>5000 lb</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>64-19-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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):

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Hazardous Substances RQs</th>
<th>Extremely Hazardous Substances RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium hydroxide</td>
<td>1000 lb</td>
<td></td>
</tr>
<tr>
<td>1336-21-6</td>
<td>454 kg</td>
<td></td>
</tr>
<tr>
<td>Acetic Acid</td>
<td>5000 lb</td>
<td>2270 kg</td>
</tr>
<tr>
<td>64-19-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. This pesticide is toxic to fish and invertebrates.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>56-81-5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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
Acetic acid ethenyl ester, polymer with oxirane 25820-49-9 | X | X | | X | | X | X |

### CANADA

**WHMIS Statement**
This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

### 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>Health Hazards</td>
<td>Flammability</td>
<td>Physical hazard</td>
<td>Personal Protection</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

*Indicates a chronic health hazard.

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

**Revision date:** 2018-12-04
**Reason for revision:** Initial Release

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**Prepared By:**
FMC Corporation

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End of Safety Data Sheet