SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier
Trade name LUNA® SENSATION
Product code (UVP) 06033007
SDS Number 102000012886
EPA Registration No. 264-1090

Relevant identified uses of the substance or mixture and uses advised against
Use Fungicide
Restrictions on use See product label for restrictions.

Information on manufacturer
Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577
Product Information Telephone Number 1-866-99BAYER (1-866-992-2937)
SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Acute toxicity (Oral): Category 4

Signal word: Warning

Hazard statements
Harmful if swallowed.

Precautionary statements
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
Rinse mouth.
Dispose of contents/container in accordance with local regulation.
Other hazards
No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Average % by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluopyram</td>
<td>658066-35-4</td>
<td>21.40</td>
</tr>
<tr>
<td>Trifloxystrobin</td>
<td>141517-21-7</td>
<td>21.40</td>
</tr>
<tr>
<td>1,2-Propanediol</td>
<td>57-55-6</td>
<td>8.70</td>
</tr>
<tr>
<td>Polyethylene-polypropylene copolymer</td>
<td>9003-11-6</td>
<td>2.00</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice
When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

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 physician or poison control center immediately.

Skin contact
Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

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 physician or poison control center immediately.

Ingestion
Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms
No symptoms known or expected.

Indication of any immediate medical attention and special treatment needed

Treatment
Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.
SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable
High volume water jet

Special hazards arising from the substance or mixture
In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Carbon monoxide (CO), Nitrogen oxides (NOx)

Advice for firefighters

Special protective equipment for fire-fighters
Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information
Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point
> 100 °C

Autoignition temperature
370 °C / 698 °F

Lower explosion limit
no data available

Upper explosion limit
no data available

Explosivity
Not explosive 92/69/EEC, A.14 / OECD 113

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions
Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice
Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

Reference to other sections
Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.
SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Hygiene measures

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Protect from freezing. Keep away from direct sunlight.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluopyram</td>
<td>658066-35-4</td>
<td>0.34 mg/m³ (OES BCS)</td>
<td></td>
<td>OES BCS*</td>
</tr>
<tr>
<td>Trifloxystrobin</td>
<td>141517-21-7</td>
<td>2.7 mg/m³ (TWA)</td>
<td></td>
<td>OES BCS*</td>
</tr>
<tr>
<td>1,2-Propanediol (Vapor.)</td>
<td>57-55-6</td>
<td>1000ug/m³ (ST ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
</tr>
<tr>
<td>1,2-Propanediol (Vapor.)</td>
<td>57-55-6</td>
<td>50ppb (AN ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
</tr>
<tr>
<td>1,2-Propanediol (Vapor.)</td>
<td>57-55-6</td>
<td>500ppb (ST ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
</tr>
<tr>
<td>1,2-Propanediol (Vapor.)</td>
<td>57-55-6</td>
<td>100ug/m³ (AN ESL)</td>
<td>02 2013</td>
<td>TX ESL</td>
</tr>
<tr>
<td>1,2-Propanediol (Aerosol.)</td>
<td>57-55-6</td>
<td>10 mg/m³ (TWA)</td>
<td>2010</td>
<td>WEEL</td>
</tr>
</tbody>
</table>

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.
Respiratory protection
When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection
Chemical resistant nitrile rubber gloves

Eye protection
Safety glasses with side-shields

Skin and body protection
Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
white to beige

Physical State
suspension

Odor
characteristic

Odour Threshold
no data available

pH
5.0 - 8.0 at 100 % (23 °C)

Vapor Pressure
no data available

Vapor Density (Air = 1)
no data available

Density
ca. 1.17 g/cm³ at 20 °C

Evaporation rate
no data available

Boiling Point
no data available

Melting / Freezing Point
no data available

Water solubility
suspensive

Minimum Ignition Energy
not applicable

Decomposition temperature
Stable under normal conditions.

Partition coefficient: n-octanol/water
no data available

Viscosity
240 - 350 mPa.s at 20 °C Velocity gradient 20 /s

Flash point
> 100 °C

Autoignition temperature
370 °C / 698 °F

Lower explosion limit
no data available

Upper explosion limit
no data available

Explosivity
Not explosive
92/69/EEC, A.14 / OECD 113
Other information

Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition
Stable under normal conditions.

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No hazardous reactions when stored and handled according to prescribed instructions.

Conditions to avoid
Extremes of temperature and direct sunlight.

Incompatible materials
Store only in the original container.

Hazardous decomposition products
No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes
Skin Absorption, Ingestion, Inhalation, Eye contact

Immediate Effects

Skin
Harmful if absorbed through skin.

Ingestion
Harmful if swallowed.

Inhalation
Harmful if inhaled.

Information on toxicological effects

Acute oral toxicity
LD50 (female rat) 2,000 mg/kg

Acute inhalation toxicity
LC50 (rat) > 1.7 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
Highest attainable concentration.
No deaths
LC50 (rat) > 6.8 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.

Acute dermal toxicity
LD50 (rat) > 2,000 mg/kg

Skin irritation
No skin irritation (rabbit)

Eye irritation
No eye irritation (rabbit)

Sensitisation
Non-sensitizing. (mouse)
OECD Test Guideline 429, local lymph node assay (LLNA)
Assessment repeated dose toxicity
Fluopyram did not cause specific target organ toxicity in experimental animal studies. Trifloxystrobin did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity
Fluopyram was not mutagenic or genotoxic in a battery of in vitro and in vivo tests. Trifloxystrobin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity
Fluopyram caused at high dose levels an increased incidence of tumours in rats in the following organ(s): liver. Fluopyram caused at high dose levels an increased incidence of tumours in mice in the following organ(s): thyroid. The tumours seen with Fluopyram were caused through a non-genotoxic mechanism, which is not relevant at low doses. The mechanism that triggers these tumours is not relevant to humans. Trifloxystrobin was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH
None.

NTP
None.

IARC
None.

OSHA
None.

Assessment toxicity to reproduction
Fluopyram caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Fluopyram is related to parental toxicity. Trifloxystrobin caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Trifloxystrobin is related to parental toxicity.

Assessment developmental toxicity
Fluopyram caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Fluopyram are related to maternal toxicity. Trifloxystrobin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Trifloxystrobin are related to maternal toxicity.

Further information
Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish
LC50 (Rainbow trout (Oncorhynchus mykiss)) 0.091 mg/l
Exposure time: 96 h

Toxicity to aquatic invertebrates
EC50 (Water flea (Daphnia magna)) 0.086 mg/l
Exposure time: 48 h

Toxicity to aquatic plants
IC50 (Pseudokirchneriella subcapitata) 0.292 mg/l
Growth rate; Exposure time: 72 h

Biodegradability
Fluopyram: ; not rapidly biodegradable
Trifloxystrobin: ; not rapidly biodegradable

Koc
Fluopyram: Koc: 279
Trifloxystrobin: Koc: 2377

Bioaccumulation
Fluopyram: Bioconcentration factor (BCF) 18; Does not bioaccumulate.
Trifloxystrobin: Bioconcentration factor (BCF) 431; Does not bioaccumulate.

Mobility in soil
Fluopyram: Moderately mobile in soils
Trifloxystrobin: Slightly mobile in soils

Additional ecological information
No other effects to be mentioned.

Environmental precautions
Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.
Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.
Do not apply when weather conditions favor runoff or drift.
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.
Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product
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.

Contaminated packaging
Do not re-use empty containers.
Triple rinse containers.
Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities.
If burned, stay out of smoke.
Follow advice on product label and/or leaflet.
SECTION 14: TRANSPORT INFORMATION

49CFR
Not dangerous goods / not hazardous material

IMDG
UN number 3082
Class 9
Packaging group III
Marine pollutant YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRIFLOXYSTROBIN SOLUTION)

IATA
UN number 3082
Class 9
Packaging group III
Environm. Hazardous Mark YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRIFLOXYSTROBIN SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 264-1090
US Federal Regulations
TSCA list
1,2-Propanediol 57-55-6
Polyethylene-polypropylene copolymer 9003-11-6
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D) None.
SARA Title III - Section 302 - Notification and Information None.
SARA Title III - Section 313 - Toxic Chemical Release Reporting None.
US States Regulatory Reporting
CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause...
reproductive harm.

**US State Right-To-Know Ingredients**
- 1,2-Propanediol 57-55-6 MN

**Canadian Regulations**
- **Canadian Domestic Substance List**
  - Polyethylene-polypropylene copolymer 9003-11-6

**Environmental**
- **CERCLA**
  - None.
- **Clean Water Section 307 Priority Pollutants**
  - None.
- **Safe Drinking Water Act Maximum Contaminant Levels**
  - None.

**EPA/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 required on the pesticide label:

**Signal word:** Caution!

**Hazard statements:**
- Harmful if swallowed, inhaled or absorbed through the skin.
- Avoid contact with skin, eyes and clothing.
- Avoid inhalation of vapour or mist.
- Wash thoroughly with soap and water after handling.

**SECTION 16: OTHER INFORMATION**

**NFPA 704 (National Fire Protection Association):**
- Health - 2
- Flammability - 1
- Instability - 0
- Others - none

- Health - 2
- Flammability - 1
- Physical Hazard - 0
- PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

**Reason for Revision:** Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

**Revision Date:** 06/11/2014

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.