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

Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>LUNA® TRANQUILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code (UVP)</td>
<td>84445908</td>
</tr>
<tr>
<td>SDS Number</td>
<td>102000017503</td>
</tr>
<tr>
<td>EPA Registration No.</td>
<td>264-1085</td>
</tr>
</tbody>
</table>

Relevant identified uses of the substance or mixture and uses advised against

Use Fungicide

Restrictions on use See product label for restrictions.

Information on supplier

Supplier Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

Responsible Department Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577

Product Information Telephone Number 1-866-99BAYER (1-866-992-2937)

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Hazards Not Otherwise Classified (HNOC)
No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Concentration % by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluopyram</td>
<td>658066-35-4</td>
<td>11.3</td>
</tr>
<tr>
<td>Pyrimethanil</td>
<td>53112-28-0</td>
<td>33.8</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
To date no symptoms are known.

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 cyanide (hydrocyanic acid), Hydrogen chloride (HCl), Hydrogen fluoride, Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx)

Advice for firefighters
Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information
Keep out of smoke. Fight fire from upwind position. Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.
SAFETY DATA SHEET

LUNA® TRANQUILITY
Version 3.1 / USA
102000017503

Flash point
No flash point - Determination conducted up to the boiling point.

Auto-ignition temperature
560 °C / 1040 °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. Contaminated soil may have to be removed and disposed.

Additional advice
Use personal protective equipment. If the product is accidentally spilled, 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
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 and put on clean clothing. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

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. Keep away from direct sunlight. Store in original container. Protect from freezing.
Advice on common storage  Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSOINAL 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 (TWA)</td>
<td></td>
<td>OES BCS*</td>
</tr>
<tr>
<td>Pyrimethanil</td>
<td>53112-28-0</td>
<td>5.6 mg/m³ (TWA)</td>
<td></td>
<td>OES BCS*</td>
</tr>
</tbody>
</table>

*OES BCS: Internal Bayer AG, Crop Science Division "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 Tightly fitting safety goggles
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 - 8.5 (100 %) (23 °C)
Vapor Pressure No data available
Vapor Density (Air = 1) No data available
Density ca. 1.11 g/cm³ (20 °C)
Evaporation rate No data available
Boiling Point 99 °C / 210.2 °F (1,006 hPa)
Melting / Freezing Point  No data available
Water solubility  No data available
Minimum Ignition Energy  Not applicable
Decomposition temperature  No data available
Partition coefficient: n-octanol/water  No data available
Viscosity  220 - 350 mPa.s (20 °C) Velocity gradient 20 /s
Flash point  No flash point - Determination conducted up to the boiling point.
Auto-ignition temperature  560 °C / 1040 °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  No data available
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  No data available
Hazardous decomposition products  No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes  Ingestion, Inhalation, Skin contact
Immediate Effects
Eye  May cause eye irritation.
Skin  Harmful if absorbed through skin.
Ingestion  Harmful if swallowed.
Inhalation Harmful if inhaled.

Information on toxicological effects

<table>
<thead>
<tr>
<th>Toxicological Effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>LD50 (Rat) &gt; 2,000 mg/kg</td>
</tr>
<tr>
<td>Acute inhalation toxicity</td>
<td>LC50 (Rat) &gt; 1.973 mg/l Exposure time: 4 h</td>
</tr>
<tr>
<td></td>
<td>Determined in the form of liquid aerosol.</td>
</tr>
<tr>
<td></td>
<td>Highest attainable concentration.</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>LD50 (Rat) &gt; 2,000 mg/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>No skin irritation (Rabbit)</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>No eye irritation (Rabbit)</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Skin: Non-sensitizing. (Mouse)</td>
</tr>
<tr>
<td></td>
<td>OECD Test Guideline 429, local lymph node assay (LLNA)</td>
</tr>
</tbody>
</table>

Assessment STOT Specific target organ toxicity – repeated exposure

Fluopyram did not cause specific target organ toxicity in experimental animal studies. Pyrimethanil did not cause any significant specific adverse effects or target organ toxicity in subchronic toxicity studies.

Assessment mutagenicity

Fluopyram was not mutagenic or genotoxic in a battery of in vitro and in vivo tests. Pyrimethanil 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. Pyrimethanil was not carcinogenic in lifetime feeding studies in mice. Pyrimethanil caused at high dose levels an increased incidence of tumours in rats in the following organ(s): Thyroid. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.

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. Pyrimethanil did not cause reproductive toxicity in a two-generation study in rats.

**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. Pyrimethanil did not cause developmental toxicity in rats and rabbits.

**Further information**

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

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### SECTION 12: ECOLOGICAL INFORMATION

**Toxicity to fish**

- LC50 (Oncorhynchus mykiss (rainbow trout)) 10.56 mg/l
  - Exposure time: 96 h
  - The value mentioned relates to the active ingredient pyrimethanil.

- LC50 (Oncorhynchus mykiss (rainbow trout)) > 2 mg/l
  - Exposure time: 96 h
  - The value mentioned relates to the active ingredient fluopyram.
  - No acute toxicity was observed at its limit of water solubility.

**Toxicity to aquatic invertebrates**

- EC50 (Daphnia magna (Water flea)) 2.9 mg/l
  - Exposure time: 48 h
  - The value mentioned relates to the active ingredient pyrimethanil.

- EC50 (Daphnia magna (Water flea)) > 20 mg/l
  - Exposure time: 48 h
  - The value mentioned relates to the active ingredient fluopyram.
  - No acute toxicity was observed at its limit of water solubility.

**Toxicity to aquatic plants**

- EC50 (Raphidocelis subcapitata (freshwater green alga)) 8.9 mg/l
  - Growth rate; Exposure time: 72 h
  - The value mentioned relates to the active ingredient fluopyram.

- IC50 (Raphidocelis subcapitata (freshwater green alga)) 1.2 mg/l
  - Exposure time: 96 h
  - The value mentioned relates to the active ingredient pyrimethanil.

**Biodegradability**

- Fluopyram: Not rapidly biodegradable
- Pyrimethanil: Not rapidly biodegradable

**Koc**

- Fluopyram: Koc: 279
- Pyrimethanil: Koc: 301

**Bioaccumulation**

- Fluopyram: Bioconcentration factor (BCF) 18
  - Does not bioaccumulate.
  - Pyrimethanil:
Does not bioaccumulate.

**Mobility in soil**
- Fluopyram: Moderately mobile in soils
- Pyrimethanil: Moderately mobile in soils

**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.
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.
Do not apply when weather conditions favor runoff or drift.
Apply this product as specified on the label.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Product**
Dispose in accordance with all local, state/provincial and federal regulations.
Never place unused product down any indoor or outdoor drain.

**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.

**RCRA Information**
Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user’s responsibility. RCRA classification may apply.

**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. (PYRIMETHANIL SOLUTION)

**IATA**
- UN number: 3082
- Class: 9
- Packaging group: III
- Environm. Hazardous Mark: YES
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PYRIMETHANIL 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.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 264-1085
US Federal Regulations
TSCA list
Water 7732-18-5
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)
Not applicable.
SARA Title III - Section 302 - Notification and Information
None.
SARA Title III - Section 313 - Toxic Chemical Release Reporting
Magnesium nitrate 10377-60-3
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, RI
Magnesium nitrate 10377-60-3 CT, NJ, RI
Glycerine 56-81-5 MN, RI
Sodium hydroxide 1310-73-2 CA, CT, IL, MN, NJ, RI
Glutaral 111-30-8 CA, MN, RI

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 breathing spray mist.
Remove and wash contaminated clothing before re-use.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms
49CFR Code of Federal Regulations, Title 49
ACGIH US. ACGIH Threshold Limit Values
ATE Acute toxicity estimate
CAS-Nr. Chemical Abstracts Service number
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
EINECS European inventory of existing commercial substances
ELINCS European list of notified chemical substances
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IMDG International Maritime Dangerous Goods
N.O.S. Not otherwise specified
NTP US. National Toxicology Program (NTP) Report on Carcinogens
OECD Organization for Economic Co-operation and Development
TDG Transportation of Dangerous Goods
TWA Time weighted average
UN United Nations
WHO World health organisation

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

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

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

Reason for Revision: The following sections have been revised: Section 9: Physical and Chemical Properties. Reviewed and updated for general editorial purposes.

Revision Date: 05/20/2019

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