



Material Safety Data Sheet

LUNA® TRANQUILITY

MSDS Number: 102000017503

MSDS Version 2.1

Revision Date: 02/01/2012

Print Date: 02/02/2012

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name	LUNA® TRANQUILITY
MSDS Number	102000017503
Product code (UVP)	79111894
EPA Registration No.	264-1085
Product Use	Fungicide

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

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-866-99BAYER (1-866-992-2937)

SECTION 2. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! 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.

Physical State	suspension
Odor	characteristic
Appearance	white to beige
Exposure routes	Ingestion, Inhalation, Skin contact
Immediate Effects	
Eye	May cause eye irritation. Avoid contact with eyes.
skin	Harmful if absorbed through skin. Avoid contact with skin and clothing.
Ingestion	Harmful if swallowed. Do not take internally.
Inhalation	Harmful if inhaled. Avoid breathing spray mist.
Chronic or Delayed Long-Term	This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.



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Potential Environmental Effect Toxic to fish and aquatic invertebrates. This product may impact surface water quality due to runoff.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Fluopyram	658066-35-4	11.30
Pyrimethanil	53112-28-0	33.80
1,2-Propanediol	57-55-6	5.40

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	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.
skin	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.
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.
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.
Notes to physician Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	No flash point - Determination conducted up to the boiling point.
Autoignition temperature	560 °C / 1040 °F
Lower Flammability Limit	no data available



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Upper Flammability Limit	no data available
Explosiveness	Not explosive 92/69/EEC, A.14 / OECD 113
Fire and Explosion Hazards	In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid) Carbon monoxide (CO) Nitrogen oxides (NOx)
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	High volume water jet
Fire Fighting Instructions	Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses. In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

SECTION 7. HANDLING AND STORAGE

Handling procedures	Use only in area provided with appropriate exhaust ventilation. No special precautions required.
Storing Procedures	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 food, drink and animal feedingstuffs.



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Work/Hygienic Procedures Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Wash hands immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection Train employees in safe use of the product. Follow all label instructions.

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.

Eye/Face Protection Safety glasses with side-shields

Hand protection Chemical resistant nitrile rubber gloves

Body Protection Wear long-sleeved shirt and long pants and shoes plus socks.

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.

Exposure Limits

Pyrimethanil 1,2-Propanediol	53112-28-0	OES BCS*	TWA	5.6 mg/m3
		WEEL	TWA	10 mg/m3
	57-55-6	TX ESL	ST ESL	20 ug/m3
		TX ESL	ST ESL	500 ppm
		TX ESL	AN ESL	2 ug/m3
		TX ESL	AN ESL	50 ppm

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance white to beige

Physical State suspension

Odor characteristic

pH 5.0 - 9.0 (100 %) at 23 °C

Vapor Pressure no data available



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Vapor Density (Air = 1)	no data available
Density	ca. 1.11 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	no data available
Minimum Ignition Energy	no data available
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	150 - 300 mPa.s at 20 °C Velocity gradient 20 /s

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	no data available
Incompatibility	no data available
Hazardous Decomposition Products	Thermal decomposition can lead to release of: Nitrogen oxides (NO _x) Hydrogen cyanide (hydrocyanic acid) Carbon monoxide
Hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Chemical Stability	Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredients, fluopyram and pyrimethanil.

Acute oral toxicity	rat: LD50: > 2,000 mg/kg
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Acute dermal toxicity	rat: LD50: > 2,000 mg/kg
Acute inhalation toxicity	rat: LC50: > 1.973 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. Highest attainable concentration. rat: LC50: > 8.0 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
Skin irritation	rabbit: No skin irritation
Eye irritation	rabbit: No eye irritation
Sensitisation	mouse: Non-sensitizing. OECD Test Guideline 429, local lymph node assay (LLNA)
Chronic toxicity	Fluopyram caused specific target organ toxicity in the liver in experimental animal studies. The effect is due to an overwhelmed metabolic capacity of the liver at high dose levels. Pyrimethanil did not cause any significant specific adverse effects or target organ toxicity in subchronic toxicity studies.

Assessment Carcinogenicity

Fluopyram caused an increased incidence of tumours in the liver of rats at high dose levels.

Fluopyram caused an increased incidence of tumours in the thyroid of mice. The tumours seen with Fluopyram were caused through a non-genotoxic mechanism, which is not relevant at low doses. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.

Pyrimethanil was not carcinogenic in lifetime feeding studies in mice. Pyrimethanil caused an increased incidence of tumours in the thyroid of rats at high dose levels. 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.

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

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.

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.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish

Rainbow trout (*Oncorhynchus mykiss*)

LC50: 10.56 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient pyrimethanil.

Rainbow trout (*Oncorhynchus mykiss*)

LC50: > 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 plants

Pseudokirchneriella subcapitata

Growth rate

EC50: 8.9 mg/l

Exposure time: 72 h

The value mentioned relates to the active ingredient fluopyram.

Pseudokirchneriella subcapitata

IC50: 1.2 mg/l

Exposure time: 96 h

The value mentioned relates to the active ingredient pyrimethanil.

Acute Toxicity to Aquatic Invertebrates

Water flea (*Daphnia magna*)

EC50: 2.9 mg/l

Exposure time: 48 h

The value mentioned relates to the active ingredient pyrimethanil.

Water flea (*Daphnia magna*)

EC50: > 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.



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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. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance

Pesticide wastes may be toxic. 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.

Container Disposal

Not completely emptied packagings should be disposed of as hazardous waste.

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
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PYRIMETHANIL SOLUTION)

IATA

UN-Number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Description of the goods	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.



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SECTION 15. REGULATORY INFORMATION

EPA Registration No. 264-1085

US Federal Regulations

TSCA list

1,2-Propanediol 57-55-6

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, RI

Canadian Regulations

Canadian Domestic Substance List

1,2-Propanediol 57-55-6

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Instability - 1 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

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

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



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Reason for Revision: Reviewed and updated for general editorial purposes.

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