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

Product identifier
Trade name VELUM® PRIME
Product code (UVP) 86243776
SDS Number 102000036907
EPA Registration No. 264-1078

Relevant identified uses of the substance or mixture and uses advised against
Use Fungicide, Nematicide
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>41.5</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 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
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

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
There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

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

Further information
Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point
> 100 °C
SAFETY DATA SHEET

VELUM® PRIME
Version 1.0 / USA
Print Date: 12/06/2018

Auto-ignition temperature: No data available
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. 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: 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 and put on clean clothing.

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.
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 (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
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 (100 %) (23 °C)

Vapor Pressure
No data available

Vapor Density (Air = 1)
No data available

Density
c. 1.20 g/cm³ (20 °C)

Evaporation rate
No data available

Boiling Point
No data available

Melting / Freezing Point
No data available

Water solubility
dispersible

Minimum Ignition Energy
Not applicable
Decomposition temperature: No data available
Partition coefficient: n-octanol/water: Not applicable
Viscosity: 200 - 400 mPa.s  Velocity gradient 20 /s
Flash point: > 100 °C
Auto-ignition temperature: No data available
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, Skin Absorption, Inhalation, Eye contact
Immediate Effects
Skin: The product may be absorbed through the skin. Harmful if absorbed through skin.
Ingestion: Harmful if swallowed.
Information on toxicological effects
Acute oral toxicity: LD50 (Rat) > 2,000 mg/kg
Acute inhalation toxicity: LC50 (Rat) > 1.911 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
Highest attainable concentration.

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

**Skin corrosion/irritation**
No skin irritation (Rabbit)

**Serious eye damage/eye irritation**
No eye irritation (Rabbit)

**Respiratory or skin sensitisation**
Skin: Non-sensitizing. (Mouse)
OECD Test Guideline 429, local lymph node assay (LLNA)

**Assessment STOT Specific target organ toxicity – repeated exposure**
Fluopyram 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.

**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.

**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.

**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.

**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 (Cyprinus carpio (Carp)) > 200 mg/l
Exposure time: 96 h

Toxicity to aquatic invertebrates
EC50 (Daphnia magna (Water flea)) 141 mg/l
Exposure time: 48 h

Toxicity to aquatic plants
EC50 (Raphidocelis subcapitata (freshwater green alga)) 14.6 mg/l
Growth rate; Exposure time: 72 h
EC50 (Lemna gibba (gibbous duckweed)) 8.1 mg/l
Growth rate; Exposure time: 7 d
Test conducted with a similar formulation.

Biodegradability
Fluopyram:
Not rapidly biodegradable

Koc
Fluopyram: Koc: 279

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

Mobility in soil
Fluopyram: Moderately 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.
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

Waste treatment methods
Product
Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law.
It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.

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. (FLUOPYRAM SOLUTION)

**IATA**
- UN number: 3082
- Class: 9
- Packaging group: III
- Environm. Hazardous Mark: YES
- Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUOPYRAM 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.** 264-1078
**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.
SAFETY DATA SHEET

VELUM® Prime
Version 1.0 / USA

SARA Title III - Section 302 - Notification and Information
Vinyl acetate 108-05-4

SARA Title III - Section 313 - Toxic Chemical Release Reporting
Vinyl acetate 108-05-4 0.1%
Magnesium nitrate 10377-60-3
Toluene 108-88-3 25000lbs

US States Regulatory Reporting
CA Prop 65
This product does not contain any substances known to the State of California to cause cancer.

This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
Toluene 108-88-3 Developmental toxin.

US State Right-To-Know Ingredients
1,2-Propanediol 57-55-6 MN, RI
Vinyl acetate 108-05-4 CA, CT, IL, LA, MN, NJ, RI
Glycerine 56-81-5 MN, RI
Magnesium nitrate 10377-60-3 CT, NJ, RI
Sodium hydroxide 1310-73-2 CA, CT, IL, MN, NJ, RI
Glutaral 111-30-8 CA, MN, RI
Toluene 108-88-3 CA, CT, IL, MI, MN, NJ, 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 or absorbed through skin.
Avoid contact with skin, eyes and clothing.
Wash thoroughly with soap and water after handling.

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 - 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: New Safety Data Sheet due to change in numbering scheme.

Revision Date: 12/06/2018

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.