



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695

SDS Version 1.1

Revision Date: 02/07/2014

Print Date: 02/11/2014

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name	VIOS™ G3
SDS Number	102000016695
Product code (UVP)	79279213
PCP Registration No.	29643
Product Use	Herbicide

Bayer CropScience Inc
 #200, 160 Quarry Park Blvd, SE
 Calgary, Alberta T2C 3G3
 Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-888-283-6847

SECTION 2. HAZARDS IDENTIFICATION

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

Emergency Overview Caution! Harmful if swallowed or absorbed through skin. Moderate eye irritation. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

Physical State	Liquid
Odor	characteristic
Appearance	white to light beige
Exposure routes	Eye contact, Skin contact, Ingestion
Immediate Effects	
Eye	Moderate eye irritation.
Skin	May cause slight irritation. Harmful if absorbed through skin.
Ingestion	Harmful if swallowed.
Chronic or Delayed Long-Term	This product or its components may have target organ effects.
Potential Environmental Effect	This product may cause adverse effects on non-target plants. Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment. Toxic to wildlife.



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695
SDS Version 1.1

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Tembotrione	335104-84-2	28.30
Thiencarbazone-methyl	317815-83-1	5.60
Isoxadifen-ethyl	163520-33-0	10.90
Glycerine	56-81-5	11.50
Polyarylphenylether sulfate, ammonium salt	119432-41-6	3.50

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	
Signs and Symptoms	No symptoms known or expected.
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	no data available
Lower Flammability Limit	no data available



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695
SDS Version 1.1

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: Carbon monoxide (CO) Hydrogen cyanide (hydrocyanic acid) Hydrogen fluoride Hydrogen chloride (HCl) Nitrogen oxides (NOx) Sulphur oxides
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	None known.
Fire Fighting Instructions	Keep out of smoke. Fight fire from upwind position. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Do not allow run-off from fire fighting to enter drains or water courses. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

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. Do not allow product to contact non-target plants.

SECTION 7. HANDLING AND STORAGE

Handling procedures	Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.
Storing Procedures	Store in a cool, dry place and in such a manner as to prevent cross



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695
SDS Version 1.1

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.

Work/Hygienic Procedures

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.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection	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	Chemical resistant goggles must be worn.
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

Tembotrione	335104-84-2	OES BCS*	TWA	0.15 mg/m3
Thiencarbazone-methyl	317815-83-1	OES BCS*	OES BCS	10 mg/m3
Isoxadifen-ethyl	163520-33-0	OES BCS*	TWA	1 mg/m3
Glycerine	56-81-5	CAD AB OEL	TWA	10 mg/m3
		CAD BC OEL	TWA	3 mg/m3
		CAD BC OEL	TWA	10 mg/m3
		CAD ON OEL	TWAEV	10 mg/m3
		CAD SK OEL	8 HR ACL	10 mg/m3
		CAD SK OEL	15 MIN ACL	20 mg/m3
		OEL (QUE)	TWA	10 mg/m3

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



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695
SDS Version 1.1

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white to light beige
Physical State	Liquid
Odor	characteristic
pH	2.8 - 3.8 (10 %) at 23 °C
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	1.22 g/cm ³ at 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	Stable under normal conditions.
Partition coefficient: n-octanol/water	no data available
Viscosity	950 - 1,400 cps 300 - 500 mPa.s at 20 °C Velocity gradient 20 /s 120 - 200 mPa.s at 20 °C Velocity gradient 100 /s
Other information	Further safety related physical-chemical data are not known.

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatibility	Store only in the original container.



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695
SDS Version 1.1

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

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

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, Thien carbazono-methyl and Tembotrione, as well as, the herbicide safener, Isoxadifen-ethyl.

Acute oral toxicity female rat: LD50: > 2,000 mg/kg

Acute dermal toxicity male/female combined rat: LD50: > 2,000 mg/kg

Acute inhalation toxicity rat: LC50: > 2.0 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
highest concentration tested
No deaths
During intended and foreseen applications, no respirable aerosol is formed.

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: Slight irritation

Eye irritation rabbit: Mild eye irritation.

Sensitisation guinea pig: Non-sensitizing.
OECD Test Guideline 406, Buehler test

Chronic toxicity Tembotrione did not cause specific target organ toxicity in experimental animal studies.

Thien carbazono-methyl did not cause specific target organ toxicity in experimental animal studies.

Isoxadifen-ethyl did not cause specific target organ toxicity in experimental animal studies.

Assessment Carcinogenicity

Tembotrione caused at high dose levels an increased incidence of tumours in rats in the following organ(s): cornea. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695
SDS Version 1.1

Thiencarbazone-methyl was not carcinogenic in a lifetime feeding study in rats. Thiencarbazone-methyl caused at high dose levels an increased incidence of tumours in mice in the following organ(s): urinary bladder. The tumours seen with Thiencarbazone-methyl were caused through the chronic irritation due to the presence of bladder stones.

Isoxadifen-ethyl was not carcinogenic in lifetime feeding studies in rats and mice.

- ACGIH**
None.
- NTP**
None.
- IARC**
None.
- OSHA**
None.

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

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

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

Developmental Toxicity Tembotrione caused developmental toxicity only at dose levels toxic to the dams. Tembotrione caused a delayed ossification of foetuses, an increased incidence of variations. The developmental effects seen with Tembotrione are related to maternal toxicity.

Thiencarbazone-methyl did not cause developmental toxicity in rats and rabbits.

Isoxadifen-ethyl did not cause developmental toxicity in rats and rabbits.

Mutagenicity Tembotrione was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Thiencarbazone-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Isoxadifen-ethyl 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: 6.06 mg/l
Exposure time: 96 h

Toxicity to aquatic plants *Pseudokirchneriella subcapitata*



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695
SDS Version 1.1

Growth rate
EC50: 40.6 mg/l
Exposure time: 72 h

Lemna gibba (duckweed)
Growth rate
EC50: 0.0181 mg/l
Exposure time: 7 d

Acute Toxicity to Aquatic Invertebrates Water flea (Daphnia magna)
EC50: 83.1 mg/l
Exposure time: 48 h

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 or runoff from treated areas may adversely affect non-target plants. Apply this product as specified on the label.

Ecological Information No other effects to be mentioned.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations.

Container Disposal Follow advice on product label and/or leaflet. Triple rinse containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke.

SECTION 14. TRANSPORT INFORMATION

TDG Not dangerous goods / not hazardous material

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. (THIENCARBAZONE-METHYL, ISOXADIFEN-ETHYL SOLUTION)**



Safety Data Sheet

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IATA

UN number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIENCARBAZONE-METHYL, ISOXADIFEN-ETHYL 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

PCP Registration No. 29643

US Federal Regulations

TSCA list

Isxadifen-ethyl	163520-33-0
Glycerine	56-81-5

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

Isxadifen-ethyl	163520-33-0
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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

Glycerine	56-81-5	MN
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Canadian Regulations

Canadian Domestic Substance List

Glycerine	56-81-5
Polyarylphenylether sulfate, ammonium salt	119432-41-6

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations



Safety Data Sheet

VIOS™ G3

SDS Number: 102000016695
SDS Version 1.1

European Inventory of Existing Commercial Substances (EINECS)

Glycerine

56-81-5

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2

Flammability - 1

Instability - 1

Others - none

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

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: Reviewed and updated for general editorial purposes.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 02/07/2014

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