

SAFETY DATA SHEET



VIOS™ G3

Version 2.0 / CDN
102000016695

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Revision Date: 10/03/2018
Print Date: 10/04/2018

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

Product identifier

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

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

Use Herbicide
Restrictions on use See product label for restrictions.

Information on supplier

Supplier Bayer CropScience Inc
#200, 160 Quarry Park Blvd, SE
Calgary, Alberta T2C 3G3
Canada
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 1-888-283-6847

SECTION 2: HAZARDS IDENTIFICATION

Classified in accordance with Part 2 of the Hazardous Products Regulations
Reproductive toxicity, Specific target organ toxicity - repeated exposure: Category 2

Labelling in accordance with Part 3 of the Hazardous Products Regulations



Signal word: Warning

Hazard statements

Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

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Wear protective gloves/ protective clothing/ eye protection/ face protection.
Do not breathe mist or vapours.
IF exposed or concerned: Get medical advice/ attention.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Tembotrione	335104-84-2	28.3
Thiencarbazone-methyl	317815-83-1	5.6
Isoxadifen-ethyl	163520-33-0	11.0
Polyarylether sulfate, ammonium salt	119432-41-6	3.5

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.

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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: Carbon monoxide (CO), Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Hydrogen chloride (HCl), Nitrogen oxides (NO_x), Sulphur oxides

Advice for firefighters

Special protective equipment 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. 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.

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

Auto-ignition temperature 420 °C / 788 °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. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

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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 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.

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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Tembotrione	335104-84-2	0.15 mg/m ³ (SK-SEN)		OES BCS*
Thiencarbazone-methyl	317815-83-1	10 mg/m ³ (TWA)		OES BCS*
Isoxadifen-ethyl	163520-33-0	1 mg/m ³ (SK-SEN)		OES BCS*

*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.

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Hand protection	Chemical resistant nitrile rubber gloves
Eye protection	Chemical resistant goggles must be worn.
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	beige to yellow
Physical State	Liquid
Odor	characteristic
Odour Threshold	No data available
pH	2.4 - 3.2 (100 %) (23 °C)
Vapor Pressure	No data available
Vapor Density (Air = 1)	No data available
Density	1.22 g/cm ³ (20 °C)
Evaporation rate	No data available
Boiling Point	97 °C / 206.6 °F
Melting / Freezing Point	No data available
Water solubility	dispersible
Minimum Ignition Energy	Not applicable
Decomposition temperature	No data available
Viscosity	950 - 1,400 cps 300 - 500 mPa.s (20 °C) Velocity gradient 20 /s 120 - 200 mPa.s (20 °C) Velocity gradient 100 /s
Flash point	No flash point - Determination conducted up to the boiling point.
Auto-ignition temperature	420 °C / 788 °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.

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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	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.
Information on toxicological effects	
Acute oral toxicity	LD50 (female Rat) > 2,000 mg/kg
Acute inhalation toxicity	LC50 (Rat) > 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.
Acute dermal toxicity	LD50 (male/female combined Rat) > 2,000 mg/kg
Skin corrosion/irritation	slight irritation (Rabbit)
Serious eye damage/eye irritation	Mild eye irritation. (Rabbit)
Respiratory or skin sensitisation	Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test Non-sensitizing. (Mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment STOT Specific target organ toxicity – repeated exposure

Tembotrione caused specific target organ toxicity in experimental animal studies in the following

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organ(s): Eyes, Kidney, Liver.

Thiencarbazone-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 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.

Assessment carcinogenicity

Tembotrione caused 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.

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.

Assessment toxicity to reproduction

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.

Assessment 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.

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)) 6.06 mg/l Exposure time: 96 h
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 83.1 mg/l Exposure time: 48 h
Toxicity to aquatic plants	EC50 (Pseudokirchneriella subcapitata (microalgae)) 40.6 mg/l Growth rate; Exposure time: 72 h EC50 (Lemna gibba (gibbous duckweed)) 0.0181 mg/l Growth rate; Exposure time: 7 d
Biodegradability	Tembotrione: Not rapidly biodegradable Thiencarbazone-methyl: Not rapidly biodegradable Isoxadifen-ethyl: Not rapidly biodegradable
Koc	Tembotrione: Koc: 66 Thiencarbazone-methyl: Koc: 100 Isoxadifen-ethyl: Koc: 2512
Bioaccumulation	Tembotrione: Does not bioaccumulate. Thiencarbazone-methyl: Does not bioaccumulate. Isoxadifen-ethyl: Does not bioaccumulate.
Mobility in soil	Tembotrione: Mobile in soils Thiencarbazone-methyl: Moderately mobile in soils Isoxadifen-ethyl: 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. 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.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

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

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regulations.

Contaminated packaging 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.
Do not use containers for other products.

SECTION 14: TRANSPORT INFORMATION

TDG

UN number	3082
Labels	9
Packaging group	III
Marine pollutant	Marine pollutant
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIENCARBAZONE-METHYL, ISOXADIFEN-ETHYL)

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. (THIENCARBAZONE-METHYL, ISOXADIFEN-ETHYL SOLUTION)

IATA

UN number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	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.

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Further Information

Exempt from regulation when transported by road or rail, in accordance with TDG Regulations 1.45.1.
This exemption provides that this product does not require dangerous goods shipping documentation or safety marks when transported on land by road or rail.

SECTION 15: REGULATORY INFORMATION

PCP Registration No. 29643

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 - 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: Revised according to the current Canadian WHMIS standard (WHMIS 2015).

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

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