



# Brigadier 750 WG (halosulfuron-methyl 750 g/kg)

## Safety Data Sheet

according to SANS 10234:2019 and SANS 11014:2010  
Issue date: 9/8/2022 Version: 1.0

### SECTION 1: Identification

#### 1.1. Product identifier

Product form	: Mixture
Trade name	: Brigadier 750 WG (halosulfuron-methyl 750 g/kg)
Type of product	: Herbicide
CAS-No.	: 100784-20-1
Product group	: End product

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	: A water dispersible granular post-emergence herbicide for the control of nutsedge and certain broadleaf weeds in crops as indicated.
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#### 1.3. Supplier's details

##### Supplier

Farm-Ag International (Pty) Ltd  
Old Mill Industrial Park  
61, Marshall Drive  
P.O. Box 1523  
4300 Mount Edgecombe – Durban KwaZulu Natal  
South Africa  
T 031 003 3486

#### 1.4. Emergency telephone number

Emergency number	: 24 Hr Emergency Number: In case of Poisoning: Poison Information Helpline : 0861 555 777
	In case of Spillage: HAZMAT:0800 147 112

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to the United Nations GHS

Acute toxicity (dermal), Category 5	H313
Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation, Category 3	H316
Serious eye damage/eye irritation, Category 2A	H319
Hazardous to the aquatic environment – Acute Hazard, Category 1	H400
Hazardous to the aquatic environment – Chronic Hazard, Category 1	H410
Full text of H-statements: see section 16	

#### 2.2. Label elements

##### Labelling according to the United Nations GHS

Hazard pictograms (GHS ZA)



Signal word (GHS-ZA)	: Warning
Hazardous ingredients	: Halosulfuron-methyl 97% TC
Hazard statements (GHS ZA)	: H313 - May be harmful in contact with skin H316 - Causes mild skin irritation H319 - Causes serious eye irritation.

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### Precautionary statements (GHS ZA)

H332 - Harmful if inhaled.  
H410 - Very toxic to aquatic life with long lasting effects.  
: P101 - If medical advice is needed, have product container or label at hand.  
P102 - Keep out of reach of children.  
P103 - Read label before use.  
P261 - Avoid breathing dust.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 - Call a POISON CENTER or doctor if you feel unwell.  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P391 - Collect spillage.  
P501 - Dispose of contents and container to an approved waste disposal plant.

### 2.3. Other hazards

Adverse physicochemical, human health and environmental effects

: Harmful if inhaled, Harmful in contact with skin, Causes mild skin irritation, Causes serious eye irritation, Very toxic to aquatic life with long lasting effects.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to the United Nations GHS
Halosulfuron-methyl 97% TC	CAS-No.: 100784-20-1	≥ 75 – < 80	Acute Tox. Not classified (Oral) Acute Tox. 5 (Dermal), H313 Acute Tox. Not classified (Inhalation: dust, mist) Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410
sodium sulfate	CAS-No.: 7757-82-6	≥ 5 – < 10	Acute Tox. 5 (Oral), H303 Aquatic Acute Not classified
Polycarboxylic acid sodium salt	CAS-No.: 37199-81-8	≥ 5 – < 10	Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319
Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts	CAS-No.: 68439-57-6	≥ 1 – < 5	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 2, H401

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general

: IF exposed or concerned: Get medical advice/attention. Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation

: Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or Poison Control Centre immediately.

First-aid measures after skin contact

: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact

: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

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First-aid measures after ingestion : If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : Harmful if inhaled.  
Symptoms/effects after skin contact : Irritation.  
Symptoms/effects after eye contact : Eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Class B foam (alcohol-resistant). Dry chemical. Carbon dioxide. Water spray.  
Unsuitable extinguishing media : Water spray as a fog can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Do not use direct jet of water. Contain water used for fire-fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.  
Personal protection (Emergency response) : Wear respiratory protection, Wear protective gloves, Wear protective clothing, Wear eye protection, Face-shield



## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

#### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. Avoid breathing dust.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.  
Methods for cleaning up : Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations.  
Do not create a powder cloud by using a brush or compressed air. Clean contaminated surface thoroughly.  
Other information : Dispose of materials or solid residues at an authorized site.

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### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust. Do not get in eyes, on skin, or on clothing.
Hygiene measures	: Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store locked up. Store in a well-ventilated place. Keep cool.
Storage area	: Store in a dry area. Store out of reach of unauthorised persons, children and animals.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: Food supplies. Water supplies.
Maximum storage period	: 2 years

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

#### 8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection	: Protective gloves
Eye protection	: Safety glasses
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: In case of inadequate ventilation wear respiratory protection.

Personal protective equipment symbol(s):



#### 8.4. Exposure limit values for the other components

No additional information available

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Granule.
Colour	: Tan to brown.
Odour	: No data available
Odour threshold	: No data available
pH	: 7.1
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable

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Auto-ignition temperature	: 410 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 0.54
Relative density of saturated gas/air mixture	: No data available
Density	: No data available
Relative gas density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable
Lower explosion limit	: No data available
Upper explosion limit	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: May be harmful in contact with skin.
Acute toxicity (inhalation)	: Harmful if inhaled.

#### Brigadier 750 WG (halosulfuron-methyl 750 g/kg) (100784-20-1)

ATE ZA (Dermal)	2500 mg/kg bodyweight
ATE ZA (dust, mist)	1.5 mg/l/4h

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### Brigadier 750 WG (halosulfuron-methyl 750 g/kg) (100784-20-1)

Unknown acute toxicity (GHS ZA)Unknown acute toxicity (GHS ZA)	14% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral) 22.75% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal) 93% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))
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### Halosulfuron-methyl 97% TC (100784-20-1)

LD50 oral rat	8870 mg/kg
LD50 oral	11200 mg/kg Mice
LD50 dermal rat	> 2000 mg/kg
LC50 Inhalation - Rat	> 6 mg/l/4h

### Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts (68439-57-6)

LC50 Inhalation - Rat	> 52 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Remarks on results: other:
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### poly(dimethylsiloxane) (9016-00-6)

LD50 oral rat	> 5000 mg/kg (Rat, Literature study, Oral)
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### sodium sulfate (7757-82-6)

LD50 oral rat	> 2000 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 15 day(s))
LC50 Inhalation - Rat	> 2.4 mg/l air (OECD 436: Acute inhalation toxicity-acute toxic class method, 4 h, Rat, Male / female, Experimental value, Inhalation (dust))

Skin corrosion/irritation	: Causes mild skin irritation. pH: 7.1
Serious eye damage/irritation	: Causes serious eye irritation. pH: 7.1
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

### Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts (68439-57-6)

NOAEL (chronic, oral, animal/male, 2 years)	≥ 195 mg/kg bodyweight Animal: rat, Animal sex: male, Remarks on results: other:
NOAEL (chronic, oral, animal/female, 2 years)	≥ 259 mg/kg bodyweight Animal: rat, Animal sex: female, Remarks on results: other:
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

### Brigadier 750 WG (halosulfuron-methyl 750 g/kg) (100784-20-1)

Viscosity, kinematic	Not applicable
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## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: Very toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Very toxic to aquatic life with long lasting effects.

### Halosulfuron-methyl 97% TC (100784-20-1)

LC50 - Fish [1]	> 118 mg/l Bluegill Sunfish
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### Halosulfuron-methyl 97% TC (100784-20-1)

LC50 - Fish [2]	> 131 mg/l Rainbow Trout
EC50 - Crustacea [1]	> 107 mg/l
EC50 - Other aquatic organisms [1]	116 mg/l Oysters
EC50 - Other aquatic organisms [2]	106 mg/l Mysid shrimps
Partition coefficient n-octanol/water (Log Kow)	-0.0186
Additional ecotoxicological information	Acute oral LD50 for bobwhite quail >2250 mg/kg. Dietary LC50 (5d) for bobwhite quail and mallard ducks >5620 mg/kg diet. Bees (LD50, µg/bee) >100 (contact). Worms: LC50 for earthworms >1000 mg/kg soil.

### Sulfonic acids, C14-16-alkane hydroxy and C14-16-alkene, sodium salts (68439-57-6)

LC50 - Fish [1]	4.2 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	4.53 mg/l Test organisms (species): Ceriodaphnia sp.
EC50 72h - Algae [1]	5.2 mg/l Test organisms (species): Skeletonema costatum
LOEC (chronic)	20 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	6.3 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

### poly(dimethylsiloxane) (9016-00-6)

LC50 - Fish [1]	> 10000 mg/l (96 h, Salmo gairdneri, Static system, Literature study)
BCF - Fish [1]	2.9 – 1250 (3 day(s), Hypophthalmichthys molitrix, Literature study)

### sodium sulfate (7757-82-6)

LC50 - Fish [1]	7960 mg/l (EPA 600/4-90/027, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value, Lethal)
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## 12.2. Persistence and degradability

### Brigadier 750 WG (halosulfuron-methyl 750 g/kg) (100784-20-1)

Persistence and degradability	No additional information available
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### poly(dimethylsiloxane) (9016-00-6)

Persistence and degradability	Biodegradable in the soil. Not readily biodegradable in water.
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### sodium sulfate (7757-82-6)

Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

## 12.3. Bioaccumulative potential

### Brigadier 750 WG (halosulfuron-methyl 750 g/kg) (100784-20-1)

Bioaccumulative potential	No additional information available
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### Halosulfuron-methyl 97% TC (100784-20-1)

Partition coefficient n-octanol/water (Log Kow)	-0.0186
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### poly(dimethylsiloxane) (9016-00-6)

BCF - Fish [1]	2.9 – 1250 (3 day(s), Hypophthalmichthys molitrix, Literature study)
Bioaccumulative potential	No straightforward conclusion can be drawn based upon the available numerical values.

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### sodium sulfate (7757-82-6)

Bioaccumulative potential	Not bioaccumulative.
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### 12.4. Mobility in soil

#### Brigadier 750 WG (halosulfuron-methyl 750 g/kg) (100784-20-1)

Mobility in soil	No additional information available
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#### Halosulfuron-methyl 97% TC (100784-20-1)

Mobility in soil	77.04
Partition coefficient n-octanol/water (Log Kow)	-0.0186

### poly(dimethylsiloxane) (9016-00-6)

Ecology - soil	Adsorbs into the soil. Low potential for mobility in soil. Not toxic to plants.
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### sodium sulfate (7757-82-6)

Surface tension	71 mN/m (20 °C, 1.005 g/l, EU Method A.5: Surface tension)
Ecology - soil	No (test)data on mobility of the substance available.

### 12.5. Other adverse effects

Ozone	: Not classified
Other adverse effects	: No additional information available




## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
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## SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
<b>14.1. UN number</b>		
3077	3077	3077
<b>14.2. Proper Shipping Name</b>		
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains halosulfuron-methyl 750 g/kg)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains halosulfuron-methyl 750 g/kg)	Environmentally hazardous substance, solid, n.o.s. (contains halosulfuron-methyl 750 g/kg)
<b>14.3. Transport hazard class(es)</b>		
9	9	9
		
<b>14.4. Packing group</b>		
III	III	III
<b>14.5. Environmental hazards</b>		
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes



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according to SANS 10234:2019 and SANS 11014:2010

SANS	IMDG	IATA
No supplementary information available		

### 14.6. Special precautions for user

#### SANS

Special provisions (SANS)	: 179, 274, 331, 335
Limited quantities (SANS)	: 5 kg
Limited quantities (SANS)	: 5 kg
Packagings, large packagings and IBCs Packing instructions (SANS)	: P002, IBC08, LP02
Packagings, large packagings and IBCs Special packing instructions (SANS)	: PP12, B3
Portable tank and bulk containers instructions (SANS)	: T1, BK2
Portable tank and bulk container special provisions (SANS)	: TP33

#### IMDG

Special provisions (IMDG)	: 274, 335, 966, 967, 969
Limited quantities (IMDG)	: 5 kg
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: LP02, P002
Special packing provisions (IMDG)	: PP12
IBC packing instructions (IMDG)	: IBC08
IBC special provisions (IMDG)	: B3
Tank instructions (IMDG)	: BK1, BK2, BK3, T1
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS
Stowage category (IMDG)	: A

#### IATA

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y956
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 956
PCA max net quantity (IATA)	: 400kg
CAO packing instructions (IATA)	: 956
CAO max net quantity (IATA)	: 400kg
Special provisions (IATA)	: A97, A158, A179, A197, A215
ERG code (IATA)	: 9L

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health, and environmental national regulations specific for the product

No additional information available

## SECTION 16: Other information

Issue date : 08/09/2022

### Full text of H-statements

H303	May be harmful if swallowed
H313	May be harmful in contact with skin

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### Full text of H-statements

H315	Causes skin irritation.
H316	Causes mild skin irritation
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects.

Safety Data Sheet (SDS), South Africa

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.