


Safety Data Sheet

KETONIC - Reg. No: L 10536 (Act No 36 of 1947)

Date of issue: 29/04/2019

1) IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER.	
Product name:	KETONIC
Other means of identification:	Mesotrione 80 g/L / Flumetsulam 20 g/L / Sulcotrione 180 g/L SL
UN number:	3082
Recommended use:	Herbicide
Restrictions on use:	Agriculture
Distributed by:	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 MOBILE: 0834006056 www.agritech.co.za
Emergency Number:	POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 WESTERN CAPE POISONS TELEPHONE SERVICE 0861 555 777 RAPID SPILL RESPONSE 0800 775 3305 GRIFFON POISON CENTRE: 082 446 8946
Chemical Name:	Mesotrione: 2-(4-mesyl-2-nitrobenzoyl)cyclohexane-1,3-dione Flumetsulam: 2',6'-difluoro-5-methyl[1,2,4]triazolo[1,5-a]pyrimidine-2-sulfonamide Sulcotrione: 2-(2-chloro-4-mesylbenzoyl)cyclohexane-1,3-dione
2) Classification of the substance / mixture:	
Classification of the product:	N; R50/53 Full text of R-phrases; see section 15
Label elements:	<p>Hazard statement(s): H303: May be harmful if swallowed H315: Causes skin irritation. H317: May cause an allergic skin reaction. H410: Very toxic to aquatic life with long lasting effects.</p> <p>Precautionary statement(s): P102: Keep out of reach of children. P270; Do not eat, drink or smoke when using this product. P280; Wear protective gloves/ protective clothing. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P391: Collect spillage. P501; Dispose of contents/ container to an approved waste disposal plant.</p> <p>Pictogram:</p>  <p>Signal Word: Warning</p>

Health effects: eyes:	May cause eye irritation.
Health effects: skin:	May cause skin irritation
Health effects: ingestion	Harmful
Health effects: inhalation	May be harmful
Health effects: Other	

3) COMPOSITION / INFORMATION ON INGREDIENTS:

Mixture: Sulcotrione, Flumetsulam and Mesotrione

Chemical name	composition	CAS No.	EC No.	Classification according to Regulation EC 1272/2008 (CLP)	Classification according to Directive 199/45/EC
Mesotrione	8.0 %	10420-82-8	-	Aquatic Acute 1: H400: Very toxic to aquatic life Aquatic chronic: H410: Very toxic to aquatic life with long lasting effects	N; R50/53 S60 S61
Sulcotrione	18.0 %	99105-77-8	-	Skin Sens. 1A: H317: May cause an allergic skin reaction. Repr. 2: H361d: Suspected of damaging the unborn child. STOT RE 2: H373: May cause damage to organs (Kidneys) Aquatic acute 1 H400 (Very toxic to aquatic life) Aquatic Chronic 1: H410 (Very toxic to aquatic life with long-lasting effects)	Xi, N
Flumetsulam	2.0%	98967-40-9		Aquatic acute 1: H400: Aquatic chronic 1: H410:	
Bentonite	>0.5%	1302-78-9	215-108-5	Skin Irrit. 2: H315: Causes skin irritation Eye Irrit. 2: H319: Causes serious eye irritation. STOT SE 3: H335: May cause respiratory irritation.	

Full text of R- and S-phrases: see section 15.

4) First Aid Measures:

Eye contact:	Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Seek medical assistance.
Skin contact:	Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash affected areas with soap and water. Do not rub skin. Seek medical assistance should irritation persist.
Ingestion:	Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting. One or two glasses of water may be given. For advice, contact the National Poisons Centre. Seek medical assistance immediately.

<p>Inhalation:</p> <p>Most important symptoms and effects, acute and delayed:</p> <p>Indication of immediate medical attention and special treatment needed: Advice to physician</p>	<p>Remove patient to fresh air. Lie down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation.</p> <p>Seek medical assistance.</p> <p>No specific antidote is available Treat symptomatically and supportively.</p>
<p>5) Fire-Fighting Measures:</p>	
<p>Suitable extinguishing media:</p> <p>Unsuitable extinguishing media:</p> <p>Special hazards arising from the substance or mixture:</p>	<p>Will not burn readily. For small fires, use foam, carbon dioxide, dry powder or halon extinguisher. For large fires, use foam or water-fog.</p> <p>Water jet, due to contamination risk.</p> <p>This product may generate poisonous, explosive and corrosive fumes (carbon monoxide and nitrous gases) Keep upwind.</p>
<p>Fire-fighting:</p>	<p>Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire.</p> <p>Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal.</p> <p>Generating poisonous and corrosive fumes. Keep upwind.</p> <p>Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal..</p> <p>Do not scatter the material. Bund area with sand or earth to avoid pollution of waterways. Water can be used to cool containers. Dispose of extinguishing agent and spillage in a safe way at a later stage.</p> <p>Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.</p> <p>Product may generate toxic and / or irritating fumes during a fire.</p>
<p>Protective clothing:</p>	<p>Full protective clothing and self-contained breathing apparatus</p>
<p>6) Accidental Release Measures:</p>	
<p>Personal precautions:</p> <p>Environmental precautions:</p> <p>Cleaning procedure:</p>	<p>Do not inhale vapour or spray. Avoid contact with skin and eyes. For personal protection see section 8.</p> <p>Do not contaminate waterways, drains and groundwater. If contamination of waterways, drains, rivers or lakes is unavoidable, warn the local authorities (Police and Department of Water/Environmental affairs) immediately.</p> <p>Wear protective clothing. Clear area of unprotected personnel. Contain and absorb liquid spills with inert material and place in waste containers. Wash area with water containing soda or detergent and absorb with further inert material. If spill does enter waterways contact the local authority. Heavily contaminated soil layers should be removed and disposed of in an approved way. Spilled product cannot be re-used and must be disposed of by</p>

Eye protection:	The use of safety goggles with side shields is recommended.
Respiratory protection:	Wear respirator if ventilation is inadequate or exposure to high levels are likely
Emergency eye wash:	Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.
9) Physical & Chemical Properties:	
Form:	Liquid
Colour:	White to cream white
Odour:	Characteristic
Odour threshold:	No data available
pH:	3.0 - 5.0
Melting point / Freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point:	Does not flash
Evaporation rate:	N/A
Flammability (solid, gas)	Flammable
Upper/ lower flammability or explosive limits:	No hazard is expected as long as the product is used appropriately and in accordance with the intended use
Vapour pressure:	No data available
Vapour density:	No data available
Relative density:	±1.6 g/L
Solubility(ies)	Suspends in water
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature:	No data available
Viscosity:	N/A
10) Stability & Reactivity:	
Reactivity:	No hazardous reactions if stored and handled as indicated / prescribed.
Chemical stability:	Stable under normal use and standard conditions. Stable for 24 months..
Hazardous decomposition product(s):	None under normal storage and use conditions. Combustion or thermal decomposition will evolve irritant and toxic vapours (traces of carbon- and nitrogen oxides)
Conditions to avoid:	Segregate from food and animal feeds. Keep away from heat and protect from direct sunlight.
Incompatible materials:	Avoid strong bases, strong acids and strong oxidizing agents.
11) Toxicological Information:	
Acute:	
Oral LD ₅₀	> 2 000 mg/kg, rat
Dermal LD ₅₀	> 2 000 mg/kg, rat
Inhalation LC ₅₀ (4h): for rats	> 4.98 mg/L.
Eye Contact	: Non-irritant
Skin Contact	: Non-irritant

Skin Sensitization : Grade 1 weak sensitizer

Repeated dose toxicity:

The statement has been derived from the properties of the individual components. Tests revealed no substance-specific organ toxicity after repeated administration to animals.

Mutagenicity:

The statement has been derived from the properties of the individual components. Tests revealed no genotoxic potential.

Carcinogenicity:

The statement has been derived from the properties of the individual components. Tests revealed no indication of a carcinogenic effect.

Reproductive toxicity:

The statement has been derived from the properties of the individual components. Tests revealed no indication of a fertility impairing effect.

Teratogenicity: The statement has been derived from the properties of the individual components. Tests revealed no indication of developmental toxic effects at dosage rates that were not toxic to the parent animals.

12) Ecological Information:

Information below based on active ingredient: SULCOTRIONE technical material

Bees: LD₅₀ >(oral) >50 µg/bee; (contact) >200 µg/bee.

Birds: LD₅₀ (14 d) (oral) for bobwhite quail >2111, mallard ducks >1350 mg/kg b.w. Dietary LC₅₀ for bobwhite quail and mallard ducks >5620 mg/kg diet.

Fish: LC₅₀ (96 h) for rainbow trout r rainbow trout 227, mirror carp 240 mg/L. Daphnia : EC₅₀ (48 h) >848 mg/l.

Algae: EC₅₀ (5 d) for green algae (*Selenastrum capricornutum*) 4.9, blue-green algae (*Anabaena flos aquae*) 167 µg/L.

Worms: LC₅₀ (14 d) >950 mg/kg soil.

Other aquatic species.: EC₅₀ (14 d) for Lemna gibba 0.011 mg/L.

12) Ecological Information: Based on active ingredients:

Sulcotrione:

Bees : Low toxicity to bees, both by topical and oral application; LD₅₀ (oral) >50 µg/bee; (contact) >200 µg/bee.

Birds : Acute oral LD₅₀ for bobwhite quail >2111, mallard ducks >1350 mg/kg b.w. Dietary LC₅₀ for bobwhite quail and mallard ducks >5620 mg/kg diet.

Fish : LC₅₀ (96 h) for rainbow trout 227, mirror carp 240 mg/l. Daphnia : EC₅₀ (48 h) >848 mg/l.

Algae : EC₅₀ (96 h) for *Selenastrum capricornutum* 3.5 mg/l. ErC₅₀ (72 h) for *Anabaena flos-aquae* 54 mg/l.

Worms : LC₅₀ (14 d) for *Eisenia foetida* >1000 mg/kg soil.

Flumetsulam:

Bees : LC₅₀ >100 µg/bee. NOEL 36 µg/bee

Birds : Acute oral LD₅₀ for bobwhite quail >2250 mg/l. Dietary LC₅₀ (8 d) for bobwhite quail and mallard ducks >5620 mg/l.

Fish : LC₅₀ (96 h) for silverside minnows >379 mg/l. Non-toxic to fathead minnows and bluegill sunfish. Daphnia : Non-toxic

Algae : EC₅₀ (5 d) for green algae (*Selenastrum capricornutum*) 4.9, blue-green algae (*Anabaena flosaquae*) 167 µg/L.

Worms : LC₅₀ (14 d) >950 mg/kg soil.

Mesotrione:

Bees : LD₅₀ (oral) >11 µg/bee; (contact) >9.1 µg/bee, based on 100 g/l formulation

Birds : Acute oral LD₅₀ for bobwhite quail >2000 mg/kg. Dietary LC₅₀ for mallard ducks >5200 mg/kg.

Fish LC₅₀ (96 h) for bluegill sunfish and rainbow trout >120 mg/l. Daphnia : LC₅₀/EC₅₀ (48 h, static) >900 mg/l.

Algae : LC₅₀/EC₅₀ (120 h, static) for *Selenastrum capricornutum* 3.5 mg/l.

Worms : NOEL ≥1000 mg/kg.

Persistence and degradability:

SULCOTRIONE:

Rapidly degraded in soil; lab. DT50 4–90 d; field DT50 1–11 d. The major metabolite is 2-chloro-4-methylsulfonylbenzoic acid. Koc 17–58. No adverse effects on soil micro-organisms.

Biodegradation: Not readily biodegradable

Bioaccumulative potential: Low

Bioconcentration factor: Bioconcentration is unlikely.

Flumetsulam:

Availability of flumetsulam in soil is principally dependent upon soil pH and organic matter. Herbicidal activity increases as pH increases and organic matter decreases. DT50 in soil (25 °C, pH ≥7, o.m. <4%; or pH 6–7, o.m. c. 1%) ≤1 mo. DT50 in soil (pH 6–7, o.m. 2–4%) 1–2 mo. Koc 5–182; Kd 0.05–2.4.

Biodegradation: No data available

Bioaccumulative potential: Low

Bioconcentration factor: No data available

Mesotrione:

DT50 (lab., anaerobic) 4 d (first order); DT90 12 d. DT50 (lab., aerobic) 6–27 d (17 soils); DT90 20–89 d. Soil photolysis c. 23 d. DT50 (field) 3–7 d (6 sites); DT90 36–78 d. Degradation is faster at higher pH values. Koc 19–141 (seven soils, pH 5.1–8.2; o.c. 0.53–3.31%); Koc 29–390 (13 soils, pH 4.5–7.5, o.c. 0.6–2.2%); overall mean Koc 109; sorption decreases as pH increases.

Biodegradation: No data available.

Bioaccumulative potential: Low

Bioconcentration factor: No data available.

Other adverse effects:

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

Environments fate

Persistence and degradability:

Imazamox: Degrades aerobically in the soil to a non-herbicide metabolite; also degrades by aqueous photolysis; photodegradation is slow on soil. Lab DT50 12–207 d (median 44 d) (20 °C). Field DT50 5–41 d. No clear dependence of degradation rates on pH or timing of application. Koc 2–374 (mean 67). Imazamox is mobile, but the terminal soil metabolite is moderately mobile to immobile. Leaching of imazamox in field studies was very limited.

13) Disposal Considerations:

Waste Disposal: In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Refer to the product label for instructions. Triple rinse empty containers before disposal in the following manner: Invert the container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed to a drip. Thereafter, rinse the container three times with a volume of water equal to a third of that of the container volume. Add rinsing to the contents of the spray tank before destroying the container in the prescribed manner. Empty containers should not be burnt; puncture and flatten containers and dispose at a licensed landfill site according to local regulations. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Prevent contamination of water sources, food

or feed by disposal. DO NO REUSE THE CONTAINER FOR ANY OTHER PURPOSE. If recycling, replace cap and take containers to the designated recycling point. If containers cannot be recycled, they should be disposed of together with the waste chemical according to local regulations.

14) Transportation Information:

UN Number: 3082

Road transport ADR/RID

Class: 9

Packing group: III

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOTRIONE, SULCOTRIONE, FLUMETSULAM)

Maritime transport IMDG/IMO

Environmental hazards: Marine pollutant: Yes

Class: 9

Packing group: III

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOTRIONE, SULCOTRIONE, FLUMETSULAM)

Air transport IATA-DGR

Road Transport ADR/ RID:

Class: 9

Packaging group: III

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOTRIONE, SULCOTRIONE, FLUMETSULAM)

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC code): NA

15) Regulatory Information:

Contains: HEXAZINONE

Symbols: Xi – Irritant.

N - Dangerous for the environment



Risk – Phrase(s):

R36 – Irritating to eyes.

R50/53 – Very toxic to aquatic organisms, may cause long-term adverse effect in the aquatic environment.

R52 / 53 – Harmful to aquatic organisms, may cause long-term adverse effect in the aquatic environment.

Safety – Phrase(s):

S2 - Keep out of the reach of children.

S7 - Keep container tightly closed.

S13 - Keep away from food, drink and animal feeding stuffs .

S20/21 - When using, do not eat drink or smoke.

S29/35 - Do not empty into drains; dispose of this material and its container in a safe way.

S57 - Use appropriate container to avoid environmental contamination.

S60 - This material and its container must be disposed of as hazardous waste.

S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets..

Hazard – phrase(s)

16. Other Information

All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.

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