


## Safety Data Sheet

### MISTIC- Reg. No: L 10123 (Act No 36 of 1947)

Date of issue: 08/12/2016

1) IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER.	
Product name:	MISTIC
Other means of identification:	Imazomox 33g/L; Imazapyr 15 g/L
UN number:	Not regulated
Recommended use:	Herbicide
Restrictions on use:	Agriculture
Distributed by:	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 MOBILE: 0834006056 <a href="http://www.agritech.co.za">www.agritech.co.za</a>
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:	Imazamox: RS)-2-(4-isopropyl-4-methyl-5-oxo-2-imidazolin-2-yl)-5-methoxymethylnicotinic acid Imazapyr: 2-(4-isopropyl-4-methyl-5-oxo-2-imidazolin-2-yl)nicotinic acid
2) Classification of the substance / mixture:	
Classification of the product:	
Label elements:	<p><b>Hazard statements:</b> H412: harmful to aquatic life with long lasting effects. EUH401: To avoid risks to human health and the environment, comply with the instructions for use.</p> <p><b>Precautionary Statements (Disposal)</b> P501: Dispose of content / container to hazardous or special waste collection point.</p> <p><b>Hazard Symbol:</b></p>  <p>Signal Word: <b>Warning</b></p>
Health effects: eyes:	Unlikely to cause harmful effects under normal conditions of use.
Health effects: skin:	Unlikely to cause harmful effects under normal conditions of use.
Health effects: ingestion	Virtually non- toxic after single ingestion.

<b>Health effects: inhalation</b>	Virtually non- toxic after single inhalation.				
<b>Health effects: Other</b>					
<b>3) COMPOSITION / INFORMATION ON INGREDIENTS:</b>					
Mixture:					
<b>Chemical name</b>	<b>Composition</b>	<b>CAS No.</b>	<b>EC No.</b>	<b>Classification according to Regulation EC 1272/2008 (CLP)</b>	<b>Classification according to 67/548/EEC</b>
Imazamox	3.3%	114311-32-9	246-585-8	Aquatic acute 1 Aquatic Chronic 1 H400, H410	N; R50/53
Imazapyr	1.5 %	81334-34-1		Eye Irrit. 2 Aquatic Chronic 3 H319 H412	Xi R36, 52/53
Full text of R- and S-phrases: see section 15.					
<b>4) First Aid Measures:</b>					
<b>Eye contact:</b>	Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Seek medical assistance.				
<b>Skin contact:</b>	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.				
<b>Ingestion:</b>	Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting unless told to so by poison control centre or doctor. A glass of water may be given to sip. For advice, contact the National Poisons Centre. Seek medical assistance immediately.				
<b>Inhalation:</b>	Remove patient to fresh air. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation.  Seek medical assistance.				
<b>Most important symptoms and effects, acute and delayed:</b>	Not known				
<b>Indication of immediate medical attention and special treatment needed: Advice to physician</b>	There is no specific antidote if this product is ingested. Treat symptomatically (decontamination, vital functions).				
<b>5) Fire-Fighting Measures:</b>					
<b>Suitable extinguishing media:</b>	Use foam, carbon dioxide, dry extinguishing media, water mist or fog (avoid water jet).				
<b>Unsuitable extinguishing media:</b>	No information available.				
<b>Special hazards arising from the substance or mixture:</b>	None known				
<b>Fire-fighting:</b>	<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. Avoid inhaling hazardous vapours and fumes from burning materials. 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. (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated.</p>				

	<p>Do not scatter the material. 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 carbon monoxide, ammonia and nitrogen oxides during a fire.</p>
<b>Protective clothing:</b>	Full protective clothing and self-contained breathing apparatus.
<b>6) Accidental Release Measures:</b>	
<p><b>Personal precautions:</b></p> <p><b>Environmental precautions:</b></p> <p><b>Cleaning procedure:</b></p> <p><b>Disposal:</b></p>	<p>Wear appropriate safety clothing and eye/face protection. Do not breathe in spray or fumes.</p> <p>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 incineration or disposal in a chemical waste disposal facility. If containers cannot be recycled, they should be disposed of together with the waste chemical</p> <p><b>Waste Disposal:</b></p> <p>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.</p> <p><b>Container Disposal:</b></p> <p>Refer to the product label for instructions.</p> <p>If the container is to be refilled, do not rinse with any material or introduce any pesticide other than this product.</p> <p><b>DO NO REUSE THE CONTAINER FOR ANY OTHER PURPOSE.</b></p> <p>Do not transport if this container is damaged or leaking.</p>
<b>7) Handling &amp; Storage:</b>	
<p><b>Handling:</b></p> <p><b>Storage:</b></p>	<p>Avoid skin and eye contact and inhalation of spray mist. Keep away from heat and sources of ignition. Ensure adequate ventilation.</p> <p>Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Wash contaminated clothing before re-use.</p> <p>APPROVED HANDLER: This product must be under the control of an approved handler when applied in a wide dispersive manner; or used by a commercial contractor.</p> <p>BEWARE: Spray drift hazard. Apply this product carefully. Spray drift may cause serious damage to other desirable plants.</p> <p>Store in original container tightly closed and in a locked, dry, cool area away from foodstuffs, fertilisers and seeds. Keep away from children or uninformed persons. Avoid extreme temperatures.</p>

<b>8) Exposure Control / Personal Protection:</b>	
<p>It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.</p> <p><b><u>PERSONAL PROTECTIVE EQUIPMENT:</u></b></p> <p><b>Clothing:</b></p> <p><b>Gloves:</b></p> <p><b>Eye protection:</b></p> <p><b>Respiratory protection:</b></p> <p><b>Emergency eye wash:</b></p>	<p>Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.</p> <p>Employee must wear appropriate chemical-resistant gloves to prevent contact with this substance</p> <p>The use of safety goggles with side shields is recommended.</p> <p>Wear respirator if ventilation is inadequate or exposure to high levels are likely</p> <p>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.</p>
<b>9) Physical &amp; Chemical Properties:</b>	
<p><b>Form:</b></p> <p><b>Colour:</b></p> <p><b>Odour:</b></p> <p><b>Odour threshold:</b></p> <p><b>pH:</b></p> <p><b>Melting point / Freezing point</b></p> <p><b>Initial boiling point and boiling range</b></p> <p><b>Flash point:</b></p> <p><b>Evaporation rate:</b></p> <p><b>Flammability (solid, gas)</b></p> <p><b>Upper/ lower flammability or explosive limits:</b></p> <p><b>Vapour pressure:</b></p> <p><b>Vapour density:</b></p> <p><b>Relative density:</b></p> <p><b>Solubility(ies)</b></p> <p><b>Partition coefficient: n-octanol/water</b></p> <p><b>Auto-ignition temperature:</b></p> <p><b>Viscosity:</b></p>	<p>Liquid</p> <p>Amber</p> <p>Faint colour</p> <p>No data available</p> <p>6.0-8.0</p> <p>No data available</p> <p>No data available</p> <p>Not flammable</p> <p>N/A</p> <p>No flammable</p> <p>No hazard is expected as long as the product is used appropriately and in accordance with the intended use. Negligible at normal ambient temperature</p> <p>No data available</p> <p>No data available</p> <p>±1.04 g/L</p> <p>Soluble in water</p> <p>No data available</p> <p>389 °C</p> <p>No data available</p>
<b>10) Stability &amp; Reactivity:</b>	
<p><b>Reactivity:</b></p> <p><b>Chemical stability:</b></p>	<p>No hazardous reactions if stored and handled as indicated / prescribed.</p> <p>Stable under normal use and standard conditions. Stable for 24 months.</p>

<b>Hazardous decomposition product(s):</b>	No hazardous reactions decomposition if stored and handled as indicated.
<b>Conditions to avoid:</b>	Segregate from food and animal feeds. Keep away from heat and protect from direct sunlight.
<b>Incompatible materials:</b>	Avoid strong bases, strong acids and strong oxidizing agents.

### 11) Toxicological Information:

Acute:

Oral LD50 : > 5 000 mg/kg, rat.

Dermal LD50 : > 5 000 mg/kg

Inhalation LC50 (4h): > 6.18 mg/L, mouse.

Skin irritation : Non-irritant, rabbit

Eye irritation : Non- irritating, rabbits.

Sensitisation : Does not cause sensitization on laboratory animals (Guinea pig).

Other :

#### 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 Page 6 of 8 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: Imazamox:

**Bees:** Not toxic to bees; LD50 (oral) > 40 µg/bee. (72 h, contact) >25 µg/bee.

**Birds:** LD<sub>50</sub>(14 d) (oral) for bobwhite quail >1846, mallard ducks >1950 mg/kg. LC<sub>50</sub> (Dietary) for bobwhite quail and mallard ducks >5572 mg/kg diet.

**Fish :** LC<sub>50</sub> (96h) for rainbow trout >122 mg/l. NOEC (96 h) for bluegill sunfish 119 mg/L. Daphnia : NOEC (48 h) 122 mg/L.

**Algae :** EC<sub>50</sub> (120 h) >0.037 mg/l (4 species).

**Worms:** EC<sub>50</sub> (14d) > 901 mg/kg soil

#### Other aquatic species:

#### ENVIRONMENTAL FATE:

##### Persistence and Degradability:

Degrades aerobically in the soil to a non-herbicidal 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.

**Biodegradation:** Not readily biodegradable.

**Bioaccumulative potential:** Bioconcentration factor: <1, Lepomis macrochirus. Does not bioaccumulate in organisms.

**Information below based on active ingredient: Imazapyr:**

**Bees :** LD<sub>50</sub> (Dermal) for honeybees >100 µg/bee. bee.

**Birds :** Acute oral LD<sub>50</sub> for bobwhite quail and mallard ducks >2150 mg/kg. Dietary LC<sub>50</sub> (8 d) for bobwhite quail and mallard ducks >5000 mg/kg.

**Fish :** LC<sub>50</sub> (96 h) for rainbow trout, bluegill sunfish, and channel catfish >100 mg/l. Daphnia : LC<sub>50</sub> (48 h) >100 mg/l.

**Algae :** EC<sub>50</sub> (120 h) for Selenastrum 71, Anabaena 11.7, Skeletonema 85.5, Navicula >59 mg/l.

**Worms :** NA

**ENVIRONMENTAL FATE:**

**Persistence and degradability:**

In field dissipation studies, first order DT<sub>50</sub> 24–143 d. Aerobic soil degradation laboratory studies were generally longer, DT<sub>50</sub> 117 (biphasic) to 313 d. Degradation is primarily due to soil microbial activity, which is not represented in laboratory studies. In water, DT<sub>50</sub> 7 d; degradation is due to photolysis. Bioaccumulation in the environment is highly unlikely. The major residue is the parent compound.

**Biodegradation:** Not readily biodegradable.

**Bioaccumulative potential:** Bioconcentration factor: <1, Lepomis macrochirus. Does not bioaccumulate in organisms.

**Results of PBT and vPvB assessment:**

This product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent / very bioaccumulative) criteria.

**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.

**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 NOT 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: Not regulated

Road Transport ADR/ RID: Not classified as a dangerous good under transport regulations

Class: Not applicable

Packaging group: Not applicable

Labelling no: Not applicable

Shipping name: Not applicable

Maritime Transport IMDG / IMO: Not classified as a dangerous good under transport regulations

Class: Not applicable

Packaging group: Not applicable

Labelling no: Not applicable

Shipping name: Not applicable

Air Transport IATA: Not classified as a dangerous good under transport regulations

Class: Not applicable

Packaging group: not applicable

Labelling no: Not applicable

Shipping Name : Not applicable

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

#### 15) Regulatory Information:

**Contains: IMAZAMOX AND IMAZAPYR**

**Symbols:** Xi – Irritant

N – Dangerous for the environment

**Risk – Phrase (s):**

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

R36 – Irritating to eyes.

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

**Safety – Phrase (s):**

S2 – Keep out of reach of children.

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

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

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.

Aquatic chronic – Hazardous to the aquatic environment – chronic.

Aquatic acute – Hazardous to the aquatic environment – acute.

Eye Dam./Irrit. – Serious eye damage / eye irritation.

**Hazard -Phrase (s)**

H400 – Very toxic to aquatic life.

H410 – Very toxic to aquatic life with long lasting effects.

#### 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.

It is the responsibility of persons in receipt of this SDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with this product. If the recipient subsequently produces formulation(s) containing this product, it is the recipient's sole responsibility to ensure the transfer

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