

# UNIVERSAL LOCATE 538 SC

# MATERIAL SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE SUBSTANCE

**Product name:** LOCATE 538 SC  
Herbicide

**UN No.:** 3082

**Company:** Universal Crop Protection (Pty) Ltd.  
**Co. Reg. No.:** 1983/008184/07  
PO Box 801,  
Kempton Park, 1620, South Africa

**Telephone:** (011) 396 2233

**Fax:** (011) 396 4666

**Website:** [www.villacrop.co.za](http://www.villacrop.co.za)

### Emergency telephone numbers:

#### 24 Hr Transport / Spill emergency no:

Envirosure. +27 31 205 4918  
 (Hazcall24) +27 86 044 4411  
 (Client: Villa Crop Protection)

Griffon Poison Information Centre +27 82 446 8946  
 (Client: Villa Crop Protection)

#### Poisoning Emergency telephone numbers:

Griffon Poison Information Centre +27 82 446 8946  
 Poisons Information Centre +27 861 555 777

#### Villa Crop Protection Emergency number:

**National Safety, Health and Environmental Manager:**  
+27 63 698 0668

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

**Common name:** Mesotrione, Terbutylazine & S-Metolachlor

**Chemical Name:** **Mesotrione:** 2-(4-mesyloxyphenyl)-2-cyclohexanone (IUPAC)  
**Terbutylazine:** *N*<sup>2</sup>-*tert*-butyl-6-chloro-*N*<sup>4</sup>-ethyl-1,3,5-triazine-2,4-diamine (IUPAC)  
**S-Metolachlor:** A mixture of (*aRS,1S*)-2-chloro-6'-ethyl-*N*-(2-methoxy-1-methylethyl)acetamide and (*aRS,1R*)-2-chloro-6'-ethyl-*N*-(2-methoxy-1-methylethyl)acetamide in the proportion 80–100% to 20–0% (IUPAC)

**CAS No.:** **Mesotrione:** 104206-82-8  
**Terbutylazine:** 5915-41-3  
**S-Metolachlor:** 87392-12-9

**Chemical Family:** **Mesotrione:** Triketone  
**Terbutylazine:** Triazine  
**S-Metolachlor:** Chloroacetamide

**Chemical Formula:** **Mesotrione:** C<sub>14</sub>H<sub>13</sub>NO<sub>7</sub>S  
**Terbutylazine:** C<sub>9</sub>H<sub>16</sub>CIN<sub>5</sub>

**Molecular weight:** **S-Metolachlor:** C<sub>15</sub>H<sub>22</sub>ClNO<sub>2</sub>  
**Mesotrione:** 339.3  
**Terbutylazine:** 229.7  
**S-Metolachlor:** 283.8

**Use:** A pre-emergence herbicide.

**Formulation:** **Mesotrione + Terbutylazine + S-Metolachlor:** 538 g/l  
Suspension Concentrate

**Symbols:** Xi, N

**Indication of danger:** Harmful if swallowed, Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Risk-phrase(s):** R 36/38

## 3. HAZARD IDENTIFICATION

**Toxicity class:** WHO III, A low toxicity herbicide.

**Likely routes of exposure:** Ingestion.

**Eye contact:** Direct contact with the product may cause mild eye irritation.

**Skin contact:** Prolonged skin contact can cause possible skin irritation.

**Ingestion:** Harmful if swallowed.

**Inhalation:** Inhalation of the dust may be irritating to the nose, throat and lungs.

## 4. FIRST AID MEASURES AND PRECAUTIONS

**Inhalation:** Move the victim to fresh air or remove source of contamination. Monitor for respiratory distress if breathing is irregular or stopped, administer artificial respiration. Keep person warm and at rest. Get medical attention immediately if necessary.

**Skin contact:** Move the victim to fresh air and remove all contaminated clothing, shoes and leather goods. Wash off immediately with plenty of water. If irritation persists, seek medical advice.

**Eye contact:** Immediately flush the contaminated eyes with gently flowing lukewarm water for 15 to 20 minutes, occasionally lifting the upper and lower lids. Remove contact lenses. Seek medical advice immediately.

**Ingestion:** Seek medical advice immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

**Advice to physician:**  
No specific antidotes are available. Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

**Fire hazard and explosion hazard:**  
As the product contains combustible organic components, fire will produce dense black smoke containing hazardous

## UNIVERSAL LOCATE 538 SC

## MATERIAL SAFETY DATA SHEET

products of combustion. Exposure to decomposition products may be a hazard to health.

**Extinguishing media NOT to be used:** Do NOT use a solid water stream as it may scatter and spread fire.

**Suitable Extinguishing Agents:** Small fires: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Large fires: Alcohol-resistant foam and water spray.

**Firefighting:** Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire.

Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Do not scatter the material. Remove container from fire area if possible and without risk. Avoid the accumulation of polluted run-off from the site. Avoid pollution of waterways.

Avoid inhaling hazardous vapours. Keep upwind.

**Personal protective equipment:** Fire-fighters and others that may be exposed should wear full chemical protective clothing and self-contained breathing apparatus. See section 8 for recommendations regarding Exposure Controls/Personal Protection.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Do not breathe in dusts or fumes. Avoid contact with skin and eyes. For personal protection see Section 8 and see section 4 regarding First Aid Measures when exposed to material during clean-up operations.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

**Occupational spill:** Remove all sources of flames and sparks. Contain spillage, and then collect with non-combustible absorbent material, (e.g. Sand, earth, vermiculite) and place in container for disposal.

### 7. HANDLING AND STORAGE REQUIREMENTS

**Handling:** Wear appropriate protective equipment when handling the product. Do not handle material near food, feed or drinking water. Avoid contact with eyes, prolonged contact with skin, and inhalation of dust and vapour. Avoid high concentrations of dust in air and accumulation of dust on equipment. Use with adequate ventilation to control dust and reduce exposure to vapours. Protect all equipment from explosions. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet.

Remove clothing immediately if the product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination. Local regulations should be complied with.

**Storage:** Store the product in its original labeled container in cool, dry, well ventilated area, away from heat, sparks and other sources of ignition. No smoking is allowed. Do not store next to food, feed and water supplies. Keep out of reach of unauthorized persons, children and animals. Avoid breaking the containers, spillage or leaks. Comply with the local regulations.

### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

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.

Acceptable exposure limit for:

**Mesotrione:** AEL (8 hour TWA, total dust): 10 mg/m<sup>3</sup>

**Terbutylazine:** AEL (8 h TWA, total dust): 0.8 mg/m<sup>3</sup>

**S-Metolachlor:** AEL (8 h TWA, total dust): 10 mg/m<sup>3</sup>

#### PERSONAL PROTECTIVE EQUIPMENT:

**Respirator:** Wear an approved full-face respirator suitable for protection from dusts and mists of pesticides is required.

**Clothing:** Wear appropriate chemical-resistant protective clothing or other impervious clothing. Wear boots, hat and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing. Wash clothing after use.

**Gloves:** Wear appropriate chemical-resistant protective gloves whenever the product is handled to prevent contact with this substance. Wash gloves after use.

**Eye protection:** Use safety goggles and face-shield, which is compatible with respiratory equipment.

**Emergency eyewash:** Where there is any possibility that an employee's eyes may be exposed to this substance, an eye wash fountain or appropriate alternative within the immediate work area for emergency use, must be provided.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Soluble Concentrate.

**Appearance:** Cream.

**Odour:** Very slight aromatic hydrocarbon odour.

**Explosive properties:** Not explosive.

**Flash point:** Not flammable.

## UNIVERSAL LOCATE 538 SC

## MATERIAL SAFETY DATA SHEET

pH: 5.8.  
 pH: (of 1% solution): 4.6.  
**Storage stability:** Stable for 2 years under normal, dry storage conditions in unopened packages. The product is stable after 14 days at 54 °C (accelerated storage test).

### 10. STABILITY AND REACTIVITY

**Stability:** Considered stable for at least 2 years in unopened original packages, under normal, dry storage conditions.

**Incompatibility:** Avoid contact with oxidizing agents and acids. Keep away from moisture, heat or flame. Always perform a compatibility test before using with other products.

**Hazardous decomposition products:** Combustion or thermal decomposition will evolve toxic and irritant vapors.

**Hazardous polymerization:** Product will not undergo polymerisation.

### 11. TOXICOLOGICAL INFORMATION

**Acute oral LD<sub>50</sub>:** > 2600 mg/kg in rats.

**Acute dermal LD<sub>50</sub>:** > 2000 mg/kg in rats.

**Acute inhalation LC<sub>50</sub>:** Mesotrione: LC<sub>50</sub> (4h) male rats > 5 mg/ℓ.

**Terbuthylazine:** LC<sub>50</sub> (4h) rats > 5.3 mg/ℓ.

**S-metolachlor:** LC<sub>50</sub> (4h) rats > 2910 mg/m<sup>3</sup>.

**Dermal sensitization:** Non-sensitizing.

**Skin irritation:** Mild irritant.

**Eye irritation:** Mild irritant.

**Carcinogenicity:** Mesotrione is classified as "not likely to be carcinogenic to humans" based upon lack of evidence of carcinogenicity in rats and mice.

In some studies carcinogenicity effects were noted. Based on available data, the US EPA has classified **Terbuthylazine** as a Group D – one for which inadequate evidence exists to determine carcinogenicity in humans.

**S-Metolachlor:** Animal studies did not detect any carcinogenic effects

### 12. ECOLOGICAL INFORMATION

**Degradability: Mesotrione:** Degradation is influenced by soil pH

**Terbuthylazine:** Adsorption on soils is strong. Terbuthylazine is only slightly mobile. Microbial degradation proceeds mainly by de-ethylation and hydroxylation, with eventual ring cleavage.

**S-Metolachlor:** Major aerobic metabolites are derivatives of oxanilic and sulfonic acids

### ECOTOXICOLOGY:

**Birds:** Non-toxic

**Mesotrione:** LD<sub>50</sub>: Bobwhite quail: >2000 mg/kg

Mallard duck: >5200 mg/kg

**Terbuthylazine:** LD<sub>50</sub>: Bobwhite quail: >1000 mg/kg

Mallard duck: >1000 mg/kg

**S-Metolachlor:** LD<sub>50</sub>: Bobwhite quail: >2510 mg/kg

Mallard duck: >2510 mg/kg

**Fish:**

**Mesotrione:** LC<sub>50</sub> (96h): Bluegill sunfish: >120 mg/l

Rainbow trout: >120 mg/l

**Terbuthylazine:** LC<sub>50</sub> (96h): Bluegill sunfish: 52 mg/l

Rainbow trout: 2.2 mg/l

Carp & Catfish: 7.0 mg/l

**S-Metolachlor:** LC<sub>50</sub> (96h): Bluegill sunfish: 3.16 mg/l

Rainbow trout: 1.23 mg/l

**Daphnia:**

**Mesotrione:** L(E)C<sub>50</sub> (48h, static): 900 mg/l

**Terbuthylazine:** LC<sub>50</sub> (48h): 69.3 mg/l

**S-Metolachlor:** LC<sub>50</sub> (48h): 11.24-26.00 mg/l

**Algae:**

**Mesotrione:** L(E)C<sub>50</sub> (72h, static):

*Selenastrum capricornutum* 4.5 mg/l

**Terbuthylazine:** EC<sub>50</sub> (72h):

*Scenedesmus subspicatus* 0.016–0.024 mg/l

**S-Metolachlor:** E<sub>b</sub>C<sub>50</sub> (120h):

*Selenastrum capricornutum* 0.008 mg/l

*Skeletonema costatum* 0.11 mg/l

**Honeybees:**

**Terbuthylazine:** LD<sub>50</sub> (Oral): >0.085 mg/bee

(Contact) : >0.2 mg/bee

**S-Metolachlor:** LD<sub>50</sub> (Oral & Contact): >200 µg/bee

### 13. DISPOSAL CONSIDERATION

**Pesticide disposal:** Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product that cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers.

Comply with local legislation applying to waste disposal.

**Package product wastes:** Emptied containers retain vapour and product residues. Observe all labeled safeguards until container is destroyed. Empty the container of excess product into the container of the applicator. Destroy the emptied containers by perforation and flattening. Bury in an approved, designated landfill. Do not re-use the empty container for any other purpose.

## UNIVERSAL LOCATE 538 SC

## MATERIAL SAFETY DATA SHEET

Do not burn the empty container. Comply with any local legislation applying to disposal.

**Declaration:** All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and is presented in good faith believed to be correct. This information applies to the PRODUCT AS SUCH. In case of 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 MSDS 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 the product. If the recipient subsequently produces formulation(s) containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.

### 14. TRANSPORT INFORMATION

**UN NUMBER:** 3082  
**ADR/IRD:**  
 Class: 9  
 Shipping name: Environmentally hazardous substance, Liquid, N.O.S. (Mesotrione, S-Metolachlor & Terbutylazine 538 g/l)

**IMDG/IMO:**  
 Packaging group: III  
 Class: 9  
 Shipping name: Environmentally hazardous substance, Liquid, N.O.S. (Mesotrione, S-Metolachlor & Terbutylazine 538 g/l)

### MARINE POLLUTANT

**ICAO/IATA:**  
 Class: 9  
 Packaging group: III  
 Shipping name: Environmentally hazardous substance, Liquid, N.O.S. (Mesotrione, S-Metolachlor & Terbutylazine 538 g/l)

### END OF DOCUMENT

**Compiled:** June 2012  
**Revised:** March 2019  
**Revision no.:** (2)  
**Next revision date:** March 2024

For detailed information on revisions, contact the Registration holder.

### 15. REGULATORY INFORMATION

**Symbol:** Xi, N  
**Indication of danger:** Irritating substance, environmentally dangerous substance.

#### Risk phrases:

**R 36/38** Irritating to eyes and skin.

#### Safety phrases:

**S 2** Keep out of the reach of children.  
**S 8** Keep container dry.  
**S 13** Keep away from food, drink and animal feeding stuffs.  
**S 20/21** When using do not eat or drink.  
**S 24/25** Avoid contact with skin and eyes.  
**S 36/37** Wear suitable protective clothing and gloves.

### 16. OTHER INFORMATION:

**Packing and Labeling:** Packed in 1, 5, 10, 20, 25 & 50 litres plastic containers. Labelled according to South African regulations and guidelines.