
STARPLEX 83 CC

Material Safety Data Sheet

Revised on: 1 January 2017

Revision number 3

1. Substance/preparation and company identification

ULTRAWEED SUPER

Use: Domestic, Agriculture, Herbicide

Company:

Starplex 83 CC
Reg. No. 2004/01564/23
P.O. Box 14374
BREDELL 1623
SOUTH AFRICA
TEL: (011) 979-4246/7

Emergency contact numbers

Tygerberg Poison Center: +2721 931 6129
Griffon Poison Information Centre - 082 446 8946

2. Composition/information on ingredients

Glyphosate (glycine derivative)/Glifosaat (glisienderivaat)	167 g/l
Glyphosate acid equivalent	125 g/l
Simazine(Triazine)	175 g/l
Terbutylazine	175 g/l
Other related triazines	1.8 g/l
Total active triazines	351.8 g/l

3. Hazard identification

Main hazard: A relatively low toxicity herbicide. Poisonous if swallowed. Irritating to eyes and respiratory system.

Flammability: Water based product, non-flammable.

Chemical hazard:

Simazine: R 40. Possible risks of irreversible effects. Most mammals tend to be insensitive to simazine. For unknown reasons, sheep and cattle are especially susceptible to poisoning by simazine. Doses of 500 mg/kg were fatal in sheep with death delayed for 5 to 16 days. Symptoms exhibited by poisoned sheep include lower food intake, higher water intake, incoordination, tremors, and weakness, especially in the hindquarters. Sheep show liver damage, (see also section 12: Bio-accumulation);

Terbutylazine: R22. Harmful if swallowed.

Glyphosate: Irritating to eyes. (Risk of serious damage to eyes).

Biological hazard: Highly toxic to algae. Dangerous to fish.

Reproductive hazard:

Glyphosate: Most of the field and laboratory evidence shows that glyphosate produces no reproductive changes in test animals; it is unlikely that the compound would produce any reproductive effects in humans. It did not cause any teratogenic effects (birth defects).

Simazine: No adverse effects on reproductive capacity or development were observed in a three generation study of rats fed 5 mg/kg/day simazine.

Eye effects: eyes:

Glyphosate: Irritating to eyes.

Simazine: Non-irritating to skin and eyes (rabbits).

Terbuthylazine: No skin or eye irritation; not a skin sensitizer.

Health effects: skin:

Glyphosate: Non-irritating to skin (rabbits); Glyphosate – Dermal LD50 (rat) > 5000 mg/kg.

Simazine: Dermal LD50 (rat) > 3100 mg/kg; (Non-irritating to skin and eyes (rabbits). Simazine is slightly toxic via dermal exposure.

Terbuthylazine: Dermal LD50 (rat) > 3000 mg/kg; (Non-irritant to eyes and slightly to skin of rabbits).

Health effects: ingestion:

Glyphosate: Oral LD50 (rat) > 5000 mg/kg.

Simazine: Oral LD50 (rat) > 5000 mg/kg. Irritating to respiratory system. Avoid inhalation of vapour or spray mist. Simazine is moderately toxic if ingested. No cases of poisoning in humans have been reported from ingestion of simazine.

Terbuthylazine: Oral LD50 (rat) = 2000 mg/kg.

Health effects: inhalation:

Glyphosate: LC50 (4h) for rats > 12.2 mg/l air.

Simazine: LC50 (4h) for rats > 2 mg/l air. Simazine is highly toxic if inhaled (especially important at manufacturing sites). The final product is relatively safe if all the precautions and personal protections related to the pesticide are followed.

Terbuthylazine: LC50 (4h) for rats > 3.51 mg/l air.

Carcinogenicity:

Simazine: - Carcinogenic category 3: Substance which may cause concern for man owing to possible carcinogenic effects but in respect of which the available information is not adequate for making a satisfactory assessment. Because simazine in drinking water may possibly increase the risk of cancer in humans, the Lifetime Health Advisory level (LHA = 1 g/l) set by EPA includes an additional margin of safety. Simazine did not produce tumors in mice given 215 mg/kg/day, the highest dose tolerated, for 18 months. Simazine produced thyroid and mammary tumors in female rats fed 5 mg/kg, the highest dietary dose tested.

Glyphosate: US EPA has stated that there is sufficient evidence to conclude that glyphosate is not carcinogenic in humans.

Mutagenicity:

Simazine: Animal studies did not detect any mutagenic effects. No human information available.

Terbuthylazine: Not mutagenic in a series of tests using bacteria, cultured mammalian cells and whole animals. No human information available.

Glyphosate: Does not cause mutations in microbes. The compound poses little mutagenic risk to humans.

Neurotoxicity:

Simazine: In case of heavy intoxication, symptoms of excitement and depression of the central nervous system may appear.

Terbuthylazine: In case of heavy intoxication, symptoms of excitement and depression of the central nervous system may appear.

Glyphosate: Hens fed massive amounts over three days and again 21 days later showed no nerve related effects.

4. First-aid measures

General advice:

Avoid contact with the skin, eyes and clothing. Remove contaminated clothing. If difficulties occur: Obtain medical attention. Show container, label and/or safety data sheet to physician.

If poisoning is suspected, do not wait for symptoms to develop. Contact a physician, the nearest hospital, or the nearest Poison Control Centre.

Symptoms:

Some triazines are mildly irritating to skin, eyes, and upper respiratory tract. Systemic toxicity is unlikely unless very large amounts have been ingested. Simazine: Symptoms of simazine poisoning include:

In coordination, tremor and weakness, cyanosis and chronic convulsions.

Terbuthylazine: The acute toxicity to terbuthylazine for man is thought to be low, and no adverse health effects from exposure to this herbicide have been reported. Glyphosate: Symptoms of Glyphosate poisoning include: headache, dizziness, weakness, in-coordination, muscle twitching, tremor, nausea, abdominal cramps, diarrhea, and sweating. Blurred or dark vision, confusion, tightness in the chest, wheezing, productive cough, and pulmonary oedema may occur. Incontinence, unconsciousness and convulsions may indicate severe poisoning. Slow heartbeat and salivation may occur. Slowing of the heartbeat rarely progresses to complete sinus arrest. Respiratory depression may be fatal.

Advice to physician: No signs and symptoms of triazine poisoning are known or expected in humans. There is no specific antidote. Treat symptomatically and supportively as and when required. When large amounts have been ingested, gastric lavage or the administration of activated charcoal with water may be indicated. Remove by gastric lavage and catharsis, but not if victim is unconscious. Give oxygen if respiration is depressed.

If inhaled:

Keep patient calm, remove to fresh air. Irritating to respiratory system. Get medical advice if symptoms appear or after significant exposure. Apply artificial respiration if necessary. Treat symptomatically. (Simazine is highly toxic if inhaled, but no fatalities from the final product have been reported).

On skin contact:

After contact with skin, wash immediately with plenty of water and soap including hair and under fingernails. If irritation develops, seek medical attention. Persons who become sensitized may require specialized medical management with anti-inflammatory agents.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open. If eye symptoms (redness, irritation or pain) persist refer patient to ophthalmologist for examination of eye.

On ingestion:

Seek medical advice immediately. Rinse mouth thoroughly with water. The patient should be kept under observation for at least 72 hours. Treat symptomatically.

Ingestions of small amounts (less than 10mg glyphosate / kg body weight) occurring less than an hour before treatment, are probably best treated by: Syrup of Ipecac (e.g. Lennon Ipekakuanha), followed by 1-2 glasses of water. Dose for adults and children over 12 years: 30 ml. Dose for children under 12 years: 15 ml.

Note for physicians

No signs and symptoms of triazine poisoning are known or expected in humans. There is no specific antidote. Treat symptomatically and supportively as and when required. When large amounts have been ingested, gastric lavage or the administration of activated charcoal with water may be indicated. Remove by gastric lavage and catharsis, but not if victim is unconscious. Give oxygen if respiration is depressed.

No cases of poisoning from the final product have been recorded. Glyphosate: There is no specific antidote. Treat symptomatically and supportively as and when required. Remove by gastric lavage and catharsis, but not if victim is unconscious. Give oxygen if respiration is depressed. **INGESTION** of **LARGE** amounts (more than 10 mg glyphosate / kg) occurring less than an hour before treatment, should probably be treated by gastric lavage:

A. INTUBATE stomach and ASPIRATE contents.

B. LAVAGE stomach with slurry of ACTIVATED CHARCOAL in 0.9% saline. Leave 30-50 gm activated charcoal in the stomach before withdrawing tube.

C. SODIUM SULFATE, 0.25 gm/kg in tap water, as a cathartic.

CAUTION: Hydrocarbons (kerosene, petroleum distillates) may be included in the formulation. Ingestion of very **LARGE AMOUNTS** may cause CNS depression. In this case, **IPECAC IS CONTRAINDICATED**. Also, gastric intubation incurs a risk of **HYDROCARBON PNEUMONITIS**. For this reason observe the following precautions:

(1) If the victim is unconscious or obtunded and facilities are at hand, insert an **ENDOTRACHEAL TUBE** (cuffed, if available) prior to gastric intubation.

(2) Keep victim's **HEAD BELOW LEVEL OF STOMACH** during intubation and lavage (Trendelenburg, or left lateral decubitus, with head of table tipped downward). Keep victim's head turned to the left.

(3) **ASPIRATE PHARYNX** as regularly as possible to remove gagged or vomited stomach contents.

INGESTIONS occurring **MORE THAN** an **HOUR** before treatment are probably best treated only by **ACTIVATED CHARCOAL**, 30-50 gm, and **SODIUM** or **MAGNESIUM SULFATE**, 0.25 gm/kg, as described above. There are no specific antidotes for these chemicals. Because manifestations of toxicity do occasionally occur in peculiarly predisposed individuals, **MAINTAIN CONTACT** with victim for at least 72 hours so that unexpected adverse effects can be treated promptly.

5. Fire-fighting measures

Suitable extinguishing media:

Dry chemical, carbon dioxide, standard foam. Water can be used for larger fires or cooling of unaffected stock, but avoid the accumulation of polluted run-off from the site. Contain fire control water for later disposal.

Specific hazards:

Generating poisonous and corrosive fumes containing:

carbon monoxide, nitrogen oxides and hydrochloric acid. Keep upwind. Keep product out of sewers and water sources. Use of contaminated buildings, area and equipment must be prevented until they are properly decontaminated.

Fire may produce irritating or poisonous vapours, mists or other products of combustion. Fire-fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

Further information:

In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions:

Use personal protective clothing. Avoid contact with the skin, eyes and clothing. Remove contaminated clothes, undergarments and shoes immediately. Avoid breathing vapours or spray drift. If necessary, wear a self-contained breathing apparatus.

Environmental precautions:

Dangerous to fish. Do not contaminate ponds, waterways or ditches with chemical or used container. Do not allow to enter drainage systems, surface or ground water. If the product enters watercourses or sewers or contaminate soil or plants, inform competent authority.

Methods for cleaning up or taking up:

For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr) and place into containers for subsequent disposal. Wash the spill area with a strong detergent and water. Flush the spill area with water to remove any residue.

For large amounts: Dike spillage. Pump off product.

Cleaning operations should be carried out only while wearing breathing apparatus. Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labelled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

7. Handling and storage

Suitable material: This product should only be stored or applied using stainless steel, aluminium, fibreglass or plastic lined containers. Do not mix, store or apply in galvanized or unlined mild steel containers or spray tanks. The product can react with such containers and tanks or produce hydrogen gas, which may form a highly combustible mixture that can flash or explode, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Handling

Harmful if swallowed. Avoid contact with skin, eyes and clothing. Do not leave the product in the applicator for long periods. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately if the herbicide 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.

Storage

Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect against moisture. Protect from direct sunlight.

Storage stability:

Storage duration: 24 Months

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure controls and personal protection

Occupational exposure limits:

Gllyphosate: ADI (acceptable daily intake) for man 0.3 mg/kg body weight.

Simazine: ADI 0.005 mg/kg body weight daily. No occupational exposure limits for simazine have been set by OSHA, NIOSH, or ACGIH.

Terbuthvlazine: ADI 0.0035 mg/kg body weight daily.

Engineering control measures: Use outdoors in a well-ventilated area. Comply with occupational safety, environmental, fire, and other applicable regulations. Wear suitable personal protective equipment. Following application clean sprayer parts by flushing with water.

Personal protection - respiratory: Avoid inhaling fumes or spray drift. Respiratory protection is not required for normal use and handling. During periods of abnormal exposure to heavy spray or mist, use a NIOSH approved dust/mist respirator. Limitations of respirator use specified by the approving agency and the manufacturer must be observed

Personal protection – hand: Protective waterproof (impermeable) rubber or plastic gloves.

Personal protection – eye: Wear eye protection. Safety glasses. The use of safety goggles is recommended. During mixing or pouring operations or other activities in which eye contact with undiluted ULTRAWEED SUPER is likely to occur, splash goggles should be worn.

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 emergence use.

Personal protection – skin: Long-sleeved shirt, long pants, shoes plus socks, protective waterproof (impermeable) gloves. Employee must wear appropriate protective clothing and equipment to prevent prolonged skin contact with this product. Clothing soaked with ULTRAWEED SUPER solution should be promptly removed and laundered before re-use.

Other protection: Do not eat, drink or smoke while handling this product. Prevent contamination of food, feeds, drinking water and eating utensils. After using this product wash hands and face before eating. Take extreme care to avoid drift. Wash accurately (preferably a shower) after work shift. Wash hands during breaks and at the end of the work with soap and water.

9. Physical and chemical properties

Appearance:	Thick whitish, free-flowing suspension concentrate that forms a fine suspension on dilution. Slight esotery odour.
pH:	5.2 to 5.6
Flashpoint:	>100 °C
Oxidizing properties:	Corrosive to iron, steel and aluminium.
Solubility in water:	<u>Glyphosate</u> : 12 g/L (25°C); Very soluble in water. <u>Simazine</u> : 3.5 mg/L (20°C) or 5 ppm (20-22°C). <u>Terbuthvlazine</u> : 8.5 mg/L (20°C).
Solubility – solvent:	Glyphosate: Insoluble in common organic solvents, e.g. acetone, ethanol and xylene; Terbuthylazine: 100 g/L dimethylformamide; 40 g/L ethyl acetate; 14.3 g/L octan-1-ol; Simazine: 900 mg/L chloroform; 300 mg/L diethyl ether; 2 mg/L light petroleum; 400 mg/L methanol.
Neurotoxicity:	Simazine: In case of heavy intoxication, symptoms of excitement and depression of the central nervous system may appear. Terbuthylazine: In case of heavy intoxication, symptoms of excitement and depression of the central nervous system may appear. Glyphosate: Hens fed massive amounts over three days and again 21 days later showed no nerve related effects.

10. Stability and reactivity

Conditions to avoid:	Avoid sources of heat, free flames or spark generating equipment. Glyphosate is stable up to 60°C.
Incompatible materials:	Spray solutions containing this product should only be stored or applied using stainless steel, aluminium, fibreglass or plastic lined containers. Do not mix, store or apply in galvanized or unlined mild steel containers or spray tanks. The product can react with such containers and tanks or produce hydrogen gas, which may form a highly combustible mixture that can flash or explode, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source. The product is relatively stable in neutral, weakly acidic and weakly alkaline media, but reacts strongly (and possibly violently) with strong alkalis. Do not mix with other herbicides or pesticides except for products mentioned on the product label. Do not physically mix concentrate directly with other herbicides or pesticides concentrates; always dilute first.
Hazardous decomposition:	Thermal decomposition product may include toxic and corrosive fumes of chlorides and toxic oxides of nitrogen.
Non hazardous reactions when stored and handled according to prescribed instructions.	

11. Toxicological information (active ingredient)

Acute Toxicity

Glyphosate: Acute oral LD₅₀ for rats 5600 mg/kg; Acute dermal LD₅₀ for rabbits > 5000 mg/kg; Acute inhalation (4 h) for rats > 1.3 mg/L air. Glyphosate is a moderately toxic herbicide. Even though the LD₅₀ values show the compound to be relatively non-toxic it can cause significant eye irritation.

The triazine herbicides (simazine and terbuthylazine) disturb energy metabolism (thiamin and riboflavin functions). Toxicity symptoms include difficulty in walking, tremor, convulsions, paralysis, cyanosis, slowed respiration, miosis (pin point pupils), gut pain, diarrhea and impaired adrenal function.

Terbuthylazine: Skin and eye – acute dermal LD₅₀ for rats > 2000 mg/kg; Acute oral LD₅₀ for rats 1590 - > 2000 mg/kg.

Simazine: Acute oral LD₅₀ for rats 950 mg/kg; Skin and eye - acute dermal LD₅₀ for rats = 3100 mg/kg, rabbits > 10200 mg/kg. Simazine is highly toxic if inhaled, moderately toxic if ingested, and slightly toxic via dermal exposure. No cases of poisoning in humans have been reported from ingestion of simazine. No systemic toxicity was observed in a 21 day dermal study with rabbits exposed to doses of up to 1 gm/kg. The lethal concentration fifty, or LC50, is that concentration of a chemical in air or water that kills half of the experimental animals exposed to it for a set time period. The 4-hour inhalation LC50 in rats is 2 mg/m³, and the 1-hour LC50 in rats is 9800 mg/m³. The LClo in rats is 580 mg/m³. An LClo is the lowest concentration which causes death in test animals. Simazine is considered to be moderately toxic. It is possible that 0.5-5 g/kg would kill a 70 kg person if eaten

Skin and eye contact:

Glyphosate: Mild eye irritant; non irritating to skin (rabbits); LD₅₀ for rabbits > 5000 mg/kg. Contact and non-contact re-entry: When fully dry.

Simazine: Non-irritating to skin and eyes (rabbits). Rashes and dermatitis from occupational exposure to simazine have occurred. Simazine is slightly irritating to the skin and moderately irritating to the eyes of rabbit. Patch tests on humans have shown that simazine is not a skin irritant, fatiguing agent or sensitizer. Large amounts of simazine may cause dermatitis (rashes). This kind of exposure may be gotten in manufacturing settings. In rabbits, 80 mg of simazine produced irritation in the eye.

Terbuthylazine: No skin or eye irritation; not a skin sensitiser.

Chronic toxicity:

Glyphosate: NOEL (no observable effect level) - In 2 year feeding trials, no ill-effects were observed in rats and dogs receiving 300 mg/kg diet (highest dose treated); ADI (acceptable daily intake) for man 0.3 mg/kg body weight.

Simazine: NOEL (no observable effect level) - In 2 year feeding trials, no ill- effects were observed in rats receiving 10 mg/kg diet (0.7 mg/kg daily), for dogs 20 mg/kg diet (0.7 mg/kg daily); ADI (acceptable daily intake) 0.005 mg/kg body weight daily. When rats were given repeated doses of 15 mg/kg/day, some liver cells degenerated during the first 3 days, but the condition did not progress. Instead, the liver adapted and the compound was metabolized. The US EPA has set a

Lifetime Health Advisory (LHA) for Simazine in drinking water at 1 µg/L. EPA believes that water containing simazine at or below this level is acceptable for drinking every day over the course of one's lifetime, and does not pose any health concerns. Rats and guinea pigs fed 100 mg/kg daily for 6 months had decreased weight gain, increased white blood cell counts, decreased blood cholinesterase activity and deterioration and inflammation of the stomach. In a 28-day study, oral doses of 2,500 mg/kg/day to rats resulted in stomach ulcers, damage to the small intestine, and death.

Terbuthylazine: NOEL (12 months) for dogs 0.4 mg/kg daily; (lifetime) for rats 0.35 mg/kg daily; 2 year for mouse 16.8 mg/kg daily; ADI 0.0035 mg/kg.

Carcinogenicity:

Simazine: The product is classified as a probable human carcinogen. While the information is adequate for animal studies it is incomplete for human risks of cancer. Despite the incomplete record of human carcinogenicity due to the product, the EPA has required the DANGER signal word on product labels based on the product's potential to cause tumours in rats.

Terbuthylazine: Long-term animal studies did not show carcinogenic activity. No human information available.

Glyphosate: The US EPA has stated that there is sufficient evidence to conclude that glyphosate is not carcinogenic in humans.

Mutagenicity:

Simazine: Animal studies did not detect any mutagenic effects. No human information available.

Terbuthylazine: Not mutagenic in a series of tests using bacteria, cultured mammalian cells and whole animals. No human information available.

Glyphosate: The product was not clastogenic when tested with Chinese Hamster ovary cells, and is not mutagenic in mouse lymphoma cells.

Reproductive hazards:

Glyphosate: Most of the field and laboratory evidence shows that glyphosate produces no reproductive changes in test animals. It is unlikely that the compound would produce any reproductive effects in humans. It did not cause any teratogenic effects (birth defects).

Simazine: No adverse effects on reproductive capacity or development were observed in a three generation study of rats fed 5 mg/kg/day simazine. Chronic inhalation of a cumulative dose of 17 mg/m³ for 2 hr/day for 8 days in pregnant rats resulted in toxic effects on the fetuses and developmental abnormalities. Decreased weights and increased skeletal abnormalities were noted in the fetuses of pregnant rabbits fed 200 mg/kg/day.

12. Ecological information

Aquatic toxicity - fish: Glyphosate: LC₅₀ (96 h) for trout 86 mg/L. Bluegill sunfish 120 mg/L.

Simazine: LC₅₀ (96 h) for rainbow trout > 100 mg/L; Bluegill sunfish 90 mg/L; Crucian carp > 100 mg/L; Guppies 49 mg/L. Simazine has very low toxicity to all aquatic species reviewed.

Terbuthylazine: LC₅₀ (96 h) for rainbow trout = 3.8 - 4.6 mg/L; Bluegill sunfish 52 mg/L; Carp and catfish 7.0 mg/L.

Aquatic toxicity - daphnia: Glyphosate LC₅₀ (48 h) > 780 mg/L.

Simazine: LC₅₀ (48 h) > 100 mg/L; 21 Days 0.29 mg/L. Simazine has very low toxicity to all aquatic species reviewed.

Terbuthylazine: LC₅₀ (48 h) 21.2 mg/L.

Aquatic toxicity - algae: Highly toxic to algae.

Biodegradability: Glyphosate: Microbial degradation is the major cause of loss from soil, with liberation of carbon dioxide. The principle metabolite is aminomethylphosphonic acid.

Terbuthylazine: Microbial degradation proceeds mainly by de-ethylation and hydroxylation, with eventual ring cleavage. DT₅₀ 30 - 60 days in biologically active soil.

Simazine: In soil, microbial activity accounts for degradation of a significant amount of simazine. Loss by photo decomposition or volatilisation is significant. DT₅₀ 70 - 110 days. Residual activity remains for 2-7 months (2-4 kg simazine / ha) after application. Simazine adsorbs to clays and mucks

Bio-accumulation: Simazine: The product shows little or no tendency to bio-accumulate. Simazine stimulates its own breakdown in the liver. Some accumulation occurs in the fat. Anywhere from 67-97% of the simazine in the body is excreted through the urine within 24 hours. When a cow was fed 5 ppm for 3 days, no simazine was found in the cow's milk during the next 3 days. It has been reported that simazine residues were present in the urine of sheep for up to 12 days after administration of a single oral dose. The maximum concentration in the urine occurred from 2 to 6 days after administration. Plants that are sensitive to simazine accumulate it unchanged. It is possible that livestock or wildlife grazing on these plants could be poisoned.

Terbuthylazine: The product shows little or no tendency to bio-accumulate and poses no long term threat to wildlife.

Glyphosate: The product shows little or no tendency to bio-accumulate and poses no long term threat to wildlife.

Mobility:

Glyphosate: Strongly adsorbed to soil and therefore becomes practically immobile.

Simazine: Downward movement or leaching is limited by the low water solubility of simazine. Several months after application, the greatest portion is found in the surface 2 inches of soil. K_d 0.37-4.66, K_{oc} 103-377, median c.150. The product is of low mobility in soils and is unlikely to result in contamination of ground water.

Terbuthylazine: Leaches only slightly. Adsorption on soils is strong: K_d 2.2-25, K_{oc} 162-278 are typical values for light agricultural soils. The product is relatively mobile in soil and can result in the contamination of surface and ground water.

13. Disposal considerations

Disposal methods: Do not contaminate crops, grazing, rivers or dams with chemical or used container. Contaminated absorbents, used containers, surplus product, etc. should be burnt in an incinerator, preferably designed for pesticide disposal. Hydrolysis under alkaline conditions (10% NaOH) is a suitable method to dispose of small quantities of the product. Heating speeds up the process. After hydrolysis, dilute and dispose off. The product is relatively stable and characterized by high Terbutylazine mobility in some soils and should not be buried in dump sites, landfills, etc. Comply with any local legislation applying to waste disposal.

Disposal of packaging: Emptied containers retain vapour and product residues. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed. Rinse empty container three times with a volume of water equal to at least one tenth of that of the container. Add the rinsings to the spray tank before perforating and flattening the container. Dispose of in approved landfill or preferably in a pesticide incinerator. Containers that are in good condition may be returned to a drum reconditioner for re-use with the same type of pesticide product. Do not re-use empty container for any other purposes.

14. Transport information

Non-hazardous for transport
UN no: 3077

15. Regulatory information

Regulations of the European union (Labelling) / National legislation/Regulations

Risk phases:

R 20/22 Harmful by inhalation or if swallowed.

R 36 Irritating to eyes.

R 40 Possible risks of irreversible effects.

Carcinogenic category 3 Substance which may cause concern for man owing to possible carcinogenic effects but in respect of which the available information is not adequate for making a satisfactory assessment.

Safety phases:

S 2 Keep out of reach of children.

S 25/26 Avoid contact with eyes. In case of accidental contact with eyes, rinse immediately with plenty of warm water and seek medical advice.

S 36/37 Wear suitable protective clothing and gloves.

S 46 If swallowed, seek medical advice immediately and show this container and label.

16. Other information

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.
