



SAFETY DATA SHEET

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: HARVEST NOVASATE 360 SL
 ACTIVE: **GLYPHOSATE 360g/L**
 REGISTRATION HOLDER: HARVEST CROP SOLUTIONS (PTY) LTD.
 DISTRIBUTOR: HARVEST CHEMICALS (PTY) LTD.
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1. CHEMICAL PRODUCT

Product name : NovaSate 360 SL
Active ingredient : Glyphosate

2. COMPOSITION/INFORMATION ON INGREDIENTS

Composition	CAS No.	Content (g/Lt)
Glyphosate	1071-83-6	360g/Lt
Other ingredients		Up to 1 Lt

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW : No adverse health effects are expected if the product is handled in accordance with this Material Safety Data Sheet and the product label. Symptoms may occur if the product is mishandled.

Toxicity classification :

Toxicity Class : EPA (Formulation) III

Signal Word : CAUTION

4. FIRST AID MEASURES

Symptoms of human poisoning:

May irritate the eyes, nose, throat and skin. Harmful if inhaled or swallowed.

If swallowed: If swallowed, immediately contact a poison control centre, doctor or nearest hospital for treatment advice. Rinse mouth with water. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control centre. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomit, rinse mouth and administer water.

If in eyes: Immediately flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. After 5 minutes check for and remove contact lenses, then continue rinsing eye. Obtain medical attention immediately if irritation persists.

If on skin or clothing: Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with running water for a minimum of 20 minutes. Obtain medical attention if irritation persists. Wash contaminated clothing before re-use.

If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is laboured, give oxygen. Obtain immediate medical attention.

Notes 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. Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazard:

Flammability: Non-flammable Liquid.

Special Hazards: The material does not burn. It is not explosive. Should the chemical be involved in a general fire, ensure chemical protective clothing is used.

Minimise the use of water to prevent environmental contamination.

Hazardous Products of Combustion:

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

Small Fires: Regular foam, Water spray, Foam, Dry powder chemical agent and carbon dioxide (CO₂).

Large Fires: Water Spray, Fog or regular foam. Move containers from fire area if you can do it without risk. Dike fire control water for later disposal; do not scatter the material. Do not use straight streams.

In Case of Fire:

Use appropriate extinguishing media for combustibles in the area. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Decontaminate equipment after use. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff. Prevent runoff to enter sewers, waterways, rivers or dams.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Avoid contact with skin and eyes. Do not inhale mist. Ventilate area of spill or leak, especially confined areas.

Wear appropriate personal protective equipment as specified in Section 8. Chemical protective clothing usage is advised, i.e. wear neoprene gloves, cotton overalls and safety goggles.

Environmental Precautions:

Small Spill:

Absorb with sand, soil or other absorbent material. Scrub the spill area with detergent and water. Minimise the use of water to prevent environmental contamination.

Large Spill:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8.

Cover entire spill with absorbing material and place into compatible disposal container. Scrub the spill area with detergent and water. Collect wash water with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal.

Spill/Leak Procedures: Notify safety personnel, isolate and ventilate area, deny entry, and stay upwind. Shut off all ignition sources.

7. HANDLING AND STORAGE

Handling: Relatively safe to handle.

Do not eat, drink or smoke while handling this product.

Do not breathe dust, vapor, mist or gas. Do not get in eyes, on skin or on clothing.

Wash thoroughly with soap and water after handling.

Dispose of wash water where it will not contaminate crops, grazing, dams or rivers.

Storage:

Store in a well-ventilated, secure area out of reach of children, uninformed persons and animals.

Store in tightly closed container.

Do not store food, beverages or tobacco products in the storage area.

Local regulations should be complied with

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: Use adequate ventilation to keep airborne concentrations low. The measures appropriate for a particular worksite depends 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. If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

Eye Protection: Wear appropriate protective eyeglasses.

Emergency Eye Wash: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower for emergency use.

Skin Contact: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear.

Inhalation: A combination particulate/organic vapor respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state/appearance: Light Yellow liquid

pH: 4.5 – 5.8

Water solubility: Soluble in water

Explosive properties: Not explosive

Oxidizing properties: No oxidizing properties

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions in sealed container.

Hazardous Polymerization: Will not occur.

Conditions to avoid:

- Do not use galvanized or unlined mild steel
- Containers as the product can react with such
- Containers to produce a highly combustible
- Mixture of hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation studies (Finished product)

PLANT. CULTIVATE. HARVEST

Oral: Acute Oral Toxicity LD₅₀ for Rats: >5000 mg/kg, goat 5700 mg/kg.

Skin and Eye Contact: Acute percutaneous LD₅₀ for Rabbits > 5000 mg/kg. Slight eye irritant, not a skin irritant (Rabbits).

Inhalation: LC₅₀ (4h) for Rats > 1.4 mg/L air.

Noel: In a 6 mo capsule trial, no ill-effects were observed in dogs receiving 300 mg/kg daily (highest dose treated).

Mutagenicity: No

Teratogenicity: No

Carcinogenesis: No

12. ECOLOGICAL AND ECOTOXICOLOGICAL INFORMATION

Breakdown of Chemical in Animals, Plant Soil/Environment: In mammals, following oral administration, **Glyphosate** is very rapidly excreted unchanged and does not bioaccumulate. In plants, it is slowly metabolized to aminomethylphosphonic acid (1066-51-9), which is the major metabolite. In soil (field), DT₅₀ 1-130d, depending on edaphic and climatic conditions. In water, DT₅₀ varies from a few to 90d. Photodegradation in water occurs under natural conditions, DT₅₀ 33-77d; no substantial photodegradation in soil was recorded over 31d. In lab. Whole system with water and sediment, DT₅₀ 27-146d (aerobic), 14-22d (anaerobic). The major metabolite in soil and water is aminomethylphosphonic acid.

ECO-ACUTE TOXICITY FOR FISH, DAPHNIA, ALGAE, WORMS:

Fish: LC₅₀ (96hr) for Rainbow Trout and Bluegill sunfish >1000, Fathead minnow 97, Channel fish 130 mg/l.

Daphnia: LC₅₀ (48hr) 930 mg as/l.

Algae: EC₅₀ 72.9 mg/l (72 h) for *Scenedesmus subspicatus*.

Worms: LC₅₀ > 5000 mg as/kg soil – (14 d) for *Eisenia foetida*. Reproductive toxicity NOEC 28.79 mg/kg.

13. DISPOSAL CONSIDERATIONS

Product: Dispose of as hazardous waste. Burn in controlled high temperature incinerator. Keep out of drains, sewers, ditches and water ways. When no incinerator is available, bury in an approved dump, or in an area where there is no risk of contamination of surface or ground water. Before burying, liberally mix with sodium carbonate crystals, to help neutralize the product, and with soil rich organic matter.

Container: Triple rinse according to directions on label. Do not reuse product containers for any other purpose.

Dispose of product containers, waste containers, and residues according to local, regional, national and international regulations.

14. TRANSPORT INFORMATION

Not classified as Dangerous Goods for transport by road or rail.

Take with care. Keep locked up. Keep away from fire. Do not contaminate water, food, or feeds by storage or disposal.

UN No.: 3018

Toxicity Class: EPA (formulation) III

15. REGULATORY INFORMATION

In accordance with Local Regulatory requirements.

Risk phrase(s)

R21: Harmful in contact with skin.

R22: Harmful if swallowed.

R23/25: Toxic by inhalation/Toxic if swallowed.

Safety phrase(s)

S1/2: Keep locked up and Keep out of reach of children.

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

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

S24/25: Avoid contact with skin/eyes.

S28: After contact with skin, wash immediately with plenty of water.

S29/35: Do not empty into drains/Dispose of material and container in a safe way.

S36/37: Wear suitable protective clothing and gloves.

S46: If swallowed, seek medical advice immediately – show the label or container where possible.

16. OTHER INFORMATION

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 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 on 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 clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact the company.

