

BENEFIT PLUS

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: BENEFIT PLUS
Other identifier: Nitrogen Salt Adjuvant
Recommended use: Adjuvant
Restrictions on use: Agriculture

Supplier: Villa Crop Protection (Pty) Ltd.
Co. Reg. No.: 1992/002474/07
 PO Box 10413
 Aston Manor, 1630, South Africa

Telephone: (011) 396 2233
Fax: (011) 396 4666
Website: www.villacrop.co.za

Emergency telephone numbers:
24 Hr Transport / Spill emergency no:
 (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

2. HAZARDS IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008		
Hazard classes	Hazard categories	H-statements
Health		
Eye Irritation	Eye Irrit. 2	H319
Environment		
Aquatic Acute	Aquatic Acute 1	H400
Aquatic Chronic	Aquatic Chronic 1	H412

The most important adverse effects:
Physicochemical effects: None known
Human health effects:
 Causes serious eye irritation (Eye Irrit. 2)

Label elements:



Signal word: Warning

Hazard statements:

H319: Causes serious eye irritation.
 H400: Very toxic to aquatic life.
 H412: Harmful to aquatic life with long lasting effects.

Precautionary statements:

P264+P265: Wash hands and face thoroughly after handling. Do not touch eyes.
 P273: Avoid release into the environment.
 P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P317: If eye irritation persists: Get medical help.
 P391: Collect spillage.
 P501: Dispose of contents/container to suitable landfill in accordance with local regulations.

Other hazards:

None known.

Toxicity:

Classification according to GHS: Unclassified

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

Composition:

Chemical name	CAS	Conc. (m/m%)	Classification EC 1272/2008
Ethoxylated isotridecanol (Marlipal 013/90)	69011-36-5	< 30 %	Aquatic Acute 1 Aquatic Chronic 3
Ammonium nitrate solution, ammonium salt	6484-52-2	< 40 %	Ox. Sol. 3 Eye Irrit. 2
Ammonia	7664-41-7	< 2 %	Press. Gas Flam. Gas 2 Skin Corr. 1B Acute Tox. 3 Aquatic Acute 1

4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs.

Skin: Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Do not rub the skin. Persons who become sensitized may require specialized medical management. **Immediately seek medical advice.**

Eyes: Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present,

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remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention.**

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Obtain medical attention immediately. Qualified medical personnel should perform administration of oxygen. If the person is alert, rinse mouth thoroughly with water and give person large volumes of water or milk to drink. When vomiting occurs, keep head lower than hips to prevent aspiration.

Anticipated acute effects: None known.

Anticipated delayed effects: None known.

Most important symptoms / effects: Causes serious eye irritation.

Advice to physician: Both ammonium & diamino methanal components have diuretic actions. Large doses may cause vomiting. Acidosis may occur in presence of impaired renal function. Treat for methemoglobinemia.

5. FIRE-FIGHTING MEASURES

Fire and explosion hazard: Will not burn or support combustion, but will decompose into noxious, poisonous gases when exposed to the high temperatures of a fire. The solutions may become explosive if combined with a flammable substance and/or dried to a low percentage of water.

Suitable Extinguishing Media: Water.

Unsuitable Extinguishing Media: High volume water jet. Use a water jet only to cool heated containers.

Hazardous products of combustion: Ammonia, oxidizes further to nitric oxide and nitrogen dioxide.

Special fire-fighting procedures: Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Remain upwind of fire. Avoid inhaling hazardous vapours and fumes from burning materials. **BENEFIT PLUS** is not flammable. Use water to extinguish a fire involving **BENEFIT PLUS** if water is compatible with the burning material. Remove container from fire area if possible and without risk. If not, apply cooling water to sides of containers that are exposed to fire, until well after the fire is out. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal. **Dried ammonium salts, when sensitized or when decomposing, may become unstable or explosive.** This product is classified as being toxic to aquatic life – Avoid pollution of waterways by run-off from the site.

Personal protective equipment: Wear NIOSH / MSHA approved self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid contact with eyes and skin. Do not breathe in spray mist or fumes/vapours. Ventilate area of spill or leak, especially in contained areas.

Protective equipment: Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

Emergency procedures: Alert firefighting personnel, evacuate unprotected personnel and animals.

Environmental Precautions: Prevent spilled product from entering sewers, waterways or ground water. This product is classified as toxic to aquatic organisms and may cause effects in the aquatic environment. Any spillages or uncontrolled discharges into watercourses should be reported immediately to the police and the Department of Water / Environmental Affairs. This product is considered a marine pollutant.

Methods and Materials for Containment: Contain spilt product by diking area with sand or earth. Do not touch-spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals.

Methods and Materials for Clean-up: Remove sources of heat or ignition. Clean-up spill but do not flush to surface water. Contaminated soil can be spread as if it were fertilizer. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind. Dried ammonium salts, when sensitized or when decomposing, may become unstable or explosive.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: Do not use near source of sparks or open flame. Harmful if swallowed. Avoid contact with eyes and skin and inhalation of spray and vapour. Immediately clean up spills that occur during handling. Keep containers closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.

General occupational hygiene: Practice good hygiene when using this product. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Launder all clothing before it is re-used. 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 inter-tidal areas below the mean high-water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage:

Conditions for safe storage: Do not pressurize or expose containers to heat, flames, sparks or other sources of ignition; they may evolve poisonous gas or become

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unstable/explode and cause injury or death. Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original, labelled container, tightly closed in an isolated, dry, cool and well-ventilated area. Do not store near heat, open flame, sources of ignition or hot surfaces - avoid excess heat. Not to be stored next to foodstuffs, feed and water supplies. Avoid cross contamination with other pesticides and fertilisers.

Incompatible substances and mixtures: Refer to product label.

Packaging material: Plastic bottles or plastic drums/containers.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

No occupational exposure limits have been determined for the significant ingredients in this product.

Engineering Controls:

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations.

Personal Protective Equipment:

Respiratory Protection: For most well-ventilated conditions, no respiratory protection should be needed. Dried salt or aerosol solution will dissolve with mucosal membrane contact (lungs). If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved, air-purifying respirator with cartridges / canisters approved for organic vapours.

Hand Protection: Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye Protection: It is an aqueous salt solution and will dissolve with mucosal membrane contact (eyes). Remove contact lenses and wear safety glasses, chemical goggles or face shield where contact with liquid or dried salt may occur.

Skin and Body Protection: Employees must wear appropriate protective (impervious) clothing e.g., coveralls, (rubber) boots, hat and equipment to prevent repeated or prolonged skin contact with this product.

Emergency eyewash: Immediately flush with large amounts of water, including under the eyelids. If discomfort persists contact a physician, preferably an Ophthalmologist. Speed and thoroughness in rinsing eyes are important to avoid permanent injury. 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 AND CHEMICAL PROPERTIES

Appearance: Translucent to Transparent.

Odour: Slight ammonia odour.

Odour threshold: Not available.

pH (1% aqueous dilution): 8.3.

Melting point: Not available.

Freezing Point: Not available.

Boiling Point: Not available.

Flash Point: >53°C.

Flammability: Flammable.

Upper / lower explosion limits: Not available.

Vapour Pressure (mm Hg): Not available.

Relative Vapour Density: Not available.

Density / Relative density: 1.19 g/cm³.

Solubility: Soluble in water.

Corrosiveness: Corrosive to metals.

n-octanol / water partition coefficient: Not available.

Auto-ignition temperature: Not available.

Decomposition temperature: Not available.

Viscosity: Not available.

10. STABILITY AND REACTIVITY

Chemical stability: The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50°C, preferably below 30°C, and not for prolonged periods in direct sunlight.

Reactivity: None known.

Possibility of hazardous reactions: Unlikely to occur.

Conditions to avoid: Extreme heat or exposure to flames. Avoid contact with caustic soda, lime, strong alkali and oxidizing agents.

Incompatible materials: Incompatible with strong oxidizing agents. Hypochlorites or chlorine may react with **BENEFIT PLUS** to form nitrogen trichlorite that may be explosive.

Hazardous decomposition products: Ammonia, oxidized further to nitric oxide, nitrogen dioxide.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Calculated according to GHS

Oral LD₅₀: > 6600 mg/kg

Dermal LD₅₀: > 16000 mg/kg

Inhalation LC₅₀: Not classified.

Skin Corrosion: Not classified.

Eye Damage: Causes serious eye irritation.

Skin Sensitization: Not classified.

Respiratory Sensitization: Not classified.

Reproductive cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

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Reproductive toxicity: Not classified.
Specific target organ toxicity – single exposure: Not classified.
Specific target organ toxicity – repeated exposure: Not classified.
Aspiration hazard: Not classified.
Chronic Effects: Not classified.
POTENTIAL ADVERSE EFFECTS:
Eyes: This product can cause serious eye irritation.
Skin: Not classified
Ingestion: Not classified.
Other information: Not available.

mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of via an approved collector or recycler (www.croplife.co.za). Do not bury, burn, or donate the container to any other parties that may use it as a container for food or beverages. Observe all labelled safeguards until container is destroyed.

12. ECOLOGICAL INFORMATION

This product is harmful to aquatic life with long lasting effects.

ECOTOXICITY DATA:

Fish (diaminomethanal + ammonium salt):

LC ₅₀ (96hrs):	<i>Oncorhynchus mykisso</i>	103 mg/l
LC ₅₀ (96hrs):	<i>Pimephalas promelas</i>	100-500 mg/l

Fish ([isotridecanol] oxo-alcohol ethoxylate surfactant):

Alcohols, C8 – C18, ethoxylated: Toxic to fish		
LC ₅₀ (96 hrs):	<i>Cyprinus carpio</i>	1 – 10 mg/l
LC ₅₀ (24 hrs):	<i>Daphnia magna</i>	1 – 10 mg/l

Algae ([isotridecanol] oxo-alcohol ethoxylate surfactant):

EC ₅₀ (96 hrs):	<i>Scenedesmus subspicatus</i>	1 – 10 mg/l
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Product is considered a water pollutant and toxic to aquatic life. Algae blooms may form in static water contaminated with **BENEFIT PLUS**. The ammonia may form nitrates or nitrites in water, which will decrease the dissolved oxygen. Product can cause poisoning to livestock or poultry.

14. TRANSPORT INFORMATION

This product is environmentally hazardous.

UN Number: 3082

Road Transport ADR / ORD:

Class: 9
 Packaging group: III
 UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nitrogen solution 929 g/l)

Maritime Transport IMDG / IMO:

Class: 9
 Packaging group: III
 UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nitrogen solution 929 g/l)

Marine pollutant (Y/N): Yes

Air Transport IATA / ICAO:

Class: 9
 Packaging group: III
 UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nitrogen solution 929 g/l)

Special / Environmental Precautions: Wedge drums tightly to avoid movement.

Transport in bulk: Refer to MARPOL 73/78, Annex II and the IBC code.

13. DISPOSAL CONSIDERATIONS

Waste: BENEFIT PLUS is not considered a hazardous waste. Open dumping or burning of this product is prohibited. Waste resulting from the use of this product 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.

Container: Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed.

TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS: Invert the empty container over the spray or

15. REGULATORY INFORMATION

Safety, health and environmental regulations / legislation for the mixture:

OHSA 1993 Regulations for Hazardous Chemical Substances.

Relevant information regarding restrictions: None.

EU regulation: Regulation EC1272/2008 (EU-GHS/CLP)

Other national regulations: None.

Chemical Safety Assessment carried out? No

16. OTHER INFORMATION

Packaging: Packed in 50, 100, 200, 500 ml and 1.5l containers.

Other hazard statements, abbreviations and explanations:

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H221: Flammable gas.

H272: May intensify fire or explosion; strong oxidizer.

H280: Contains gas under pressure; may explode if heated.

H314: Causes severe skin burns and eye damage.

H319: Causes serious eye irritation.

H331: Toxic if inhaled.

H400: Very toxic to aquatic life.

IATA: International Air Transport Association.

IBC: International Bulk Chemical.

ICAO: International Civil Aviation Organization.

IMDG: International Maritime Dangerous Goods

IMO: International Maritime Organization.

LD₅₀ value: The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.

OEL/RL: Occupational exposure limit-recommended limit.

TWA: Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.

ST/STEL: Short-term exposure limits.

Disclaimer: The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage, and use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed. All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

END OF DOCUMENT

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For detailed information on revisions, contact the Registration holder.