6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Stop leak if possible to do so without risk to prevent further discharge. Pump liquid from bunds into undamaged storage tanks and containers. Contain spillage, then absorb spill into non-combustible absorbent material (vermiculite, sand or similar), collect and place in a suitable container for disposal. Rinse concrete areas afterwards and collect rinse water for disposal. Do not allow rinse water to enter bores, wells, sewers, stormwater drains and watercourses. If the area is not bunded and the leak cannot be stopped and/or liquid is flowing from site, construct a dam or earthen bund to prevent liquid product entering stormwater drains or watercourses. Use absorbent inert material, e.g. sand, soil, to soak up residual liquid.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas. This product when stored in a confined, unventilated space can give off ammonia odour and lead to the depletion of oxygen within this space. It is therefore essential that ventilation is carried out prior to entry to all confined spaces. Do not allow pumps to run dry and overheat. Bunding of liquid storage areas is recommended, particularly if in close proximity to drains and watercourses, as the product has the potential to cause environmental harm.

7.2 Conditions for safe storage, including any incompatibilities
Store in a dedicated clean tank. Avoid contamination with any chemical. Avoid evaporation of water from this product. Store away from incompatible materials which include strong acids, hypochlorites, bleach, pool chlorine, or chlorine based cleaning products. Alkalis will accelerate the evolution of toxic ammonia gas.

Storage Tanks: Stainless steel, high-density polyethylene (HDPE) or fibreglass tanks are recommended. If mild steel tanks are used for long term storage, it is recommended that an epoxy or polyurethane coating be applied internally and to other surfaces that may come in contact with the fertiliser. Galvanised or concrete tanks are not suitable. Tanks must be suitably rated to account for the Specific Gravity of the products to be stored. Standard polyethylene water tanks are not recommended.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

Ingredient	Reference	Determinant	Sampling Time	BEI
AMMONIUM NITRATE	ACGIH BEI	Methemoglobin in blood	During or end of shift	1.5% of hemoglobin

8.2 Exposure controls
Engineering controls Ensure adequate natural ventilation.

PPE

The selection of Personal Protective Equipment (PPE) should be based on a Risk Assessment of the task being performed and level of exposure. Normal work clothing may suffice where contact with the product is limited under well ventilated conditions where occupational exposure limits are not exceeded.

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Not required under normal conditions of use.

Wash splashed liquid from hands and exposed skin. Remove contaminated clothing and thoroughly wash the affected area. Wash contaminated clothing and other protective equipment before storage or reuse. Ensure all PPE conforms to the relevant Australian Standards. Read the labels on the PPE.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS LIQUID
Odour	AMMONIACAL ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	125°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	6.5 to 7.5 (10% solution)
Vapour density	NOT AVAILABLE
Relative density	1.25 to 1.35
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Cold temperatures (as constituents will salt out at temperatures below freezing), high temperatures (as ammonia gas may evolve from the fertiliser solution) and fire conditions (which may cause the fertiliser to boil, evaporate and decompose). Residual material that crystallises following the evaporation of water from Flexi-N contains ammonium nitrate, which may explode by detonation, heat or shock. Ensure all equipment is thoroughly rinsed after use and before undertaking any hot repair work, e.g. welding or cutting. Do not allow pumps to run dry.

10.5 Incompatible materials

Incompatible with combustible materials, and reducing agents (e.g. sulphites). Reactive with mineral acids, chlorine, oxidising agents and alkalis. This liquid fertiliser is not compatible with copper, zinc, or their alloys (i.e., bronze, brass, galvanised metals, etc.), aluminum, mild steel, and concrete. Do not use the above materials of construction in handling systems, or storage containers for this product.

10.6 Hazardous decomposition products

Fire will cause this liquid fertiliser to decompose, giving off acrid smoke and toxic and flammable fumes of nitrogen oxides, cyanuric acid, ammonia, carbon dioxide and carbon monoxide.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
AMMONIUM NITRATE	2217 mg/kg (rat)	> 5000 mg/kg (rat)	--
UREA	> 5000 mg/kg (rat)	> 5000 mg/kg (rat)	No data but expected to be low toxicity

Skin Contact may result in irritation, redness, rash and dermatitis.

Eye Causes serious eye irritation. Contact may result in irritation, lacrimation, pain and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Over exposure may result in irritation of the nose and throat, with coughing.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

It is not anticipated to cause any adverse effects to plants or animals.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

Plant nutrients may be beneficial to plants at low levels, however high levels may cause reduced growth or burns in sensitive species. Excess may be washed through soil to waterways. Nutrients released to waterways may cause algal blooms, with potential for toxic effects on aquatic organisms.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Beneficial reuse is the preferred disposal option. Do not empty waste or rinse water into drains or allow spills to flow into or contaminate watercourses. If the fertiliser solution has been recovered from a bund and has not been contaminated, it can be used for its intended purpose, i.e. as a nitrogen fertiliser, either in fertigation programs or through a boom-spray. If insoluble materials are present, the fertiliser solution may need to be filtered before application to prevent blockages of filters and nozzles. Sand and soil that has been used to soak up residual or spilt liquid can also be spread for its nutrient value as a fertiliser. If the waste (liquid or absorbent material) has been contaminated with other harmful materials, e.g. fuel, oil or chemicals, it must be disposed of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required). Dispose of in accordance with relevant local legislation.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated.	None allocated.	None allocated.
14.2 Proper Shipping Name	None allocated.	None allocated.	None allocated.
14.3 Transport hazard class	None allocated.	None allocated.	None allocated.
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem code None allocated.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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