



SAFETY DATA SHEET

KOCH FERTILISER AUSTRALIA PTY LTD

1. Identification

Product identifier Nexen™

Other means of identification

Synonyms Urea treated with AGROTAIN® urease inhibitor. * Nexen™ 46

Product code KFau_Nexen_AU_EN

Recommended use of the chemical and restrictions on use

Recommended use Fertiliser

Restrictions on use Not available.

Details of manufacturer or importer

Manufacturer

Company name Koch Fertiliser Australia Pty Ltd

Address Level 17
357 Collins St
Melbourne, Victoria, 3000
Australia

Telephone +011 61 3 9452 8200 or
+1.316.828.7672

e-mail kochmsds@kochind.com

Emergency telephone number Chemtrec: +001 703-527-3887
(Please reverse charges)

2. Hazard(s) identification

Classification of the hazardous chemical

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

Label elements, including precautionary statements

Hazard symbol(s) None.

Signal word None.

Hazard statement(s) The mixture does not meet the criteria for classification.

Precautionary statement(s)

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Other hazards which do not result in classification None known.

Supplemental information None.

3. Composition/information on ingredients

Mixture

Identity of chemical ingredients	CAS number and other unique identifiers	Concentration of ingredients
Urea	57-13-6	99.9
Propane -1,2 -diol	57-55-6	< 0.3

N-(n-butyl)-thiophosphoric triamide	94317-64-3	< 0.096
1-Methyl-2-pyrrolidinone	872-50-4	< 0.08
Urea formaldehyde resin	9011-05-6	< 0.04
Food Grade Dye Blend	N/A	< 0.01

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

4. First-aid measures

Description of necessary first aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.

Personal protection for first-aid responders Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Symptoms caused by exposure Dusts may irritate the respiratory tract, skin and eyes.

Medical attention and special treatment Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.

Specific hazards arising from the chemical Urea is non-combustible under most conditions. However, during a fire, irritating/toxic gases may be generated. The dust can be ignited at very high temperatures, but not expected to explode (minimum ignition temperature (cloud) = 900 deg C).

Special protective equipment and precautions for fire fighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire fighting equipment/instructions Move containers from fire area if you can do it without risk. Use water spray to prevent dust formation, absorb heat, keep containers cool and protect fire-exposed material.

Hazchem Code None.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
For emergency responders	Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

Methods and materials for containment and cleaning up Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions for safe handling Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Practice good housekeeping.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls and personal protection

Control parameters

Follow standard monitoring procedures.

Occupational exposure limits

Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A)

Components	Type	Value	Form
1-Methyl-2-pyrrolidinone (CAS 872-50-4)	STEL	309 mg/m ³	
	TWA	75 ppm 103 mg/m ³	
Propane -1,2 -diol (CAS 57-55-6)	TWA	25 ppm	Total vapour and particulates. Particulate. Total vapour and particulates.
		474 mg/m ³	
		10 mg/m ³ 150 ppm	

Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)

Components	Type	Value	Form
1-Methyl-2-pyrrolidinone (CAS 872-50-4)	STEL	309 mg/m ³	
	TWA	75 ppm 103 mg/m ³	
Propane -1,2 -diol (CAS 57-55-6)	TWA	25 ppm	Total vapour and particulates. Particulate. Total vapour and particulates.
		474 mg/m ³	
		10 mg/m ³ 150 ppm	

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
1-Methyl-2-pyrrolidinone (CAS 872-50-4)	STEL	80 mg/m ³	
	TWA	20 ppm 40 mg/m ³	
Propane -1,2 -diol (CAS 57-55-6)	TWA	10 ppm	Total vapour and particulates. Particulate. Total vapour and particulates.
		474 mg/m ³	
		10 mg/m ³ 150 ppm	

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
1-Methyl-2-pyrrolidinone (CAS 872-50-4)	TWA	82 mg/m ³	Vapour and aerosol.
		20 ppm	Vapour and aerosol.

Biological limit values

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling time
1-Methyl-2-pyrrolidinone (CAS 872-50-4)	150 mg/l	5-Hydroxy-N-methyl-2-pyrrolidon	Urine	*

* - For sampling details, please see the source document.

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling time
1-Methyl-2-pyrrolidinone (CAS 872-50-4)	100 mg/l	5-Hydroxy-N-methyl-2-pyrrolidinone	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Australia OELs: Skin designation

1-Methyl-2-pyrrolidinone (CAS 872-50-4) Can be absorbed through the skin.

Appropriate engineering controls Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust.

Individual protection measures, for example personal protective equipment (PPE)

Eye/face protection Use tight fitting goggles if dust is generated.

Skin protection

Hand protection Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

Other Risk of contact: Wear appropriate clothing to prevent any possibility of skin contact.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practices.

9. Physical and chemical properties

Appearance Light Green Granules.

Physical state Solid.

Form Granular. Pellets.

Colour Light green.

Odour Not applicable.

Odour threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapour pressure Not available.

Vapour density Not available.

Relative density Not available.

Solubility(ies)	
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other physical and chemical parameters	
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
Chemical stability	Normally stable. May gradually give off ammonia. The product is hygroscopic and will absorb water by contact with the moisture in the air.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Moisture. High temperatures. Contact with incompatible materials.
Incompatible materials	Strong oxidising agents. Nitric acid. Nitrates.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx). Ammonia. Biuret.

11. Toxicological information

Information on possible routes of exposure

Inhalation	Dust may irritate respiratory system.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Dust may irritate the eyes.
Ingestion	May cause discomfort if swallowed.
Symptoms related to exposure	Dusts may irritate the respiratory tract, skin and eyes.

Acute toxicity May cause discomfort if swallowed.

Components	Species	Test results
1-Methyl-2-pyrrolidinone (CAS 872-50-4)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Inhalation		
<i>Mist</i>		
LC50	Rat	> 5.1 mg/l, 4 hours
Oral		
LD50	Rat	3605 mg/kg
N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Wistar rat	> 2.1 mg/l, 4 hours
Oral		
LD50	Wistar rat	> 2000 mg/kg

Components	Species	Test results
Propane -1,2 -diol (CAS 57-55-6)		
Acute		
Dermal		
LD50	Rabbit	20800 mg/kg
Oral		
LD50	Rat	22000 mg/kg
Urea (CAS 57-13-6)		
Acute		
Oral		
LD50	Rat	14300 mg/kg

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Irritation Corrosion - Skin

1-Methyl-2-pyrrolidinone (CAS 872-50-4) Result: Slightly irritating
Species: Rabbit

Serious eye damage/irritation Direct contact with eyes may cause temporary irritation.

Eye

1-Methyl-2-pyrrolidinone (CAS 872-50-4) Result: Moderately irritating
Species: Rabbit
Observation Period: 14 days

Respiratory or skin sensitisation

Respiratory sensitisation Not a respiratory sensitiser.

Skin sensitisation This product is not expected to cause skin sensitisation.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not available.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test results
1-Methyl-2-pyrrolidinone (CAS 872-50-4)		
Aquatic		
<i>Acute</i>		
Algae	EC50	Scenedesmus subspicatus > 500 mg/l, 72 Hours
Crustacea	EC50	Daphnia magna > 1000 mg/l, 24 Hours
Fish	LC50	Oncorhynchus mykiss > 500 mg/l, 96 Hours
<i>Chronic</i>		
Crustacea	NOEC	Daphnia magna 12.5 mg/l, 21 days
N-(n-butyl)-thiophosphoric triamide (CAS 94317-64-3)		
Aquatic		
Algae	EC50	Selenastrum capricornutum 280 mg/l, 96 hours
Crustacea	EC50	Daphnia magna 290 mg/l, 48 hours
	LC50	Daphnia 350 mg/l, 48 hours
Fish	LC50	Lepomis macrochirus 1140 mg/l, 96 hours

Components	Species		Test results
Urea (CAS 57-13-6)			
Aquatic			
Algae	EC10	Algae	47 mg/l, 192 hours
Crustacea	LC50	Water flea (Daphnia magna)	> 10000 mg/l, 24 hours
Fish	LC50	Leuciscus idus	> 6810 mg/l, 96 hours

Persistence and degradability

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

1-Methyl-2-pyrrolidinone (CAS 872-50-4)	-0.54
Propane -1,2 -diol (CAS 57-55-6)	-0.92
Urea (CAS 57-13-6)	-2.11

Mobility in soil This product is water soluble and may disperse in soil.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal methods Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Residual waste Dispose in accordance with applicable regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

ADG

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Safety, health and environmental regulations

National regulations This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals (23/12/2011).

Australia Medicines & Poisons Appendix B

13C-UREA (CAS 57-13-6)
Propylene glycol (CAS 57-55-6)

Australia Medicines & Poisons Appendix E

N-METHYL-2-PYRROLIDONE, WHEN INCLUDED IN SCHEDULE 5 (CAS 872-50-4)

Australia Medicines & Poisons Schedule 5

N-METHYL-2-PYRROLIDONE (OR A MIXTURE OF ANY TWO OR MORE OF N-METHYL-2-PYRROLIDONE, N-(N-OCTYL)-2-PYRROLIDONE OR N-(N-DODECYL)-2-PYRROLIDONE) (CAS 872-50-4)

Australia Medicines & Poisons Schedule 6

N-methyl-2-pyrrolidone (CAS 872-50-4)

High Volume Industrial Chemicals (HVIC)

Propane -1,2 -diol (CAS 57-55-6)

10000 - 99999 TONNES See the regulation for additional information.

Urea (CAS 57-13-6)

100000 - 999999 TONNES See the regulation for additional information.

Importation of Ozone Depleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10)

Not listed.

National Pollutant Inventory (NPI) substance reporting list

Not listed.

Prohibited Carcinogenic Substances

Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)

Not listed.

Restricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)

Not listed.

Restricted Carcinogenic Substances

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date 27-April-2017

Revision date 08-April-2022

Key abbreviations or acronyms used

DNEL: Derived No Effect Level.

PNEC: Predicted No Effect Concentration.

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.