

Neutrog Kahoona Pellets WA

Neutrog Australia

Chemwatch Hazard Alert Code: 2

Chemwatch: 4795-93

Version No: 4.1.1.1

Safety Data Sheet according to WHS and ADG requirements

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S.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Neutrog Kahoona Pellets WA
Synonyms	Not Available
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Fertiliser.
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Details of the supplier of the safety data sheet

Registered company name	Neutrog Australia
Address	288 Mine Road Kanmantoo SA 5252 Australia
Telephone	+61 8 8538 3500
Fax	+61 8 8538 3522
Website	Not Available
Email	Not Available

Emergency telephone number


Association / Organisation	Neutrog Australia
Emergency telephone numbers	+61 8 8538 5077
Other emergency telephone numbers	0409728738, 131126 (AH)

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Poisons Schedule	Not Applicable
Classification [1]	Eye Irritation Category 2A, Acute Aquatic Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

Label elements

Hazard pictogram(s)	
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SIGNAL WORD **WARNING**

Hazard statement(s)

H319	Causes serious eye irritation.
H402	Harmful to aquatic life.

Precautionary statement(s) Prevention

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

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+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

Neutrog Kahoona Pellets WA

Not Applicable

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
Not Available	30-60	chicken manure
7783-20-2	10-30	<u>ammonium sulfate</u>
7778-80-5	10-30	<u>potassium sulfate</u>
7487-88-9	<5	<u>magnesium sulfate, anhydrous</u>
Not Available	<5	seaweed
7720-78-7	<5	<u>ferrous sulfate anhydrous</u>
7785-87-7	<1	<u>manganese sulfate</u>
1330-43-4	<1	<u>sodium borate anhydrous (Na2B4O7)</u>
7733-02-0	<1	<u>zinc sulfate</u>
7758-98-7	<1	<u>copper sulfate</u>
7631-95-0	trace	<u>sodium molybdate</u>

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary.
Ingestion	<ul style="list-style-type: none"> ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice.

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to iron and its derivatives:

- ▶ Always treat symptoms rather than history.
- ▶ In general, however, toxic doses exceed 20 mg/kg of ingested material (as elemental iron) with lethal doses exceeding 180 mg/kg.
- ▶ Control of iron stores depend on variation in absorption rather than excretion. Absorption occurs through aspiration, ingestion and burned skin.
- ▶ Hepatic damage may progress to failure with hypoprothrombinaemia and hypoglycaemia. Hepatorenal syndrome may occur.
- ▶ Iron intoxication may also result in decreased cardiac output and increased cardiac pooling which subsequently produces hypotension.
- ▶ Serum iron should be analysed in symptomatic patients. Serum iron levels (2-4 hrs post-ingestion) greater than 100 ug/dL indicate poisoning with levels, in excess of 350 ug/dL, being potentially serious. Emesis or lavage (for obtunded patients with no gag reflex) are the usual means of decontamination.
- ▶ Activated charcoal does not effectively bind iron.
- ▶ Catharsis (using sodium sulfate or magnesium sulfate) may only be used if the patient already has diarrhoea.
- ▶ Deferoxamine is a specific chelator of ferric (3+) iron and is currently the antidote of choice. It should be administered parenterally. [Ellenhorn and Barceloux: Medical Toxicology]

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves in the event of a fire. ▶ Prevent, by any means available, spillage from entering drains or water courses.
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Neutrog Kahoona Pellets WA

	<ul style="list-style-type: none"> ▶ Use fire fighting procedures suitable for surrounding area.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of: carbon monoxide (CO) carbon dioxide (CO ₂) nitrogen oxides (NO _x) sulfur oxides (SO _x) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.
HAZCHEM	Not Applicable

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment.
Major Spills	Moderate hazard. <ul style="list-style-type: none"> ▶ CAUTION: Advise personnel in area. ▶ Alert Emergency Services and tell them location and nature of hazard. ▶ Control personal contact by wearing protective clothing.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions) ▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. ▶ Establish good housekeeping practices. ▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.
Other information	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry area protected from environmental extremes. ▶ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag. NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.
Storage incompatibility	<ul style="list-style-type: none"> ▶ Avoid reaction with oxidising agents Avoid contamination of water, foodstuffs, feed or seed.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	ferrous sulfate anhydrous	Iron salts, soluble (as Fe)	1 mg/m ³	Not Available	Not Available	Not Available
Australia Exposure Standards	manganese sulfate	Manganese, dust & compounds (as Mn)	1 mg/m ³	Not Available	Not Available	Not Available
Australia Exposure Standards	sodium borate anhydrous (Na ₂ B ₄ O ₇)	Borates, tetra, sodium salts (anhydrous)	1 mg/m ³	Not Available	Not Available	Not Available
Australia Exposure Standards	sodium borate anhydrous (Na ₂ B ₄ O ₇)	Borates, tetra, sodium salts (decahydrate)	5 mg/m ³	Not Available	Not Available	Not Available

Neutrog Kahoona Pellets WA

Australia Exposure Standards	sodium borate anhydrous (Na ₂ B ₄ O ₇)	Borates, tetra, sodium salts (pentahydrate)	1 mg/m ³	Not Available	Not Available	Not Available
Australia Exposure Standards	sodium molybdate	Molybdenum, soluble compounds (as Mo)	5 mg/m ³	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
ammonium sulfate	Ammonium sulfate	13 mg/m ³	140 mg/m ³	840 mg/m ³
potassium sulfate	Potassium sulfate (2:1); (Dipotassium sulfate)	20 mg/m ³	220 mg/m ³	1,300 mg/m ³
magnesium sulfate, anhydrous	Magnesium sulfate (1:1)	20 mg/m ³	220 mg/m ³	1,300 mg/m ³
ferrous sulfate anhydrous	Ferrous sulfate	8.2 mg/m ³	41 mg/m ³	250 mg/m ³
manganese sulfate	Manganous sulfate	8.2 mg/m ³	14 mg/m ³	430 mg/m ³
sodium borate anhydrous (Na ₂ B ₄ O ₇)	Sodium borate decahydrate (Borax)	6 mg/m ³	190 mg/m ³	1,100 mg/m ³
sodium borate anhydrous (Na ₂ B ₄ O ₇)	Sodium borate; (Disodium tetraborate)	6 mg/m ³	88 mg/m ³	530 mg/m ³
zinc sulfate	Zinc sulfate heptahydrate (1:1:7)	27 mg/m ³	170 mg/m ³	1,000 mg/m ³
zinc sulfate	Zinc sulfate	15 mg/m ³	97 mg/m ³	580 mg/m ³
copper sulfate	Copper sulfate; (Copper(II) sulfate)	7.5 mg/m ³	9.9 mg/m ³	59 mg/m ³
sodium molybdate	Sodium molybdate dihydrate; (Disodium molybdate dihydrate)	3.8 mg/m ³	34 mg/m ³	210 mg/m ³
sodium molybdate	Molybdic acid, disodium salt; (Disodium molybdate)	3.2 mg/m ³	17 mg/m ³	100 mg/m ³

Ingredient	Original IDLH	Revised IDLH
ammonium sulfate	Not Available	Not Available
potassium sulfate	Not Available	Not Available
magnesium sulfate, anhydrous	Not Available	Not Available
ferrous sulfate anhydrous	Not Available	Not Available
manganese sulfate	500 mg/m ³	Not Available
sodium borate anhydrous (Na ₂ B ₄ O ₇)	Not Available	Not Available
zinc sulfate	Not Available	Not Available
copper sulfate	Not Available	Not Available
sodium molybdate	1,000 mg/m ³	Not Available


OCCUPATIONAL EXPOSURE BANDING

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
ammonium sulfate	E	≤ 0.01 mg/m ³
zinc sulfate	E	≤ 0.01 mg/m ³
copper sulfate	E	≤ 0.01 mg/m ³

Notes:

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	<p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> ▶ polychloroprene. ▶ nitrile rubber. ▶ butyl rubber.

Neutrog Kahoona Pellets WA

Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C. apron. ▶ Barrier cream.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- ▶ The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- ▶ Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust conditions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Appearance	Brown pellets; partially mixes with water.		
Physical state	Divided Solid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Partly miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Neutrog Kahoona Pellets WA

Information on toxicological effects

Inhaled	<p>Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p> <p>There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p>
Ingestion	<p>Accidental ingestion of the material may be damaging to the health of the individual.</p> <p>Ingestion may result in nausea, abdominal irritation, pain and diarrhoea</p>
Skin Contact	<p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.</p>
Eye	<p>The dust may produce eye discomfort causing smarting, pain and redness.</p>
Chronic	<p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung.</p>

Neutrog Kahoona Pellets WA	TOXICITY	IRRITATION
		Not Available
ammonium sulfate	TOXICITY	IRRITATION
	Oral (rat) LD50: >2000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1] Skin: no adverse effect observed (not irritating) ^[1]
potassium sulfate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1] Oral (rat) LD50: >2000 mg/kg ^[1]	Not Available
magnesium sulfate, anhydrous	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1] Oral (rat) LD50: >2000 mg/kg ^[1]	Not Available
ferrous sulfate anhydrous	TOXICITY	IRRITATION
	dermal (rat) LD50: >881 mg/kg ^[1] Oral (rat) LD50: 13 mg/kg ^[1]	Not Available
manganese sulfate	TOXICITY	IRRITATION
	Oral (rat) LD50: 2150 mg/kg ^[2]	Not Available
sodium borate anhydrous (Na ₂ B ₄ O ₇)	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[2] Oral (rat) LD50: >250 mg/kg ^[1]	Eye: adverse effect observed (irritating) ^[1] Skin: no adverse effect observed (not irritating) ^[1]
zinc sulfate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1] Oral (rat) LD50: >1000-2000 mg/kg ^[1]	Not Available
copper sulfate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1] Oral (rat) LD50: 300 mg/kg ^[2]	Not Available
sodium molybdate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1] Inhalation (rat) LC50: >2.08 mg/l/4h ^[2]	Not Available
	Oral (rat) LD50: 250 mg/kg ^[2]	
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

AMMONIUM SULFATE	For ammonium sulfate: Acute toxicity: Ammonium sulfate has relatively low acute toxicity. In healthy humans, inhaling high concentrations caused mild reduction in lung
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Neutrog Kahoona Pellets WA

	function. Animal testing has not shown ammonium sulfate to cause irritation to the skin and eyes. There is no available data on sensitization. Repeat dose toxicity: Testing in animals has not shown any chronic toxic effects, except for diarrhoea.
POTASSIUM SULFATE	For sodium sulfate: The acute toxicity of sodium sulfate has not been established, but existing data indicate very low acute toxicity. Very high doses cause severe diarrhea. Sodium sulfate is not irritating to the skin, and only slightly irritating to the eyes. It is highly unlikely to cause sensitizing effects. There is no data regarding genetic toxicity except for a single negative test.
MAGNESIUM SULFATE, ANHYDROUS	Intravenous (woman) LDLo: 80 mg/kg/2m-l
SODIUM BORATE ANHYDROUS (NA2B4O7)	Reproductive effector in rats Mutagenic towards bacteria
ZINC SULFATE	Oral (human) TDLo: 45 mg/kg/7d-C Eye (rabbit): 0.42 mg moderate Oral (man) TDLo: 180 mg/kg/6w-l Equivocal tumorigenic agent by RTECS criteria. for zinc sulfate heptahydrate Sleep, ataxia, respiratory stimulation, somnolence, coma, diarrhoea, changes in endocrine pancreas recorded. Exposure may produce irreversible effects*. NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.
COPPER SULFATE	For copper sulfate Copper sulfate is corrosive. Side effects are diverse and multi-systemic, and include severe gastrointestinal symptoms and signs, metallic taste in the mouth, burning pain in the chest, headache, sweating, shock and damage to brain, liver and kidneys. It has been reported as a cause of human suicide. On exposure, it can cause dose dependent damage to the skin and eye, also, eczema and allergic reactions.
AMMONIUM SULFATE & SODIUM BORATE ANHYDROUS (NA2B4O7) & COPPER SULFATE & SODIUM MOLYBDATE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Neutrog Kahoona Pellets WA	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

ammonium sulfate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.068mg/L	4
	EC50	48	Crustacea	73.05mg/L	2
	EC50	96	Algae or other aquatic plants	254000mg/L	3
	NOEC	216	Fish	0.064mg/L	4

potassium sulfate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	3-550mg/L	2
	EC50	48	Crustacea	=890mg/L	1
EC50	72	Algae or other aquatic plants	=2900mg/L	1	

magnesium sulfate, anhydrous	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	15-mg/L	2
	EC50	48	Crustacea	343.56mg/L	4
	EC50	72	Algae or other aquatic plants	2-700mg/L	2
NOEC	504	Crustacea	360mg/L	4	

ferrous sulfate anhydrous	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.41mg/L	4
	EC50	48	Crustacea	7.2mg/L	4
	EC50	96	Algae or other aquatic plants	254000mg/L	3
NOEC	48	Algae or other aquatic plants	0.0001260853mg/L	4	

manganese sulfate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
LC50	96	Fish	3.17mg/L	2	

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Neutrog Kahoona Pellets WA

	EC50	48	Crustacea	8.28mg/L	4
	EC50	96	Algae or other aquatic plants	25.7mg/L	4
	BCF	840	Algae or other aquatic plants	5mg/L	4
	EC10	840	Fish	0.004-0.6291mg/L	2
	NOEC	840	Fish	0.004-0.49689mg/L	2
sodium borate anhydrous (Na ₂ B ₄ O ₇)	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	74mg/L	2
	EC50	96	Algae or other aquatic plants	15.4mg/L	4
	NOEC	768	Fish	0.009mg/L	2
zinc sulfate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.001-0.81mg/L	2
	EC50	48	Crustacea	0.001-0.014mg/L	2
	EC50	96	Algae or other aquatic plants	0.0101mg/L	4
	BCF	336	Fish	3469.930mg/L	4
	EC15	24	Crustacea	0.0021mg/L	4
	NOEC	96	Fish	0.000017mg/L	4
copper sulfate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.000057mg/L	4
	EC50	48	Crustacea	0.001-0.213mg/L	2
	EC50	72	Algae or other aquatic plants	0.0004mg/L	4
	BCF	1440	Fish	1800.00mg/L	4
	EC10	32	Crustacea	0.000085mg/L	4
sodium molybdate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	18.452mg/L	3
	EC50	48	Crustacea	3618mg/L	4
	EC50	96	Algae or other aquatic plants	49.705mg/L	3
	BCF	168	Algae or other aquatic plants	0.025mg/L	4
NOEC	Not Available	Algae or other aquatic plants	4.6mg/L	2	

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
ammonium sulfate	HIGH	HIGH
magnesium sulfate, anhydrous	HIGH	HIGH
ferrous sulfate anhydrous	HIGH	HIGH
zinc sulfate	HIGH	HIGH
copper sulfate	HIGH	HIGH
sodium molybdate	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
ammonium sulfate	LOW (LogKOW = -2.2002)
magnesium sulfate, anhydrous	LOW (LogKOW = -2.2002)
ferrous sulfate anhydrous	LOW (BCF = 52)
zinc sulfate	LOW (BCF = 112)
copper sulfate	LOW (LogKOW = -2.2002)
sodium molybdate	LOW (LogKOW = 2.229)

Mobility in soil

Ingredient	Mobility
ammonium sulfate	LOW (KOC = 6.124)
magnesium sulfate, anhydrous	LOW (KOC = 6.124)
ferrous sulfate anhydrous	LOW (KOC = 6.124)

Continued...

Neutrog Kahoona Pellets WA

zinc sulfate	LOW (KOC = 6.124)
copper sulfate	LOW (KOC = 6.124)
sodium molybdate	LOW (KOC = 48.64)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible. ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material) ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

AMMONIUM SULFATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

POTASSIUM SULFATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

MAGNESIUM SULFATE, ANHYDROUS IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 3

FERROUS SULFATE ANHYDROUS IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

MANGANESE SULFATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS)

SODIUM BORATE ANHYDROUS (NA2B4O7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Chemical Footprint Project - Chemicals of High Concern List

ZINC SULFATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Australia Inventory of Chemical Substances (AICS)

COPPER SULFATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Neutrog Kahoona Pellets WA

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 Australia Inventory of Chemical Substances (AICS)
 Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
 Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

SODIUM MOLYBDATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (ammonium sulfate; potassium sulfate; magnesium sulfate, anhydrous; manganese sulfate; sodium borate anhydrous (Na ₂ B ₄ O ₇); zinc sulfate; copper sulfate; sodium molybdate)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (manganese sulfate)
Vietnam - NCI	Yes
Russia - ARIPS	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date	01/11/2019
Initial Date	08/02/2013

SDS Version Summary

Version	Issue Date	Sections Updated
3.1.1.1	04/12/2017	Classification
4.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
 PC—STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit.
 IDLH: Immediately Dangerous to Life or Health Concentrations
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index

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TEL (+61 3) 9572 4700.