

Safety Data Sheet according to WHS and ADG requirements

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

Product Identifier

Product name AIRX MIRACOIL
Chemical Name Mixture blended from discrete components – not applicable
Synonyms Not Available
Chemical Formula Mixture blended from discrete components – not applicable
Other Means of Identification Not Available
CAS Number Mixture blended from discrete components – not applicable

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

Relevant Identified Uses CLEANING AGENT

Details of the supplier of the safety data sheet

Registered Company Name Bioenzymes
Address PO BOX 51, WAVELL HEIGHTS, BRISBANE QUEENSLAND 4012.
Telephone +61 7 3630 4683 Mobile 0410 797 713
FAX
Website www.bioenzymes.com.au
Email james@bioenzymes.com.au

Emergency telephone number

Organisation Chemical Consulting Services Pty Ltd
Emergency Contact Number 0417720832
Other Emergency Numbers 13 11 26 (Poisons Information Centre Hotline)

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

HAZARD RATING

Flammability	0	0 = Minimum
Toxicity	2	1 = Low
Body Contact	4	2 = Moderate
Reactivity	2	3 = High
Chronic	1	4 = Extreme

POISONS SCHEDULE S6
CLASSIFICATION Metal Corrosion Category 1
Skin Corrosion/Irritation Category 1A
Serious Eye Damage Category 1

Label elements



GHS LABEL ELEMENTS
SIGNAL WORD

DANGER

Hazard statement(s)

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Precautionary statement(s) Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P234 Keep only in original container.

Precautionary statement(s) Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Precautionary statement(s) Storage

P405 Store locked up.

Precautionary statement(s) Disposal

P501 Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS #	% w/w	NAME
1310-73-2	<10%	Sodium Hydroxide
64-02-8	<10%	EDTA tetrasodium salt
	<10%	Ingredients determined not to be hazardous
7732-18-5	>60%	water

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact If this product comes in contact with eyes:
Immediately hold eyelids apart and flush the eye continuously with 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.
Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
Transport to hospital or doctor without delay.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact If skin contact occurs:
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 If fumes, aerosols or combustion products are inhaled remove from contaminated area.
Other measures are usually unnecessary.

Ingestion **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 highly alkaline materials:
Respiratory stress is uncommon but present occasionally because of soft tissue edema.
Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
Oxygen is given as indicated.
The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.
Alkalis continue to cause damage after exposure.
INGESTION:
Milk and water are the preferred diluents
No more than 2 glasses of water should be given to an adult.
Neutralising agents should never be given since exothermic heat reaction may compound injury.
* Catharsis and emesis are absolutely contra-indicated.
* Activated charcoal does not absorb alkali.
* Gastric lavage should not be used.
Supportive care involves the following:
Withhold oral feedings initially.
If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).
SKIN AND EYE:
Injury should be irrigated for 20-30 minutes.
Eye injuries require saline.

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 None known.

Advice for firefighters

Fire Fighting 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.
Use fire fighting procedures suitable for surrounding area.
DO NOT approach containers suspected to be hot.
Cool fire exposed containers with water spray from a protected location.
If safe to do so, remove containers from path of fire.
Equipment should be thoroughly decontaminated after use.

Non combustible.
Not considered a significant fire risk, however containers may burn.
Decomposition may produce toxic fumes of: nitrogen oxides (NOx)

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Minor Spills Clean up all spills immediately.
Avoid breathing vapours and contact with skin and eyes.
Control personal contact with the substance, by using protective equipment.
Contain and absorb spill with sand, earth, inert material or vermiculite.
Wipe up.
Place in a suitable, labelled container for waste disposal.

Major Spills Minor hazard. – slip hazard
CAUTION: Advise personnel in area.
Alert Emergency Services and tell them location and nature of hazard.
Control personal contact by wearing protective clothing.
Prevent, by any means available, spillage from entering drains or water courses.
Recover product wherever possible.
IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. **IF WET:** Vacuum/shovel up and place in labelled containers for disposal.
ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
If contamination of drains or waterways occurs, advise Emergency Services.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Store away from incompatible materials and foodstuff containers.
Protect containers against physical damage and check regularly for leaks.
Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container

Polyethylene or polypropylene container.
Packing as recommended by manufacturer.
Check all containers are clearly labelled and free from leaks.

Storage incompatibility

Avoid strong acids, acid chlorides, acid anhydrides
Avoid reactive metals (aluminium)

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	sodium hydroxide	Sodium hydroxide	Not Available	Not Available	2 mg/m3	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
sodium hydroxide	Sodium hydroxide	Not Available	Not Available	Not Available
EDTA tetrasodium salt	Ethylenediaminetetraacetic acid, tetrasodium salt, dihydrate	6 mg/m3	66 mg/m3	400 mg/m3
EDTA tetrasodium salt	Ethylenediaminetetraacetic acid, tetrasodium salt;	30 mg/m3	330 mg/m3	2000 mg/m3

Ingredient	Original IDLH	Revised IDLH
sodium hydroxide	250 mg/m3	10 mg/m3
EDTA tetrasodium salt	Not Available	Not Available
Ingredients determined not to be hazardous	Not Available	Not Available
water	Not Available	Not Available

MATERIAL DATA

Exposure controls

Appropriate engineering controls

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:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.

If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

Such protection might consist of:

- (a): particle dust respirators, if necessary, combined with an absorption cartridge;
- (b): filter respirators with absorption cartridge or canister of the right type;
- (c): fresh-air hoods or masks.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Personal protection



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. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves should be replaced. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. polychloroprene. nitrile rubber. butyl rubber. fluorocautchouc. polyvinyl chloride. Gloves should be examined for wear and/ or degradation constantly.

Other protection

Overalls.
P.V.C. apron.
Barrier cream.
Skin cleansing cream.
Eye wash unit.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

CLEAR RED LIQUID

Physical state	Liquid	Relative Density (Water = 1)	1.1 @ 20°C
Odour	BLAND	Partition co-efficient n-octanol / water	Not Available
Odour Threshold	Not Available	Autoignition Temperature	Not Available
pH (as supplied)	>13	Decomposition Temperature	Not Available
Melting Point / Freezing Point (°C)	Not Available	Viscosity	1 cSt @ 20°C
Initial Boiling point and boiling range (°C)	100°C	Molecular Weight	Not Applicable
Flash Point (°C)	Not Applicable	Taste	Not Applicable
Evaporation Rate	Not Determined	Explosive Properties	Not Applicable
Flammability	Not Flammable	Oxidizing Properties	Not Oxidising
Upper Explosive Limit (UEL %)	Not Applicable	Surface Tension (mN/m)	Not Determined
Lower Explosive Limit (LEL %)	Not Applicable	Volatile Component	Approx. 95%
Vapour pressure (kPa)	As for water	Gas Group	Not Applicable
Solubility in water (g/L)	Miscible	pH as a solution (1%)	>13 @ 25°C
Vapour density (Air = 1)	Not Determined	VOC g/L	Not determined

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	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

Information on toxicological effects

Inhaled This is not anticipated to be an issue under normal conditions of use.
Not normally a hazard due to non-volatile nature of product, however The vapour/mist is highly discomforting to the upper respiratory tract
The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.
Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).

Ingestion This is not anticipated to be an issue under normal conditions of use.

The liquid is highly corrosive to the gastro-intestinal tract and may be fatal if swallowed
Considered an unlikely route of entry in commercial/industrial environments

Skin Contact

The liquid is corrosive to the skin and is capable of causing burns.
The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.
Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

Eye

The liquid is highly corrosive to the eyes and is capable of causing severe damage with loss of sight and the material presents a hazard from a single acute exposure
The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Chronic

Principal routes of exposure are usually by skin contact / eye contact
Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.

Reference Data

	TOXICITY	IRRITATION
sodium hydroxide	Oral (rabbit) LD50: 325 mg/kg[1]	Eye (rabbit): 0.05 mg/24h SEVERE Eye (rabbit):1 mg/24h SEVERE Eye (rabbit):1 mg/30s rinsed-SEVERE Skin (rabbit): 500 mg/24h SEVERE

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

SECTION 12 ECOLOGICAL INFORMATION

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
sodium hydroxide	LC50	96	Fish	4.mg/L	3
sodium hydroxide	EC50	48	Crustacea	40.4mg/L	2
sodium hydroxide	EC50	96	Algae or other aquatic plants	1040mg/L	3
sodium hydroxide	EC50	384	Crustacea	27900mg/L	3
sodium hydroxide	NOEC	96	Fish	56mg/L	4
EDTA tetrasodium salt	LC50	96	Fish	41mg/L	2
EDTA tetrasodium salt	EC50	48	Crustacea	140mg/L	2
EDTA tetrasodium salt	EC50	72	Algae or other aquatic plants	1.01mg/L	1
EDTA tetrasodium salt	EC10	72	Algae or other aquatic plants	0.48mg/L	1
EDTA tetrasodium salt	NOEC	71	Algae or other aquatic plants	0.4ug/L	4

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - 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

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

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.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

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 licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).

Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 TRANSPORT INFORMATION



Labels Required

Marine Pollutant	NO
HAZCHEM	2R
Land transport (ADG):	
UN Number	1719
UN proper shipping name	CAUSTIC ALKALI LIQUID, N.O.S. (contains sodium hydroxide)
Transport Hazard	Class 8
Packing Group	II
Environmental Hazard	Not applicable
Special Provisions	274
Limited Qty	1L

Air transport (ICAO-IATA / DGR):

UN number	1719
UN proper shipping name	Caustic alkali liquid, n.o.s. * (contains sodium hydroxide)
Transport hazard class(es)	ICAO/IATA Class 8
	ICAO / IATA Subrisk Not Applicable
	ERG Code 8L
Packing group	II
Environmental hazard	Not Applicable

Special precautions for user

Special provisions	A3A803
Cargo Only Packing Instructions	855
Cargo Only Maximum Qty / Pack	30 L
Passenger and Cargo Packing Instructions	851
Passenger and Cargo Maximum Qty / Pack	1 L
Passenger and Cargo Limited Quantity Packing Instructions	Y840
Passenger and Cargo Limited Maximum Qty / Pack	0.5 L

Sea transport (IMDG-Code / GGVSee):

UN number	1719
UN proper shipping name	CAUSTIC ALKALI LIQUID, N.O.S. (contains sodium hydroxide)
Transport hazard class(es)	IMDG Class 8
	IMDG Subrisk Not Applicable
Packing group	II
Environmental hazard	Not Applicable
Special precautions for user	
EMS Number	F-A, S-B
Special provisions	274
Limited Quantities	1 L

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

Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	Y
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y

Legend:

Y = All ingredients are on the inventory

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other information

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