



## Section 1 - Identification of The Material and Supplier

**Adama Australia Pty Ltd,**  
Level 1, Building B  
207 Pacific Highway St Leonards, NSW 2065  
ACN 050 328 973

**Telephone (02)9431 7800 (office hours)**  
**Emergency 1800 033 111 (24 hours)**  
**Fax (02)9431 7700**

**Chemical nature:** Liquid fertiliser enzyme additive.  
**Trade Name:** **RES+® Liquid Enzyme**  
**Product Use:** Liquid fertiliser enzyme additive.  
**Creation Date:** **December, 2024**  
**This version issued:** **December, 2024** and is valid for 5 years from this date.  
**Poisons Information Centre:** **Phone 13 11 26 from anywhere in Australia**

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

**SUSMP Classification:** None allocated.

**ADG Classification:** None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

**UN Number:** None allocated



### GHS Signal word: WARNING

Skin Irritation Category 2

Eye irritation Category 2A

Hazardous to aquatic environment Short term/Acute Category 2

Hazardous to aquatic environment Short term/Chronic Category 3

#### HAZARD STATEMENT:

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H401: Toxic to aquatic life.

H412: Harmful to aquatic life with long lasting effects.

#### PREVENTION

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P262: Do not get in eyes, on skin, or on clothing.

P264: Wash contacted areas thoroughly after handling.

P280: Wear protective gloves, protective clothing and eye or face protection.

#### RESPONSE

P362: Take off contaminated clothing and wash before reuse.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313: If exposed or concerned: Get medical advice.

P332+P313: If skin irritation occurs: Get medical advice.

P337+P313: If eye irritation persists: Get medical advice or attention.

P370+P378: In case of fire: Use carbon dioxide, dry chemical, foam, water fog, to extinguish.

#### STORAGE

P410: Protect from sunlight.

P402+P404: Store in a dry place. Store in a closed container.

P403+P235: Store in a well-ventilated place. Keep cool.

## SAFETY DATA SHEET

**DISPOSAL**

P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

**Emergency Overview**

**Physical Description & colour:** Clear blue liquid.

**Odour:** Mild earthy odour.

**Major Health Hazards:** causes skin irritation, causes serious eye irritation. This product is a cumulative poison. Minor exposures over a period of time may lead to serious health problems.

**Section 3 - Composition/Information on Ingredients**

Ingredients	CAS No	Conc, %	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Sodium hydroxide	1310-73-2	<5	2	Peak
Zinc sulfate	7446-19-7	<1	not set	not set
Citric acid	77-92-9	<5	not set	not set
Copper sulfate	7758-99-8	<1	not set	not set
Sodium nitrate	7631-99-4	<1	not set	not set
Other ingredients not contributing to hazard	-	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

**Section 4 - First Aid Measures****General Information:**

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 11 26 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

**Inhalation:** First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**Skin Contact:** Seek urgent medical attention. Flush contaminated area with lukewarm, gently flowing water for at least 60 minutes, by the clock. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this SDS and take their advice). Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts).

**Eye Contact:** Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If swallowed, do NOT induce vomiting. Immediately contact a Poisons Information Centre, or call a doctor. Wash mouth with water. If vomiting occurs naturally, lay patient on side, in recovery position as there is a chance that vomitus may enter airways causing harm to lungs.

**Section 5 - Fire Fighting Measures**

**Fire and Explosion Hazards:** The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

**Extinguishing Media:** In case of fire, use carbon dioxide, dry chemical, foam or water fog.

**Fire Fighting:** When fighting fires involving significant quantities of this product, no special equipment is believed to be necessary.

**Section 6 - Accidental Release Measures**

**Accidental release:** Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, Viton, Nitrile, butyl rubber, Barricade, neoprene, Teflon, polyethylene, PE/EVAL, Saranex and Responder. Eye/face protective equipment should comprise, as a minimum, protective glasses and, preferably,

**SAFETY DATA SHEET**

goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8). Otherwise, not normally necessary. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

## Section 7 - Handling and Storage

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10. Take special care if handling this product over extended periods as it is a cumulative poison.

**Storage:** Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

## Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: **AS/NZS 4501** set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

### SWA Exposure Limits

### TWA (mg/m<sup>3</sup>)

### STEL (mg/m<sup>3</sup>)

Sodium hydroxide

2

Peak

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

**Ventilation:** This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

**Eye Protection:** Protective glasses or goggles must be worn when this product is being used. Failure to protect your eyes may lead to severe harm to them or to general health. Emergency eye wash facilities must also be available in an area close to where this product is being used.

**Skin Protection:** Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

**Protective Material Types:** We suggest that protective clothing be made from the following materials: rubber, Viton, nitrile, butyl rubber, Barricade, neoprene, Teflon, polyethylene, PE/EVAL, Saranex, Responder.

**Respirator:** Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Eyebaths or eyewash stations should, if practical, be provided near to where this product is being handled commercially.

## Section 9 - Physical and Chemical Properties:

**Physical Description & colour:** Clear blue liquid.

**Odour:** Mild earthy odour.

**Boiling Point:** Not available.

**Flash point:** No data

**Upper Flammability Limit:** No data.

**Lower Flammability Limit:** No data.

**Flammability Class:** No data.

**Freezing/Melting Point:** No specific data. Liquid at normal temperatures.

**Volatiles:** No data.

**Vapour Pressure:** No data.

**Vapour Density:** No data.

**Specific Gravity:** 1.180-1.200

**Water Solubility:** Dispersible.

**pH:** 6.0-8.0

## SAFETY DATA SHEET

<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Coeff Oil/water distribution:</b>	No data.
<b>Autoignition temp:</b>	No data.
<b>Particle Characteristics:</b>	Not applicable for liquids.

## Section 10 - Stability and Reactivity

**Reactivity:** This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

**Conditions to Avoid:** None known.

**Incompatibilities:** acids, bases, strong oxidising agents, strong reducing agents.

**Fire Decomposition:** Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke.

Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen.

Occasionally hydrogen cyanide gas in reducing atmospheres. May form oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour. Sodium compounds. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

**Polymerisation:** Polymerisation reactions are unlikely. They are not expected to occur.

## Section 11 - Toxicological Information

**Local Effects:**

**Target Organs:** This product may attack eyes, skin. Ingredients in this product have an established TWA, so exposure by inhalation should be avoided.

### Classification of Hazardous Ingredients

Ingredient	Health Hazard Statement Codes
Sodium Hydroxide	H335, H314
<ul style="list-style-type: none"><li>Specific target organ toxicity (single exposure) – category 3</li><li>Skin and eye corrosion – category 1A</li></ul>	
Zinc Sulfate	H302, H318, H410
<ul style="list-style-type: none"><li>Acute toxicity – category 4</li><li>Eye damage – category 1</li><li>Hazardous to the aquatic environment (acute) – category 1</li><li>Hazardous to the aquatic environment (chronic) – category 1</li></ul>	
Citric Acid	H319, H315, H335
<ul style="list-style-type: none"><li>Eye irritation – category 2A</li><li>Skin irritation – category 2</li><li>Specific target organ toxicity (single exposure) – category 3</li></ul>	
Copper Sulfate	H302, H318, H410
<ul style="list-style-type: none"><li>Acute toxicity – category 4</li><li>Eye damage – category 1</li><li>Hazardous to the aquatic environment (acute) – category 1</li><li>Hazardous to the aquatic environment (chronic) – category 1</li></ul>	

**NOTE:** Several ingredients shown above are classified as irritating/corrosive to the skin/eyes due to extreme pH levels. This product contains a mixture of acids and bases, resulting in a pH which is close to neutral (pH 6-8), and so these classifications are not applicable to the formulated product. Classifications used elsewhere relating to irritation are based on reports from the supplier.

### Potential Health Effects

**Inhalation:**

**Short term exposure:** Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

**Long Term exposure:** No data for health effects associated with long term inhalation.

## SAFETY DATA SHEET

Issued by: Adama Australia Pty Ltd

Phone: (02)9431 7800 (office hours)

Poisons Information Centre: 13 11 26 from anywhere in Australia, (0800 764 766 in New Zealand)

**Skin Contact:**

**Short term exposure:** This product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but if treated promptly, all should disappear once exposure has ceased.

**Long Term exposure:** No data for health effects associated with long term skin exposure.

**Eye Contact:**

**Short term exposure:** This product is a severe eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms such as swelling of eyelids and blurred vision may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment is likely to cause permanent damage.

**Long Term exposure:** No data for health effects associated with long term eye exposure.

**Ingestion:**

**Short term exposure:** Significant oral exposure is considered to be unlikely. However, this product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. Other symptoms may also become evident, but all should disappear once exposure has ceased.

**Long Term exposure:** Long term minor exposures to this product may cause serious health effects.

**Carcinogen Status:**

**SWA:** No significant ingredient is classified as carcinogenic by SWA.

**NTP:** No significant ingredient is classified as carcinogenic by NTP.

**IARC:** No significant ingredient is classified as carcinogenic by IARC.

**Section 12 - Ecological Information**

This product is toxic to aquatic life. This product harmful to aquatic life with long lasting effects. This product is not readily biodegradable; it may accumulate in the soil or water and cause long term problems.

**Section 13 - Disposal Considerations**

**Disposal:** This product 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. If neither of these options is suitable in-house, consider controlled incineration, or contact a specialist waste disposal company.

**Section 14 - Transport Information**

**UN Number:** This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

**Section 15 - Regulatory Information**

**AICS/AIIC:** All of the significant ingredients in this formulation are compliant with AICIS regulations.

The following ingredient: Sodium hydroxide, is mentioned in the SUSMP.

**Section 16 - Other Information**

**This SDS contains only safety-related information. For other data see product literature.**

**Acronyms:**

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
<b>AICS/AIIC</b>	Australian Inventory of Industrial Chemicals
<b>CAS number</b>	Chemical Abstracts Service Registry Number
<b>Hazchem Code</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>SWA</b>	Safe Work Australia, formerly ASCC and NOHSC
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>SUSMP</b>	Standard for the Uniform Scheduling of Medicines & Poisons
<b>UN Number</b>	United Nations Number

**Contact Points:**

**Call Adama on (02)9431 7800 and ask for the technical manager.**

**Fax: (02)9431 7700**

**Police and Fire Brigade:**

**Dial 000**

**Emergency contact:**

**1800 033 111 (24 hours)**

**SAFETY DATA SHEET**

Issued by: Adama Australia Pty Ltd

Phone: (02)9431 7800 (office hours)

**Poisons Information Centre: 13 11 26 from anywhere in Australia, (0800 764 766 in New Zealand)**

**If ineffective:**

**Dial Poisons Information Centre**

**(13 11 26 from anywhere in Australia)**

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (July 2020) and GHS Revision 7

Copyright © Kilford & Kilford Pty Ltd, December, 2024.

<http://www.kilford.com.au/> Phone (02)8321 8866

**SAFETY DATA SHEET**