



## MSDS OF NAADCO ETHEPHON 900 GROWTH REGULATOR

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product name</b>	<b>NAADCO ETHEPHON 900 GROWTH REGULATOR</b>
<b>Supplier</b>	New Australia Agricultural Development Company Pty Limited
<b>Address</b>	Rear 150-154 Parramatta Rd, Auburn, NSW, 2144
<b>Telephone</b>	+61 2 94983675, 0425328311
<b>Fax</b>	+61 2 94983675
<b>Website</b>	www.naadco.com.au

### 2. HAZARDS IDENTIFICATION

#### STATEMENT OF HAZARDOUS NATURE

This product is classified as: T, Toxic. N, Dangerous to the environment. C, Corrosive. Hazardous according to the criteria of SWA.

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

**SUSMP classification:** S6

**ADG Classification:** Class 8: Corrosive Substances.

**UN Number:** 3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

**GHS Signal word:** DANGER

Acute Toxicity Oral Category 4

Acute Toxicity Dermal Category 3

Skin Corrosion Category 1

Acute Toxicity Inhalation Category 4

Hazardous to aquatic environment Short term/Chronic Category 2

#### HAZARD STATEMENT:

H302: Harmful if swallowed.

H311: Toxic in contact with skin.

H314: Causes severe skin burns and eye damage.

H332: Harmful if inhaled.

H411: Toxic to aquatic life with long lasting effects.

#### PREVENTION:

P260: Do not breathe fumes, mists, vapours or spray.

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

P264: Wash contacted areas thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well ventilated area.

P273: Avoid release to the environment.

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

#### RESPONSE:



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P363: Wash contaminated clothing before reuse.

P301+P312: IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

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

P303+P361+P353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P391: Collect spillage.

### EMERGENCY OVERVIEW

**Physical Description & colour:** Clear, straw-coloured liquid

**Odour:** Characteristic mild odour.

**Major Health Hazards:** toxic in contact with skin, causes burns, harmful by inhalation and if swallowed.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration
Ethephon	[16672-87-0]	900g/L
Other non hazardous ingredients	secret	to 1 L

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.

### 4. FIRST AID MEASURES

**Consult the Poisons Information Centre (131126) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.**

#### FIRST AID

##### Swallowed:

If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Give activated charcoal if instructed.

##### Eye Contact:

Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 20-30 minutes, by the clock, while holding the eyelid(s) open. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this MSDS and take their advice). Take care not to rinse contaminated water into the unaffected eye or onto face. If irritation persists, repeat flushing. Call a Poisons Information Centre or a doctor urgently. Take special care if exposed person is wearing contact lenses.

##### Skin:



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Flush contaminated area with lukewarm, gently flowing water for at least 20-30 minutes, by the clock. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this MSDS and take their advice). Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately.

### **Inhaled:**

If symptoms of poisoning become evident, contact a Poisons Information Centre, or call a doctor at once. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

## **5. FIRE FIGHTING MEASURES**

### **EXTINGUISHING MEDIA:**

Not combustible. Use extinguishing media suited to burning materials. Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

### **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 little risk of an explosion from this product if commercial quantities are involved in a fire. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

### **FIRE-FIGHTING EQUIPMENT:**

If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

### **FLASH POINT:**

Does not burn.

## **6. ACCIDENTAL RELEASE MEASURES**

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. 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, PVC and Viton. Eye/face protective equipment should include a full face shield. 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).

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. Because of the corrosiveness of this product, special personal care should be taken in any cleanup operation. 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. Refer to product



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label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. 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.

### 7. HANDLING AND STORAGE

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

##### Precautions for Safe 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.

##### Conditions for Safe Storage:

This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area. Check containers periodically for corrosion and leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 10000kg or L of Dangerous Goods of Packaging Group III, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

#### EXPOSURE GUIDELINES:

The ADI for Ethephon is set at 0.02mg/kg/day. The corresponding NOEL is set at 0.17mg/kg/day. ADI means Acceptable Daily Intake; NOEL means No-observable-effect-level. Data from Australian ADI List, March 2017.

##### Engineering controls:

This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.



#### Personal protection:

#### EYE/FACE PROTECTION:



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Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

### SKIN PROTECTION:

Because of the dangerous nature of this product, make sure that all skin areas are completely covered by impermeable gloves, overalls, hair covering, apron and face shield. See below for suitable material types.

### RESPIRATORY PROTECTION:

Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Clear, straw-coloured liquid
<b>Physical state:</b>	Liquid
<b>Odour:</b>	Characteristic mild odour.
<b>Boiling Point:</b>	Not available.
<b>Freezing/Melting Point:</b>	<0°C
<b>Solubility in Water:</b>	Completely soluble.
<b>Specific Gravity:</b>	1.38 at 20°C
<b>Vapour Pressure:</b>	No data available.
<b>pH:</b>	No specific data. May be below 1.0
<b>Volatile Component:</b>	No data available.
<b>Decomposition temp:</b>	170°C
<b>Autoignition temp:</b>	Not applicable - does not burn.

## 10. STABILITY AND REACTIVITY

### Reactivity:

Most strong acids react with inorganic and organic bases such as amines to form salts. They also react with many metals liberating hydrogen gas. These reactions are often rapid and sometimes liberate much heat. They can also decompose many organic materials such as esters, in a reaction called hydrolysis.

### Conditions to Avoid:

This product should be kept in a cool place, preferably below 30°C. Under no circumstances should the container be sealed. Keep isolated from combustible materials. Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

### Incompatible materials:

Bases, strong oxidising agents, zinc, tin, aluminium and their alloys.

### Hazardous decomposition products:

Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

## 11. TOXICOLOGICAL INFORMATION

This section includes possible adverse effects, which could occur if this material is not handled in the



recommended manner.

**Toxicity:**

An information profile for Ethephon is available at <http://extoxnet.orst.edu/pips/ghindex.html>

**Acute Toxicity:**

Acute animal toxicity studies in a few species show that via the oral and dermal routes, Ethephon is relatively non-toxic except in hens. An acute study with rats showed an oral LD50 of 1.6 g/kg (EPA toxicity category III). An acute dermal study using rabbits showed a dermal LD50 of greater than 5 g/kg (EPA toxicity category III).

**Chronic Toxicity:**

A chronic toxicity/oncogenicity study using Swiss albino mice included 85 mice fed diets containing 0, 4.5, 45, or 150 mg/kg/day of Ethephon for 78 weeks. Inhibition of plasma cholinesterase activity was significant at the 45 and 150 mg/kg/day dose levels in males and females. The No Observable Effect Level (NOEL) for plasma cholinesterase activity is 4.5 mg/kg/day for both sexes and the Lowest Effect Level for this effect was 45 mg/kg/day for both sexes. There appeared to be a dose-related decrease in red blood cell cholinesterase activity in females. There was significant depression in RBC cholinesterase activity at the 45 and 150 mg/kg/day dose levels, while females in the 4.5 mg/kg/day dose groups exhibited depression in RBC cholinesterase activity at 52 weeks and 78 weeks, which was not considered statistically significant. The highest dose without adverse effects reported in rats was 375 mg/kg/day for 90 days.

**Reproductive Effects:**

A developmental toxicity study was conducted on New Zealand white rabbits. The doses tested were 50, 100, or 150 mg/kg. The teratogenic NOEL was greater than 50 mg/kg/day (LDT or lowest dose tested). The number of litters at termination of the study were insufficient to determine teratogenic effects at the 100 and 150 mg/kg/day levels. The NOEL was reported to be greater than 1500 ppm (highest dose tested). **Teratogenic Effects:** The NOEL for rat teratogenic effects is 600 mg/kg/day, while in the rabbit, the NOEL was reported to be 50 mg/kg/day based on foetal resorptions at higher dose levels tested.

**Mutagenic Effects:**

Ethephon studies in *Salmonella typhimurium* indicated no mutagenic effect up to 1,000 micrograms/100 microliters, without enzyme activation.

**Carcinogenic Effects:**

No dose-related evidence of carcinogenicity/oncogenicity was reported.

**Organ Toxicity:**

No information currently available. Fate in Humans and Animals: No information currently available.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION**

**Short term exposure:**

Available data shows that this product is harmful, but symptoms are not available. In addition product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort. If liquid enters nasal passages, it will cause pain and burn nasal membranes. Patients with inhalation burns may develop acute pulmonary oedema.

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

**SKIN CONTACT**

**Short term exposure:**

Available data shows that this product is toxic, but further symptoms are not available. In addition product is



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corrosive to the skin. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. Corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure. Burns may not be immediately painful; the onset of pain may be minutes to hours.

### **Long Term exposure:**

No data for health effects associated with long term skin exposure.

### **EYE CONTACT**

#### **Short term exposure:**

This product is corrosive to eyes. It will cause severe pain, and corrosion of the eye and surrounding facial tissues. Unless exposure is quickly treated, permanent blindness and facial scarring is likely.

#### **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. Available data shows that this product is harmful, but symptoms are not available. However, this product is corrosive to the gastrointestinal tract. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. Corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure.

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

## **12. ECOLOGICAL AND ECOTOXICOLOGICAL INFORMATION**

Toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

### **Effects on Birds:**

Data indicate that technical-grade Ethephon is slightly toxic on an acute oral basis to bobwhite quail, and slightly toxic on a subacute dietary basis to bobwhite quail and mallard ducks.

**Effects on Aquatic Organisms:** Laboratory and field studies indicate that Ethephon is slightly toxic to fish.

**Effects on Other Animals (Nontarget species):** Two studies using Ethephon were conducted in humans. In the first study, some symptoms characteristic of anticholinesterase activity were observed. Five humans of each sex were dosed with Ethephon at an average dose level of 1.8 mg/kg/day. Subjects receiving the test compound reported the following symptoms and/or signs; sudden onset of diarrhoea or an urgency of bowel movements, stomach cramps or gas and increased urgency or frequency of urination, and either an increase or decrease in appetite. None of the control subjects had complaints similar to the test group. In the second human study, 10 humans of each sex were administered Ethephon at 0.5 mg/kg/day for 16 days, followed by a 2-week recovery period. Dose related effects occurred in plasma cholinesterase activity, but not in red blood cell cholinesterase activity. The effect was reversible within 15 days. When the control group and test groups were compared, the decreased plasma cholinesterase activity was statistically significant.

### **ENVIRONMENTAL FATE**

Breakdown of Chemical in Soil and Groundwater: Ethephon was found to have low to moderate mobility in soils ranging in texture from loamy sand to peat and silt loam based on soil thin layer chromatography tests. Therefore, the potential for contamination of groundwater appears to be low to moderate. In soil, rapid degradation to



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phosphoric acid, ethylene, and chloride ions was reported. Breakdown of Chemical in Surface Water: No information currently available.

### 13. DISPOSAL CONSIDERATIONS

#### **Disposal method:**

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulations. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

### 14. TRANSPORT INFORMATION

**Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.**

**UN No:** 3265

**Hazchem Code:** 2X

**Special Provisions:** 223, 274

**Limited quantities:** ADG 7 specifies a Limited Quantity value of 5 L for this class of product.

**Class:** 8

**Packing group:** III

Class 8 Corrosive Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances where the Toxic Substances are cyanides and the Corrosives are acids), 7 (Radioactive Substances), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Poisonous Gases), 3 (Flammable liquids), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 6 (Toxic Substances except where the Toxic Substances are cyanides and the Corrosives are acids) and 9 (Miscellaneous Dangerous Goods).

### 15. REGULATORY INFORMATION

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

The following ingredient: Ethephon, is mentioned in the SUSMP.

### 16. OTHER INFORMATION

Version 1.0

Revision Date: 2020.08.25

The information contained in this MSDS is provided in good faith and is believed to be correct and the date hereof. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

Please read all labels carefully before using product.