

MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name: Kenso Agcare Ethephon 720 Growth Regulator
Product Type: Plant Growth Regulator
Company Name: Kenso Corporation (M) Sdn Bhd
Address: Unit 3C, 59, Oxford Street, Bulimba Queensland 4171
Telephone Number: (07) 3217 9788
Facsimile Number: (07) 3217 9733
Emergency Telephone Number: 000 (Police or Fire Brigade)
13 11 26 (Poisons Information Centre)
Use: A cotton harvest aid for accelerated boll opening, defoliation, and pre-conditioning before defoliation.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification Hazardous according to the criteria of NOHSC Australia.
Dangerous according to the Australian Dangerous Goods (ADG) Code.

Risk Phrase(s) R22: Harmful if swallowed
R34: Causes burns.
R38: Irritating to skin
R41: Risk of serious damage to eyes

Safety Phrase(s) S20: When using, do not eat or drink.
S24: Avoid contact with skin.
S36: Wear suitable protective clothing.
S46: If swallowed, contact a doctor or Poisons Information Centre immediately and show this container or label.

Other Information SUSDP Classification: S6
ADG Classification: Class 8 (CORROSIVE LIQUID, N.O.S.)
UN Number: 1760

Emergency Overview

Physical Description & colour: Brown limpid liquid.
Odour: Slight pungent odour.
Major Health Hazards: Causes burns, may cause serious damage to eyes, irritating to skin, harmful if swallowed.

Potential Health Effects

Health Effects

Ethephon is a weak to moderate cholinesterase inhibitor. Repeated minor exposure may have an accumulative effect. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:-

Acute:

Swallowed: This product is harmful if swallowed, and will cause cholinesterase inhibition, corrosive to the gastrointestinal tract. Will cause burning to mouth and throat, possible irreversible problems, even death unless treated promptly.

Eye: Not harmful to eyes. However 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.

Skin: Not harmful to skin. It should present no hazards in normal use. However, this product is irritating, but is unlikely to cause anything more than mild transient discomfort.

Inhaled: Not harmful. However, this product may be irritating, but is unlikely to cause anything more than mild transient discomfort

Carcinogenicity Information:

NOHSC: No significant ingredient is classified as carcinogenic by NOHSC.

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

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

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
Ethephon	16672-87-0	72 % w/v
Water		To 100 % w/w

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 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Atropine tablets 0.6 mg should be available in the area where this product is used, or in a nearby unlocked medicine cabinet. If swallowed, splashed on skin or inhaled, contact a Poisons Information Centre or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. Give atropine if instructed. The usual instruction is to give one atropine tablet every 5 minutes until dryness of the mouth occurs.

This product has the properties of a strong acid and may cause strong mucosal damage if swallowed.

Appropriate conventional treatment for circulatory shock, respiratory depression and convulsions may be needed.

Swallowed	If swallowed, rinse mouth thoroughly with water and contact a Poisons Information Centre. Urgent hospital treatment may be needed. See instructions above about treatment with atropine.
Eye	Quickly and gently, blot or brush away chemical. 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.
Skin	Quickly and gently, blot or brush away excess chemical. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 20 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). If irritation persists, repeat flushing and obtain medical advice. Completely decontaminate clothing, shoes and leather goods before reuse or discard. See instructions above about treatment with atropine.
Inhaled	No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

Advice to Doctor:

Treat symptomatically.

SECTION 5 – FIRE FIGHTING MEASURES

Fire and Explosion Hazards:

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 are likely to be harmful if inhaled. Take suitable protective measures. This product is likely to decompose only after heating to dryness, followed by further strong heating.

Extinguishing Media:	Not combustible. Use extinguishing media suited to burning materials.
Fire Fighting:	Breathable air apparatus should be worn when fighting a fire in which this product is involved.
Flash point:	Will not burn until water component is driven off.
Upper Flammability Limit:	Does not burn.
Lower Flammability Limit:	Does not burn.
Autoignition temperature:	Does not burn.
Flammability Class:	Does not burn.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills & Disposal

Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite). Collect spilled material and waste in sealable open-top type containers for disposal.

Personal Protection

For appropriate personal protective equipment (PPE), refer Section 8.

Clean-up Methods – Large Spillages

Place damaged containers in recovery bins (if available) and return to manufacturer. If large liquid spills occur, attempt to recover as much spilt material from sumps and bunded areas absorbing remaining material into vermiculite or other absorbent.

SECTION 7 – HANDLING AND STORAGE

Handling: Ethephon is corrosive to metals. Mix only the quantity of spray required for immediate use and do not allow to stand in metal containers for more than 2 hours.

Storage: Store in the closed, original container in a cool, well ventilated area. Do not store for prolonged periods in direct sunlight.

Tank Cleaning: Ethephon may be corrosive to metal parts of the sprayer. Thoroughly flush tanks, pumps and nozzles with water after use.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

National Exposure Standards

No exposure standards have been set for this product or the active ingredients.

Engineering Controls

Handle in well ventilated areas, generally natural ventilation is adequate.

Personal Protective Equipment

When opening the container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and goggles.

Eye Protection

Eye protection is essential. Wear a face shield or goggles.

Hygiene Measures

After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash contaminated clothing and safety equipment.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid
Colour:	Brown limpid
Odour:	Slight pungent odour
Melting point (°C):	Not available
Boiling point (°C):	Not available
Specific gravity:	1.31 ± 0.1 g/cm ³
Vapour Pressure:	Not available
Flashpoint:	Non flammable

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability:	The product is very stable at pH <3.5 and does not cause any degradation when stored in normal conditions and at temperature <75°C. At higher pH, possible decomposition with ethylene emission.
Hazardous Reactions:	Reacts with alkaline materials, metallic salts and metals such as iron, copper and aluminium. Hazardous decomposition products include hydrogen chloride and ethylenes.
Hazardous Polymerization:	Hazardous polymerization will not occur.
Materials to Avoid:	Do not mix, store or apply the product or spray solutions of the product in galvanized steel or unlined steel (except stainless) containers or spray tanks. Avoid contact with alkaline materials.

SECTION 11 – TOXICOLOGICAL INFORMATION

Inhalation:	May cause irritation to the respiratory tract if mists or aerosols are inhaled. Severe over-exposure by inhalation can cause pulmonary oedema, which may be delayed.
Ingestion:	May cause burns to the mouth, throat, esophagus and stomach.
Skin:	Will irritate the skin. Unless removed immediately, will cause burns.
Eye:	The concentrate will cause irritation of the eyes. Will cause burns unless immediate treatment is given.
Chronic Effects:	Regular exposure may result in lowering of cholinesterase activity which will recover within a few days after exposure ceases.
Reproductive Toxicity:	Data indicates no reproductive effects.
Mutagenicity:	Ethephon studies in Salmonella typhimurium indicated no mutagenic effect up to 1,000 micrograms/100mL, without enzyme activation.
Carcinogenicity:	A carcinogenicity study was conducted in mice using 70.6-72.1% Ethephon. The doses were administered in feed at 0, 15.5 156 or 1630 mg/kg/day to CD-1 mice for 78 weeks. No dose-related evidence of carcinogenicity/oncogenicity was reported.
Acute Oral:	LD ₅₀ (rat): 3030 mg/kg
Acute Dermal:	LD ₅₀ (rat): 1560 mg/kg
Acute Inhalation:	LC ₅₀ (rat) (4hr) 4.52 mg/l for
Other Information:	The Australian Acceptable Daily Intake (ADI) for ethephon for a human is 0.02 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.17 (H) mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing, 'ADI List', TGA, September 2005).

SECTION 12 – ECOLOGICAL INFORMATION

Known Harmful Effects on the Environment

Not available.

Environ. Protection

Spray drift should be avoided, read the label for more information.

Acute Toxicity - Fish

LC₅₀ (96 hr) for Carp is >140 mg/l for a similar product

LC₅₀ (96 hr) for Rainbow trout is 720 mg/l for ethephon

Acute Toxicity - Daphnia

LC₅₀ (48hr) for Daphnia is 1000 mg/l for ethephon

Acute Toxicity –Algae

EC₅₀ (24-48 hr) for Chlorella vulgaris 32 mg/l

Acute Toxicity – Other Organisms

The following data is for the active ingredient, ethephon

LD₅₀ for bobwhite quail is 1072 mg/kg

Not toxic to bees.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemCollect).

Container Disposal: Do not use this container for any other purpose. Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations. DRUMMUSTER is the national program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical containers. If the label on your container carries the DRUMMUSTER symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program.

If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

Returnable containers: empty contents fully into application equipment. Replace cap, close all valves and return to the point of supply for refill or storage.

SECTION 14 – TRANSPORT INFORMATION

U.N. Number	1760
Proper Shipping Name	Corrosive Liquid, N.O.S. – {contains Ethephon}
DG Class	8
Hazchem Code	2X
Packing Method	3.8.8
Packing Group	III
Storage and Transport	Considered dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.

SECTION 15 – REGULATORY INFORMATION

Poisons Schedule	S6
Packaging & Labelling	POISON KEEP OUT OF CHILDREN

Hazard Category
AICS (Australia)

READ SAFETY DIRECTIONS BEFORE OPENING OR
USING

Harmful, Corrosive

All of the components in this product are listed on the
Australian Inventory of Chemical Substances.

SECTION 16 – OTHER INFORMATION

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

CONTACT POINT:

Police and Fire Brigade:

Dial 000

National Poisons Information Centre:

Dial 13 11 26 (from anywhere in Australia)

For 24 hour emergency response:

Dial 0439 933 556

Ask for Murray Goodlich