SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name:	**Kenso Agcare Speedy 250 Herbicide**
Product Type:	Group L Herbicide
Company Name:	Kenso Corporation (M) Sdn Bhd
Address:	Level 1, 98 Commercial Road, Teneriffe QLD 4005
Telephone Number:	(07) 3216 1188
Emergency Telephone Number:	000 (Police or Fire Brigade) **13 11 26 (Poisons Information Centre)**
Use:	For control of a wide range of grasses and broadleaf weeds.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification: Classified as hazardous according to criteria of Safe Work Australia.
Classified as a Dangerous Good according to the ADG Code.

Classification of the Hazardous Chemical:	Acute toxicity (Oral) – Category 3 Acute toxicity (Dermal) – Category 3 Skin sensitization – Category 1, 1A, 1B Acute toxicity (Inhalation) – Category 3 Hazardous to the aquatic environment, long term – Chronic 1
GHS Signal Word:	**DANGER**
Hazard statements:	H301: Toxic if swallowed. H311: Toxic in contact with skin. H317: May cause an allergic skin reaction. H331: Toxic if inhaled. H410: Very toxic to aquatic life with long lasting effects.
Prevention:	P261: Avoid breathing dust/fume/gas/mist/vapours/spray. 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. P272: Contaminated work clothing should not be allowed out of the workplace. P273: Avoid release to the environment. P280: Wear protective gloves/eye protection/face protection
Response:	P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER

	or doctor/ physician. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P311: Call a POISON CENTER/doctor/physician. P312: Call a POISON CENTRE or doctor/ physician if you feel unwell. P321: Specific treatment (see FIRST AID on this label) P322: Specific measures (see FIRST AID on this label) P330: Rinse mouth. P333 + P313: If skin irritation or rash occurs: Get medical advice/attention. P361: Remove/ Take off immediately all contaminated clothing. P362 + P364: Take off contaminated clothing and wash it before reuse. P363: Wash contaminated clothing before reuse. P391: Collect spillage.
Storage:	P405: Store locked up.
Disposal:	P501: Dispose of contents/container as specified on the registered label.
SUSMP Classification:	S7
ADG Classification:	Class 6.1: Toxic substances.
UN Number:	3016, BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC

Emergency Overview

Physical Description & colour: dark green/blue liquid.
Odour: pyridine base.
Major Health Hazards: may cause serious damage to health by prolonged exposure if swallowed, toxic by inhalation, in contact with skin and if swallowed, irritating to eyes, respiratory system and skin.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
Paraquat (present as paraquat dichloride)	1910-42-5	13.5%
Diquat (present as diquat dibromide)	85-00-7	11.5%
Inert ingredients	secret	<30%
Water	7732-18-5	to 100%

SECTION 4 – FIRST AID MEASURES

Inhalation:	Remove victim from area of exposure – avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

Skin contact:	Wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. If skin is broken, the component Paraquat can be absorbed through the skin. Seek medical advice immediately.
Eye contact:	Hold eyelids open and flush with plenty of water for at least 20 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Seek medical attention. Patients should be reviewed after 24 hours If splashed with the concentrate. Referral to an ophthalmologist should be considered.
Ingestion:	Get medical advice immediately if poisoning occurs. Do not delay the time of the treatment.

Advice to Doctor:
Refer to "Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment" (2003 or later edition) – available at most major treatment hospitals and Poisons Information Centre.
Treatment: Wash out stomach and test urine and gastric aspirate (if clear) for presence of Paraquat. Give up to 1 litre of 15% aqueous suspension of Fuller's Earth orally or via gastric tube, together with a suitable purgative (200ml or an aqueous solution of mannitol). Repeat administration of absorbent plus purgative until absorbent is seen in stools. This should normally take between 4 and 6 hours after the start of treatment.
Do not use supplemental oxygen.
With the possibility of late onset conjunctival ulceration it is advised that patients with Paraquat eye injuries are reviewed the day after first presentation. At the review, consideration should be given to treating the eyes with a local antibiotic preparation to prevent secondary infection. Local treatment with a suitable steroid will aid resolution of granulation tissue. Corneal oedema, which may persist for up to 3-4 weeks, may cause blurring of vision.

SECTION 5 – FIRE FIGHTING MEASURES

Fire/Explosion Hazard
Dangerous Decomposition or Combustion Products
Thermal Decomposition Not combustible, however, following evaporation of aqueous component residual material may burn. On burning will emit toxic fumes. Fire fighters must wear self contained breathing apparatus if there is risk of exposure to products of combustion.
Suitable extinguishing media: Use water fog (or if unavailable fine water spray), foam, dry agent, (carbon dioxide, dry chemical powder).
Extinguishing Media
Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimize spillage entering drains or water courses.
Fire Fighting
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.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills and Disposal
Ensure suitable personal protection (including respiratory protection) during removal of spillage. Contain spill and absorb with sand or other absorbent material. Do not allow to enter drains, sewers and watercourses. Collect in sealed open top container for disposal. Triple rinse containers, add rinsings to spray tanks and send containers for recycling or if not recycling, break, crush or puncture and bury empty containers in a local authority landfill or in accordance with local, state or federal regulation. Do not dispose of undiluted chemicals on site.

SECTION 7 – HANDLING AND STORAGE

Handling
When handling this product, do not eat, drink or smoke.
When mixing this product always wear a PVC or rubber apron, elbow length PVC gloves, face shield or goggles and overalls buttoned at the wrist and neck.
When spraying this product, wear a face shield or goggles
After each days use, wash gloves, face shield or goggles and overalls.
If product gets on skin, immediately wash area with soap and water.
Storage
Store in the closed, original container in a well-ventilated area as cool as possible out of direct sunlight. Keep from contact with fertilisers and seeds.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards:
There are no assigned values for this specific product; however, exposure standards for the active ingredients are as follows:

Ingredients	TWA	
	ppm	mg/m^3
Paraquat	-	0.1
Diquat	-	0.5
Pyridine base	5	16

As published by the National Occupational Health and Safety Commission:
TWA – the Time-Weighted Average airborne concentrations over an eight-hour working day, for a five-day working week over an entire working life.
STEL (Short Term Exposure Limit) – the average airborne concentration over a 15 minutes period which should not be exceeded at any time during a normal eight-hour work day. According to current knowledge these concentrations should neither impair the health of nor cause undue discomfort to nearly all workers.

These exposure standards are not applicable to field use.
All atmospheric contamination should be kept to as low a level as is workable. Exposure Standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.
If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during manufacture of the product. Do not enter treated areas without protective clothing (waterproof footwear, clothing and gloves) until spray has dried.

Engineering Controls:

Ensure the ventilation is adequate to maintain air concentrations of components below quoted Exposure Standards. Avoid generating and inhaling mists. Keep containers closed when not in use.

Personal Protection:

MANUFACTURE, PACKING AND TRANSPORT: Avoid eye and skin contact and the inhalation of vapour and mist. Wear face shield or goggles, elbow-length impervious gloves, splash apron and rubber boots. Always wash hands before eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using. If inhalation risk of vapour or spray mist exists wear organic vapour respirator meeting the requirements of AS/NZ 1715 and AS/NZ 1716.

PREPARATION AND USE OF PRODUCT: Avoid contact with eyes, skin and clothing. When opening the container and preparing product for use, wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves, face shield or goggles and half face piece respirator or disposable respirator. Do not work in spray mist. When there is a risk of exposure to spray mist wear a face mask or respirator covering nose and mouth and capable of filtering spray droplets. A high efficiency type particulate respirator is recommended, but in any event use a respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. After use and before eating, drinking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash contaminated clothing, gloves and face shield or goggles. Avoid contacting vegetation wet with spray, but if necessary to do so, wear waterproof footwear and waterproof protective clothing and gloves.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form:	Clear solution
Colour:	Dark green/blue
Odour:	Pyridine bases
pH:	5 - 6.5
Melting Point (°C):	100
Boiling Point (°C):	100
Specific Gravity:	1.164
Vapour Pressure:	N/A
Flash Point	Non flammable
Volatility:	Not volatile
Solubility	Soluble in water
Corrosiveness:	Corrosive

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
Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.
Incompatibilities
No particular Incompatibilities.
Fire Decomposition
This product is likely to decompose only after heating to dryness, followed by further strong heating. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Hydrogen chloride gas, other compounds of chlorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.
Polymerisation
This product will not undergo polymerisation reactions.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity: Paraquat Dichloride: LD_{50} Oral, Rat 157mg/kg LD_{50} Oral, Mouse = 104mg/kg
LD_{50} Oral, Guinea Pig = 22-42mg/kg LD_{50} Oral, Dog = 25-50mg/kg
LD_{50} Dermal, Rat = 236-500mg/kg
Studies in animals have shown that repeated doses of paraquat do not produce carcinogenic nor teratogenic effects or adverse reproductive effects. The dietary no effect level in the rat was 25 ppm of paraquat over 2 years.
Ingestion studies in animals have shown that repeated doses of Diquat produce cataracts in test animals (dogs and rats). These effects have not been seen in occupationally exposed humans.

Potential Health Effects

Health Effects This product is toxic according to NOHSC Australia.

Acute:

Inhalation: Highly toxic if inhaled. However, unlikely to be hazardous by inhalation because of low vapour pressure of the material at ambient temperature. Nose bleeding and soreness of the throat may result from spray mist or dust trapped on the nasal mucosa. Irritating to the respiratory system. Pulmonary oedema may occur up to 48 hours after exposure and could prove fatal.

This product contains a stanching agent to give an offensive smell. This has been done to reduce the likelihood of accidental ingestion. This stenching agent may cause headaches and nausea in some people when inhaled. The presence of this offensive smell in the air does not necessarily indicate the presence of Paraquat.
The following acute inhalation toxicity results have been determined for the Paraquat dichloride:
LC_{50} (rat) = 0.5 – 1.5 µg/L/4hrs

Skin contact: Will irritate the skin. The product is also a skin sensitiser. Can cause inflammation and in severe cases blistering of the skin. Contamination of the nails may cause white spots or in severe cases cracking and loss of the nail. Normal growth follows without delay. Intact skin is a very effective barrier to Paraquat. Broken skin removes the barrier and Paraquat may be absorbed with effects as outlined above under "Swallowed". Repeated or prolonged skin contact may lead to allergic contact dermatitis. Modelling predicted for intact human skin and diluted solutions that systemic toxicity would be unlikely, but the risk increased significantly with damaged skin or concentrated solutions.
The following acute dermal toxicity results have been determined for the active ingredients of the product:
Paraquat dichloride: LD_{50} (rat) = > 2000 mg/kg (> 660 mg Paraquat ion/kg)
Diquat dichloride: LD_{50} (rat) = > 2000 mg/kg (> 424 mg Diquat ion/kg)

Eye contact: Eye irritation may be delayed. May lead to severe, painful irritation and ulceration of corneal and conjunctival epithelium which may give rise to a secondary infection. Loss of corneal and conjunctival epithelium and iritis can occur with the risk of secondary infection and consequent residual corneal scarring. Corneal oedema may persist for up to 3-4 weeks. There may be blurring of vision and permanent damage to eyes is a possibility.

Ingestion: The immediate effects of poisoning depend on the dose of Paraquat and Diquat absorbed into the blood.
Mild poisoning occurs at < 20 mg Paraquat ion/kg body weight and the effects are vomiting and diarrhoea. Moderate to severe poisoning occurs at 20-30 mg Paraquat ion/kg body weight and the effects are vomiting, abdominal discomfort, soreness and inflammation of the mouth, throat and oesophagus, difficulty in swallowing and, later, diarrhoea. Ulceration of lips, mouth, throat and intestine may follow within 24-48 hours. Kidney and liver damage may appear 1 – 3 days after exposure. Can cause death by a delayed proliferating fibrosis of the lung within 1 – 3 weeks.
Lethal poisoning occurs at > 30 mg Paraquat ion/kg body weight and the effects are nausea and vomiting, and can cause death by multi-organ failure and circulatory collapse within 48 hours. The lethal dose of Diquat

dibromide for man is approximately 4 – 6 g of Diquat (equivalent to approx. 60 mg/kg body weight).
The following acute oral toxicity results have been determined for the active ingredients of the product:
Paraquat dichloride: LD_{50} (rat) = 283 mg/kg (93.4mg Paraquat ion/kg)
Diquat dichloride: LD_{50} (rat) = 1009 mg/kg (214 mg Paraquat ion/kg)

Chronic:
Studies in animals have shown that repeated doses of Paraquat do not produce carcinogenic nor teratogenic effects or adverse reproductive effects. The dietary no effect level in the rat was 25 ppm o Paraquat over 2 years. Ingestion studies in animals have shown that repeated doses of Diquat product cataracts in test animals (dog, rat). These effects have not been seen in occupationally exposed humans.
The ADI for humans (Paraquat cation) is 0.004 mg/kg/bw/day. The corresponding NOAEL is set at 0.45 mg/kg/bw/day. The ADI for humans (Diquat ion) is 0.002 mg/kg/bw/day. The corresponding NOAEL is set at 0.2 mg/kg/bw/day.
**ADI= Acceptable Daily Intake; NOAEL: No Observable Adverse Effect Level. Data adopted from Australia ADI List, December 2022.*

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity data (on paraquat)
Acute Toxicity – Bird
LD_{50} hen: 262-380mg/kg
LD_{50} bobwhite quail: 981mg/kg
LD_{50} Japanese quail: 970mg/kg
LD_{50} mallard duck: 4048mg/kg
Acute Toxicity – Fish
LC_{50} rainbow trout: 32mg/L
LC_{50} brown trout: 2.15-13mg/L
Environmental fate:
Paraquat
Animals: In rats, following oral administration, 76-90% of the dose was excreted in the faeces, and 11-20% in urine.
Plants: On plant surfaces, photochemical degradation occurs. Degradation products which have been isolated include 1-methyl-4-carboxypyridinium chloride and methylamine hydrochloride.
Soil/environment: Clays and organic materials rapidly and strongly absorb paraquat, resulting in complete deactivation. Typical strong absorption capacities vary from 20-3000mg/kg soil depending on clay or organic material content. Desorption requires digestion with 12N sulfuric acid for several hours.
Diquat.
Diquat is rapidly adsorbed by clay constituents of soil and in the sorbed state is resistant to biodegradation and photodegradation. The duration of residual activity in soil is a few days; the

deactivation resulting from its binding to the soil. In some soils such as montmorillonite clay, adsorption is considered irreversible. There is some evidence of a more loosely bound component, the fraction of which depends on the type of soil.
Diquat is removed rapidly from aquatic systems, principally by adsorption. If adsorption is initially to weeds, biodegradation to soluble or volatile products occurs in several weeks. When sorbed to sediment, little or no degradation probably occurs. In any case, the Diquat disappears from the water in 2-4 weeks. Diquat will photodegrade in surface layers of water in 1-3 or more weeks when not adsorbed to particulate matter.
Should Diquat be released to the atmosphere during spraying operations, it would be associated with aerosols. It will be subject to photolysis (half-life approx 48 hrs) and gravitational settling.
Little or no bioconcentration in fish will occur, as is expected for a chemical whose log octanol/water partition coefficient is -3.05. No residues were detected in organs or tissues of channel catfish collected from pools 5 months after a single application or 2 months after a second treatment of 1 ppm Diquat.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal: Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.

SECTION 14 – TRANSPORT INFORMATION

ADG

UN Number:	3016
Proper shipping name:	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC (contains PARAQUAT)
Class:	6.1 Toxic Substances
Packaging group:	III
Hazchem:	2X

IMO-IMDG

UN Number:	3016
Proper shipping name:	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC (contains PARAQUAT)
Class:	6.1 Toxic Substances
Packaging group:	III
Marine pollutant:	Yes

SECTION 15 – REGULATORY INFORMATION

SUSMP Classification	S7
Packaging & Labelling	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP

SECTION 16 – OTHER INFORMATION

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

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS number	Chemical Abstracts Service Registry Number
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOHSC	National Occupational Health and Safety Commission
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number
GHS	Globally Harmonised System

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	0428 776 327 Ask for Russell Clark