MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name:	**Kenso Agcare Ken-Up Gold 500 Herbicide**
Product Type:	Group M Herbicide
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:	Water soluble herbicide for non-selective control of many annual, perennial and aquatic weeds in the situations stated in the directions for use table.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification: Hazardous according to the criteria of NOHSC Australia.
Risk Phrase(s): R36/38 Irritating to eyes and skin.
Safety Phrase(s): S24/25 Avoid contact with skin and eyes
SUSDP Classification: S5
ADG Classification: None allocated. Not a Dangerous Good.
UN Number: None allocated.

Emergency Overview

Physical Description & colour: Clear, viscous, yellow solution.
Odour: slight ammoniacal odour.
Major Health Hazards: Glyphosate is practically nontoxic by ingestion, with a reported acute oral LD_{50} of 5600 mg/kg in the rat. The toxicities of the technical acid (glyphosate) and the formulated product are nearly the same. No major health hazards are known.

Potential Health Effects

Health Effects

Acute:

Swallowed: No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed. Ingestion of similar formulations has been reported to produce gastrointestinal discomfort with irritation of the mouth, nausea, vomiting and diarrhoea. Oral ingestion of large quantities of one similar product has been reported to result in hypotension and lung oedema.

Eye: Available data shows that this product is not harmful. In addition, this product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

Skin: Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition, this product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Inhaled: Available data indicates that this product is not harmful. However, this product may be mildly irritating, but is unlikely to cause anything more than mild transient discomfort.

Chronic:
See section 11 for Chronic exposure studies.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
Glyphosate isopropylamine salt	38641-94-0	67.5 % w/v
Surfactant	secret	10-20% w/v
Inert ingredient		To 100 % w/v

SECTION 4 – FIRST AID MEASURES

Swallowed	Rinse mouth with water. Give plenty of water to drink. Do NOT induce vomiting. Seek medical assistance.
Eye	Hold the eyes and flush immediately with plenty of water. Seek medical advice if irritation develops.
Skin	Remove contaminated clothing and wash affected area or skin with soap and water. Seek medical advice if irritation develops.
Inhaled	Remove to fresh air, keep warm and at rest. Give artificial respiration or oxygen if breathing is shallow or stopped. Get medical attention immediately.

Advice to Doctor:
Treatment is symptomatic.

SECTION 5 – FIRE FIGHTING MEASURES

Fire/Explosion Hazards:
Dangerous decomposition or Combustion products
Thermal decomposition
Not a fire or explosion hazard

Hazardous decomposition products
None known

Hazardous reactions
DO NOT mix, store or apply the product or spray solutions of the product in galvanized steel or unlined steel (except stainless steel) containers or spray tanks. The product or spray solutions of the product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture that can flash or explode if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source. Spray solutions of the product should be mixed, stored and applied only in stainless steel, aluminium, fiberglass, plastic and plastic-lined steel containers.

Extinguishing Media
Extinguish fire with foam, dry powder, carbon dioxide or water spray.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills & 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

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

Transport
Considered non-hazardous by Australian Code for the Transport of Dangerous Goods by Road and Rail.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards:
None established for formulated product or its components.

Engineering Controls
No special ventilation required.

Personal Protection
Avoid contact with eyes and skin. Do not inhale spray mist. When preparing spray solution, wear PVC/rubber apron or cotton overalls buttoned to the neck and wrist, elbow-length PVC gloves and goggles or face-shield. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face and contaminated clothing.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid
Colour:	Clear, viscous, yellow solution
Odour:	Ammoniacal odour
Vapour Pressure:	Not applicable
Specific Density:	1.22 $\pm$ 0.01
Flashpoint:	Non flammable
Flammability Limits:	Non flammable
Solubility in Water:	Completely soluble

SECTION 10 – STABILITY AND REACTIVITY

Hazardous Polymerization
Hazardous polymerisation is not possible.

Materials to Avoid
Corrosive to mild steel, galvanised steel and zinc. Non corrosive to stainless steel, polyethylene and plastics. Do not mix, store or apply the product or spray solutions of the product in galvanised steel or unlined steel (except stainless steel) containers or spray tanks.

Hazardous Reaction
Avoid contact of the concentrate with strong alkalis and alkaline materials such as lime. Such contact may release isopropylamine vapour with a strong fish like odour, which is an irritant to eyes. Isopropylamine is moderately toxic, LD50 (oral, rat) is 820 mg/kg and a TLV of 5 ppm (TWA) has been set.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity Data:

Glyphosate is isopropylamine salt technical
Acute oral LD_{50} for rats: 5600 mg/kg
Acute dermal LD_{50} for rabbits: >5000 mg/kg
LC_{50} (96hr) for rainbow trout: 8.2 – 26 mg/L
LC_{50} (96hr) for bluegill sunfish: 5.8 – 14 mg/L
LD_{50} for bees: >0.1 mg/kg

Chronic toxicity:
Studies of glyphosate lasting up to 2 years, have been conducted with rats, dogs, mice and rabbits, and with few exceptions no effects were observed. For example, in a chronic feeding study with rats, no toxic effects were observed in rats given doses as high as 400 mg/kg/day. Also, no toxic effects were observed in a chronic feeding study with dogs fed up to 500 mg/kg/day, the highest dose tested.

SECTION 12 – ECOLOGICAL INFORMATION

Known Harmful Effects on the Environment
Harmful to fish and other aquatic organisms (mainly due to the surfactant).

Other Precautions
Do not spray in high winds. Do not contaminate dams, waterways or sewers with this product.

Environmental Protection
Glyphosate is a non-selective contact herbicide. Spray drift can cause damage.

Persistence / Degradability
Adsorption studies indicate that glyphosate has very low mobility. Average field half life of glyphosate is 47 days.

Acute Toxicity – Fish
The following is data for a similar product.

LC_{50} (96 hr) for bluegill sunfish is 5.8 - 14 mg/l.
LC_{50} (96 hr) for rainbow trout is 8.2 - 26 mg/l.
LC_{50} (96 hr) for fathead minnow is 9.4 mg/l.
TL_{50} (96hr) carp is 19.7 ppm

Acute Toxicity – Other Organisms
The following data is for the active ingredient, glyphosate.

Birds: Not toxic to birds. LD_{50} for bobwhite quail is >3850 mg/kg
Bees: Not toxic to bees. LD_{50} >100 µg/bee.

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 Code: This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

SECTION 15 – REGULATORY INFORMATION

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database.

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