MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name:	**Kenso Agcare Ken-Up Aquatic 360 Herbicide**
Product Type:	Group M Herbicide
Company Name:	Kenso Corporation (M) Sdn Bhd
Address:	Kirkland Corner H/177, Old Cleveland Rd. Coorparoo Queensland 4151
Telephone Number:	(07) 3847 4288
Facsimile Number:	(07) 3847 4188
Emergency Telephone Number:	000 (Police or Fire Brigade) **13 11 26 (Poisons Information Centre)**
Use:	A non selective herbicide for the control of a range of annual, perennial, and woody weeds as indicated in the directions for use.

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	**CAS number**	**Proportion**
Glyphosate Isopropylamine Salt	38641-94-0	36 % w/v
Inert Ingredient	secret	<10% w/v
Water	7732-18-5	to 100% w/v

SECTION 3 – HAZARDS IDENTIFICATION

Hazard Classification: Hazardous according to 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 yellow liquid.
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. This product is irritating to eyes and skin.

Potential Health Effects

Health Effects

Acute:

Swallowed: May cause gastrointestinal discomfort, nausea, vomiting and diarrhoea. If ingested large quantities of the undiluted product may result in hypotension and pulmonary oedema.

Eye: Cause irritation and conjunctivitis.

Skin: Cause irritation.

Inhaled: No adverse respiratory effects are anticipated.

Chronic:
Not available.

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 areas 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 Hazard
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 galvanised 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, fibreglass, 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 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

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:
Well ventilated

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 yellow liquid
Odour:	Slight ammoniacal odour
Boiling point (°C):	Not applicable
Vapour Pressure:	Not applicable
Specific Density:	1.17 $\pm$ 0.01
Flashpoint:	Non flammable
Flammability Limits:	Non flammable
Solubility in Water:	Completely soluble

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability:	This product is unlikely to react or decompose under normal storage conditions.
Conditions to Avoid:	This product should be kept in a cool place, preferably below 30^0C.
Incompatibilities:	No particular incompatibilities.
Fire Decomposition:	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. Oxides of phosphorus and other phosphorus compounds. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death. Hydrogen cyanide poisoning signs and symptoms are weakness, dizziness, headache, nausea, vomiting, coma, convulsions, and death. Death results from respiratory arrest. Hydrogen cyanide gas acts very rapidly; symptoms and death can both occur quickly.
Polymerization:	This product is unlikely to undergo polymerisation.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity data:

Glyphosate isopropylamine salt technical
Acute oral LD_{50} for rat: 5600 mg/kg
Acute dermal LD_{50} for rabbits: >5000 mg/kg

LC_{50} (96 hr) for rainbow trout: 8.2 – 26 mg/L
LC_{50} (96 hr) forbluegill sunfish: 5.8 – 14 mg/L
LD_{50} for bees: > 0.1 mg/kg

Other Information
The Australian Acceptable Daily Intake (ADI) for glyphosate for a human is 0.3 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 30 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, August 2003).

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.

Environ. 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 data is for the formulated product.

Not toxic to fish.
LC_{50} (96 hr) for rainbow trout is >989 mg/l.
LC_{50} (96 hr) for carp is >895 mg/l.

Acute Toxicity – Other Organisms

Birds: Not toxic to birds. LD_{50} for mallard ducks and bobwhite quail (diet) is >5620 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

UN Number:	None allocated
Proper Shipping Name:	None allocated
SUSDP Classification:	S5
ADG Class:	None allocated. Not a dangerous good.
Hazchem Code:	None allocated.
Packing Group:	None allocated.

SECTION 15 – REGULATORY INFORMATION

SUSDP Classification	S5
Packaging & Labelling	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
AICS (Australia)	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.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS	Australian Inventory of Chemical Substances
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
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

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