MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name:	**Kenso Agcare Ken-Star 450 Herbicide**
Product Type:	Group I 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:	For the control of emerged broadleaf weeds prior to sowing crops and pastures in conservation tillage and for selective weed control in various crops.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification: Hazardous according to criteria of NOHSC Australia.
Risk Phrase(s): R22 Harmful if swallowed.
R36/38 Irritating to eyes and skin.
Safety Phrase(s): S20 When using, do not eat and drink.
24/25 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 reddish brown liquid.
Odour: Ammoniacal odour.
Major Health Hazards: The oral LD_{50} of 2,4-D ranges from 375 to 666 mg/kg in the rate, 370 mg/kg in mice, and from less than 320 to 1000 mg/kg in guinea pigs. The dermal LD_{50} values are 1500 mg/kg in rats and 1400 mg/kg in rabbits, respectively. In humans, prolonged breathing of 2,4-D causes coughing, burning, dizziness, and temporary loss of muscle coordination. Other symptoms of poisoning can be fatigue and weakness with possible nausea. On rare occasions following high levels of exposure, there can be inflammation of the nerve endings with muscular effects.

Potential Health Effects

Health Effects No LD_{50} information is available for this product.

Acute:

Swallowed: Harmful

Eye: Cause irritation

Skin: Cause irritation

Inhaled: Irritation to respiratory system

Chronic:
Not available

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
2,4D (present as isopropylamine salt)	5742-17-6	450 g/L
Inert ingredient	secret	To 100%

SECTION 4 – FIRST AID MEASURES

Swallowed	If swallowed, and if more than 15 minutes from a hospital induce vomiting, preferably using Ipecac Syrup APF. Seek medical advice immediately.
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
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 sulphur (sulphur dioxide is a respiratory hazard) and other sulphur compounds. Most will have a foul odour. 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. 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.

Incompatibilities
Strong acids, strong bases, strong oxidising agents.

Hazardous decomposition products
None known

Hazardous reactions
None known

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills & Disposal
Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. Stop leak if safe to do so, and contain spill. Sweep up

and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. 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 MSDS 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.

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

Ingredient	TWA mg/m^3
2,4-D Acid	10

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 reddish brown liquid
Odour:	Ammoniacal odour
Boiling point (°C):	About 100 ^{0}C
Vapour Pressure:	16 mm Hg (water)
Specific Density:	1.15 $\pm$ 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
Reaction of the concentrate or spray mix with acids will precipitate solid 2,4-D acid and largely de-activate the product and cause blockages in spray equipment. The addition of a strong alkali such as caustic soda

will cause release of mono-isopropylamine vapour. Mono-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:

Acute oral LD_{50} for rats: > 500 mg/kg
Acute dermal LD_{50} for rats: > 2000 mg/kg

Effects on Birds: Non-toxic to birds on a dietary basis (LC_{50} > 5000 mg/kg)

Effects on Aquatic Organisms: LC_{50} (48 hr) for (daphnia) is 184 mg/l for 2,4-D (2,4-dichlorophenoxyacetic acid) dimethylamine salt.

Effects on Other Animals: Not toxic to bees. LD_{50} for (mallard duck) is >500 mg/kg

Environmental fate: Biodegradation may occur under aerobic conditions.

SECTION 12 – ECOLOGICAL INFORMATION

Known Harmful Effects on the Environment
2,4-D products do not appear to pose any threat to birds.
2,4-D products do not appear to pose any threat to fish or other aquatic organisms other than in very high concentrations.

Acute Toxicity - Fish
LC_{50} (96 hr) for (rainbow trout) is >100 mg/l.

Acute Toxicity - Daphnia
LC_{50} (48 hr) for (daphnia) is 184 mg/l for 2,4-D (2,4-dichlorophenoxyacetic acid) dimethylamine salt.

Acute Toxicity – Other Organisms
Not toxic to bees.
LD_{50} for (mallard duck) is >500 mg/kg

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
ADG Class:	None Allocated
Hazchem Code:	None Allocated
Packing Group:	None Allocated

SECTION 15 – REGULATORY INFORMATION

Poison schedule	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