

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name: Kenso Agcare Diquat 200 Herbicide
Product Type: Group L Herbicide
Company Name: Kenso Corporation (M) Sdn Bhd
Address: Level 1, 98 Commercial Road, Teneriffe, 4005 QLD.
Telephone Number: (07) 3216 1188
Emergency Telephone Number: 000 (Police or Fire Brigade)
13 11 26 (Poisons Information Centre)
Use: Herbicide for the control of a wide range of broadleaf weeds through aerial and ground equipment application.

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: Corrosive to metals – Category 1
Acute toxicity (Oral) – Category 4
Skin corrosion/ irritation – Category 2
Skin sensitization – Category 1/1A/1B
Serious eye damage/eye irritation – Category 2/2A
Acute toxicity (Inhalation) – Category 1,2
Specific target organ toxicity, single exposure – Category 3
Specific target organ toxicity, repeated exposure – Category 1
Hazardous to the aquatic environment, long term – Chronic 1

GHS Signal Word: **DANGER**

Hazard statements: H290: May be corrosive to metals
H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H330: Fatal if inhaled.
H335: May cause respiratory irritation.
H372: Causes damage to organs through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.

Prevention: P234: Keep only in original container.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash contacted area thoroughly after handling.

Response: 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/protective clothing/eye protection/face protection.
 P284: Wear respiratory protection.
 P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
 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.
 P305 P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310: Immediately call a POISON CENTER or doctor/physician.
 P320: Specific treatment is urgent (see FIRST AID on this label).
 P330: Rinse mouth.
 P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313: If eye irritation persists: Get medical advice/attention.
 P362+P364: Take off contaminated clothing and wash it before reuse.
 P390: Absorb spillage to prevent material damage.
 P391: Collect spillage.

Storage: P403+P233: Store in a well-ventilated place. Keep container tightly closed.
 P405: Store locked up.
 P406: Store in corrosive resistant container with a resistant inner liner.

Disposal: P501: Dispose of contents and containers as specified on the registered label.

SUSMP Classification: S6
ADG Classification: Class 8: Corrosive.
UN Number: 1760, CORROSIVE LIQUID, N.O.S (contains DIQUAT DIBROMIDE)

Emergency Overview

Physical Description & colour: Dark red brown viscous liquid.

Odour: Pyridine base.

Major Health Hazards: Very dangerous. Poisonous if absorbed by skin contact, inhaled or swallowed. Will irritate the eyes, nose, throat and skin. Avoid contact with eyes and skin. DO NOT inhale spray mist.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
Diquat (present as dibromide)	85-00-7	20%
Inert ingredients	secret	<10%
Water		to 100%

SECTION 4 – FIRST AID MEASURES

Inhalation:	Remove victim from exposure. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Obtain immediate medical attention.
Skin contact:	Immediately take off all contaminated clothing. Wash skin immediately with water followed by soap and water. If swelling, redness, blistering or irritation occurs seek medical attention. Contaminated clothing should be laundered before reuse.
Eye contact:	Immediately irrigate with copious quantities of water for at least 20 minutes. Eyelids to be held open. Urgently seek medical assistance. Transport to hospital or medical centre.
Ingestion:	If poisoning occurs get to a doctor of hospital quickly, warning by telephone of the estimated arrival time so that treatment is not delayed. Do not induce vomiting. DO NOT delay the start of treatment. If swallowed, and more than 15 minutes from a hospital induce vomiting, preferably using Ipecac Syrup APF.

Advice to Doctor:

Administer either activated charcoal (100 g for adults or 2 g/kg body weight in children).

NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit.

Eye contact: severe damage may be caused by apparently trivial contact and healing may be delayed. Medical supervision should continue until complete healing has occurred.

SECTION 5 – FIRE FIGHTING MEASURES

Fire/Explosion Hazard

Dangerous Decomposition or Combustion Products

Thermal Decomposition

This is a non-combustible liquid. During a fire, smoke may contain the original material in addition to combustion products of varying composition that may be toxic and/ or irritating. Take appropriate protective measures. It may emit oxides of nitrogen, and possibly toxic fumes of hydrogen chloride and hydrogen bromide gas.

Special Fire Fighting Procedures

Evacuate personnel to a safe area. Always wear positive-pressure self-contained breathing apparatus and full protective clothing. Do not allow water from fire-fighting to enter water supplies or drainage systems.

Extinguishing Media

Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.

Fire Fighting

If a significant quantity of this product is involved in a fire, call the fire brigade.

Polymerisation

Not known to occur.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

General Instructions

Wear appropriate protective equipment. Clear area of all unprotected personnel. Prevent entry of chemical or used/damaged containers into sewers, drains, streams or waterways. If necessary, inform the police and the relevant State Authority.

Small Spill: For cleanup of a spill from a single shipping pack soak up with sand or other non-combustible absorbent material and place into containers for disposal. If applicable, wash the area with detergent and water.

Large Spill: Prevent spillage from entering drains or water courses. Wear protective clothing as overalls, goggles and gloves. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. 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. 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

Handling

Very dangerous. Poisonous if absorbed by skin contact, inhaled or swallowed. Will irritate the eyes, nose, throat and skin. Avoid contact with eyes and skin. DO NOT inhale spray mist. When preparing spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves, face shield or goggles and half-face respirator or disposable respirator.

If clothing becomes contaminated with product or wet with spray remove clothing immediately. If product on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and face shield or goggles, respirator and if rubber wash with detergent and warm water, face shield and contaminated clothing.

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 limits

Exposure limits have not been established by NOHSC for active ingredient, however the OSHA permissible exposure limit for diquat is TWA 0.5 mg/m³. ACGIH TLV: TWA 0.1 mg/m³ (respirable dust). It is not considered a significant teratogen or causative agent for reproductive effects, nor is there any evidence of carcinogenicity.

Ventilation

Use only with adequate ventilation. Provide general and/ or local exhaust ventilation to control airborne levels below the exposure guidelines. Make sure that the work environment remains clean and that vapours and mists are minimised.

Eye Protection

Eye protection such as protective glasses or goggles are required when this product is being used.

Skin Protection

Use protective clothing always. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form:	Clear solution
Colour:	Dark red brown
Odour:	Pyridine bases
pH:	4 - 5.5
Melting Point (°C):	100
Boiling Point (°C):	100
Specific Gravity:	1.20
Vapour Pressure:	N/A
Flash Point	N/A
Flammability Limits:	N/A
Combustibility:	Non combustible
Volatility:	Not volatile
Solubility	Soluble
Corrosiveness:	Corrosive

SECTION 10 – STABILITY AND REACTIVITY

Chemical Reactivity

This product is stable under normal storage condition and unlikely to react or decompose under normal storage conditions.

Conditions to Avoid

Avoid high temperatures and direct sunlight. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities

Strong oxidising agents. Diquat is highly corrosive to most metals, e.g., aluminium, Zinc and iron. Diquat is inactivated by absorption onto clays.

Fire Decomposition

During a fire, smoke may contain the original material in addition to combustion products of varying composition that may be toxic and/ or irritating. Take appropriate protective measures. It may emit oxides of nitrogen and possibly toxic fumes of hydrogen chloride and hydrogen bromide.

Polymerisation

This product is unlikely to undergo polymerisation processes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity – Oral

HARMFUL Tests on rats indicate this product is harmful following single doses of a similar formulation. (LD₅₀ ca. 550 mg/kg)

Acute Toxicity – Dermal

LOW TOXICITY Tests on rats indicate this product has a low toxicity following skin contact with a similar formulation. (LD₅₀ > 5,000 mg/kg)

Acute Toxicity - Inhalation

TOXIC Tests on rats indicate this product is toxic due to inhalation of a similar formulation. LC₅₀ (4h) = 0.64 mg/L air) Nose bleeding and soreness of the throat may result from spray mist or dust trapped on the nasal mucosa.

Skin Irritation

Moderate irritant

Eye Irritation

Slight irritant

Sensitisation

Not a sensitiser

Potential Health Effects

Health Effects

This product is toxic according to NOHSC Australia.

Acute:

Inhalation:

Highly toxic if inhaled. Nose bleeding and soreness of the throat may result from spray mist or dust trapped on the nasal mucosa.

Skin contact:

Contact with skin will result in severe irritation. Can cause inflammation and in severe cases blistering of the skin. Contamination of the nails may cause white spots or cracking and loss of the nail. Normal growth follows without delay. This product is a skin sensitiser. Repeated or prolonged skin contact may lead to allergic contact dermatitis.

Absorption of Diquat through human skin is poor.

The following acute dermal toxicity results have been determined for the active ingredient of the product:

Diquat dibromide: LD₅₀ (rat) > 2000 mg/kg

Eye contact:

Severe damage may be caused, if this product comes into contact with the eye. It may lead to ulceration of corneal and conjunctival epithelium giving rise to secondary infection.

Ingestion:

Swallowing can result in nausea, vomiting, diarrhoea and abdominal pain within a few hours of ingestion. Ulceration of lips, mouth, throat and intestine may follow within 24-48 hours. Kidney failure and liver damage may occur at higher doses. In severe cases circulatory collapse, coma and death from respiratory failure/cardiac arrest can occur. The lethal dose for man is approximately 4-6g of Diquat (equivalent to approx. 60mg/kg).

The following acute oral toxicity results have been determined for the active ingredient of the product:

Diquat dibromide: LD₅₀ male rats = 214 mg/kg, LD₅₀ female rats = 222 mg/kg

Chronic:

Ingestion studies in animals have shown that repeated doses of Diquat produce cataracts in test animals (dog, rat). The no-effect level was 5 ppm in the diet (approx. 0.25 mg/kg body weight per day) for the rat in a two year study. For the dog the no-effect level was 0.5 mg cation per kg per day in a one year study. These effects have not been seen in occupationally exposed humans. Diquat has not been shown to be carcinogenic or teratogenic.

Other Information

The ADI (Acceptable Daily Intake) for humans (Diquat dibromide) is 0.002 mg/kg/day, with NOAEL (no-observed-adverse-effect level) is 0.2 mg/kg/day.

*Data adopted from Australia ADI List, December 2022.

SECTION 12 – ECOLOGICAL INFORMATION

General Information

The product is marine pollutant for sea transport.

Acute Toxicity – Bird (diquat dibromide)

LD₅₀ (12d) for mallard ducks is 71 mg diquat ion/kg

LD₅₀ (14d) for partridges is 158 mg diquat ion/kg

Acute Toxicity – Fish (diquat dibromide)

LC₅₀ (96h) for rainbow trout is 6.1 mg diquat ion/L

Acute Toxicity – Daphnia

LC₅₀ (48 hr) for daphnia is 1.2 µg diquat ion/L

Acute Toxicity – Other Organisms

The following data is for the active ingredient, diquat dibromide.

LD₅₀ (96h) for algae (*Pseudokirchneriella subcapitata*) is 11 µg diquat ion/L

LD₅₀ (oral, 120h) is 13 µg diquat ion/bee

Environmental fate

Diquat is persistent in water (Degradation half-life: > 30 d)

Diquat is persistent in soil (Degradation half-life: 11 - 41 y). Diquat is immobile in soil and does not bioaccumulate.

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:

UN1760

Proper shipping name:

CORROSIVE LIQUID, N.O.S (contains DIQUAT DIBROMIDE)

Class: 8 Corrosive Substances
Packaging group: III
Hazchem: 2X

IMO-IMDG

UN Number: UN1760
Proper shipping name: CORROSIVE LIQUID, N.O.S (contains contains DIQUAT DIBROMIDE)
Class: 8 Corrosive Substances
Packaging group: III
Marine pollutant: Yes

SECTION 15 – REGULATORY INFORMATION

SUSMP Classification S6
Packaging & Labelling POISON
 KEEP OUT OF REACH OF CHILDREN
 READ SAFETY DIRECTIONS BEFORE OPENING OR USING

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