

Material Safety Data Sheet

Diquat 150g/l SL

1. IDENTIFICATION OF THE SUBSTANCE

Product name : Diquat 150g/l SL Company Identification:
Yongnong Biosciences Co., Ltd., No. 3, Weiqi Rd. (East), Hangzhou Gulf Economy and
Technology Development Zone Shangyu, Zhejiang, China
Telephone Fax P. : 86-575-82728875 :
C. 86-575-82729696 :
Emergency Phone 312369
Product Use : 86-800-8575300 :
Herbicide

2. HAZARD IDENTIFICATION

Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredient Name | CAS Number | Concentration (g/L w/v) |
|-------------------|------------|-------------------------|
| Diquat dibromide | 85-00-7 | 150 Min. |
| Inert Ingredients | | To 1 L |

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

In case of skin contact

Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with plenty of water for 15-20 minutes.

In case of eye contact

Flush eyes with clean water, holding eyelids apart for a minimum of 15-20 minutes.

Remove contact lenses, if present, after 5 minutes, then continue flushing eye.

If swallowed

Induce vomiting. **TRANSFER TO HOSPITAL IMMEDIATELY. SPEED IS**

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ESSENTIAL. If delay is unavoidable, administer fluids and induce further vomiting. If bentonite, activated charcoal or Fuller's earth is available, administer it.

Advice to doctor:

To be effective, treatment for diquat poisoning must begin immediately. Treatment consists of binding diquat in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from blood by charcoal hemoperfusion.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media Suitable

extinguishing media

Water fog, alcohol foam, carbon dioxide, dry chemical, halogenated agents.

5.2 Special hazards arising from the substance or mixture

Possible toxic smoke, vapors, fallout and runoff water can result from fires depending on extent of combustion and presence of other combustible materials. Contaminated buildings, areas and equipment must not be used until they are properly decontaminated.

5.3 Advice for firefighters

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.

5.4 Further information

no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear equipment and clothing as described in Section 8 and/or the product label.

6.2 Environmental precautions

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Contaminated material is cleaned up and placed in a disposal container, seal container and arrange for disposal.

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disposal. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory authority.

6.3 Methods and materials for containment and cleaning up

If the container is leaking, secure leak and place the container in heavy plastic bag or drum. Remove as much as possible by absorbing with inert material. Remove any contaminated soil. Place in closed, labeled containers and store in a safe place to await disposal. Generously cover the contaminated areas with common, household detergent. Using a stiff brush and small amounts of water, work the detergent into the remaining spilled material forming a slurry. Brush the slurry into cracks and crevices and allow to stand for 2-3 minutes. Be careful to completely avoid skin or eye contact. Do not splatter on oneself or bystanders. Spread absorbent on the slurry liquid and shovel mixture into the open drum. Rinse with small amount of water and use absorbent to collect the wash solution. Shovel into the open drum. Seal drum and dispose of contaminated material in a facility permitted for hazardous waste. Large spills should be handled according to a spill plan.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. When using, do not eat, drink or smoke. For personal protection see section 8. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fibreglass.

7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feed.

7.3 Specific end uses

no data available

8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Components with workplace control parameters

No data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Avoid generating and inhaling mists. Keep container closed when not in use.

8.3 Personal protective equipment


Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Skin protection

Where contact is likely, wear chemical-resistant gloves (such as nitrile or butyl),

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coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

Respiratory protection

A respirator is not normally required when handling this substance. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapour cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------|-----------------------|
| a) Appearance | Brown liquid. |
| b) Odor | Odorless |
| c) Boiling point | approx 100 °C |
| d) Melting point | Not available. |
| e) Density | 1.17 g/ml at 20 °C |
| f) Flash Point | does not flash |
| g) Solubility | soluble in/with water |
| h) pH | 4.0-8.0 |

10. STABILITY AND REACTIVITY

10.1 Reactivity

Corrosive to most metals including zinc, aluminium and mild steel.

10.2 Chemical stability

Stable

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Concentrate should not be stored in aluminum containers. This product reacts with aluminum to produce flammable hydrogen gas. Do not mix or store in containers or systems made of aluminum or having aluminum fittings. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass.

10.5 Incompatible materials

Strong alkalis and anionic wetting agents (e.g., alkyl and alkylaryl sulfonates).
Corrosive to aluminum.

10.6 Hazardous decomposition products

Combustion or thermal decomposition will evolve toxic and irritant vapors.

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11. TOXICOLOGICAL INFORMATION

Acute toxicity

Acute oral: Cut-off value for female rats 500mg/kg.bw Acute

Dermal LD₅₀ rat (male and female): > 2000 mg/kg.bw Acute
inhalation LC₅₀: 0.684mg/l (4h)

Skin corrosion/irritation Non irritate

Serious eye damage/eye irritation

Non irritate

Respiratory or skin sensitization

No skin sensitization in guinea pigs.

Germ cell mutagenicity No mutagenic potential activity in mice.

Carcinogenicity

No evidence of carcinogenicity in rat and mouse studies.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

Ocular effects (cataracts) have been reported following long term oral exposure of laboratory animals (rat and dog). This is not considered to be a risk to man when handled and used as directed on the label.

Aspiration hazard no data available

12. ECOLOGICAL INFORMATION (based on active ingredient)

12.1 Toxicity

Acute toxicity to birds: Acute oral LD₅₀ for mallard ducks 155, partridges 295 mg/kg.

Acute toxicity to fish: LC₅₀ (96 h) for rainbow trout 39, mirror carp 125 mg/l.

Acute toxicity to daphnia: LC₅₀ (48 h) 2.2g/l.

Acute toxicity to algae: EC₅₀ (96 h) 21g/l.

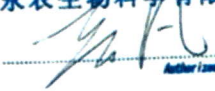
Acute toxicity to bees: LD₅₀ (oral, 120 h) 22g/bee.

Acute toxicity to worms: LC₅₀ (14 d) 243mg/kg.

12.2 Persistence and degradability

Typical half-life is 1000 d. Diquat is highly persistent due to strong binding to clay and unavailability to microbes. Diquat in soil is not taken up by plants, so any crop can be seeded at any time after application.

Photodegradation: Losses probably occur on sprayed leaf surfaces and on dead and decaying vegetation. Photochemical decomposition of diquat has been measured in the

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lab by irradiating thin layers of soil, but has not been unequivocally demonstrated under field conditions. Other degradation: Certain microbe species in soil-less culture media decompose diquat. However, they degrade diquat bound to soil slowly or not at all.

12.3 Bioaccumulative potential

Has low potential to bioaccumulate.

12.4 Mobility in soil

Immobile in soil

12.5 Other adverse effects

Sorption: Extremely tightly adsorbed to (negatively-charged) soil particles due to its dicationic nature. Diquat is primarily adsorbed to clay, less so to OM. Diquat bound to soil is unavailable for plant uptake and is largely unavailable to soil microbes.

13. DISPOSAL CONSIDERATIONS

13.1 Product

Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

13.2 Contaminated packaging

Container Disposal: Do not contaminate ponds, waterways or ditches with chemical or used containers. Surplus material must be disposed of as detailed in the 'Guidelines for the avoidance, limitation and disposal of pesticide waste on the farm' GCPF, 1987. Empty containers should be washed and discarded. Empty containers should not be used for other purposes. Disposal should be in accordance with local, state or national legislation.

14. TRANSPORT INFORMATION

UN Number: UN 1760

Hazard Class: 8

Proper Shipping Name: Corrosive Liquid, NOS (Diquat).

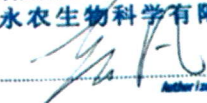
Packing group: III

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of GHS (third revised edition). Local regulations, if any should be applied to classification and labeling.

16. OTHER INFORMATION

This information is provided in good faith but without express or implied warranty. Buyer assumes all responsibility for safety and use not in accordance with label instruction.

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