SAFETY DATA SHEETS

According to the UN GHS revision 8

Version: 1.0
Creation Date: July 15, 2019
Revision Date: Jun.9th, 2025

1. Identification

1.1. GHS Product identifier

Product name Benzalkonium Chloride+Didecyl Dimethyl Ammonium Chloride

1.2. Other means of identification

Product number -

Other names Organic surfactant DDAC-2

1.3. Recommended use of the chemical and restrictions on use

Identified uses Surface active agents

Uses advised against no data available

1.4. Supplier's details

Company HEBEI JRAIN TECHNOLOGY CO.,LTD.

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Telephone +86-0311-80680379

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1.5. Emergency phone number

Emergency phone number +86-0311-80680380

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2. Hazard identification

2.1. Classification of the substance or mixture

Skin corrosion, Category 1B

2.2. GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s) Harmful if swallowed
Causes severe skin burns and eye damage

Precautionary statement(s)

Prevention Wash thoroughly after handling.

	Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection.
Response	P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/…if you feel unwell.P330 Rinse mouth.P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].P363 Wash contaminated clothing before reuse.P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.P310 Immediately call a POISON CENTER/doctor/…P321 Specific treatment (see ... on this label).P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	P405 Store locked up.
Storage	P405 Store locked up.

2.3. Other hazards which do not result in classification

no data available

3. Composition/information on ingredients

3.1. Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Alkyl dimethyl benzyl ammonium chloride	Alkyl dimethyl benzyl ammonium chloride	68424-85-1	270-325-2	32%
Di-octyl decyl dimethyl ammonium chloride	Di-octyl decyl dimethyl ammonium chloride	68424-95-3	251-035-5	48%
Water	Water	7732-18-5	231-791-2	20%

4. First-aid measures

4.1. Description of necessary first-aid measures

General advice

Medical attention is required. Consult a doctor. Show this safety data sheet (SDS) to the doctor in attendance.

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2. Most important symptoms/effects, acute and delayed

no data available

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Poisons A and B

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

5.2. Specific hazards arising from the chemical

no data available

5.3. Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all

sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2. Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3. Methods and materials for containment and cleaning up

If a spill occurs, clean it up promptly. Don't wash it away. Instead, sprinkle the spill with sawdust, vermiculite, or kitty litter. Sweep it into a plastic garbage bag, and dispose of it as directed on the pesticide product label./Residential uses/

7. Handling and storage

7.1. Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2. Conditions for safe storage, including any incompatibilities

Do not contaminate water, food or feed by storage or disposal. Bardac Wood Preservative 80

8. Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure limit values

no data available

8.2. Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

9. Physical and chemical properties

Physical state	Liquid
Colour	Colorless crystals
Odour	Mushroom-like odor
Melting point/ freezing point	94-100 deg C /OECD Guideline 102/
Boiling point or initial boiling point and boiling range	>180 deg C; decomposes before boiling at 1 atm /OECD Guideline 103/
Flammability	no data available
Lower and upper explosion limit / flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	pH = 6.8 to 6.9 at 25 deg C in a 29.5% water solution
Kinematic viscosity	no data available
Solubility	In water, 0.65 g/L at 20 deg C /OECD Guideline 115/
Partition coefficient n-octanol/water	log Kow = 2.59 at 20 deg C, pH 7
Vapour pressure	<4.3X10-5 mm Hg at 25 deg C, <1.1X10-5 mm Hg at 20 deg C /OECD Guideline 104/
Density and/or relative density	0.95 g/cm3 (20ºC)
Relative vapour density	no data available
Particle characteristics	no data available

10. Stability and reactivity

10.1. Reactivity

no data available

10.2. Chemical stability

no data available

10.3. Possibility of hazardous reactions

no data available

10.4. Conditions to avoid

no data available

10.5. Incompatible materials

no data available

10.6. Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /nitrogen oxides, ammonia, and hydrogen chloride/.

11. Toxicological information

Acute toxicity
● Oral: LD50 Rat oral 84 mg/kg
● Inhalation: no data available
● Dermal: no data available
Skin corrosion/irritation
no data available
Serious eye damage/irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
no data available
Reproductive toxicity
no data available
STOT-single exposure
no data available
STOT-repeated exposure
no data available
Aspiration hazard
no data available

12. Ecological information

12.1. Toxicity

● Toxicity to fish: LC50; Species: Lepomismacrochirus (Bluegill); Conditions: freshwater, static; Concentration: 270 ug/L for 96 hr (95% confidence interval: 190-390 ug/L)
● Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea) age <24 hr; Conditions: freshwater, static, 19 deg C, pH 8.2, hardness 209.43 mg/L CaCO3, dissolved oxygen >6.5 mg/L; Concentration: >1000 ug/L for < or =6 hr; Effect: behavioral changes, general /Bardac 22, 45% AI
● Toxicity to algae: no data available
● Toxicity to microorganisms: no data available

12.2. Persistence and degradability

AEROBIC: Didecyl dimethyl ammonium chloride biodegradation test results(1).Test Category Degradation Duration (days) OECD Guideline 301D (Ready Biodegradability: Closed Bottle Test) readily biodegradable 69% 28 OECD Guideline 301B (Ready Biodegradability: CO2 Evolution

Test) readily biodegradable 67-72% CO2 evolution 28 Zahns-Wellens test (activated sludge, non-adapted) inherently biodegradable 80% DOC removal 28; >15 day adaptation time observed with rapid degradation afterwards OECD Guideline 303A (Simulation Test - Aerobic Sewage Treatment. A: Activated Sludge Units) >99.95% 59 Soil degradation study using a loam soil 49% mineralization 114

12.3. Bioaccumulative potential

A BCF of 81 was reported in bluegill sunfish (Lepomismacrochirus) for didecyl dimethyl ammonium chloride(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate. Didecyl dimethyl ammonium chloride is reported to have low bioconcentration in tests using carp (Cyprinuscarpio)(3); BCF values not reported(SRC).

12.4. Mobility in soil

The log Koc for didecyl dimethyl ammonium chloride has been reported as 5.64 (sand), 5.96 (sandy loam), 6.20 (silty clay loam), 6.17 (silt loam)(1), corresponding to Koc values of 4.4X10+5, 9.1X10+5, 1.6X10+6, and 1.5X10+6 respectively(SRC). In batch equilibrium studies using five different soil types and OECD Guideline 106 (Adsorption - Desorption Using a Batch Equilibrium Method), didecyl dimethyl ammonium chloride had Koc values of 667, 1140, 10456, 14072 and 24433(2). According to a classification scheme(2), these Koc values suggest that didecyl dimethyl ammonium chloride is expected to have low to no mobility in soil with most Koc values suggesting the compound is immobile in soil. Didecyl dimethyl ammounium chloride is a cationic surfactant(1) that may exist in cation form in the environment(SRC), and cations generally adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(4). Didecyl dimethyl ammounium chloride binds rapidly to suspended solids and sediments(1). Reported Kd values at 25 deg C are 3.03 (sand), 3.91 (sandy loam), 4.52 (silty clay loam), and 4.49 (silt loam)(1).

12.5. Other adverse effects

no data available

13. Disposal considerations

13.1. Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill.

Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. Transport information

14.1. UN Number

ADR/RID: 2922 IMDG: 2922 IATA: 2922

14.2. UN Proper Shipping Name

ADR/RID: CORROSIVE LIQUID, TOXIC,ORGANIC, ACID N.O.S.	IMDG: CORROSIVE LIQUID, TOXIC,ORGANIC, ACID N.O.S.	IATA: CORROSIVE LIQUID, TOXIC,ORGANIC, ACID N.O.S.

14.3. Transport hazard class(es)

ADR/RID: 8 +6.1 IMDG: 8+6.1 IATA: 8+6.1

14.4. Packing group, if applicable

ADR/RID: II IMDG:II IATA: II

14.5. Environmental hazards

ADR/RID: No IMDG:No IATA: No

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15. Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Quaternary ammonium compounds DDAC-2	Quaternary ammonium compounds DDAC-2	N/A	N/A
European Inventory of Existing Commercial Chemical Substances (EINECS)	Listed.		
EC Inventory	Listed.		
United States Toxic Substances Control Act (TSCA) Inventory	Listed.		
China Catalog of Hazardous chemicals 2015	Not Listed.		
New Zealand Inventory of Chemicals (NZIoC)	Listed.		
Philippines Inventory of Chemicals and Chemical	Listed.		

Substances (PICCS)	
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

16. Other information

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
  EC50: Effective Concentration 50%

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