



Safety Data Sheet

Dow Chemical Company Ltd

Product Name: AQUCAR(TM) CM 14 Antimicrobial

Revision Date: 2006/05/11

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Dow Chemical Company Ltd encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Identification of the substance/preparation and of the company/undertaking

Product Name

AQUCAR(TM) CM 14 Antimicrobial

Use of the substance/preparation

For biocidal applications. For industrial use.

COMPANY IDENTIFICATION

Dow Chemical Company Ltd
Diamond House, Lotus Park
Kingsbury Crescent
TW18 3AG Staines, Middlesex
United Kingdom

Customer Information Number: 0203 139 4000

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: +44 (0) 1553 761 251

Local Emergency Contact: 00 44 155 37 61 251

2. Composition/information on ingredients

Component	Amount	Classification:	CAS #	EC #
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	>= 13.0 - <= 17.0 %	T: R23/24/25; C: R34; R43; N: R50, R53	55965-84-9	See components

See Section 16 for full text of R-phrases.

3. Hazards Identification

Harmful by inhalation, in contact with skin and if swallowed.

Causes burns.

May cause sensitization by skin contact.

* Indicates a Trademark

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. First-aid measures

Eye Contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Skin Contact: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection)

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person. Seek medical attention immediately.

Notes to Physician: Probable mucosal damage may contraindicate the use of gastric lavage. Maintain adequate ventilation and oxygenation of the patient. First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection) If burn is present, treat as any thermal burn, after decontamination. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. Fire Fighting Measures

Extinguishing Media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. Container may rupture from gas generation in a fire situation. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion

products may include and are not limited to: Sulfur oxides. Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled:

Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Isolate area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

7. Handling and Storage

Handling

General Handling: Do not get in eyes. Avoid contact with skin and clothing. Do not swallow. Avoid prolonged or repeated contact with skin. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

Storage

Shelf life: Use within 12 Months

Storage temperature: < 40 °C

8. Exposure Controls / Personal Protection

Exposure Limits

None established

Personal Protection

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. Eye wash fountain should be located in immediate work area.

Skin Protection: Use chemical protective clothing resistant to this material, when there is any possibility of skin contact. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Viton. Polyethylene. Chlorinated polyethylene. Styrene/butadiene rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Butyl rubber. Polyvinyl chloride ("PVC" or "vinyl"). Avoid gloves made of: Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: This product is a respiratory irritant. If discomfort is experienced ventilation is not adequate and an approved full face air-purifying respirator is recommended. In misty atmospheres, use an approved organic vapor respirator in combination with a dust/mist filter. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Local exhaust ventilation is required.

9. Physical and Chemical Properties

Physical State	Liquid
Color	Orange to brown
Odor	Pungent
Flash Point - Closed Cup	Not applicable
Flammable Limits In Air	Lower: Not applicable Upper: Not applicable
Autoignition Temperature	Not applicable
Vapor Pressure	0.0027 mmHg <i>Literature</i>
Boiling Point (760 mmHg)	100 °C <i>Literature</i>
Vapor Density (air = 1)	0.62 <i>Literature</i>
Specific Gravity (H ₂ O = 1)	1.3 <i>Literature</i>
Freezing Point	No test data available
Melting Point	-33 °C <i>Literature</i>
Solubility in Water (by weight)	100 %
pH	1.0 - 3.0 <i>Literature</i>
Dynamic Viscosity	16 cps @ 25 °C <i>Literature</i>

10. Stability and Reactivity

Stability/Instability

Unstable at elevated temperatures.

Conditions to Avoid: Avoid temperatures above 40°C (104°F) Potentially violent decomposition can occur above 50°C (122°F) Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.

Incompatible Materials: Avoid contact with: Amines. Mercaptans. Oxidizers. Reducing agents.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides. Sulfur oxides.

11. Toxicological Information

Acute Toxicity

Ingestion

Moderate toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death.

For similar material(s): LD50, Rat 457 mg/kg

Eye Contact

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Skin Contact

Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Skin Absorption

Prolonged or widespread skin contact may result in absorption of harmful amounts.

For similar material(s): LD50, Rabbit 660 mg/kg

Inhalation

Vapor may cause irritation of the upper respiratory tract (nose and throat) and lungs. Mist may cause irritation of upper respiratory tract (nose and throat) and lungs.

Sensitization

Skin

For similar material(s): Has caused allergic skin reactions when tested in guinea pigs. Skin contact may cause an allergic skin reaction.

Repeated Dose Toxicity

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Chronic Toxicity and Carcinogenicity

Similar material(s) did not cause cancer in laboratory animals.

Developmental Toxicity

For similar material(s): Did not cause birth defects in laboratory animals. For the active ingredient(s): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Genetic Toxicology

Based on information for a similar material: In vitro genetic toxicity studies were positive. Based on information for a similar material: Animal genetic toxicity studies were negative.

12. Ecological Information

CHEMICAL FATE

Data for Component: **Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)**

Movement & Partitioning

Bioconcentration potential is low ($BCF < 100$ or $\log Pow < 3$). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): $4.96E-8 \text{ atm} \cdot \text{m}^3/\text{mole}$

Partition coefficient, n-octanol/water ($\log Pow$): -0.83

Partition coefficient, soil organic carbon/water (Koc): 28

Persistence and Degradability

No relevant information found.

ECOTOXICITY

Data for Component: **Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)**

Material is considered very toxic to aquatic organisms ($LC50/EC50/IC50$ below 1 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: 0.19 mg/l

LC50, bluegill (*Lepomis macrochirus*), 96 h: 0.28 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea *Daphnia magna*, 24 h: 32 - 320 mg/l

13. Disposal Considerations

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

14. Transport Information

ROAD & RAIL

Proper Shipping Name: CORROSIVE LIQUID, TOXIC, N.O.S.

Technical Name: Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one

Hazard Class: 8 (6.1) **ID Number:** UN2922 **Packing Group:** PG III

Classification: CT1

Kemler Code: 86

Tremcard Number: 80GCT1-II+III

OCEAN

Proper Shipping Name: CORROSIVE LIQUID, TOXIC, N.O.S.

Technical Name: Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one

Hazard Class: 8 (6.1) **ID Number:** UN2922 **Packing Group:** PG III

EMS Number: F-A,S-B

Marine pollutant.: No

AIR

Proper Shipping Name: CORROSIVE LIQUID, TOXIC, N.O.S.

Technical Name: Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one

Hazard Class: 8 (6.1) **ID Number:** UN2922 **Packing Group:** PG III

Cargo Packing Instruction: 820

Passenger Packing Instruction: 818

INLAND WATERWAYS

Proper Shipping Name: CORROSIVE LIQUID, TOXIC, NOS

Technical Name: Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one

Hazard Class: 8 (6.1) **ID Number:** UN2922 **Packing Group:** PG III

Classification: CT1

Kemler Code: 86

Tremcard Number: 80GCT1-II+III

15. Regulatory Information

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

EC Classification and User Label Information

Hazard Symbol :

- C - Corrosive.
N - Dangerous for the environment.

Risk Phrases :

- R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed.
R34 - Causes burns.
R43 - May cause sensitization by skin contact.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases :

- S24 - Avoid contact with skin.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 - After contact with skin, wash immediately with plenty of water.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60 - This material and its container must be disposed of as hazardous waste.
S61 - Avoid release to the environment. Refer to special instructions/Safety data sheets.

Contains: Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)

For professional users only.

16. Other Information

Risk-phrases in Section 2

- R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R34 Causes burns.
R43 May cause sensitization by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Revision

Identification Number: 1005224 / 3005 / Issue Date 2006/05/11 / Version: 1.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Dow Chemical Company Ltd urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.