

NET WEIGHT: 425 LBS.

R. M. 07616

Q-077

Sep. 15 - 1977
E651-51-11
UNDER THE FEDERAL INSECTICIDE
FUNGICIDE AND MITICIDICIDE ACT
FOR ECONOMIC POISON REGISTERED
UNDER NO. 1677-41

QUATERNARY AMMONIUM CONCENTRATE

FOR FORMULATION ONLY

EPA Reg. No. 1677-41AA

FOR INDUSTRIAL USE ONLY

Active Ingredients:	60.0%
Alkyl (50% C ₁₂ , 30% C ₁₄ , 17% C ₁₆ , 3% C ₁₈) dimethyl dichlorobenzyl ammonium chlorides	60.0%
Inert Ingredients:	40.0%

*See Technical Information Sheet
for Directions.*



A product of

ECONOMICS LABORATORY, INC.

General Office: 21 Park Ave., New York, N.Y. 10003
White Plains, N.Y. 10604

6780/0400/0772

PRINTED IN U.S.A.

DANGER:

Keep out of reach of children. Corrosive. Causes eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. Avoid contamination of food.

FIRST AID:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. For eyes, call a physician. Remove and wash contaminated clothing before reuse.

If swallowed, drink *promptly* a large quantity of milk, egg whites, gelatin solution or if these are not available, drink large quantities of water. Avoid alcohol. Call a physician immediately.

NOTE TO PHYSICIAN:

Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

CONTAINER DISPOSAL:

Rinse empty container thoroughly with water before discarding.

DATE

CODE _____

NET WEIGHT: 425 LBS.

R. M. #07616

Q-077

QUATERNARY AMMONIUM CONCENTRATE

FOR FORMULATION ONLY

For Formulation Only - Q-077A

FOR INDUSTRIAL USE ONLY

Active Ingredients

Quaternary Ammonium Chloride 60.0%
Water 39.9%

*See Technical Information Sheet
for Directions*

EL

A product of

ECONOMICS LABORATORY, INC.

General Offices: St. Paul, Minn. 55101 • Sales Offices: 4 Corporate Park Drive, White Plains, N.Y. 10604

DANGER:

Highly irritating to eyes, skin, and mucous membranes. Causes severe irritation. Do not get in eyes, on face, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. Avoid contamination of food.

FIRST AID:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if necessary. Do not induce vomiting.

If swallowed, induce vomiting. Do not give anything by mouth to someone who is unconscious. If inhaled, get person to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration.

NOTE TO PHYSICIAN

Quaternary Ammonium Chloride is a strong irritant. It causes severe irritation of the eyes, skin, and mucous membranes. It is also a powerful disinfectant and is used in the treatment of various infections.

INTAIN 10000000

© 1980 Economics Laboratory, Inc.



TECHNICAL BULLETIN

Q-077

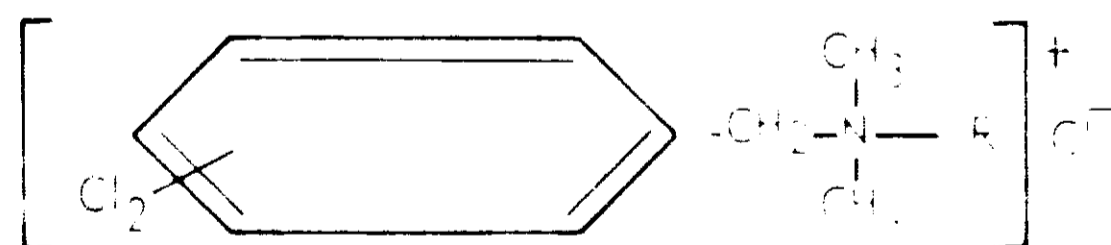
60% CONCENTRATE FOR FORMULATION ONLY

ACCEPTED
Sep-15-1977
UNDER THE FEDERAL INSECTICIDE
FUNGICIDE AND RODE CONTROL ACT
FOR ECONOMIC POISON CONTROL
UNDER NO. 1677-41

Q 077 is a 60% concentrate of a special mixture of alkyl (50% C₁₂, 30% C₁₄, 17% C₁₆, 3% C₁₈) dimethyl dichlorobenzyl ammonium chlorides in water. This blend was also chosen for its effectiveness in hard water.

Chemical and Physical Properties

Structure:



R represents alkyl radicals of straight chain hydrocarbons from C₁₂H₂₅ to C₁₈H₃₅. Dichloro benzyl radical is 65-70% 2,4-dichlorobenzyl chloride. Remainder is a mixture of 3,4-, 2,5- and 2,6-dichloro benzyl chlorides.

Molecular Weight (average): 429.4

Appearance: Water white to pale yellow liquid, slight odor of amine. Concentrates at low temperatures, becomes homogeneous when heated to room temperature.

Solubility: Freely soluble in water, slightly soluble in alcohol, soluble in other organic liquids.

Specific Gravity: 1.04 (at 20°C)

pH: 10-11

Weight per gallon: 11.5

Stability: Stable at room temperature

ganisms. The action of Q 077 is relatively non selective inasmuch as it acts effectively against most microorganisms.

Since phenol coefficients are not applicable to evaluate the bacterial killing index of quaternary ammonium compounds, only AOAC Use Dilution Test data is presented to demonstrate the effectiveness of Q-077 as a hard surface disinfectant.

AOAC Use-Dilution Test: The official AOAC Use Dilution Test is applicable to testing disinfectants miscible with water to determine maximum dilutions effective for practical disinfection. The effective use dilution for Q 077 against *Staphylococcus aureus*, *Salmonella choleraesuis* and *Pseudomonas aeruginosa* has been found to be 540 ppm (0.054%). On the basis of 60% active ingredient this concentration provides 3.20 ppm (0.032%) active quaternary.

Antibacterial Activity in Hard Water: The official AOAC Germicidal and Detergent Sanitizers method for determining the maximum water hardness tolerances for recommended concentration of disinfectant. A solution providing 200 ppm of active quaternary will kill 99.999% of the test microorganisms in 30 seconds in water containing up to 100 ppm hardness.

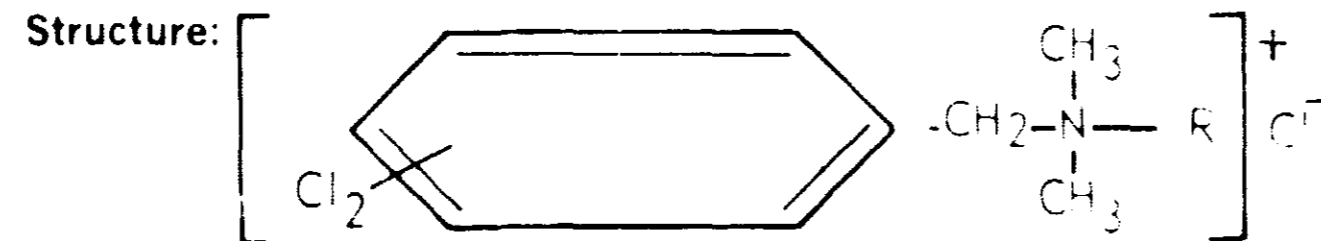
Typical Formulation Using Q 077 Disinfectant

60% CONCENTRATE FOR FORMULATION ONLY

GERMICIDE AND RODENTICIDE
FOR ECONOMIC POISONING CONTACT
UNDER NO. 1677-41

Q-077 is a 60% concentrate of a special mixture of alkyl (50% C₁₇, 30% C₁₄, 17% C₁₆, 3% C₁₈) dimethyl dichlorobenzyl ammonium chlorides in water. This blend was also chosen for its effectiveness in hard water.

Chemical and Physical Properties:



R represents alkyl radicals of straight chain hydrocarbons from C₁₇H₃₅ to C₁₈H₃₇. Dichloro benzyl radical is 65-70% 2, 4-dichloro benzyl chloride. Remainder is a mixture of 3, 4-, 2-, 5- and 2, 6-dichloro benzyl chlorides.

Molecular Weight (average): 429.4

Appearance: Water-white to pale yellow liquid; slight odor of amine. Congeals at low temperatures; becomes homogeneous when heated to room temperature.

Solubility: Freely soluble in water, alcohol, and acetone; insoluble in ether and only slightly soluble in benzene.

Specific Gravity: 1.054 at 23.9°C (75°F)

pH: 10% solution: 6.0-8.0.

Weight per gallon: 8.8 pounds.

Stability: Stable over wide range of temperatures and long periods of time.

Compatibility: Compatible with most inorganic salts commonly employed in the formulation of alkaline detergents and with most non-ionic surface active agents in the formulation of detergent sanitizers.

Q-077 is a cationic compound and, therefore, will react with anions. However, the reaction is quantitative, so that traces of anionic substances may reduce but not necessarily completely nullify the bacterial activity. Soap or anionic wetting agents should not be admixed with Q-077.

Bacteriological Properties: Q-077 is a powerful germicide, particularly against a broad spectrum of pathogenic microor-

ganisms. The action of Q-077 is relatively non-selective inasmuch as it acts effectively against most microorganisms.

Since phenol coefficients are not applicable to evaluate the bacterial killing index of quaternary ammonium compounds, only AOAC Use-Dilution Test data is presented to demonstrate the effectiveness of Q-077 as a hard surface disinfectant.

AOAC Use-Dilution Test: The official AOAC Use-Dilution Test is applicable to testings disinfectants miscible with water to determine maximum dilutions effective for practical disinfection. The effective use dilution for Q-077 against *Staphylococcus aureus*, *Salmonella choleraesuis* and *Pseudomonas aeruginosa* has been found to be 540 ppm (0.054%). On the basis of 60% active ingredient this concentration provides 320 ppm (0.032%) active quaternary.

Antibacterial Activity in Hard Water: The official AOAC Germicidal and Detergent Sanitizers method for determining the maximum water hardness tolerances for recommended concentrations of germicides. A solution providing 200 ppm of active quaternary will kill 99.999% of the test microorganisms in 30 seconds in water containing up to 1100 ppm hardness.

Typical Formulation Using Q-077:

Disinfectant:

Q-077	8.5%
Phosphoric acid (75% active)	9.0%
Water	82.5%

Recommended Use Concentration: 1.0 oz. per gallon

Detergent-Sanitizer:

Q-077	8.5%
Phosphoric acid (75% active)	9.0%
Nonionic	3.0%
Water	79.5%

Recommended Use Concentration: 1.0 oz. per gallon

Detergent-Disinfectant:

Q-077	15.0%
Phosphoric acid (75% active)	9.0%
Nonionic	10.0%
Water	66.0%

Recommended Use Concentration: 1.0 oz. per gallon

EPA Reg. No. 1677-41AA



**A product of
ECONOMICS LABORATORY, INC.**

General Offices: Osborn Building, St. Paul, Minnesota 55102
Executive, Sales and Advertising Offices: 41 Corporate Park Drive, White Plains, N. Y. 10604
Div. Magnus Industrial, Klenzade, Food Processing, Institutional, Consumer
Refer to telephone directory for listing in White or Yellow Pages

Products and Services available World Wide Through Affiliated Solmax Companies in: Australia, Austria, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Greece, Holland, Hong Kong, Italy, Japan, Mexico, New Zealand, Norway, Panama, Philippines, Puerto Rico, South Africa, Sweden, Switzerland, Thailand, United Kingdom, Venezuela, West India.





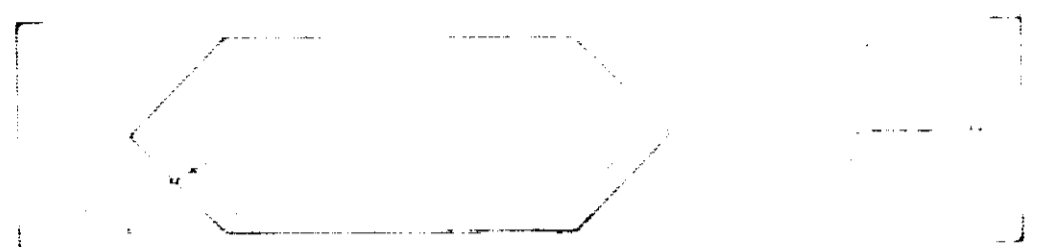
60% CONCENTRATE

FOR FORMULATION ONLY

1671

Chemical Name: *[Faint text]*
Molecular Weight: *[Faint text]*
CAS No.: *[Faint text]*

Structure:



Properties: *[Faint text]*
Solubility: *[Faint text]*
Stability: *[Faint text]*

Appearance:

[Faint text]

Solubility:

[Faint text]

Specific Gravity:

[Faint text]

pH:

[Faint text]

Weight per gallon:

[Faint text]

Stability:

[Faint text]

Compatibility:

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

AOAC Use-Dilution Test:

[Faint text]

AOAC Activity in Hard Water:

[Faint text]

Typical Formulation (100%):

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]

[Faint text]



A product of
ECONOMICS LABORATORY, INC.

