

PM 31 6836-228

12/12

US ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF PESTICIDES PROGRAMS  
REGISTRATION DIVISION (TS-767)  
WASHINGTON, DC 20460

EPA REGISTRATION NO.  
6836-228

DATE OF ISSUANCE  
OCT 4 1996

NOTICE OF PESTICIDE:  REGISTRATION  
 REREГИSTRATION  
(Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended)

TERM OF ISSUANCE

NAME OF PESTICIDE PRODUCT

Bardac 2150 LA

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Lonza, Inc.  
17-17 Route 208  
Fairlawn, NJ 07410

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit/cite all data required for registration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

2. Make the labeling changes listed below before you release the product for shipment:

- a. Add the phrase "EPA Registration No.6836-228."
- b. The appropriate signal word is "Danger."
- c. Revise the "Precautionary Statement" section to read as follows:

"Fatal if absorbed through the skin or inhaled. Corrosive. Causes irreversible eye damage or skin burns. May be fatal if swallowed. Do not get in eyes, on skin, or on clothing. Do not breathe mist. Wear goggles or face shield. For handling activities, use either a respirator with an organic vapor removing cartridge with a

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

DATE

prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix 14G). Wear protective clothing and rubber gloves. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Remove contaminated clothing and wash clothing before reuse."

Revise the "Statement of Practical Treatment" section as follows:

"IF SWALLOWED: Call a physician or Poison Control Center. Drink 1 or 2 glasses water and induce vomiting by touching the back of the throat with finger. If person is unconscious, do not give anything by mouth and do not induce vomiting."

"IF ON SKIN: Wash with plenty of soap and water. Get medical attention."

"IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration preferably mouth. Get medical attention."

"IF IN EYES: Hold eyelids open and flush with steady, gentle stream of water for 15 minutes. Get medical attention."

Revise the "Note to Physician" section to include the following types of guidance:

- technical information on symptomatology;
  - use of supportive treatments to maintain life functions;
  - medicine that will counteract the specific physiological effects of the pesticide;
  - company telephone number to specific medical personnel who can provide specialized medical advice
- Probable mucosal damage may contraindicate the use of gastric lavage.

The word "Poison" shall appear in red on a background of distinctly contrasting color and the skull and crossbones shall appear in the immediate proximity to the word poison to read as follows:

Signal Word: Danger  
Poison SKULL and Crossbones symbol

3042

Please resubmit five (5) copies of revised product labeling incorporating these labeling revisions mentioned above.

The Agency reserves a full label review until the above discrepancies have been clarified.

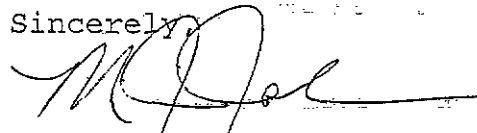
This product cannot be legally marketed or distributed in channels of trade until it is registered.

3. Submit five (5) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,



Marion J. Johnson  
Product Manager 31  
Antimicrobial Program Branch  
Registration Division (7505C)

Enclosures

# LONZA

17-17 ROUTE 208  
FAIR LAWN, NEW JERSEY 07410  
EMERGENCY TEL. NO. 309-697-5400

## BARDAC® 2150 LA

For the Formulation or Repackaging of Disinfectants, Sanitizers, Fungicides,  
Wood Preservatives and Water Treatment Microbiocides

Active Ingredient: Decyl isononyl dimethyl ammonium chloride ..... 50.0%  
Inert Ingredient: ..... 50.0%  
Total: ..... 100.0%



CAS. NO. MIXTURE

Net Weight Pounds

KEEP OUT OF REACH OF CHILDREN

**DANGER**

EPA Reg No. 6836  
EPA Est No. 6836-IL-1

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CORROSIVE.** Causes severe eye and skin damage. Harmful or fatal if swallowed. Do not get in eyes, on skin or on clothing. Wear safety glasses and rubber gloves. Wash thoroughly with soap and water after handling.

#### STATEMENT OF PRACTICAL TREATMENT

For eyes and skin flush with plenty of water for at least 15 minutes. (Eyelids must be held open). Call a physician immediately. Remove contaminated clothing and wash before reuse. If swallowed, immediately give 3-4 glasses of milk; if unavailable, give water. Do not induce vomiting. Call a physician.

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

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

FOR HELP IN A CHEMICAL EMERGENCY CALL CHEMTREC 800-424-9300  
BEFORE USING CONSULT MATERIAL SAFETY DATA SHEET

PHYSICAL OR CHEMICAL HAZARDS  
DO NOT USE OR STORE NEAR HEAT OR FLAME!

### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. This product is a concentrate for formulating purposes only. Use only in accordance with the directions in the Technical Bulletin from the manufacturer.

**NOTE:** This product should not be used or compounded with any reducing or oxidizing agents (such as calcium hypochlorite, solid perchlorate, or nitric acid), since such mixtures may be explosive. Do not use in conjunction with soap or any anionic wetting agent.

### STORAGE AND DISPOSAL

- Do not contaminate water, food, or feed by storage or disposal.
- Do not store on side.

HEALTH	3
FLAMMABILITY	2
REACTIVITY	0
PERSONAL PROTECTION	<input type="checkbox"/>

### PESTICIDE DISPOSAL

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### CONTAINER DISPOSAL

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

ACCEPTED WITH COMMENTS  
IN EPA LETTER DATED

OCT 4 1996

4/1/92

5012

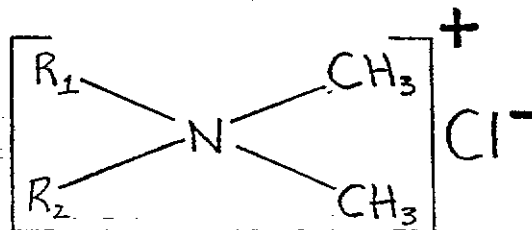
TECHNICAL DATA SHEET

BARDAC® 2150 LA

INTRODUCTION

Bardac 2150 LA is a twin chain quaternary ammonium compound in which the two alkyl chains are asymmetrical. This unique modification produces an antimicrobial agent possessing the high level of efficacy of the symmetrical dialkyl quaternaries but with significantly lower foam generation potential at use level concentrations. In addition, the performance of Bardac 2150 LA against specific algae strains (so-called "mustard" algae) is significantly superior to other quaternary ammonium compounds. Patent applications have been filed on this technology.

The Bardac quaternary products are dialkyl dimethyl ammonium chlorides in which two alkyl groups in the C<sub>8</sub> to C<sub>10</sub> range are attached directly to the nitrogen atom. These alkyl chains were found to maximize germicidal performance. Bardac 2150 LA has the chemical structure shown to the right.



Where R<sub>1</sub> = isodecyl  
R<sub>2</sub> = nonyl

Chemical Composition - Typical

Active Ingredients

Decylisononyl dimethyl ammonium chloride . . . . . Bardac 2150 LA 50.0%

Inert Ingredients . . . . . 50.0%

Typical Properties

Color (APHA) . . . . . 200  
pH (10% Active Solution) . . . . . 6.2-6.8

Physical Properties

Physical State . . . . . Clear Liquid  
Flash Point (Seta Flash) . . . . . 140°F  
Specific Gravity at 25°C . . . . . 0.93  
Density (lbs./gallon) . . . . .

EPA Registration Number . . . . .

*Accepted  
with comments  
in EPA letter dated*

OCT 4 1986

6836-228

60/12

GERMICIDAL ACTIVITY

The germicidal activity of Bardac 2150 LA has been evaluated using an extensive series of generally recognized microbiological tests including those required for EPA registration.

Standard laboratory evaluations indicate that Bardac 2150 LA has germicidal activity essentially equivalent to that demonstrated by the dialkyl quaternary. This activity is also exhibited under use conditions once considered detrimental to the performance of quaternaries. The following summarizes the advantages of Bardac 2150 LA.

- . . . . Broad spectrum biocidal activity against both gram positive and gram negative organisms.
- . . . . Better disinfectant performance at lower use concentrations.
- . . . . Greater hard water tolerance for sanitizing activity at lower use concentrations.
- . . . . Superior fungicidal performance.
- . . . . Substantial organic soil tolerance.
- . . . . Greater tolerance for anionic contaminants than previously possible.

The major additional benefit offered by Bardac 2150 LA is its significant low foam potential under use conditions. Efficacy plus low foam establish Bardac 2150 LA as a unique and desirable microbiocide.

The effectiveness of Bardac 2150 LA was evaluated against three common organisms (Pseudomonas aeruginosa, Escherichia coli, and Streptococcus faecalis) by determining the minimum inhibitory concentration (MIC) in a synthetic pool water having total hardness (as CaCO<sub>3</sub>) of 500 ppm, total alkalinity (as CaCO<sub>3</sub>) of 150 ppm, and in pH of 7.4. (Procedure details available upon request.) The following results were obtained.

Minimum kill conc. after 24 hours (ppm active)

Product	P.aeruginosa	E.coli	S.faecalis
Bardac 2180	50	50	6.3
Competitive Dialkyl Quat	50	50	25.0
Benzyl Quat	50	25	12.5
Polymeric No Foam Quat	>150	>50	6.3

OCT 4 1996

SEARCHED \_\_\_\_\_  
 INDEXED \_\_\_\_\_  
 SERIALIZED \_\_\_\_\_  
 FILED \_\_\_\_\_  
 OCT 4 1996  
 FBI - MEMPHIS  
 6836-228

7 of 12

Algicidal and Algistatic Activity

The algicides and algistatic activity of Bardac 2150 LA was determined using an MEC procedure (available on request). Algicidal activity was defined as the range of biocides concentration at which no algae growth was present in the subcultures. Algistatic activity was defined as the concentration range at which some growth was noted but less than in the untreated control.

Bardac 2150 LA was evaluated versus a green algae (Chlorella pyrenoidosa), blue-green algae (Phormidium inundatum), and two "mustard" algae (neospongiococcum granatum and "Oocystis" like).

In all cases, Bardac 2150 LA performed equal to or better than the competitive quaternary ammonium and polymeric quat biocides. This was especially true versus the "mustard" algae where Bardac 2150 LA was definitively more effective.

Low Foam Potential

The high foaming tendencies of both dialkyl and alkyl dimethyl benzyl quaternaries is a determinant to their expanded use in industrial and recreational water treatment systems. Low foaming polymeric quaternaries are used but their biocides efficacy is significantly lower than the higher foaming quaternaries. Bardac 2150 LA is designed to generate very low foam levels (at use levels) and provide the desired antimicrobial activity.

Both foam height generation (at equilibrium) and foam stability (measured as half life in seconds) are definitive in demonstrating the foam potential of the antimicrobial being evaluated. Such data, developed at 15 ppm active biocide and in distilled and hard water, shows the superior performance of Bardac 2150 LA versus standard and polymeric quaternaries (see Figures 1 and 2).

This data was developed utilizing a Dynamic Foam Testing Apparatus as illustrated in Figure 3 (details of procedure available upon request.)

Application areas	Recommended Use Levels on 100% Active Basis
Water Treatment/Cooling Towers	5-20 ppm
Water treatment/Secondary Oil Recovery*	5-20 ppm
Bacteriostat/Preservative/Fungicide	5-1000 ppm

\* Terrestrial Projects Only

ACCEPTED  
with COMMENTS  
in EPA letter dated

OCT 4 1996

6836-228

8 of 12

Water Treatment Microbiocide/Cooling Tower

Bardac 2150 LA provides the formulator with a superior microbiocide for building and industrial cooling towers at use levels of 5 - 20 ppm. Low foam production at these levels increase its desirability for this application.

Water Treatment Microbiocide/Pool and Spas

Bardac 2150 LA provides the formulator with a superior algicide for pool water treatment at the levels of 2 ppm (initial treatment) to 0.5 ppm (maintenance). Low to no foam levels are evident and algae control (including "mustard" types) is complete.

Bardac 2150 LA has been evaluated in systems containing other additives commonly found in recreational water systems (primary biocides, oxidizers, etc.) with no reduction in algicidal performance or foaming potential.

Water Treatment Microbiocide/Cooling Tower

Many water floods in the secondary recovery of oil contain bacteria, including the sulfate-reducing bacteria *Desulfovibrio desulfuricans*. This microorganism produces corrosive degradation products. Bardac 2150 LA will inhibit the growth of *D. desulfuricans*, and thus reduce the corrosive nature of the water flood. Where oil field flood waters and salt water disposal systems require the use of a microbiocide, Bardac 2150 LA may be added to the system at a level of 5.0 to 20.0 ppm.

Bacteriostat/Preservative/Fungicide

Bardac 2150 LA is a highly effective broad spectrum bacteriostat for a variety of industrial applications; that includes pulp and paper, leather, cement, and other hard surfaces. For situations where compatibility with a cationic material has been established, the actual use levels for the quaternary should be determined for each application.

OCT 4 1996

6836-228



GENERAL INFORMATION

Product Registration

Biocides and products with biocidal claims require registration by the Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. In addition, most state authorities require separate registration. The EPA NUMBER FOR BARDAC 2150 LA is \_\_\_\_\_, and may be referred to by consumers of this product. As a technical service, LONZA INC. provides advice on the registration of Bardac 2150 LA based products.

Safety and Handling

The toxicity of Bardac 2150 LA is of the same order of magnitude as other commercial quaternaries. Bardac 2150 LA or an "as-is" concentration may be considered a primary skin and eye irritant. The data below summarizes the acute oral and dermal toxicity of Bardac 2150 LA on an 80% activity basis as determined in mice and rabbits, respectively.

Oral LD<sub>50</sub> = 360 mg/kg

Acute Dermal LD<sub>50</sub> = 2674 mg/kg

For detailed handling information, consult the Bardac 2150 LA Material Safety Data Sheet which is available upon request.

Packaging

Bardac 2150 LA is available in 425 lb. net weight drums.

Accepted with Comments  
IN EPA Letter dated  
OCT 4, 1996

6836-228

10/12

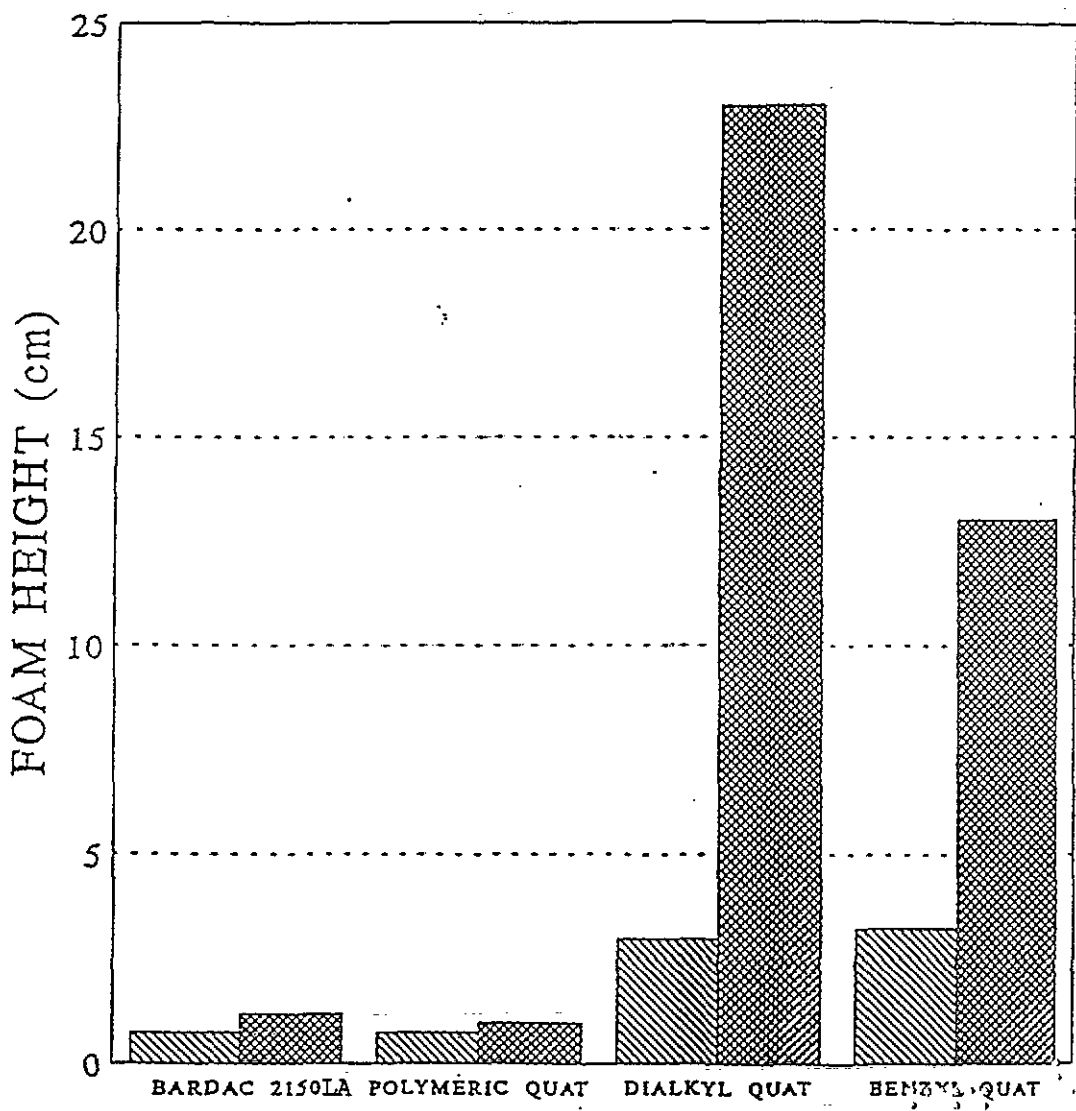
FIGURE 1

# FOAM HEIGHT

20° C  
(LOW AGITATION)

OCT 4 1996

6836-228



QUAT AT 15 ppm ACTIVE

▨ DISTILLED WATER    ▩ 148 ppm CaCO<sub>3</sub> HARDNESS

110/12

FIGURE 2

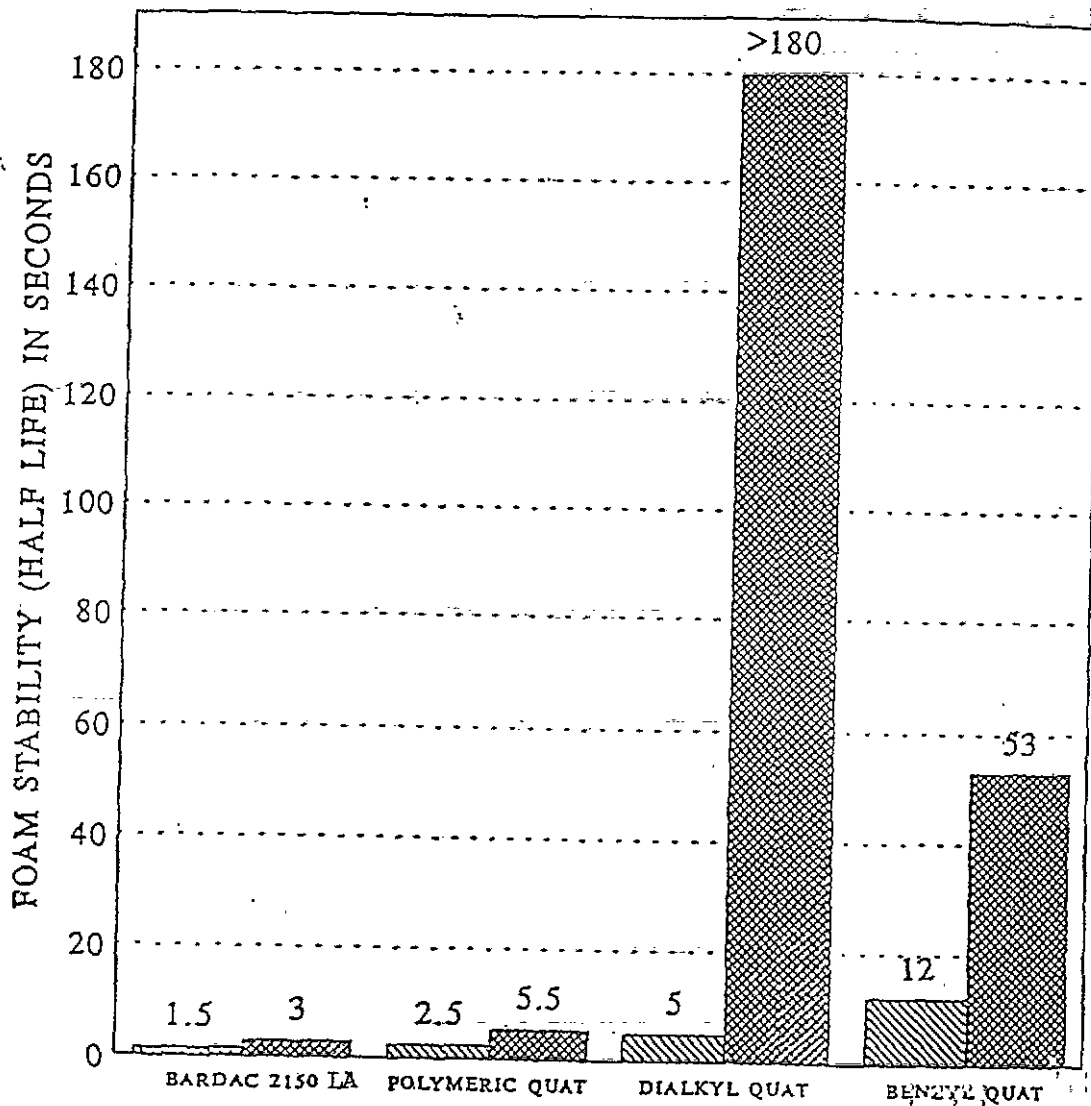
# FOAM STABILITY

20° C

(LOW AGITATION)

OCT 4 1996

6836-228



QUAT AT 15 ppm ACTIVE

▨ DISTILLED WATER    ▩ 148 ppm CaCO<sub>3</sub> HARDNESS

120/12

FIGURE 3

OCT 4 1958

6836-228

Dynamic Foam Testing Apparatus

