

MAY 11 1994

Buckman Laboratories, Inc.
1256 N. McLean Blvd.
Memphis, TN 38108

Attn: Dennis L. Barbee

Subject: Busan 40
EPA Registration No. 1448-52
Letter Dated March 3, 1993

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, to include the statement "do not induce vomiting", is acceptable, provided that you:

1. Make the following labeling changes below before you release the product for shipment bearing the amended labeling.

a. Change "Corrosive. Causes eye and skin damage" to read "Corrosive. Causes irreversible eye damage and skin burns".

b. Revise the statement "wear goggles or face shield and rubber gloves when handling" to read "wear goggles or face shield, rubber gloves and protective clothing."

c. Revise "wash thoroughly after handling" to "wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse."

d. Include the following "Note To Physician" heading to read:

Note To Physician
Probable mucosal damage may contraindicate gastric lavage.

CONCURRENCES

CONCURRENCES							
SYMBOL							
SURNAME							
DATE							

e. Revise your "Environmental Hazards" statement to read

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 Systems (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewage systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

2. Submit five (5) copies of final printed labeling before you release the product for shipment.

A release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

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

If you have any questions concerning this letter, please contact Martha Terry at 703-305-6982.

Sincerely,



Marshall Swindell
Acting Product Manager 31
Antimicrobial Program Branch
Registration Division 7505C

Enclosure

3 5 4

BUSAN 40

BUSAN is a registered trademark.

BEST AVAILABLE COPY

**KEEP OUT OF REACH OF CHILDREN
DANGER**

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes eye and skin damage. Harmful or fatal if swallowed. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Wash thoroughly after handling. Avoid contamination of food.

STATEMENT OF PRACTICAL TREATMENT: Ingestion: DO NOT INDUCE VOMITING. Rinse with copious amounts of water or milk first. Irrigate the esophagus and dilute stomach contents by slowly giving one (1) to two (2) glasses of water or milk. Avoid giving alcohol or alcohol related products. In cases where the individual is semi-comatose, comatose or convulsing, **DO NOT GIVE FLUIDS BY MOUTH.** In case of internal ingestion of the product seek medical assistance immediately; take individual to nearest medical facility. In case of skin contact, wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. If product gets in the eyes, flush immediately with copious amounts of clean, cool water for at least 15 minutes. Get medical attention immediately.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish. Do not apply in marine and/or estuarine oil fields. Do not discharge treated effluent into lakes, streams, ponds, or public waters unless in accordance with a NPDES permit. For guidance, contact your Regional Office of the Environmental Protection Agency.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

STORAGE: Do not stack more than five drums high. Drums should be opened in well-ventilated areas. Leaking or damaged drums should be placed in overpack drums for disposal. Spills should be absorbed in sawdust or sand and disposed of in a sanitary landfill. Keep container closed when not in use.

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 your 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 by other procedures approved by state and local authorities.

Manufactured By EPA Est. No.1448-TN-1
BUCKMAN LABORATORIES, INC.
1256 N. McLEAN BLVD., MEMPHIS, TN 38108, USA
(901) 278-0330 or 1-800-BUCKMAN
EPA Reg. No. 1448-52
Product Weight: 10.4 lbs/gal 1.25 kg/L
NET CONTENTS MARKED ON CONTAINER
HMIS/NPCA RATING
Health 3 Flammability 1 Reactivity 1

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Busan 40 is used in pulp and paper mills (1) to control bacterial and fungal slime; (2) to inhibit the growth of bacteria that cause the degradation of papermaking chemicals such as animal glue, clay slurries, starch solutions and slurries, and coating formulations; and (3) to inhibit the growth of fungi that cause the degradation of papermakers alum solutions. **SLIME CONTROL IN PULP AND PAPER MILLS:** For controlling bacterial and fungal slime in pulp and paper mill systems, Busan 40 is employed at 125 to 300 g per metric ton (0.25 to 1 lb per short ton) of pulp or paper produced. In most systems, it is added in concentrations of 1 to 5 parts per million by weight, based on the total flow of stock and water at maximum dilution, for treatment periods of 2 to 6 hours out of each 12, or each 24 hours. In neutral or alkaline systems, concentrations of 4 to 8 ppm for similar systems may be required for optimum control of slime. The concentrations of Busan 40 and the frequency of treatment should be adjusted higher or lower according to the rate of slime accretion. Results are generally obtained by leading Busan 40 into the suction side of the fan pump or into the water or stock moving to the fan pump. When necessary, this treatment can be supplemented by the treatment of fresh water, slush pulp, broke, or other furnish components with Busan 40 or any of the broad-spectrum BUSAN microbicides. When microbiologically contaminated furnish is added to the system, the supplementary addition of 0.1 kg of Busan 40 per metric ton (0.2 lb per short ton) of furnish to each beater or pulper will aid in keeping the system free of slime. Broke may also require supplementary treatment. For uncoated broke, the addition of 0.1 to 0.2 kg of Busan 40 per metric ton (0.2 to 0.4 lb per short ton) will usually be adequate, but coated broke may require as much as 0.2 to 0.4 kg of Busan 40 per metric ton (0.4 to 0.8 lb per short ton). Slush pulp may require treatment with a minimum of 0.1 kg of Busan 40 per metric ton (0.2 lb per short ton) to preserve the pulp and prevent contamination of papermaking systems. Pulp that may be stored for 8 hours to 1 week should be treated with 0.1 to 0.3 kg of Busan 40 per metric ton (0.2 to 0.6 lb per short ton) of moisture-free pulp. The Busan 40 should be added in a manner that will insure uniform distribution throughout the mass of pulp moving to storage. When the fresh water used in the machine is a significant source of microbiological contamination, treatment of this water with Busan 40 to supplement or replace chlorine can aid in slime control on the machine. For this purpose, Busan 40 is usually added to the freshwater at concentrations of 1 to 4 parts per million for treatment periods of three hours out of each eight hours. Busan 40 should not be added to water used for deck washing or bathing. **PRESERVATION OF PAPERMAKING CHEMICALS:** BUSAN 40 can be used to inhibit the growth of bacteria that cause the microbiological degradation of papermaking chemicals and the growth of fungi in papermakers alum solutions. The required amount of Busan 40 should be added in such a manner as to ensure uniform distribution throughout the substrate to be protected. The table below shows the amounts of Busan 40 recommended for the preservation of various substrates, whether buffered and unbuffered; the pH shown is the maximum pH reached during processing and is not necessarily the pH of the material. The concentrations are based on the total wet weight of slurry, emulsion, or solution to be protected and are shown as both avoirdupois ounces (oz) of Busan 40 per 1000 lbs of substrate and as parts per million Busan 40 per million parts of substrate (weight/weight).

Substrate	Recommended Concentration of Busan 40 for Preservation of Papermaking Chemicals			
	oz/1000 lbs	ppm	oz/1000 lbs	ppm
Alum solutions	0.8-1.6	50-100	1.6	—
Animal glue solutions	1.2-2.4	75-150	2.4	150
Clay slurries, phosphate-dispersed	0.8-1.6	50-100	1.6	100
Coating formulations, protein binders	2.4-6.4	150-400	6.4	400
starch binders	0.8-2.4	50-150	2.4	150
Starch slurries and solutions	0.8-2.4	50-150	2.4	150

Busan 40 is composed of substances that have been allowed for use in the manufacture of

BUSAN 40

® trademark

BEST-AVAILABLE COPY

ACTIVE INGREDIENTS:

Potassium N-hydroxymethyl-N-methylthiocarbamate 40.0%
INERT INGREDIENTS: 60.0%

paperboard under U.S. Food and Drug Administration Regulation 176.300.

OF CHILDREN

STATEMENTS

DOMESTIC ANIMALS

Age. Harmful or fatal if swallowed. goggles or face shield and rubber ding. Avoid contamination of food. : Ingestion: DO NOT INDUCE water or milk first. Irrigate the y giving one (1) to two (2) glasses related products. In cases where mvulsing, DO NOT GIVE FLUIDS product seek medical assistance ility. In case of skin contact, wash inated clothing and wash before ely with copious amounts of clean, attention immediately.

is toxic to fish. Do not apply in large treated effluent into lakes, rdance with a NPDES permit. For nvironmental Protection Agency.

DISPOSAL

Age or disposal. high. Drums should be opened in ms should be placed in overpack sawdust or sand and disposed of n not in use.

utely hazardous. Improper disposal a violation of Federal Law. If these o label instructions, contact your ency, or the Hazardous Waste uidance.

alent). Then offer for recycling or a sanitary landfill, or by other ies.

No. 1448-TN-1
RIES, INC.
S, TN 38108, USA
BUCKMAN
18-52
al 1.25 kg/L
N CONTAINER
ING
Reactivity 1

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Busan 40 is used in pulp and paper mills (1) to control bacterial and fungal slime; (2) to inhibit the growth of bacteria that cause the degradation of papermaking chemicals such as animal glue solutions, clay slurries, starch solutions and slurries, and coating formulations; and (3) to inhibit the growth of fungi that cause the degradation of papermakers alum solutions. **SLIME CONTROL IN PULP AND PAPER MILLS:** For controlling bacterial and fungal slime in pulp and paper mill systems, Busan 40 is employed at 125 to 300 g per metric ton (0.25 to 1 lb per short ton) of pulp or paper produced. In acidic systems, it is added in concentrations of 1 to 5 parts per million by weight, based on the total weight flow of stock and water at maximum dilution, for treatment periods of 2 to 6 hours out of each 8, each 12, or each 24 hours. In neutral or alkaline systems, concentrations of 4 to 8 ppm for similar treatment periods may be required for optimum control of slime. The concentrations of Busan 40 and the frequency of treatment should be adjusted higher or lower according to the rate of slime accretion. Best results are generally obtained by feeding Busan 40 into the suction side of the fan pump or into white water or stock moving to the fan pump. When necessary, this treatment can be supplemented by treatment of fresh water, slush pulp, broke, or other furnish components with Busan 40 or another one of broad-spectrum BUSAN microbicides. When microbiologically contaminated furnish is added to the system, the supplementary addition of 0.1 kg of Busan 40 per metric ton (0.2 lb per short ton) of this furnish to each beater or pulper will aid in keeping the system free of slime. Broke may also require supplementary treatment. For uncoated broke, the addition of 0.1 to 0.2 kg of Busan 40 per metric ton (0.2 to 0.4 lb per short ton) will usually be adequate, but coated broke may require as much as 0.3 kg of Busan 40 per metric ton (0.6 lb per short ton). Slush pulp may require treatment with a microbicide to preserve the pulp and prevent contamination of papermaking systems. Pulp that may be held in storage for 8 hours to 1 week should be treated with 0.1 to 0.3 kg of Busan 40 per metric ton (0.2 to 0.6 lb per short ton) of moisture-free pulp. The Busan 40 should be added in a manner that will ensure uniform distribution throughout the mass of pulp moving to storage. When the fresh water used on a machine is a significant source of microbiological contamination, treatment of this water with Busan 40 to supplement or replace chlorine can aid in slime control on the machine. For this purpose, Busan 40 is usually added to the freshwater at concentrations of 1 to 4 parts per million for treatment periods of three hours out of each eight hours. Busan 40 should not be added to water used for drinking or bathing. **PRESERVATION OF PAPERMAKING CHEMICALS:** BUSAN 40 can be used to inhibit the growth of bacteria that cause the microbiological degradation of papermaking chemicals and to inhibit the growth of fungi in papermaker's alum solutions. The required amount of Busan 40 should be added in such a manner as to ensure uniform distribution throughout the substrate to be protected. The table below shows the amounts of Busan 40 recommended for the preservation of various substrates, both buffered and unbuffered; the pH shown is the maximum pH reached during processing and storage of the material. The concentrations are based on the total wet weight of slurry, emulsion, or solution to be protected and are shown as both avoirdupois ounces (oz) of Busan 40 per 1000 lbs of substrate and as parts per million Busan 40 per million parts of substrate (weight/weight).

Recommended Concentration of Busan 40 for Preservation of Papermaking Chemicals

Substrate	pH below 7		pH above 7	
	oz/1000 lbs	ppm	oz/1000 lbs	ppm
Alum solutions	0.8-1.6	50-100	1.6	—
Animal glue solutions	1.2-2.4	75-150	2.4	150
Clay slurries, phosphate-dispersed	0.8-1.6	50-100	1.6	100
Coating formulations, protein binders	2.4-6.4	150-400	6.4	400
starch binders	0.8-2.4	50-150	2.4	150
Starch slurries and solutions	0.8-2.4	50-150	2.4	150

Busan 40 is composed of substances that have been allowed for use in the manufacture of paper and

Busan 40 is used to inhibit the growth of bacteria and fungi that cause the degradation of cellulose solutions, such as hydroxyethyl cellulose solutions, and to inhibit the growth of bacteria that cause degradation in water-thinned paints, emulsion resins, and cutting oils. Protective Colloids: Enzymes resulting from the growth of certain fungi and bacteria in water-thinned cellulose protective colloids such as hydroxyethyl cellulose solutions cause a loss in viscosity of these solutions. Busan 40 has demonstrated effectiveness in controlling this microbiological growth and thereby provides viscosity stability for the protective colloid. Concentrations of 0.05 to 0.2 percent of Busan 40 based on the total weight of solution are suggested for preservation; the exact concentration to be used will depend on the particular system, amount of microorganism contamination and the degree of protection desired. Emulsion Resins and Water-Thinned Paints: Enzymes produced by bacteria can also cause loss of viscosity in emulsion resins. Busan 40 at 0.05 to 0.2 percent based on the weight of the emulsion has shown effectiveness as a preservative for both acrylic and polyvinyl acetate emulsion resin. Such emulsion resins are commonly used for the manufacture of emulsion paints, adhesives, waxes, and polishes; and these finished products can also be preserved by the use of Busan 40. Concentrations of 0.05 to 0.2 percent of Busan 40 based on the weight of the finished product are employed in the latter applications. Cutting Oils: Busan 40 can be used to prevent degradation of aqueous emulsions of cutting oils. Concentrations of 0.03 to 0.2 percent Busan 40 based on the total weight of water and cutting oil are recommended, and the treatment with Busan 40 should be repeated periodically at not greater than 5-week intervals. In some cases, Busan 40 may be added to concentrated cutting oils, and the amount of Busan 40 used should be such that concentrations of 0.03 to 0.2 percent are obtained when the cutting oil is mixed with water.

Busan 40 is employed in leather manufacture to control bacterial and fungal degradation of tannery glue solutions. To preserve tannery glue solutions Busan 40 is added to the glue at rates of 100 to 250 ppm, based on the total weight of the glue.

Busan 40 is used for bacterial control in the preservation of salt-cured hides and skins intended for tanning, at treatment rates of 0.5 to 4.0 lb/1000 lb of white weight stock. For microorganism control in the soaking of hides, Busan 40 is used at rates of 350 to 700 ppm based on the weight of the green hides and soak water.

Busan 40 is also used to inhibit the growth of fungi and bacteria in water-based drilling muds, completion fluids, packer fluids, and other water-based drilling fluids containing starch, gums, sugars, or other organic materials. For these purposes Busan 40 is added at concentrations of 0.05 to 0.2% by weight.

Technical assistance in applying Busan 40 for microorganism control as described above is available upon request when a description of the problem is provided.

**ACCEPTED
with COMMENTS
to EPA Letter Date:**

MAY 11 1994

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.

1448-52