UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: September 29, 1978

SUBJECT: Bardac 7.5
Caswell# 331A, 507 Carlos A. Rodriguez 9/29/78

FROM: Carlos A. Rodriguez
Toxicology Branch/HED TS-769

TO: John Lee
Product Manager# 31

Registrant: Lonza, Inc.
22-10 Route 208
Fair Laen, NJ 07410

Registration#6836-48

Action Requested: Amended Registration

Formulation:

Active Ingredient

Didecyl dimethyl ammonium chloride 7.5%
Isopropanol 3.0%

Inert Ingredient: Confidential

[redacted]

Recommendation(s):

The Acute Dermal LD_{50}, 20 Day Subacute Dermal Study, Eye Irritation Study, Acute Intravenous LD_{50}, Acute Oral LD_{50} and the Primary Skin Irritation are considered Core-Minimum Studies and found adequate for registration.

Use Pattern: Disinfectant-Sanitizer Fungicide - Deodorizer for Hospital, Institutional, Industrial, School, Dairy and Other Farm and Home Use.

Toxicology Review:

Acute Dermal LD_{50} with Didecyl dimethyl ammonium chloride (50%), (Wells Laboratories, Laboratory No. C-9919, July 23, 1968).

4 rabbits were treated at each of four dose levels, less than 1230 mg/kg, 1230, 1,550 and 1950 mg/kg of the test material. Backs and flanks of the animals were clipped free of hair and abraded or left intact as required. Test dose was kept in contact with the skin for 24 hours. Dead animals were autopsied immediately. Survivors were autopsied 14 days after product application. Observation included food intake, excretion, appearance and behavior, gross pathology.

INERT INGREDIENT INFORMATION IS NOT INCLUDED

Results:

The initial effect-eschar formation followed by blackening and hardening of the skin. Animals receiving doses greater than 1,550 mg/kg failed to eat or drink . Progressive weight loss was observed in those animals which died.

Pathology:

<1,230 mg/kg - None-
>1,230 mg/kg - ischemic small intestine liver congested.

1,550 mg/kg - ischemic small intestine, liver congested, gall bladder enlarged, adrenals pale, petechiae in mesenteries.

1,950 mg/kg - lungs plae, heart enlarged, liver enlarged and congested, kidneys autolyzed and pale, adrenals pale, spleen enlarged, ischemic small intesting, petechial in mesenteries.

Classification - Core Minimum Data

LD_{50} - 1,350 (1,048-1,612) mg/kg.

TOX Category: II

20 Day Subacute Dermal Study with Didecyl dimethyl ammonium chloride (Wells Laboratories, INc., Lab.#C-9920, 8-27-68.)

6 rabbit were distributed into 3 groups each composed of 2 animals. Back and flanks of the animal were clipped free of hair and abraded and left intact as required. The test material was applied daily for 20 days. The dosages were 615, 246 and 123 mg/kg. Survivors were held for two additional weeks for observation with no further treatment. Body weights, food consumption, excretion and behavior were observed daily. Blood and urine were tested at the beginning of the study, at the 20 day interval and prior to autopsy.

Results:

Eschar formation and loss of skin. One animal in each group died before completion of the test. Blood studies revealed tendency to lower hematocrit and hempglobin levels, with partial recovery during the two weeks observation period. Leucocyte count appeared to increase during treatment, then decrease. No change in urine noted.

Histopathological Observations

The lungs shows a severe extensive acute bronchopneumonia with acute pleuritic. The kidney mild chronic pyelonephritis. The lung shows focal areas of broncho-pneumonia and congestion. The spleen shows foci of hemosiderindeposition and extramedullary hematopoiesia. The liver shows a mild chronic percholangitis.

Classification - Core-Minimum Data

Eye Irritation Study with Bardac 22, (Wells Laboratories, Inc., Lab.#E-899, February 15, 1972.)

0.1 ml of the test material was instilled into one eye of each of six rabbits. The cornea, the iris and the palpebral conjunctiva were graded at 1, 2, 3, 4, 5, 6, and 7 days post-instillation.

Results:

Corneal opacity, iritis and conjunctival irritation was produced in all rabbits. Corneal opacity and conjunctival irritation persisted through the 7 days observation period. Iritic irritation was observed in 3 rabbits through day 6 and 2 rabbits through day 5 and in 1 rabbit through day 1.

Classification - Core-Minimum Data

TOX Category: I

Acute Intravenous LD_{50} - 7 days exposure.

50 mice weighing 19 to 26 grams were administered intravenously solutions ranging from 0.5% to 1%. The mice were observed closely during the first 24 hours and held under observation for a period of one week following injection for manifestations of delayed toxicity.

Results

$LD_{50} = 27 \pm 5.5$ mg/kg (7 days)

Toxic Signs: loss of righting reflex, clonic convulsions, respiratory depression, CNS depression and death within 3 to 15 hours after injection, respiratory arrest. Survivors appeared normal and gained weight.

Classification - Core Minimum Data

Acute Oral Toxicity - 7 days exposure.

50 mice weighing 18 to 25 grams were divided in 5 groups each composed of 10 animals. Dosages administered by stomach tube were 250, 500, 794, 1260 and 2000 mg/kg. The mice were observed closely during the first 24 hours and for a period of one week for manifestations of delayed toxicity.

Results:

$LD_{50} = 295 \pm 35$ mg/kg (7 days observation)

Toxic signs: mild to deep general CNS depression and death. The survivors exhibited a mild general CNS depression from 1 to 25 minute and from $>$ 1 hour $<$ 15 hours a deep depression. There were 31 delayed deaths within 4-7 days after medication. The survivors appeared normal and gained weight.

Classification - Core Minimum Data

TOX Category: II

Primary Skin Irritation

.0.5 ml fo the test material was applied to the abraded and intact skin of 6 rabbits. The material was kept in contact with the skin by holding gauze squares by means of elastic bandages and allowing the rabbits to move freel y.

Results:

Primary Skin Irritation Index = 8

Severe erythema and edema at 24 hours. Severe erythema, edema, severe eschar formation and induration and greensih color was observed in both intact and abraded skin.

Classification - Core Minimum Data

TOX Category: I

TOX/HED:th:G.Whitmore:9/28/78

E 10/11/78