

EFFICACY EVALUATION AND TECHNICAL MANAGEMENT SECTION

EFFICACY REVIEW-I

Antimicrobial Program Branch

IN 04-04-88

OUT 10/20/88

Srinivas Gowda *REC 11/10/88*

Reviewed By Srinivas Gowda Date 10/20/88

EPA Reg. No. or File Symbol 8383-3

EPA Petition or EUP No. None

Date Division Received 03-21-88

Type Product(s): Hospital Disinfectant

MRID No(s) 405602-01

Product Mgr. No. 32 (Kempter)

Product Name(s) Permacide Brand Ristex Germicidal/Disinfectant

Company Name (s) Sporicidin International

Submission Purpose Amendment to add virucidal claim against HIV-1 (AIDS virus) with efficacy data and labeling

Chemical & Formulation Ready-to-use liquid

Active Ingredient (s): 8

Phenol.....1.41

Sodium Phenate.....0.24

Sodium Borate.....0.47

200.00 Introduction

200.1 Use (s)

Refer to the most recent accepted labeling dated 07-29-88. Also, proposed labels are attached.

200.2 Current Submission

The current submission is a proposed amendment to add a virucidal claim for the product as a disinfectant against HIV-1 (AIDS virus) with supporting efficacy data and revised labelings.

200.3 Previously Accepted Virucidal Claims: The accepted labeling for the product bears the following supported virucidal efficacy claims:

As a Disinfectant: Virucidal against Herpes Simplex Types 1 & 2, Influenza A₂ (Japan 305/57 Asian Strain) and Polio 1 when used as directed on the label as a disinfectant for 10 minutes at room temperature.

201.0 Data Summary

201.1 Brief Description of Test (MRID 405602-01)

"BRI Study No. 22367-74 - The effectiveness of Permacide Brand Disinfectant Solution to inactivate the Acquired Immune Deficiency Virus (HIV-1)" by Sue C. Tondreau, Bionetics Research, Inc., Virus Isolation and Testing Laboratory, 5516 Nicholson Lane, Kensington, MD 20895, dated 03-10-88.

201.2 Test Summary:

- a. Method Reference: EPA Product Performance Guidelines 91-2, and BRI HIV test protocol accepted by EE & TMS (Efficacy), APB, RD, on 07-27-87 (EPA letter dated 08-04-87).
- b. Test Virus: Human immunodeficiency virus Type 1 (HIV-1/H9).
- c. Virus Inoculum: Supernatant from HIV-infected H9 cells was harvested and concentrated by centrifugation, and frozen at -85°C until used. The virus inoculum consisted of virus pool in RPMI-1640 cell medium containing 5% fetal calf serum.
- d. Test Procedure: One-tenth ml of virus inoculum, with 5% blood serum, was spread over marked 3x3-cm area of the surface of 100-mm (diameter) glass petri dishes (9 cm²) and dried for 30 minutes at 35-37°C. After drying, 0.2 ml of disinfectant (undiluted) was spread over the virus film and allowed to remain for 1 and/or 10 minutes at 20-25°C. Then the virus-disinfectant mixture was diluted to 10⁻³ (non-virucidal level of disinfectant). The

virus was concentrated from the diluted mixture by centrifugation at 19,000 rpm for 2 hours at 4°C and resuspended in RPMI-1640/10% fetal calf serum to provide 10⁻² to 10⁻⁴ dilutions of virus. One ml of each dilution was inoculated into each of 4 cell cultures for determination of virus infectivity.

- e. Controls: The positive virus control consisted of the dried virus incubated and diluted with RPMI1640/10% fetal calf serum, and titrated for infectivity at 10⁻⁴ to 10⁻⁸ dilutions of virus. The virus/ nonvirucidal disinfectant control consisted of the dried virus incubated with the 10⁻³ (non-virucidal level of disinfectant) dilution of disinfectant, then diluted and titrated for infectivity as described for the positive virus control. The toxicity control consisted of the 10⁻³ (non-virucidal) dilution of disinfectant inoculated into cell cultures. The cell control consisted of the RPMI/10% fetal calf serum.
- f. Infected Cell Virus Assay: To determine the presence of infective virus, samples were incubated with DEAE-dextran treated H9 cells for 90 minutes at 37°C for virus adsorption. After adsorption, cells were centrifuged and washed with fresh cell medium, then resuspended in fresh medium, distributed into tissue culture flasks, and reincubated for 28 days at 37°C for assays.

Assays were conducted at 7, 14, 21, and 28 days by the following methods:

Determination of viral cytopathic effect (CPE) by phase microscopy, and viral antigen by antigen-capture enzyme-linked immunosorbent sandwich assay (ELISA).

Cytotoxicity determined by phase microscopy gross morphological changes or cell death.

TCID-50 or TCLD-50 values were determined by the Reed-Muench method (Karber formula).

- g. Test Samples:

Permicide Brand Disinfectant Solution

Lot No. A and Lot No. B.

Manufacturing Dates: Not listed.

Test Dates: 12-03-87 to 03-04-88.

- h. Dilution: Undiluted.
- i. Exposure: One and/or ten minutes at 20-25°C in the presence of 5% blood serum.

j. Results:

<u>Test Sample</u>	<u>Disinfectant Exposure</u>		<u>Organic Soil</u>	<u>Hard Water</u>	<u>ID-50/LD-50 (-Log 10)</u>	
	<u>Temperature</u>	<u>Time</u>			<u>A</u>	<u>B</u>
Virus Control	NA	NA	5% Serum	NA	7.75	7.75
Virus + Non-Virucidal Disinfectant	20-25°C	10 Minute	"	"	6.50	6.50
Virus + Disinfectant	20-25°C	1 Minute	"	None	1.50	1.50
		10 Minutes	"	"	1.50	1.50
Toxicity Control	NA	NA	NA	"	3.00*	2.50 [†]
Log Reduction	20-25°C	1 Minute	5% Serum	"	5.00	5.00
		10 Minutes	"	"	5.00	5.00

NA = Not Applicable

*Represents titer for disinfectant dilution; all other titre represent virus dilutions in non-toxic levels of disinfectant (10^{-3} or greater).

k. Conclusions: The testing meets the requirements for demonstrating virucidal performance of the product against HIV-1 in the presence of 5% blood serum when used as an undiluted solution for a contact time of 1 and/or 10 minutes at room temperature (20-25°C).

Page ___ is not included in this copy.

Pages 5 through 9 are not included.

The material not included contains the following type of information:

- Identity of product inert ingredients.
 - Identity of product impurities.
 - Description of the product manufacturing process.
 - Description of quality control procedures.
 - Identity of the source of product ingredients.
 - Sales or other commercial/financial information.
 - A draft product label.
 - The product confidential statement of formula.
 - Information about a pending registration action.
 - FIFRA registration data.
 - The document is a duplicate of page(s) _____.
 - The document is not responsive to the request.
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The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

CONTINUAL RESIDUAL ACTIVITY FOR OVER 6 MONTHS*

Permacide Brand Ristex Germicidal/Disinfectant

For Contamination Control

Bactericidal

Fungicidal

Virucidal **

Tuberculocidal

Prevents Mold and Mildew

Eliminates Odors

ACCEPTED
with COMMENTS
in EPA Letter Dated:

JUL 29 1988

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

8383-3

<u>Active Ingredients:</u>	Phenol 1.41%, Sodium Phenate 0.24%, Sodium Tetraborate (10 H ₂ O)	0.47%
<u>Inert Ingredients:</u>		97.88%

CAUTION

Keep Out of Reach of Children

(See additional precautions on back panel)

DIRECTIONS: It is a violation of U.S. Federal Law to use this product in a manner inconsistent with its labeling.

TO DISINFECT AND DEODORIZE:

Preclean and spray to thoroughly wet articles and surfaces. Allow to dry for 10 minutes at room temperature (20°C/68°F or above). To prevent mold and mildew, repeat weekly, or sooner, if new mold and mildew occurs.

STORAGE AND DISPOSAL:

Store at room temperature

Discard empty container in regular trash collection

EPA Reg. No. 8383-3

EPA Est. No.

SPORICIDIN INTERNATIONAL
12000 Old Georgetown Road
Rockville, MD 20852

Net Contents: 1 Pt., 6 Fl. Ozs.

AN EXCELLENT DISINFECTANT AND ACTIVE DEODORANT FOR MEDICAL, DENTAL AND VETERINARY AREAS IN HOSPITALS, CLINICS AND OFFICES as well as nursing homes, ambulances, hotels, restaurants, schools, boats, health spas and public facilities.

Action:

1. Reduces the hazards of cross-contamination on articles and other non-porous surfaces.
2. Prevents mold and mildew on non-porous surfaces.
3. Self-sanitizes surfaces against odor-causing organisms.
4. Kills Athlete's Foot fungi on bathroom, shower and pool surfaces and shoes.
5. Non-staining.
6. It penetrates cracks.
7. Contains no harmful abrasives.
8. Non-flammable.

PASSES THE RIGID AOAC EFFICACY STANDARDS FOR INSTITUTIONAL AND 100% HOSPITAL LEVEL DISINFECTION on germ-laden items and surfaces such as toilet seats, sinks, instruments, discard injection syringes, equipment, thermometers, tubing, telephones, door handles, walls, floors, furniture, shower stalls, desks, diaper cans, linen hampers, ducts, windows, light switches, surgical carts, wheelchairs, walkers, counter tops, damp and musty areas, including animal enclosures and other reusable and disposable supplies and equipment.

Provides 100% kill of most disease and odor-causing organisms such as Staphylococcus aureus, Streptococcus salivarius, Streptococcus pyogenes, Group A alpha and beta hemolytic Streptococcus, Salmonella choleraesuis, Pseudomonas aeruginosa, Escherichia coli, **Herpes simplex types 1 and 2 (oral and genital), Influenza A₂ (Japan 305/57 Asian strain), and Polio I viruses, Trichophyton mentagrophytes (Athlete's foot fungus), Mycobacterium tuberculosis and prevents mold and mildew on non-porous surfaces.

A DEODORANT*: It provides residual (bacteriostatic and fungistatic) activity for over 6 months against odor-causing organisms in the presence of adequate moisture if not removed from surface. It is an active deodorant (bacteriostat and fungistat) on paper, fabrics, plastics, latex, vinyl, glass, wood, metal, porcelain, tile, painted surfaces, shoes, airline, bus and train toilet room surfaces and human waste receptacles, urinals, portable toilets and handicapped units.

CAUTION: Avoid contact with food. In case of eye contact, immediately flush with water. If necessary, consult a physician.

Collateral Labeling

PERMACIDE BRAND (RISTEX) GERMICIDAL/DISINFECTANT

A Household and Institutional Disinfectant and Deodorizer for Contamination Control

Permacide Brand (Ristex) is a germicidal disinfectant with bactericidal, fungicidal, virucidal and tuberculocidal properties against a broad spectrum of pathogenic organisms which may cause infection. It is especially adapted as a disinfectant and deodorant for hospital, household, institutional and industrial use on articles and environmental surfaces.

USES: As a hospital disinfectant, it reduces the hazards of contamination on treated articles and surfaces including thermometers, instruments, telephones, tubing, and other disposable and reusable supplies and equipment. It is a disinfectant which provides germicidal activity for household articles and environmental surfaces.

DIRECTIONS: Preclean and thoroughly wet surface. Allow to dry for 10 minutes at room temperature (20°C/68°F or above). To prevent mold and mildew, repeat weekly, or sooner, if new mold and mildew occurs.

- ACTION:
1. 100% hospital level disinfection. An active deodorant and self-sanitizer with ~~continual~~ residual (bacteriostatic and fungistatic) activity against odor-causing organisms for over 6 months in the presence of adequate moisture as long as it remains on the surface.
 2. Prevents molds and mildew on non-porous surfaces.
 3. Contains a surface tension reducing agent. 4. Contains no abrasives.
 5. Non-staining. 6. Water soluble components.
 7. Kills:

Staphylococcus aureus	Escherichia coli
Pseudomonas aeruginosa	Chaetomium globosum
Salmonella choleraesuis	Aspergillus niger
Mycobacterium tuberculosis	Pellicularia filamentosa
Trichophyton interdigitale	Influenza A ₂ (Japan 305/57 Asian Strain)
Group A alpha hemolytic Streptococcus	Herpes simplex types 1 & 2 (oral and genital)
Group A beta hemolytic Streptococcus	Polio (type 1)
Streptococcus viridans	
 8. The germicidal activity of this product was demonstrated visually with electronic microscope photos.
 - a. It dehydrates the bacterial cytoplasm.
 - b. It deactivates and alters the chromatin mass.
 - c. It destroys the bacterial cell mass and the membrane.
 9. May be used on natural and synthetic hard surfaces made from plastic, latex, glass, finished wood, metal, porcelain, enamel and painted surfaces.
 10. Kills **Influenza A₂ (Japan 305/57 Asian strain), Polio type 1 and Herpes simplex types 1 and 2 (oral and genital) viruses, and Mycobacterium tuberculosis on articles and environmental surfaces.

CAUTION: Keep out of reach of children

ACCEPTED
with **COMMENTS**
in EPA Letter Dated:

JUL 29 1988

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5383-3

BROCHURE 201

Veterinary Uses of Permacide Brand Ristex Germicidal Disinfectant, EPA Reg. No. 8383-3

DIRECTIONS FOR USE

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

- I. Disinfecting Instruments, Equipment and Hard Surfaces in Veterinary Laboratories and Hospitals. Preclean surface, spray to completely wet articles or surfaces with the solution for 10 minutes at room temperature (20°C/68°F or above).
- II. For Disinfecting Veterinary or Farm Premises and Animal Housing: (Do not use in Milking Stalls, Milking Parlors, or Milk Houses.)
 1. Remove all animals and feed from premises, vehicles and other equipment.
 2. Remove all litter and manure, from floors, walls and surfaces of barns, pens, stalls, chutes, and other facilities and fixtures occupied or traversed by animals.
 3. Empty all troughs, racks, and other feeding and watering appliances.
 4. Thoroughly clean all surfaces with soap or detergent and rinse with water.
 5. Spray to set all surfaces with the solution for a period of 10 minutes.
 6. Spray to wet all halters, ropes, and other types of equipment used in handling and restraining animals, as well as forks, shovels, and scrapers used for removing litter and manure.
 7. Ventilate buildings, vehicles, and other closed spaces. Do not house livestock or empty equipment until treatment has been absorbed and dried.
 8. Thoroughly rinse all treated feed racks, mangers, troughs, automatic feeders, fountains, with potable water before reuse.

For Disinfection of Official Meat, Poultry, Rabbit and Egg Establishments

1. All food products and packaging material must be removed from the room or carefully covered and protected.
2. Remove any loose dirt, litter, etc. that might be lying on floor or attached to the equipment.
3. Thoroughly clean all surfaces with soap or detergent and rinse with water.
4. Spray to completely wet all cleaned surfaces, instruments and equipment with the solution for a period of 10 minutes.
5. After disinfection, all equipment and/or instruments should be thoroughly rinsed with potable water before reuse.

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8383-3

SPORICIDIN INTERNATIONAL
12000 Old Georgetown Road
Rockville, MD 20852

PERMACIDE BRAND FORMALIN SOLUTIONS

(Complete Hospital Level Disinfection)

For disinfection of all surfaces in apartment in the apartment, all surfaces, surfaces in veterinary laboratory, animal hospitals, farm buildings, animal housing, in research animal laboratory and for including animal care facilities, vehicles and conveyances. It is bactericidal, fungicidal, and virucidal against the organisms (including all viruses) such as influenza, equine influenza, transmissible gastroenteritis, bovine rhinotracheitis, bovine coronavirus, and rhinopneumonitis, and all other animal viruses.

It provides 100% hospital level disinfection against all positive and negative bacteria, pathogenic fungi, and protozoa.

CAUTION: Avoid contact with skin. In case of contact, wash immediately with water. If necessary, consult a physician.

Storage and Disposal: Store in original container. Discard any remaining in regular trash collection.

EFFICACY EVALUATION AND TECHNICAL MANAGEMENT SECTION

EFFICACY REVIEW-II

Antimicrobial Program Branch

EPA Reg. No. or File Symbol 8383-3

Date Division Received 03-21-88

MRID No.(s). 405602-01

Product Manager No. PM-32 (Kempter)

Product Name Permacide Brand Ristex Germicidal/Disinfectant

Company Name Sporicidin International

202.0 Recommendations

202.1 Efficacy Supported By The Data

The submitted data are acceptable to support effectiveness of the product as a virucide against HIV-1 (AIDS virus) when used as an undiluted solution on hard, non-porous surfaces in the presence of a moderate amount of organic soil (5% blood serum) at a contact time of 1 minute or 10 minutes at room temperature (20-25°C).

203.0 Labeling

The contact time of 1 minute employed for efficacy testing against HIV-1 do not correlate with the contact time of 10 minutes supported in previously accepted efficacy data for disinfection and the last accepted labeling for this product. Therefore, if a claim for shorter contact time is made for HIV-1, a statement similar to the following will be required "Although efficacy at a 1 minute contact time has been shown to be adequate against HIV-1, this time would not be sufficient for other organisms. Use a 10-minute contact time for disinfection against all of the organisms claimed."

Label reference to "AIDS/HIV-1 virus" must be revised to read "HIV-1 (AIDS virus)"