DATA EVALUATION RECORD

DIDECYL DIMETHYL AMMONIUM CHLORIDE/
CHLORHEXIDINE DIACETATE
(SS0829.01)

STUDY TYPE: PRIMARY EYE IRRITATION - RABBIT [870.2400 (§81-4)]
MRID 45372908

Prepared for
Health Effects Division
Office of Pesticide Programs
U.S. Environmental Protection Agency
1921 Jefferson Davis Highway
Arlington, VA 22202

Prepared by
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DATA EVALUATION RECORD

STUDY TYPE: Primary Eye Irritation - Rabbit [OPPTS 870.2400 (§81-4)]

DP BARCODE: D274452
P.C. CODE: 069149 didecyl dimethyl ammonium chloride

SUBMISSION CODE: S596273
TOX. CHEM. NO.:
045502 chlorhexidine diacetate

TEST MATERIAL: SS0829.01

SYNONYMS: none

CITATION: Patterson, D. D. (2001) A low volume eye irritation study in rabbits with SS0829.01. Springborn Laboratories, Inc., Ohio Research Center, 640 North Elizabeth Street, Spencerville, OH 45887. SLI study no.: 3029.2245, February 9, 2001. MRID 45372908. Unpublished.

SPONSOR: The Procter & Gamble Company, 11530 Reed Hartman Highway., Cincinnati, OH, 45241.

EXECUTIVE SUMMARY: In a primary eye irritation study (MRID 45372908) 10 µL of SS0829.01 (Lot: # 01) was instilled onto the cornea of the right eye of two male and one female New Zealand albino rabbits. The left eyes of the rabbits were left untreated and served as the control. The eyes were scored for ocular irritation according to the Draize method 1, 24, 48, and 72 hours after instillation.

Conjunctivitis with redness and/or swelling was seen on all treated eyes at 1 hour after instillation. Grade 2 conjunctivitis resolved on all treated eyes by 24 hours and conjunctivitis resolved completely on all animals by 72 hours. No corneal effects or iritis were observed on the test eyes. The control eyes showed no corneal opacity, iritis or conjunctivitis.

The maximum average ocular irritation score was 4.0, which occurred at the 1, 24 and 48 hour scoring periods. The median time for the eyes to clear of all effects was 72 hours. The author concluded that the test material was a mild eye irritant.

This study is classified as **Unacceptable/Non-Guideline** and does not satisfy the guideline requirements for a primary eye irritation study [870.2400 (§81-4)] in the rabbit.

COMPLIANCE: Signed and dated GLP, Quality Assurance, and Data Confidentiality statements were provided.

I. MATERIALS AND METHODS

A. MATERIALS

1. Test material: SS0829.01

Description: clear, colorless liquid
Lot#: 01
Composition:
Active ingredients: didecyl dimethyl ammonium chloride, 0.03%
Chlorhexidine diacetateimpurities, 0.01%
Inert ingredients: 99.96%
CAS No.: 7173-51-5 (didecyl dimethyl ammonium chloride)
56-95-1 (chlorhexidine diacetate)

2. Vehicle and/or positive control: None

3. Test animals

Species: rabbit
Strain: New Zealand White
Age and weight at dosing: males: 20 weeks old, 3.5 - 3.8 kg; female: 16 weeks old, 3.4 kg
Source: Myrtle's Rabbitry, Thompson Station, TN
Acclimation period: 5 days or longer
Diet: PMI certified rabbit chow #5322 (Purina Mills, Inc.), *ad libitum*
Water: tap water, treated by reverse osmosis, *ad libitum*
Housing: singly housed in suspended stainless steel cages
Environmental conditions:
Temperature: 18-21 °C
Relative Humidity: 40 - 54%
Air changes: 10 -15 changes per hour
Photoperiod: 12 hour light/dark cycle

B. STUDY DESIGN AND METHODS

1. In life dates:

Start: September 15, 2000; end: September 18, 2000

2. Animal assignment and treatment

Animals selected were randomly chosen from healthy stocks and their eyes were checked for the absence of pre-existing ocular irritation or corneal injury. The test material (10 µL) was instilled directly onto the cornea of the right eye of each animal

and the eyelids were released without forced blinking or manipulation. The contralateral eye of each animal was left untreated to serve as a control. Ocular irritation was evaluated using an auxilliary light source at 1, 24, 48 and 72 hours post-instillation, according to the Draize method. Fluorescein examinations were used to aid the examination at 24 hours and to verify the absence of corneal damage. If any fluorescein findings were noted at 24 hours, a fluorescein exam was conducted on the affected eye at each subsequent observation time until a negative response was obtained.

II. RESULTS AND DISCUSSION

A. Conjunctivitis with redness and/or swelling were seen in all three animals at 1 hour after instillation. Grade 2 conjunctivitis resolved in all treated eyes by 24 hours and conjunctivitis resolved completely in all animals by 72 hours. No corneal effects or iritis were observed in the tested eyes. The control eyes showed no corneal opacity, iritis or conjunctivitis.

The maximum average ocular irritation score was 4.0, which occurred at the 1, 24 and 48 hour scoring periods. The median time for the eyes to clear of all effects was 72 hours. The author concluded that the test material was a mild eye irritant.

B. DEFICIENCIES

Only 10 µL of test material was instilled into the eye of each rabbit and not the 0.1 mL recommended in OPPTS [870.2400]. Also the test material was placed directly on the cornea and not instilled into the conjunctival sac as required in OPPTS [870.2400]. The eyelids were not held together for about 1 second, although with the small volume of test material used, this would probably not have been a problem. These deficiencies could place the test material in an inappropriate TOXICITY CATEGORY for primary eye irritation.