

**Reviewer:** Byron T. Backus, Ph.D.

**Date:** March 16, 2007

**Risk Manager:** 13

**STUDY TYPE:** Dermal Sensitization – albino Guinea Pig; OPPTS 870.2600; OECD 406

**TEST MATERIAL:** Imidacloprid/Permethrin/Pyriproxyfen; Lot #A-05-118-M854-05-05-21, containing 8.70% Imidacloprid, 43.45% Permethrin, and 0.48% Pyriproxyfen. Described as a clear, light-yellow liquid with a density of 1.147 g/mL. Solubility testing indicated that this test material was not soluble in distilled water or mineral oil, but was soluble in acetone and 95% ethanol.

**CITATION:** Moore G.E. (2006). Imidacloprid/Permethrin/Pyriproxyfen: Dermal Sensitization Study in Guinea Pigs (Buehler Method). Product Safety Laboratories, Dayton, NJ. Laboratory Study No. 18520 (Bayer Study No. 05C-I24-DB). Study completion date: November 27, 2006. MRID 47014303. 27 p. Unpublished.

**SPONSOR AND SUBMITTER:** BAYER HEALTHCARE, ANIMAL HEALTH DIVISION.

**EXECUTIVE SUMMARY:** In a dermal sensitization study (MRID 47014303) with Imidacloprid/Permethrin/Pyriproxyfen (Lot #A-05-118-M854-05-05-21, a clear light-yellow liquid with a density of 1.147 g/mL containing 8.70% Imidacloprid, 43.45% Permethrin, and 0.48% Pyriproxyfen), a group of 20 Hartley albino young adult male guinea pigs (weights: 330-394 g at start; source: Elm Hill Breeding Labs, Chelmsford, MA) were exposed (for 6 hours, using occlusive 25 mm Hill Top Chambers), once each week for 3 weeks, to 0.4 mL undiluted test material on their left sides. Twenty-seven days after the first induction dose 0.4 mL of a 75% w/w mixture of the test material in acetone was similarly applied to a previously unused site (on the right side) with 6-hr exposure. At this time, a control group of 10 previously unexposed male guinea pigs was similarly treated.

None of the 20 previously induced or 10 control guinea pigs showed any indication of a sensitization response (all scores zero or 0.5 at 24 and 48 hours following challenge).

The report includes results from a non-concurrent positive control study (PSL Study #18271, completed on October 14, 2005) which utilized  $\alpha$ -Hexylcinnamaldehyde (HCA) Technical. The results (3/10 previously induced and 0/5 control guinea pigs showing a positive response at 24 and/or 48 hours) are acceptable.

Based on the results of this study the test material, Imidacloprid/Permethrin/Pyriproxyfen (Lot #A-05-118-M854-05-05-21, a clear light-yellow liquid with a density of 1.147 g/mL containing 8.70% Imidacloprid, 43.45% Permethrin, and 0.48% Pyriproxyfen). This study is classified as acceptable. It does satisfy the guideline requirement for a dermal sensitization study (OPPTS 870.2600; OECD 406) in the guinea pig.

**COMPLIANCE:** Signed and dated GLP (p. 3), Quality Assurance (p. 4), and Data Confidentiality (p. 2) statements were provided.

## PROCEDURE

**A. Induction** – Following preliminary dermal irritation testing, a group of 20 Hartley albino young adult male guinea pigs were exposed (for 6 hours, using occlusive 25 mm Hill Top Chambers), once each week for 3 weeks, to 0.4 mL undiluted test material.

**B. Challenge** - Twenty-seven days after the first induction dose 0.4 mL of a 75% w/w mixture of the test material in acetone was applied at a previously unused site, with 6-hr exposure.

**C. Naïve Controls** – A group of 10 male guinea pigs was treated with 0.4 mL of a 75% w/w mixture of the test material in acetone at challenge only.

## RESULTS and DISCUSSION:

**A. Reactions and Durations** - None of the 20 previously induced or 10 control guinea pigs showed any indication of a sensitization response (all scores zero or 0.5 at 24 and 48 hours following challenge).

**B. Positive Control** - The report includes results from a non-concurrent positive control study (PSL Study #18271, completed on October 14, 2005; the study on the test material was conducted in the period from December 6, 2005 to January 5, 2006) which utilized  $\alpha$ -Hexylcinnamaldehyde (HCA) Technical. The results (3/10 previously induced and 0/5 control guinea pigs showing a positive response at 24 and/or 48 hours) are acceptable.

**C. Reviewer's Conclusion** – Based on the results of this study, Imidacloprid/Permethrin/Pyriproxyfen (Lot #A-05-118-M854-05-05-21, a clear light-yellow liquid with a density of 1.147 g/mL containing 8.70% Imidacloprid, 43.45% Permethrin, and 0.48% Pyriproxyfen), is not a dermal sensitizer.