UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF
PREVENTION,
PESTICIDES
AND TOXIC
SUBSTANCES

July 20, 2009

MEMORANDUM

Subject: Efficacy Review for EPA Reg. No. 777-RNI, Gattuso GP
DP Barcode: 366947

From: Tajah L. Blackburn, Ph.D., Microbiologist
Efficacy Evaluation Team
Product Science Branch
Antimicrobials Division (7510P)

7/20/09

Thru: Michele Wingfield, Chief
Product Science Branch
Antimicrobials Division (7510P)

To: Tracy Lantz Acting PM34/Stacey Grigsby
Regulatory Management Branch II
Antimicrobials Division (7510P)

Applicant: Reckitt Benckiser, Inc.
Morris Corporate Center IV
399 Interpace Parkway, PO Box 225
Parsippany, NJ 07054-0225

Formulation from the Label:

Active Ingredient(s)	% by wt.
Citric Acid	3.5%
Other Ingredients	96.5%
Total	100.0%

I BACKGROUND

The submitted data package is in response to the Agency's letter (dated November 5, 2008), and Efficacy Review (dated September 30, 2008) for the pending OPP Decision# 395278. The registrant's letter (dated February 5, 2009), stated "as recap of numerous phone conversations and email exchanges between the Agency and various members of the RB Regulatory Group please note the following:

- Agency email, dated August 19, 2008 (Adam Heyward to Mary Pisculli)
  --RB has re-classified the ingredient Formic Acid as an inert ingredient on the CSF and in the enclosed amended product chemistry reports. Enclosed with the administration documents is RB Internal Memo, dated October 3, 2008, which discusses the justification of Formic Acid as a cleaning agent in the formulation;
  --RB has revised the master text label by removing Formic Acid as an active ingredient. In addition, RB has revised the use directions, storage & disposal sections and incorporated additional marketing claims;
  --RB has conducted Hospital confirmatory efficacy data on the revised formulation (Volumes 20 and 21)

- Agency email, dated November 14, 2008 (Adam Heyward to Hal Ambuter) and RB email, dated November 17, 2008, 2:33 PM (Christine Dellanno and Adam Heyward)
  - Agency will accept MRID Nos. 474557-18, -19, -20 and -31 which utilizes a "coarse filtration" step provided that RB conduct and submit hospital confirmatory testing without utilizing a "coarse filtration" (Volume 21).
  - Agency will accept MRID Nos. 474557-29 and -30 provided RB amend the reports to address the dried recovery carrier counts (Volume 17 and 18).
    - Volume 17 provides dried recovery carrier counts that do exceed minimum 1.0×10^4 as in the AOAC Disinfectant Assay but not the 7.5×10^5 that average count per the ASTM E1153-03 method. RB would like to request that this study be considered for acceptance because the Non-Food Contact Sanitization Test methods were developed for *Staphylococcus aureus*, *Klebsiella pneumoniae* and *Enterobacter aerogenes* organisms but other organisms were not considered when developing the dried recovery counts at 7.5×10^5. The data for Volume 17 which was performed for MRID No. 474557-29 still provided a 99.9% reduction and have met the DIS/TSS-10 and the Subdivision G 91-2(j) requirements for a Non-Food Contact Sanitizer.
    - Volume 18 provides dried recovery carrier counts that exceed the 7.5 x 105 average as per the EPA request for MRID No. 474557-30 against Enterobacter aerogenes. This study along with MRID No. 474557-30 concludes that Gattuso GP is an effective product as a Sanitizer for Non-Food Contact Surfaces.
  - Do to time and resources restraints, RB was not able to conduct the Agency requested Fungistat testing utilizing a 95% humidity conditions. Therefore at this time, we have removed all references pertaining to the removal of *Aspergillus niger*.

An Agency's review (dated April 11, 2009), in response to the Agency's letter (dated November 5, 2008), and Efficacy Review (dated September 30, 2008), included an efficacy review with conclusions and recommendations to MRID No. 476883-01 for the product Gattuso GP. This study was reviewed on April 11, 2009, with the following Conclusion and Recommendations; briefly

Conclusion

The submitted confirmatory efficacy data (MRID 476883-01) do now demonstrate that the product, Gattuso GP formulated without formic acid (also referred to as Formula Number 1333-117A), is an effective disinfectant against *Staphylococcus aureus*, *Salmonella enterica*, and *Pseudomonas aeruginosa* on hard, non-porous surfaces in the presence of a 5% organic soil load for a 5-minute contact time. Testing was done without the **"coarse filtration" step as directed by the Agency.** Complete killing was observed in the subcultures of the required number of carriers tested against the required number of product lots. Test system verification confirmed that the cultures were acceptable for use in the studies. Sterility controls did not show growth. Neutralizer efficacy testing showed positive growth of the microorganisms.

Recommendations

The proposed label claims are acceptable regarding the use of the product, Gattuso GP, as a disinfectant against *Staphylococcus aureus*, *Salmonella enterica*, and *Pseudomonas aeruginosa* on pre-cleaned, hard, non-porous surfaces for a 5-minute contact time. These claims are now supported by the submitted confirmatory data.

Proposed claims, (from prior submission DPs 354310 and 362066), against Influenza A virus (H1N1/Avian Flu) for 30 seconds (MRID No. 476702-15), and Poliovirus type 1 for 5 minutes (MRID No. 476702-16) are now acceptable. The Agency's request for submission of confirmatory data was addressed in the current data package.

The study MRID No. 476883-01 is a more recent version of the study MRID No. 477922-01, submitted in the current data package. MRID No. 476883-01 has Amended Final Report Dates of January 27, 2009 and February 26, 2009. While the recently submitted data package with study MRID No. 477922-01 has an Amended Final Report Date of January 27, 2009. The studies appear to be identical, with the dates the only difference noted. As a result, the Conclusion and Recommendations stated in the April 11, 2009 review will be the same in this review.

II USE DIRECTIONS

The product is designed for disinfecting and sanitizing hard, non-porous surfaces, including: bathtubs, cabinets, counter tops, faucets, fixtures, floors, shower curtains, shower stalls, showers, sinks, toilet bowl exteriors, urinals, and vanity tops. The proposed label indicates that the product may be used on hard, non-porous surfaces

including: enamel, glass, glazed ceramic, glazed porcelain, glazed tile, laminated plastic, linoleum, metal (e.g., chrome, stainless steel), and vinyl. Directions on the proposed label provide the following information regarding use of the product: Pre-clean surfaces. Spray surfaces until thoroughly wet. To disinfect, let stand for 5 minutes. To sanitize, let stand for 30 seconds. Wipe off with a clean, damp cloth or sponge.

III AGENCY STANDARDS FOR PROPOSED CLAIMS

Disinfectants for Use on Hard Surfaces in Hospital or Medical Environments

The effectiveness of disinfectants for use on hard surfaces in hospital or medical environments must be substantiated by data derived using the AOAC Use-Dilution Method (for water soluble powders and liquid products) or the AOAC Germicidal Spray Products as Disinfectants Method (for spray products). Sixty carriers must be tested with each of 3 product samples, representing 3 different product lots, one of which is at least 60 days old, against *Salmonella enterica* (ATCC 10708; formerly *Salmonella choleraesuis*), *Staphylococcus aureus* (ATCC 6538), and *Pseudomonas aeruginosa* (ATCC 15442). To support products labeled as "disinfectants," killing on 59 out of 60 carriers are required to provide effectiveness at the 95% confidence level.

Disinfectants for Use in Hospital or Medical Environments; Confirmatory Efficacy Data Requirements

Under certain circumstances, an applicant is permitted to rely on previously submitted efficacy data to support an application or amendment for registration of a product and to submit only minimal confirmatory efficacy data on his own product to demonstrate his ability to produce an effective formation. This includes a minor formulation change (e.g., a change in an inert ingredient) in a registered product. Confirmatory data must be developed on the applicant's own finished product. For hospital disinfectants, 10 carriers on each of 2 samples representing 2 different product lots must be tested against *Salmonella enterica* (ATCC 10708; formerly *Salmonella choleraesuis*), *Staphylococcus aureus* (ATCC 6538), and *Pseudomonas aeruginosa* (ATCC 15442) using either the AOAC Use-Dilution Method or the AOAC Germicidal Spray Products as Disinfectants Method. Killing on all carriers is required.

IV SYNOPSIS OF SUBMITTED EFFICACY STUDY

1. MRID No. 476883-01 (MRID No. 477922-01) "Hospital Type Disinfectant Efficacy Testing in the Presence of Organic Soil," Test Organisms: *Staphylococcus aureus* (ATCC 6538), *Salmonella enterica* (ATCC 10708), and *Pseudomonas aeruginosa* (ATCC 15442) for Formula Number 1333-117A, by Kyle T. Smith. Study conducted at Reckitt Benckiser Inc. Study completion date – January 27, 2009. Amended final report dates – (1) January 27, 2009 and (2) February 26, 2009 and January 27, 2009 (MRID No. 477922-01) Master Schedule No. 2008-0223.

This study was conducted against *Staphylococcus aureus* (ATCC 6538), *Salmonella enterica* (ATCC 10708), and *Pseudomonas aeruginosa* (ATCC 15442). Three lots (Lot Nos. 1453-108, 1453-110, and 1453-111) of the product, Formula Number 1333-117A, were tested using the AOAC Germicidal Spray Products as Disinfectants Method as described in the AOAC Official Methods of Analysis, 17th Edition, 2000. All lots were at least 60 days old at the time of testing. The product was received ready-to-use, as a trigger spray. A culture of the challenge microorganism was prepared in accordance with the published AOAC method, with the following exceptions: (1) the culture was incubated for 48±2 hours at a target temperature of 35±2.5°C (which differs from the AOAC method specification of 48 hours for all bacterial cultures except *Pseudomonas aeruginosa*); and (2) the final culture transfer was coarse filtered. Horse serum was added to the culture to achieve a 5% organic soil load. Ten (10) glass slide carriers (20 mm x 25 mm)/lot/test organism were inoculated with 0.01 mL of the test culture. Inoculum was uniformly spread over the surface of the carriers. The carriers were dried for 40-42 minutes at 32.5-37.5°C (which differs from the AOAC method specification of 30-40 minutes at 37°C). For each lot of product, separate carriers were sprayed (2-3 pumps) with the product at a distance of 6-8 inches from the carrier surface. The carriers were allowed to remain wet for 5 minutes at ambient temperature. Following the exposure period, the remaining liquid was drained from each carrier. Individual carriers were transferred to 20 mL of subculture broth to neutralize. Subcultures then were gently agitated or shaken. All subcultures were incubated for at least 46 hours at 32.7-37.9°C (which differs from the AOAC method specification of 48 hours at 37°C). Following incubation, the subcultures were examined for the presence or absence of visible growth. Controls included those for inoculum count, dried recovery carrier count, test system verification (i.e., purity, identity), sterility, and neutralizer efficacy.

Protocol amendments: An additional control assay, Test system Viability, was added to the test procedure; (2) the section Media and Test Substance Water Quality was added to the protocol; (3) the following section was removed from the protocol, "Sterile funnels with coarse filtration medium (e.g. glass wool, cotton, gauze). This item was not used in the study as the test systems were not be coarse filtered prior to testing; (4) In the Preparation of Test Culture section, a step for the *Pseudomonas aeruginosa* culture was inadvertently left out. For *Pseudomonas aeruginosa*, after the 48±2 hour incubation, the test tube or bottles were not shaken. The culture was decanted into a sterile vesicle, leaving the pellicle behind. The preparation was continued as described for the other 2 test systems, using the decanted *Pseudomonas aeruginosa* culture; and (5) The original protocol was amended on November 20th, 2008 for the following reason: Page 14 of 14

is the Approval and Signature" page of the protocol. On 11/20/2008, an error was noticed in the Approval title on this page. The title read "Protocol Amendment Approval". This is incorrect, as the document approved was the original protocol for M.S. 2008-0223. This title was changed to read "Protocol Approval".

Protocol deviations: The protocol stated that the target incubation temperature for the a test material was 35±2.5°C. The test materials were incubated from 11/19/2008 through 11/21/2008 for a total incubation time of 48 hours, 53 minutes. For a period of 47 minutes on 11/21/2008, the incubation temperature fell below the above stated range, and was recorded to be between 32.2 and 32.4°C. After that time period, the temperature went back into range, and remained there for the duration of the test material incubation. The protocol also stated that incubation temperatures out of the acceptable range would be considered a protocol deviation, but would be deemed acceptable if the Dried Recovery Control values were with the expected range ($\geq 10^4$ organisms per carrier). Each of the 3 Dried Recovery Control values for each of the 3 test systems were within this expected range. Therefore, it has been concluded that this protocol deviation did not impact the integrity of this study, or the results obtained.

V RESULTS

MRID Number	Organism	No. Exhibiting Growth/ Total No. Tested			Dried Recovery Carrier Count (CFU/ Carrier)
		Lot No. 1453-108	Lot No. 1453-110	Lot No. 1453-111	
476883-01 and 477922-01	*Staphylococcus aureus*	0/10	0/10	0/10	1.76×10^5 to 2.44×10^5
	Salmonella enterica	0/10	0/10	0/10	7.7×10^5 to 1.03×10^6
	Pseudomonas aeruginosa	0/10	0/10	0/10	1.20×10^5 to 4.2×10^5

VI CONCLUSION

1. The submitted confirmatory efficacy data (MRID 476883-01) do now demonstrate that the product, Gattuso GP formulated without formic acid (also referred to as Formula Number 1333-117A), is an effective disinfectant against *Staphylococcus aureus*, *Salmonella enterica*, and *Pseudomonas aeruginosa* on hard, non-porous surfaces in the presence of a 5% organic soil load for a 5-minute contact time. Testing was done without the **"coarse filtration" step as directed by the Agency.** Complete killing was observed in the subcultures of the required number of carriers tested against the required number of product lots. Test system verification confirmed that the cultures were acceptable for use in the studies. Sterility controls did not show growth. Neutralizer efficacy testing showed positive growth of the microorganisms.

VII RECOMMENDATIONS

1. The proposed label claims are acceptable regarding the use of the product, Gattuso GP, as a disinfectant against *Staphylococcus aureus, Salmonella enterica*, and *Pseudomonas aeruginosa* on pre-cleaned, hard, non-porous surfaces for a 5-minute contact time. These claims are now supported by the submitted confirmatory data.

2. Proposed claims, (from prior submission DPs 354310 and 362066), against Influenza A virus (H1N1/Avian Flu) for 30 seconds (MRID No. 476702-15), and Poliovirus type 1 for 5 minutes (MRID No. 476702-16) are now acceptable. The Agency's request for submission of confirmatory data was addressed in the current data package.

3. The term "fast-acting" has not been qualified by the Agency.

4. On page 5 of the proposed label, add clarifying information, "from treated surfaces" to the claim "Prevents the spread of harmful germs".

5. On page 5 of the proposed label, remove the claim "Gives you full complete total disinfection."

6. Multiple fiberglass surfaces are porous. The registrant needs to add information regarding the fiberglass use surfaces.