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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND
TOXIC SUBSTANCES

November 1, 2000

MEMORANDUM

EPA File Symbol: 264-ANG CHARTER™ BRAND TRITICONAZOLE FUNGICIDE
DP Barcode: D269497
Case No: 066224

From: Byron T. Backus, Ph.D., Toxicologist
Technical Review Branch
Registration Division (7505C)

Byron T. Backus
11/01/2000
JCR

To: Summer Gardner-Jenkins/Mary Waller, PM 21
Herbicide Branch
Registration Division (7505C)

Registrant: AVENTIS CROPSCIENCE USA LP

ACTION REQUESTED: "Triticonazole in FY2001 Work Plan... Please review the attached product toxicity. Also attached is transmittal memo, product label and CSF..."

BACKGROUND: The label for the proposed product, 264-ANG CHARTER™ BRAND TRITICONAZOLE FUNGICIDE, has the following ingredient declaration:

Active Ingredient:
Tritoconazole.....25.9%
Inert Ingredients:.....74.1%

This package also contains the following studies (and their MRID numbers): An acute oral LD50 study in rats with RPA 406341 (44904504); an acute oral LD50 study in rats with EXP 80472H (44904503); an acute dermal LD50 study in rabbits with EXP 80472H (4404505); an acute inhalation LC50 study in rats with EXP 80472H (44904506); a

(1)

primary eye irritation study in rabbits with EXP 80472H (44904507); a primary skin irritation study in rabbits with EXP 80472H (44904508); and a dermal sensitization study in guinea pigs with EXP 80472H (44904509). According to an attached letter: "EXP 80472H is a formulation in which the antifoaming agent used was reported to have residues of formaldehyde... EXP 80472J is the formulation in which the antifoaming agent with residues of formaldehyde was changed. The antifoaming agent is very similar to the agent used in the EXP 80472H except without the formaldehyde traces... Both EXP 80472H and EXP 80472J are formulations containing 25 grams of triticonazole to be used for wheat and barley seed treatments against soil borne diseases... RPA 406341, along with RPA 404766 and RPA 404866, are hydroxy metabolites of the parent triticonazole material which are found both in plant and animal matrices. RPA 406341 is the metabolite found in higher quantities than the other two and it was therefore decided by Rhone-Poulenc Ag Company that additional testing would be needed to determine the toxicological significance of this metabolite, if any. Results from this testing show RPA 406341 to be less toxic than the parent compound.

COMMENTS AND RECOMMENDATIONS:

There is a discrepancy between the ingredient statement on the proposed label and the CSF for this proposed product, in that the label states the active ingredient (Triticonazole) is present at 25.9% and the inert ingredients are present at 74.1% [total: 100%]. However, the CSF indicates that Triticonazole is present at 2.59%, and this is reasonably consistent with the indicated compostion of the test material EXP 80472H which is reported as having 2.38% triticonazole.

The six studies [on EXP 80472H] have all been classified as acceptable; they would support the registration of a product containing approximately 2.5% (but not 25.9%) Triticonazole. The following is the acute toxicity profile for EXP 80472H:

Acute Oral LD50	IV	Acceptable
Acute Dermal LD50	III	Acceptable
Acute Inhalation LC50	IV	Acceptable
Primary Eye Irritation	III	Acceptable
Primary Dermal Irritation	IV	Acceptable
Dermal Sensitization	No	Acceptable

In addition, TRB received, as part of this action, an acute oral LD50 study on the metabolite, RPA 406341. This study is currently classified as unacceptable, but this classification can be upgraded to acceptable with information from the registrant as to the structural identity of the test material and its purity.

The appropriate precautionary labeling for 264-ANG CHARTER™ BRAND TRITICONAZOLE FUNGICIDE, **assuming that it contains only 2.59% Triticonazole, rather than the 25.9% indicated on the proposed label**, based on the acute toxicity profile given above, should include (but should not be necessarily limited to) the following statements, as obtained from the Label Review System:

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Date: 11/01/00 LABEL REVIEW SYSTEM

ID #: 000264-00603 Charter (tm) brand Triticonazole Fungicide

AGRICULTURAL USE REQUIREMENTS:

DIRECTIONS FOR USE:

Wear: long-sleeved shirt and long pants, socks and shoes and waterproof gloves when handling CHARTER™ brand Triticonazole Fungicide or treated seed.

SIGNAL WORD: CAUTION

PRECAUTIONARY STATEMENTS:

Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wear long-sleeved shirt and long pants, socks and shoes. and waterproof gloves.

STATEMENT OF PRACTICAL TREATMENT (SOPT):

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

The following should appear under the heading USER SAFETY RECOMMENDATIONS:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

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DATA REVIEW FOR ACUTE ORAL TOXICITY TESTING (870.1100, formerly §81-1))

Product Manager: 21
MRID No.: 44904503

Reviewer: Byron T. Backus, Ph.D.
Study Completion Date: August 21, 1997
Laboratory Report No.: 3147.232

Testing Facility: Springborn Laboratories, Inc. (SLI), Spencerville, OH
Author: D. A. Douds
Quality Assurance (40 CFR §160.12): Included (p. 4)

Test Material: EXP 80472H; Lot No. : 6STGX100, a dark pink liquid, with a density of 1.08 g/mL; according to the certificate of analysis (p. 21) this contained 2.38% triticonazole

Species: Rat; Crl:CD®BR VAF/Plus®
Age: "Young adult"
Weight (fasted): Males: 182-199 g; Females: 203-215 g
Source: Charles River Laboratories, Portage, Michigan

Conclusion:

1. **LD_{50} (mg/kg):**
   Males: >5000 mg/kg
   Females: >5000 mg/kg
   Combined: >5000 mg/kg
2. **The estimated LD_{50} is** >5000 mg/kg
3. **Tox. Category:** IV **Classification:** Acceptable

Procedure (including deviations from 870.1100): "The test article was administered as received from the Sponsor... On day -1 the animals chosen for the limit test were weighed and fasted overnight. On day 0, the test article was administered orally as a single dose using a ball tipped stainless steel gavage needle attached to a syringe..."

Results:

Dosage (mg/kg)	Number of Deaths/Number Tested		
	Males	Females	Combined
5000[a]	0/5	0/5	0/10

[a]The dose volume was 4.63 mL/kg, based on the density of 1.08 g/mL

Observations: No mortality occurred. "The only clinical abnormality observed during the study was abnormal colored feces." These were red in color; these were observed only on day 1 in 9/10 rats, but in one female rat they were observed through day 4. All animals gained weight during the 14-day observation period.

Gross Necropsy: "No gross internal findings were observed at necropsy on study day 14."

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DATA REVIEW FOR ACUTE DERMAL TOXICITY TESTING (870.1200, formerly §81-2)

Product Manager: 21
MRID No.: 44904505

Reviewer: Byron T. Backus, Ph.D.
Study Completion Date: August 21, 1997
Laboratory Report No.: 3147.233

Testing Facility: Springborn Laboratories, Inc. (SLI), Spencerville, OH
Author: D. A. Douds
Quality Assurance (40 CFR §160.12): Included (p. 4)

Test Material: EXP 80472H; Lot No. : 6STGX100, a dark pink liquid, with a density of 1.08 g/mL; according to the certificate of analysis (p. 25) this contained 2.38% triticonazole

Species: Rabbit; New Zealand White
Age: "Adult"
Weight: Males: 2851 - 3000 g; Females: 2470 - 2647 g
Source: Myrtle's Rabbitry, Thompson Station, TN

Dermal LD_{50} Testing:

Conclusion:

1. **LD_{50} (mg/kg):**
   Males: > 2000 mg/kg (0/5 died)
   Females: > 2000 mg/kg (0/5 died)
   Combined: > 2000 mg/kg (0/10 died)
2. **The estimated LD_{50} is** > 2000 mg/kg
3. **Tox. Category:** III **Classification:** Acceptable

Procedure (including deviations from 870.1200): "On day -1, the fur was removed from the dorsal trunk area of the animals chosen for the limit test... The clipped area was approximately 10% of the animal's body surface area... On the following day (day 0), the test article was administered dermally to approximately 10% of the body surface area. The test article was spread evenly over the test area and held in contact with the skin with an appropriately sized 4-ply porous gauze dressing backed with a plastic wrap (occlusive binding). Removal and ingestion of the test article was prevented by placing an elastic wrap over the trunk and test area. The elastic wrap was further secured with adhesive tape... After dosing, collars were placed on the animals and remained in place until removal on study day 3. After an approximate 24-hour exposure period, the gauze dressing, plastic and elastic wrap were removed and the corners of the test site delineated using a marker. Residual test article was removed using gauze moistened with deionized water followed by dry gauze."

Results:

Dosage (mg/kg)	Number of Deaths/Number Tested		
	Males	Females	Combined
2000	0/5	0/5	0/10

Observations: "Clinical abnormalities observed during the study included transient incidences of dark material around the facial area. Slight dermal irritation was noted at the site of test article

application. Due to the red staining of the test sites, interference with the erythema scores may have occurred. However, since the dermal irritation noted was slight and resolved in all animals by study day 11, any interference that may have occurred did not effect [sic] the outcome of this study."

All rabbits had body weight gains in the periods from day 0 to 7, and from 7 to 14.

Gross Necropsy: "No significant gross internal findings..."

DATA REVIEW FOR ACUTE INHALATION TOXICITY TESTING (870.1300, formerly §81-3)

Product Manager: 21
MRID No.: 44904506

Reviewer: Byron T. Backus, Ph.D.
Study Completion Date: September 5, 1997
Laboratory Report No.: 3523-97

Testing Facility: Stillmeadow, Inc., Sugar Land, TX 77478
Author: J. E. Bennick
Quality Assurance (40 CFR §160.12): Included (p. 5)

Test Material: EXP 80472H; Batch #: 6STGX100 RTP Log #: 032014; a pink liquid. According to the certificate of analysis (refer to p. 20 of MRID 44904506) the test material contained 2.38% of the active ingredient triticonazole.

Species: Rat: Albino; HSD: Sprague-Dawley
Age: "Young adult (8-12 wks)"
Weight: Males: 280-324 g; Females: 207-219 g.
Source: Harlan Sprague Dawley, Inc., Indianapolis, IN

Conclusion:

1. **LC_{50} (mg/L):**
   Males: > 3.25 mg/L (0/5 died)
   Females: > 3.25 mg/L (0/5 died)
   Combined: > 3.25 mg/L (0/10 died)
2. **The estimated LC_{50} is** > 3.25 mg/L
3. **Tox. Category:** IV **Classification**: Acceptable

Procedure (including deviations from 8700.13): Exposure was nose-only. "The animals were exposed to an aerosol generated from the undiluted test substance for a period of four hours... At the termination of the exposure period, the animals were washed and returned to their stock laboratory cages..."

Exposure Concentration mg/L (Analytically Determined)	Number of Deaths/Number Tested		
	Males	Females	Combined
3.25	0/5	0/5	0/10

Clinical Observations: ""Prominent in-life observations included activity decrease and piloerection in both sexes. Animals were asymptomatic by Day 2." One male had a considerable drop in body weight from Day 0 to Day 7 (from 324 to 292 g), but had recovered to 302 g at the end of the observation period. All other animals had reasonably good weight gains in the periods Day 0 to 7 and from Day 7 to 14.

Gross Necropsy Findings: One female had small dark spots in lungs.

Chamber Atmosphere			
Gravimetric Conc.	**Nominal Conc.**	**MMAD[a] (µm)**	**GSD[a]**
3.25 mg/L	101.2 mg/L	6.090, 2.655[b]	7.031, 12.414

[a]Two measurements for particle size distribution taken during exposure (at 1.75 and 3.75 hrs).
[b]Only a cumulative 44.95% of particles were reported to have had an effective cutoff diameter of 3.3 µm at 3.75 hrs, suggesting that the MMAD reported for 3.75 hrs may not be correct.

Other Information: At 1.75 hrs, 28% (by mass) of the particles had an effective cutoff diameter of 3.3 µm. At 3.75 hrs, 44.95% had an effective cutoff diameter of 3.3 µm [see note above].

Chamber Environment [a]	
Chamber Volume	500 L
Airflow	133 LPM
Temperature	70-72°F
Relative Humidity	90-91%

[a] Nose-only exposure

DATA REVIEW FOR PRIMARY EYE IRRITATION TESTING (870.2400, previously §81-4)

Product Manager: 21
MRID No.: 44904507

Reviewer: Byron T. Backus, Ph.D.
Study Completion Date: August 21, 1997
Laboratory Report No.: 3147.234

Testing Facility: Springborn Laboratories, Inc. (SLI), Spencerville, OH
Author: D. A. Douds
Quality Assurance (40 CFR §160.12): Included (p. 4)

Test Material: EXP 80472H; Lot No. : 6STGX100, a dark pink liquid, with a density of 1.08 g/mL; according to the certificate of analysis (p. 20) this contained 2.38% triticonazole
Dosage: 0.1 mL
Species: Rabbit; New Zealand White
Age: "Adult"
Weight: Males: 2881 - 2987 g; Females: 2780 - 3227 g
Source: Myrtle's Rabbitry, Thompson Station, TN

Conclusion:
1. **Toxicity Category:** III (all "positive effects" cleared by 48 hours)
2. **Classification**: Acceptable

Procedure (including deviations from 870.2400): The test article was instilled into the conjunctival sac of the right eye of each animal..." Six eyes remained unwashed, while three were rinsed with physiological saline starting 30 seconds after installation.

Observations	Number "positive"/number tested			
	Hours			
	1	24	48	72[b]
	Unwashed eyes			
Corneal Opacity	0/6	0/6	0/6	0/6
Iritis	1/6	0/6	0/6	0/6
Conjunctivae:				
Redness[a]	4/6	1/6	0/6	0/6
Chemosis[a]	0/6	0/6	0/6	0/6
Discharge[a]	0/6	0/6	0/6	0/6

[a]Score of 2 or more considered to be positive
[b]All animals showed red staining around the eye (presumably from dye effect of test material)

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Observations	Number "positive"/number tested			
	Hours			
	1	24	48	72[b]
	Washed eyes			
Corneal Opacity	0/3	0/3	0/3	0/3
Iritis	2/3	0/3	0/3	0/3
Conjunctivae:				
Redness[a]	1/3	0/3	0/3	0/3
Chemosis[a]	0/3	0/3	0/3	0/3
Discharge[a]	0/3	0/3	0/3	0/3

[a]Score of 2 or more considered to be positive

[b]All animals showed red staining around the eye (presumably from dye effect of test material)

DATA REVIEW FOR PRIMARY SKIN IRRITATION TESTING (870.2500, previously §81-5)

Product Manager: 21
MRID No.: 44904508

Reviewer: Byron T. Backus, Ph.D.
Study Completion Date: August 21, 1997
Laboratory Report No.: 3147.235

Testing Facility: Springborn Laboratories, Inc. (SLI), Spencerville, OH
Author: D. A. Douds
Quality Assurance (40 CFR §160.12): Included (p. 4)

Test Material: EXP 80472H; Lot No. : 6STGX100, a dark pink liquid, with a density of 1.08 g/mL; according to the certificate of analysis (p. 18) this contained 2.38% triticonazole
Dosage: 0.5 mL
Species: Rabbit; Albino, New Zealand White
Age: young adult
Weight: Males: 2002 - 2806 g; Female: 2423 g
Source: Myrtle's Rabbitry, Thompson Station, TN

Conclusion:

1. **Toxicity Category:** IV (Primary Irritation Index = 1.00)
2. **Classification**: Acceptable

Procedure (including deviations from 870.2500): The test article was administered under a 1" x 1" square 4 ply gauze patch. "The gauze patch was held in contact with the skin at the cut edges with a nonirritating tape. Removal and ingestion of the test article was prevented by placing an elastic wrap over the trunk and test area (semi-occlusive binding). The elastic wrap was then further secured with adhesive tape around the trunk at the cranial and caudal ends. After dosing, collars were placed on each animal and remained in place until removal on day 3. After a four-hour exposure period, the elastic wrap and gauze patch were removed from each animal and the corners of the test site delineated using a marker. Residual test article was removed using gauze moistened with deionized water followed by dry gauze."

Results: At one hour, all sites scored "1" for erythema and "1" for edema. At 24 hrs, all sites scored "1" for erythema; 1/6 scored "1" for edema and the remaining 5 scored zero. At 48 hrs 5/6 scored "1" for erythema and 1/6 scored "0." All sites scored zero for edema at 48 and 72 hrs. All sites scored zero for erythema at 72 hours.

Special Comments: For three sites it is stated that "Red staining may have interfered with dermal [erythema] scoring. However, due to the rapid resolution of the dermal irritation it was not considered to have affected the overall irritation score."

DATA REVIEW FOR DERMAL SENSITIZATION TESTING (870.2600, formerly §81-6)

Product Manager: 21
MRID No.: 44904509

Reviewer: Byron T. Backus, Ph.D.
Study Completion Date: August 21, 1997
Project No.: 3147.236

Testing Facility: Springborn Laboratories, Inc. (SLI), Spencerville, OH
Author: D. A. Douds
Quality Assurance (40 CFR §160.12): Included (p. 4)

Test Material: EXP 80472H; Lot No. : 6STGX100, a dark pink liquid, with a density of 1.08 g/mL; according to the certificate of analysis (p. 20) this contained 2.38% triticonazole
Positive Control Material: 1-chloro-2,4-dinitrobenzene (DNCB)
Species: Guinea pig; albino, Hartley-derived
Age: "young adult"
Weight: Males: 416-475 g; Females: 341-428 g
Source: Harlan Sprague Dawley, Inc., Haslett, Michigan
Method: Modified Buehler Design

Conclusion:

1. **There is no indication that this product is a dermal sensitizer.**
2. **Classification**: Acceptable

Procedure (including deviations from §870.2600): On the basis of findings in a range-finding study, ten animals (5M, 5F) received three induction exposures to the undiluted test material. "A dose of 0.3 mL of the test article was placed on a Hilltop chamber backed by adhesive tape (occlusive patch). The chambers were then applied to the clipped surface as quickly as possible." Inductions were on days 0, 7 and 13, and were made to the left side of the animals.

Following a 2-week rest period, the previously induced animals, as well as a group of 10 unpreviously challenged guinea pigs, were challenged with undiluted test material on the right side.

All sites were scored at 24 and 48 hours after each induction application and after the challenge application.

Results: No irritation was observed in any of the guinea pigs recieving induction treatments either following any of the induction treatments or following challenge. Two guinea pigs from the naive control group scored "±" at 24 hours following treatment, but they scored zero at 48 hrs. The positive control group showed reactions following the second and third induction treatments and following challenge. The positive control study was initiated on April 29, 1997 and concluded on May 29, 1997; the study with the test material concluded on July 4, 1997.

DATA REVIEW FOR ACUTE ORAL TOXICITY TESTING (870.1100, formerly §81-1))

Product Manager: 21
MRID No.: 44904504

Reviewer: Byron T. Backus, Ph.D.
Study Completion Date: May 28, 1999
Laboratory Report No.: 3147.264

Testing Facility: Springborn Laboratories, Inc. (SLI), Spencerville, OH
Author: G. A. Douds
Quality Assurance (40 CFR §160.12): Included (p. 4)

Test Material: RPA 406341; Batch No. BESS0599B; a white powder; from a letter of January 31, 2000, from the registrant: "RPA 406341, along with RPA 404766 and RPA 404866, are hydroxy metabolites of the parent triticonazole material which are found both in plant and animal matrices. RPA 406341 is the metabolite found in higher quantities than the other two and it was therefore decided...that additional testing would be needed to determine the toxicological significance of this metabolite, if any..."

Species: Rat; Hsd: Sprague-Dawley® SD®
Age: "Young adult" (Males: approximately 9 weeks old; Females: approximately 12 weeks old)
Weight (fasted): Males: 259-282 g; Females: 218-235 g
Source: Harlan Sprague Dawley, Inc.

Conclusion:

1. **LD_{50} (mg/kg):**
   Males: >2000 mg/kg (0/5 animals died)
   Females: >2000 mg/kg (1/5 animals died)
   Combined: >2000 mg/kg (1/10 animals died)
2. **The estimated LD_{50} is** >2000 mg/kg
3. **Tox. Category:** III

Classification: Unacceptable: the test material is inadequately characterized as to structure and purity. The study can be upgraded to acceptable with this information.

Procedure (including deviations from 870.1100): "On day 0, the test article was administered orally as a single dose using a ball tipped stainless steel gavage needle attached to a syringe..." The test material was mixed with corn oil (at a 50% w/v concentration) before administration. The rats received a dose volume of 4.0 mL/kg of the resulting suspension."

Results:

Dosage (mg/kg)	Number of Deaths/Number Tested		
	Males	Females	Combined
2000[a]	0/5	1/5	1/10

[a]The test material was administered as 4.0 mL/kg of a 50% w/v suspension in corn oil

Observations: One female died on day 8. "The most notable clinical abnormalities observed during the study included decreased activity, decreased defecation, eyelids partially closed, dark material around the facial area, soft/mucoid stools, fecal stain, feces small in size, rough haircoat, piloerection, dehydration, hunched posture, decreased food consumption and nasal discharge. Clinical abnormalities cleared by study day 4 for males and by study 9 for females."

Four females lost weight in the period from day 0 to day 7.

Gross Necropsy: "In the animal that died, the only significant gross internal finding observed was body fat depletion. No significant gross internal findings were observed at necropsy on study day 14 for the remaining animals."

ACUTE TOX ONE-LINERS

1. **DP BARCODE:** D269497
2. **PC CODE:** 125620 [Triticonazole]
3. **CURRENT DATE:** November 1, 2000
4. **TEST MATERIAL:** EXP 80472H; Lot No. : 6STGX100, a dark pink liquid, with a density of 1.08 g/mL; which is reported to have contained 2.38% triticonazole; Note: proposed label for 264-ANG CHARTER™ BRAND TRITICONAZOLE FUNGICIDE states 25.9% Triticonazole, but CSF indicates 2.59%.

Study/Species/Lab Study #/Date	MRID	Results	Tox Cat	Core Grade
Acute oral toxicity/rat/Springborn Laboratories, Inc. (SLI)/3147.232/ AUG-21-1997	44904503	LD_{50} > 5000 mg/kg (M, F, combined), no mortalities at this dose level; only clinical abnormality was red colored feces (through day 4)	IV	A
Acute dermal toxicity/rabbit/ Springborn Laboratories, Inc. (SLI)/3147.233/AUG-21-1997	44904505	LD_{50} > 2000 mg/kg (males, females, combined); no mortalities at this dose. Slight dermal irritation, red staining at application site.	III	A
Acute inhalation toxicity/rat/ Stillmeadow Inc./3523-97/SEP-05-1997	44904506	LC_{50} > 3.25 mg/L (males, females, combined); no mortalities at this dose. No significant toxicity.	IV	A
Primary eye irritation/rabbit/ Springborn Laboratories, Inc. (SLI)/3147.234/AUG-21-1997	44904507	1/6 unwashed, 0/3 washed eyes were positive for conjunctival irritation at 48 hrs. No "positive effects" at 72 hrs.	III	A
Primary dermal irritation/rabbit/ Springborn Laboratories, Inc. (SLI)/3147.235/AUG-21-1997	44904508	Primary irritation index = 1.00, with all sites scoring zero for erythema and edema at 72 hrs.	IV	A
Dermal sensitization/guinea pig/ Springborn Laboratories, Inc. (SLI)/3147.236/AUG-21-1997	44904509	No indications of a sensitization response in a modified Buehler assay.	–	A

Core Grade Key: **A =Acceptable, S = Supplementary, U = Unacceptable, V = Self Validated**

1. **DP BARCODE:** D269497
2. **PC CODE:** [metabolite of Triticonazole]
3. **CURRENT DATE:** November 1, 2000
4. **TEST MATERIAL:** RPA 406341; Batch No. BESS0599B; a white powder; from a letter of January 31, 2000, from the registrant: "RPA 406341, along with RPA 404766 and RPA 404866, are hydroxy metabolites of the parent triticonazole material which are found both in plant and animal matrices. RPA 406341 is the metabolite found in higher quantities than the other two and it was therefore decided...that additional testing would be needed to determine the toxicological significance of this metabolite, if any..."

Study/Species/Lab Study #/Date	MRID	Results	Tox Cat	Core Grade
Acute oral toxicity/rat/Springborn Laboratories, Inc. (SLI)/3147.264/ MAY-28-1999	44904504	LD_{50} > 2000 mg/kg (M, F, combined), one mortality on day 8 in a female; clinical abnormalities cleared by study day 4 for males and by study 9 for females. Four females lost weight in the period from day 0 to day 7. Female that died had depleted body fat. Test material is not adequately characterized insofar as its structure and purity are concerned; with this information the study can be upgraded to acceptable.	III	U

Core Grade Key: **A =Acceptable, S = Supplementary, U = Unacceptable, V = Self Validated**