

3-29-91



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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA Reg. No./File Symbol 524-440

Expedite Grass + Weed Plus

FROM: Sheila A. Moats, Ph.D. *MM 2/12/91*
Precautionary Review Section *E 3/29/91*
Registration Support Branch
Registration Division (H75-05C)

TO: Taylor/Allen (PM 25)
Fungicide Herbicide Branch
Registration Division (H75-05C)

APPLICANT: Monsanto Company
Suite 1100
700 14th Street, N.W.
Washington D.C. 20005

FORMULATION FROM LABEL:

Active Ingredient(s):	% by wt.
<u>Glyphosate N-(phosphonomethyl)glycine in the</u>	<u>11.9</u>
<u>form of its isopropylamine salt</u>	<u>11.4</u>
<u>Oryzalin</u>	<u>76.7</u>
Inert Ingredient(s):	<u>76.7</u>
Contains <u>[redacted] petroleum distillates</u>	Total 100.0%

INERT INGREDIENT INFORMATION IS NOT INCLUDED

Background

The Monsanto Company submitted acute oral, acute dermal, acute inhalation, primary eye, and skin irritation and dermal sensitization studies to support registration of Expedite Grass and Weed Plus. MRID Nos used were: 417017-02 - 07.

Recommendations

1. The acute toxicity studies submitted by Monsanto Company are acceptable to ASB/PAS.
2. No further acute toxicity tests are required.

Labeling

1. The CAUTION signal word is acceptable.
2. Precautionary Statements add "Remove contaminated clothing and wash before reuse" at the end of the statement.
3. The Statement of Practical Treatment is acceptable.

524-020
DATA REVIEW FOR ACUTE ORAL TOXICITY TESTING (§81-1)

Product Manager: (25)
MRID No.: 417617-02
Testing Facility: Bio/dynamics Inc.
Author(s): Blaszcak, D.L.
Species: Sprague Dawley rats
Age: Young adults
Weight: 258 - 355
Source: Charles River Breeding Labs Inc. Kingston N.Y.
Test Material: Expedite Grass Weed Plus
Quality Assurance (40 CFR §160.12): Adequate
Reviewer: S. Moats
Report Date: 1/24/91
Report No. BD-90-276/5840-9c

Conclusion:

- LD₅₀ (mg/kg): Males = ; Females = ; Combined = > 5000 mg/kg.
- The estimated LD₅₀ is
- Tox. Category: IV Classification: Guidelines.

Procedure (Deviations From §81-1): 50 ♂ & 5 ♀ rats were used for the study. The animals were administered the undiluted test material by oral gavage. Animals were observed at 1, 2 + 4 hrs after dosing + daily thereafter for 14 days.

Results:

DOSAGE (mg./kg)	Reported Mortality		
	(NUMBER KILLED/NUMBER TESTED)		
	Males	Females	Combined
5000	0/5	0/5	0/10

Symptomology & Gross Necropsy Findings:

There were no mortalities.
Clinical signs were minimal, such as urinary & fecal staining etc.
Necropsy findings were unremarkable.

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

Product Manager: (25)
 MRID No.: 417017-03
 Testing Laboratory: Bio/dynamics Inc.
 Author(s): Blaszcak, D.L.
 Species: Sprague Dawley - Rats
 Sex: ♂ + ♀ Wt.: 223 - 258 grams
 Test Material: Expedite Grass + Weed Plus
 Quality Assurance (40 CFR §160.12): Adequate

Reviewer: S. Moats
 Report Date: 1/28/91
 Report No: BD-90-276/5841-9

Summary:

1. LD₅₀ (mg/kg): Males = _____; Females = _____; Combined = > 5000 mg/kg.
2. The estimated LD₅₀ is _____
3. Tox. Category: IV. Classification: Guidelines

Procedure (Deviations From §81-2): 5♂s + 5♀s recd; undiluted doses of the test subs. at a dose level of 5000 mg/kg B.W. Prior to dosing the trunk area was clipped of fur to expose approx. 10% body surface. The test material was applied on to the exposed skin + covered with gauze. The gauze was covered with plastic + secured with tape. After a 24-hr exposure period the sites were cleansed of residues. Observers for toxicity + mortality were made at 1, 2, + 4 hrs after treatment + daily thereafter for 14 days.

DOSAGE (mg/kg)	Reported Mortality (NUMBER KILLED/NUMBER TESTED)		
	Males	Females	Combined
5000	0/5	0/5	0/10

Symptomology & Gross Necropsy Findings:

There were no mortalities.
 Only clinical sign observed were red nasal discharge on the day of dosing.
 Gross necropsy findings showed no abnormalities.

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

Product Manager: (25)

MRID No.: 417017-04

Testing Laboratory:

Author(s): Bechtel, C.L.

Species: Sprague Dawley - albino rats

Sex: ♂ + ♀

Weight: ♂ 244 gms ♀ 163 gms

Source: Charles River Breeding Lab, Portage MI

Test Material: Expedite Grass + Weed plus

Quality Assurance (40 CFR §160.12): Adequate

Reviewer: S. Moats

Report Date: 2/5/91

Report No. ML-90-278/EHL 9012

Summary:

1. LC₅₀ (mg/kg): Males = _____; Females = _____; Combined = 70.5 mg/L.
2. The estimated LC₅₀ is _____
3. Mean Concentration: 0.5 mg/L.
4. Tox. Category: III. Classification: Guideline

Procedure (Deviations From §81-2): 5♂ + 5♀ rats were housed in a stainless steel chamber during the 4-hr. exposure period. Due to the nature of the test material which tends to clog a no. of generating system were tested + the double flask system with a Laskin nebulizer + a particle size discriminator was chosen to generate the test material. Observations were made for 14 days. Air flow, temp. + humidity were monitored + recorded every 30 mts. O₂ level determined once with an electronic sensor. High pressure liquid chromatography was used to analytically determine the concentration of the test material. Cascade impactor was used for particle sizing.

Exposure Concentration (mg/L)	Reported Mortality (NUMBER KILLED/NUMBER TESTED)		
	Males	Females	Combined
0.5 mg/L	0/5	0/5	0/10

Symptomology & Gross Necropsy Findings:

There were no mortalities. All animals appeared normal + gained weight. Gross necropsy findings showed no abnormalities. Due to the physical nature of the test subs. a high concentration atmosphere with particles less than 1.0 μ in size could not be achieved.

0% particles less than 10 μ = 97.9.

0% " " " 1 μ = 7.0

MMA D = 2.6 μ (GSD 1.9).

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DATA REVIEW FOR ACUTE EYE IRRITATION TESTING (§81-4)

Product Manager: (25)
 MRID No.: 417017-05
 Testing Laboratory: Bio/dynamics Inc.
 Author(s): Alaszak, D.L.
 Species: New Zealand White - Rabbits.
 Sex: ♂ & ♀. Weight:
 Source: Summit View Farms, Hazleton, PA.
 Dosage: 0.1 ml.
 Test Material: Expedite Grass & Weed Plus.
 Quality Assurance (40 CFR §160.12): Adequate

Summary:

Tox. Category: IV Classification: Guidelines

Procedure (Deviation From §81-4): A dose of 0.1 ml of the undiluted test material was instilled into the conjunctival sac of the right eye of each of 6 rabbits. The left eye served as the untreated control. The eyes remained unwashed after application, however the treated eyes were rinsed after 24 hrs. to remove residual material. Evaluation for irritation was made at 1, 24, 48, + 72 hours after treatment.

	Observations (number "positive"/number tested)							
	Hour	Days						
	1	1	2	3	4	7	14	21
Cornea								
Opacity	0/6	0/6	0/6	0/6				
Iris	0/6	0/6	0/6	0/6				
Conjunctivae								
Redness	0/6	0/6	0/6	0/6				
Chemosis	0/6	0/6	0/6	0/6				
Discharge	4/6	0/6	0/6	0/6				

Comments: Minimal effects abating in less than
24-hours.

DATA REVIEW FOR SKIN IRRITATION TESTING (§81-5)

Product Manager: (25)
 MRID No.: 4/7017-06
 Testing Laboratory: Bio/dynamics INC.
 Author(s): Blaszcak, D.L.
 Species: New Zealand White - Rabbits.
 Age: Young adults.
 Sex: M + F.
 Weight: _____
 Dosage: 0.5 ml.
 Test Material: Expedite Grass + Weed Plus
 Quality Assurance (40 CFR §160.12): Adequate.

Reviewer: S. Moats
 Report Date: 2/11/91.
 Report No. B7-90-276/5842-90.

Summary:

The Primary Irritation Index = 0.7.

Toxicity Category: IV.

Classification: Guide lines

Procedure (Deviations From §81-5): 6 rabbits were used for the study. Day prior to dosing each animal was prepped by having the dorsal trunk area clipped free of fur to expose 10% of the body surface. The test material was applied beneath a 1x1 inch gauze patch + placed on each of 2 test sites + held in place with tape. Gauze was wrapped around the trunk + covered with porous tape to semi-occlude the test sites. After a 4-hr. exposure period, the wrapping + patches were removed + the sites gently washed to rid of residues. The sites were evaluated for irritation at 30 mts, 24, 48 + 72 hrs after Results: patch removal.

The test article is a slight irritant.

Special Comments:

DATA REVIEW FOR SKIN SENSITIZATION TESTING (§81-6)

Product Manager: (25)
 MRID No.: 417017-07
 Testing Laboratory: Bio/dynamics Inc.
 Author(s): Blaszcak, D.L.
 Species: Hartley strain albino - Guinea Pigs
 Sex: 25 + 95 Weight: 308 - 407 gms (60 + 95)
 Source: Hazleton Research Animals Inc., Denver, PA.
 Test Material: Expedite Grass + Weed Plus
 Positive Control Material: DNCB - (Cited previous study)
 Quality Assurance (40 CFR §160.12): Adequate.

Method: Modified Buchler.

Summary:

1. This product is not a dermal sensitizer.
2. Classification: Guide lines.

Procedure (Deviation From §81-6): Range finding study showed that the undiluted test material was found to be non-irritating, so a 100% conc. was used for both induction + challenge phases. Prior to dosing the fur on the back + sides were clipped + the test material was placed beneath a Hilltop chamber + applied to the test site. The chamber was covered with plastic + secured with an elastic bandage, wrapped around the animals torso. After a 6-hr. exposure period the chamber was removed + the skin cleansed of residues. This process was repeated twice for 2 weeks for a total of 3 exposures. The animals were challenged at 14 days after the last induction exposure at a second site. After a 6-hr. exposure the chambers were removed + the skin cleansed of residues. To differentiate dermal irritation fr. sensitization naive animals were subjected to the same challenge procedures as those which recd. the induction doses. 7 days after the challenge exposure, the animals were re-challenged at a previously untreated site. After a 6-hr. exposure period, the chambers were removed + the skin cleansed of residues. A previously untreated group of 10 animals was used as an irritation control group for re-challenge.

Conclusion - Following challenge dose administration, a slight erythema was observed in 4 out of 10 animals, which persisted thru 48 hrs. No response was noted in the naive controls. A rechallenge, following the challenge applic. showed that the animals which responded at challenge showed no response at rechallenge. Faint erythema at re-challenge was lower than at challenge. No responses were observed in the re-challenge of the naive controls.

100% concentration of the test material did not produce a sensitizing reaction.

REG No 524-UUO
Expedite Grass + Weed Plus.

Tox Chem No. 471AAB, 623A

Pile Last Updated

Current Date 2/11/91.

Glyphosate 471AAB
Oxyzin 623A

Study/Lab/Study #/Date

Material

EPA
Accession
No.

Results:
LD50, LC50, PIS, NOEL, LEL

TOX. CONC. Grade
Cat. Doc. No.

Acute oral LD-50, Rats
Bio/dynamics Inc.

BD-90-276/5840-90 10/10/90

Acute dermal LD-50, Rats
Bio/dynamics Inc.

AD-90-276/5841-90 10/10/90

Acute inhalation LC-50, Rats
Monsanto Environmental
Health Lab. St. Louis, MO.

ML-90-278/EHL90122 10/1/90

Eye irritation, Rabbits
Bio/dynamics Inc.

BD-90-276/5843-90 10/10/90

Skin irritation, Rabbits.
Bio/dynamics Inc.

BD-90-276/5842-90 10/10/90

Skin sensitization,
Guinea Pigs
Bio/dynamics Inc.

BD-90-276/5841-90 10/10/90

Expedite Grass + Weed Plus	417017 -02	LD50 > 5000 mg/kg	IV	Guideline
" "	417017 -03	LD50 > 5000 mg/kg	IV	Guideline
" "	417017 -04	LC50 > 0.5 mg/L	III	Guideline
" "	417017 -05	Minimal effects clearing in less than 24-hrs.	IV	Guideline
" "	417017 -06	The test article is a mild or slight irritant.	IV	Guideline
" "	417017 -07	It is not a sensitizer.	—	Guideline