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. 3/29/91
Precautionary Review Section
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.
Glyphosate N-(phosphonomethyl) glycine in the form of its isopropylamine salt	11.9
Oryzalin	11.4
Inert Ingredient(s):	76.7
Contains [redacted] petroleum distillates 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 RSB/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.

524-442

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:

1. LD_{50} (mg/kg): Males = ____; Females = ____; Combined = > 5000 mg/kg.
2. The estimated LD_{50} ~~is~~ ____
3. Tox. Category: IV. Classification: Guidelines.

Procedure (Deviations From §81-1): 5 ♂ + 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:

Reported Mortality

DOSAGE (mg/kg)	(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.

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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: 5♂s + 5♀s 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. LD_{50} (mg/kg): Males = ____; Females = ____; Combined = >5000 mg/kg
2. The estimated LD_{50} 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. Observations for toxicity + mortality were made at 1, 2, + 4 hrs after treatment + daily thereafter for 14 days.

Reported Mortality

DOSAGE (mg/kg)	(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 was nasal discharge recd on the day of dosing.

Gross necropsy findings showed no abnormalities.

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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: 5♂ + 5♀. Weight: ♂s 244 gms ♀s 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. LC_{50} (mg/kg): Males = _____; Females = _____; Combined = >0.5 mg/L.
2. The estimated LC_{50} 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.

Reported Mortality

Exposure Concentration (mg/L)	(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

0/0 particles less than 10 μ = 97.9.
0/0 " " " 1 μ = 7.0
MMAD = 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): Blaszak, D.L.
Species: New Zealand White - Rabbits.
Sex: ♂s & ♀s. Weight:
Source: Summit View Farms, Hazleton, PA.
Dosage: 0.1 ml.
Test Material: Expedite Grass+Weed Plus.
Quality Assurance (40 CFR §160.12): Adequate

Reviewer: S. Moats
Report Date: 2/11/91
Report No. BD-276/583-90

Summary:

Tox. Category: IV Classification: Guidelines.

Procedure (Deviation From §81-4): A dose of 0.1ml of the undilated 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 applic., 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.

Results:

	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 clearing in less than 24-hours.

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

Product Manager: (25)
MRID No.: 41707-06
Testing Laboratory: Bio/dynamics Inc.
Author(s): Blaszcak, D.L.
Species: New Zealand White - Rabbits.
Age: Young adults.
Sex: ♂s + ♀s.
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. BD-90-276/5842-90.

Summary:

The Primary Irritation Index = 0.7.

Toxicity Category: IV

Classification: Guidelines

Procedure (Deviations From §81-5): 6 rabbits were used for the study. Day prior to dosing each animal was prepd. 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 wrappings + 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 patch removal.

Results:

The test article is a slight irritant.

Special Comments:

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

Product Manager: (25) Reviewer: S. Moats
MRID No.: 417017-07 Report Date: 2/11/91
Testing Laboratory: Bio/dynamics Inc. Report No. BD-90-276/5844-90
Author(s): Blaszcak, D. L.
Species: Hartley strain albino - Guinea Pigs (♂s + ♀s).
Sex: ♂s + ♀s Weight: 308 - 407 gms
Source: Hazleton Research Animals, Inc., Denver PA.
Test Material: Expedite Grass + Weed Plus data from
Positive Control Material: DNCB - (cited, previous study)
Quality Assurance (40 CFR §160.12): Adequate.

Method: Modified Buehler.

Summary:
1. This product ~~is~~ (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 rechallenged 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. Foll: 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, foll: 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.

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REG No 524-UUO
Expedite Grass + Weed Plus.

/ Tox Chem No. 471AAB, 623A File Last Updated _____ Current Date 2/11/91.

Glyphosate 471AAB.
Oxyzalin 623A.

Study/Lab/Study #/Date	Material	EPA Accession No.	Results: LD_{50}, LC_{50}, PIS, NOEL, LEL	TOX. Cat.	CORE Grade Doc. No.
Acute oral LD-50, Rats Bio/dynamics Inc. # BD-90-276/5840-90 10/10/90	Expedite Grass + Weed Plus	417017 -02	LD50 > 5000 mg/kg	IV	Guidelines
Acute dermal LD-50, Rats Bio/dynamics Inc. # BD-90-276/5841-90 10/10/90	" " "	417017 -03	LD50 > 5000 mg/kg	IV	Guideline
Acute inhalation LC-50, Rats Monsanto Environmental Health Lab. St. Louis, MO. # ML-90-278/EHL.90122 10/1/90	" " "	417017 -04	LC50 > 0.5 mg/L	III	Guidelir
Eye irritation, Rabbits Bio/dynamics Inc. # BD-90-276/5843-90 10/10/90	" " "	417017 -05	Minimal effects clearing in less than 24-hrs.	IV	Guideline
Skin irritation, Rabbits. Bio/dynamics Inc. # BD-90-276/5842-90. 10/10/90	" " "	417017 -06	The test article is a mild or slight irritant.	IV	Guideli
Skin sensitization, Guinea Pigs Bio/dynamics Inc. BD-90-276/5844-90 10/10/90	" " "	417017 -07	It is not a sensitizer.	—	Guideli