

Date Out EFB: MAY 20 1981

To: Product Manager Mountfort (23)  
TS-767

From: Dr. Willa Garner lll  
Chief, Review Section No. 1  
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 352-376

Chemical: fosamine ammonium salt

Type Product: Herbicide

Product Name: Krenite

Company Name: Dupont

Submission Purpose: support aerial application on drainage ditch banks

ZBB Code: other

ACTION CODE: 305

Date in: 4/9/81

EFB # 812

Date Completed: MAY 20 1981

TAIS (level II)                      Days

Deferrals To:

63

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Ecological Effects Branch

Residue Chemistry Branch

Toxicology Branch

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Five Minute Ammonium Nitrate

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Page      is not included in this copy.

Pages 3 through 5 are not included.

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The material not included contains the following type of information:

- Identity of product inert ingredients.
  - Identity of product impurities.
  - Description of the product manufacturing process.
  - Description of quality control procedures.
  - Identity of the source of product ingredients.
  - Sales or other commercial/financial information.
  - A draft product label.
  - The product confidential statement of formula.
  - Information about a pending registration action.
  - FIFRA registration data.
  - The document is a duplicate of page(s)     .
  - The document is not responsive to the request.
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The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

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The water samples were taken from one side of the 20'-wide (6-12" deep) ditch 10 min., 1 hour, and 21 hours after application. The plastic plates were placed from the waters edge to 27 ft. away to determine drift.

### Results

In the Archie, LA study, no significant difference in residue levels were detected (11 to 18 ppm). Similarly, no appreciable difference was noted in the residue deposit (about 75 ppm) on the plastic plates at various distances from the waters edge. Tables 1 and 2 show the study's results.

The Angola, LA study (Table 3) apparently only sampled drift residues on plastic plates. All of the samples, including 0-time, were below dedetectable limits for the analytical method.

Table 4 shows the results of the Natchez, MS Study.

### Conclusion

Krenite residues (11-18 ppm) were present in the ditch water samples (Archie, LA; Table 1), although an earlier statement was made that the aerial application was such that ditch banks only would be treated and that "almost no chemical" would reach the water.

It is not understood in what way the plastic plate study (Archie, LA; Table 2) was designed to demonstrate drift. About the same amount of residue was deposited from the water edge out to 27 ft. At what point would the presence of residue indicate drift?

The Angola, LA study (Table 3) had no dedetectable residues (plastic plate) out to 6 ft. after 0-time, 10 min, and 1 hour. If there were no residues within this short distance along the bank, how would brush control be achieved?

In the Natchez, MS study (plastic plate, Table 4), residues up to 42 ppm (3 ft. from edge) were detected at 0-time after treatment. No residues were detected after 10 min., 1 hour, and 21 hours. Since photodegradation of Krenite does not take place, it is not understood why there are no residues after 0-Time.

## 4.0 Recommendations

Although the studies submitted in support of the request to amend the registered herbicide raised some questions (above), EFB concurs with the proposed addition of aerial application of Krenite to drainage ditch banks to the currently registered label for the following reasons:

1. Krenite is currently registered for use on brush control.
2. Degradation in soil is fairly rapid (T 1/2 is about 2 weeks).

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Table 1.

RESIDUE ANALYSES (Continued)

Archie, Louisiana - Received 11/9/78  
 Treated 9/27/78 (a)  
 Sampled 9/27, 9/28/78

WATER SAMPLES  
 (100 g)

Sample Number	Krenite® Treatment Gals. Product/Acre	Dilute Mixture (GPA)	Pretreatment	Residue (ppm)		
				Time After Application		
				10 mins.	1 hr.	21 hrs.
0	0 - Untreated Control	--	<0.1	--	--	--
I	3.0	20	--	11	17	11
II	3.0	20	--	16	17	18

(a) Two passes, each 1.5 gals. Krenite®/acre at 10 gpa by aircraft at 40 mph (50 ft. swath at 50 ft. altitude)

RESIDUE ANALYSES (Continued)

Table 2.

Archie, Louisiana - Received 11/9/78  
 Treated 9/27/78 (a)  
 Sampled 9/27, 9/28/78

PLASTIC PLATE SAMPLES  
 (78.5 in.<sup>2</sup>/plate)

Number	Sample		Krenite® Treatment Gals. Product/Acre	Dilute Mixture (GPA)	Residue Mixture (ppm)
	Number	Location			
I-1		Water's edge	3.0	20	78
II-1		Water's edge	3.0	20	74
I-2		3' from edge	3.0	20	78
II-2		3' from edge	3.0	20	83
I-3		6' from edge	3.0	20	82
II-3		6' from edge	3.0	20	75
I-4		9' from edge	3.0	20	75
II-4		9' from edge	3.0	20	77
I-5		12' from edge	3.0	20	55
II-5		12' from edge	3.0	20	80
I-6		15' from edge	3.0	20	75
II-6		15' from edge	3.0	20	81
I-7		18' from edge	3.0	20	68
II-7		18' from edge	3.0	20	76
I-8		21' from edge	3.0	20	72
II-8		21' from edge	3.0	20	80
I-9		24' from edge	3.0	20	71
II-9		24' from edge	3.0	20	78
II-10		27' from edge	3.0	20	77

(a) Two passes, each 1.5 gals. Krenite®/acre at 10 gpa by aircraft at 40 mph (50 ft. swath at 50 ft. altitude)

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RESIDUE ANALYSES (100 g Sample)

Table 3.

Angola, Louisiana - Received 10/15/80  
 (West Feliciana Treated 8/23/79  
 Parrish) Sampled 8/23/79

Number	Sample		Krenite® Treatment Gals. of Product/Acre	Dilute Mixture (GPA)	Pre- Treatment	Residue (ppm)		
	Location	0				10 mins.	1 hr.	
I-A	Water's edge		0 - Untreated Control	--	<0.005	--	--	--
I-B	3' from edge		0 - Untreated Control	--	<0.005	--	--	--
I-C	6' from edge		0 - Untreated Control	--	<0.005	--	--	--
II-A	Water's edge.		3.0	30	--	<0.005	<0.005	<0.005
II-B	3' from edge		3.0	30	--	<0.005	<0.005	<0.005
II-C	6' from edge		3.0	30	--	<0.005	<0.005	<0.005
III-A	Water's edge		3.0	30	--	<0.005	<0.005	0.010
III-B	3' from edge		3.0	30	--	<0.005	<0.005	<0.005
III-C	6' from edge		3.0	30	--	<0.005	<0.005	<0.005

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RESIDUE ANALYSES (Continued)

Table 4.

Natchez, Mississippi - Received 10/15/80  
 Treated 9/8/79  
 Sampled 9/8, 9/9/79

Sample		LOCATION I or A									
Number	Location	Krenite® Treatment Gals. of Product/Acre	Dilute Mixture (GPA)	Pre- Treatment	Residue (ppm)			Residue (ppm)			
					0	10 mins.	1 hr.	0	1 hr.	24 hrs	
1	Water's edge	0 - Untreated Control	--	<0.005	--	--	--	--	--	--	--
2	3' from edge	0 - Untreated Control	--	<0.005	--	--	--	--	--	--	--
3A, 4A, 7A, 9A	Water's edge	3.0	30	--	28	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4A, 6A, 8A, 10A	3' from edge	3.0	30	--	42	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
LOCATION II or B											
3B, 5B, 7B, 9B	Water's edge	3.0	30	--	36	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4B, 6B, 8B, 10B	3' from edge	3.0	30	--	0.17	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
LOCATION III or C											
3C, 5C, 7C, 9C	Water's edge	3.0	30	--	5.8	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4C, 6C, 8C, 10C	3' from edge	3.0	30	--	2.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005



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3. Degradation in natural waters would probably be relatively rapid too (soil microbes would be present). No half-life value for natural waters in our files. Company states "readily degraded in natural waters".
4. Product will be used in inaccessible (non-populated) areas.
5. Product shows no significant tendency to leach or run-off.
6. We defer to EEB for significance of residues in water to wildlife.

*Herbert L. Manning*  
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Review Section #1  
Environmental Fate Branch  
Hazard Evaluation Division

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