

US EPA ARCHIVE DOCUMENT

123301
SHAUGHNESSY NO.

5
REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 5/15/85 OUT 5/17/85

FILE OR REG. NO. 359-706

PETITION OR EXP. PERMIT NO. SF3251

DATE OF SUBMISSION 5/13/85

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RD ACTION CODE/TYPE OF REVIEW 330/Amendment

TYPE PRODUCT(S): I, D, H, F, N, R, S Fungicide

DATA ACCESSION NO(S). _____

PRODUCT MANAGER NO. H. Jacoby (21)

PRODUCT NAME(S) Alliette

COMPANY NAME Rhone-Poulenc, Inc.

SUBMISSION PURPOSE Proposed registration of use on hops

| SHAUGHNESSY NO. | CHEMICAL & FORMULATION | % A.I. |
|-----------------|-------------------------------|------------|
| <u>123301</u> | <u>Aluminum tris (O-ethyl</u> | <u>80%</u> |
| _____ | <u>phosphonate)</u> | _____ |
| _____ | <u>Inert ingredients</u> | <u>20%</u> |
| _____ | _____ | _____ |

EEB Review

100 Submission Purpose and Label

100.1 Submission Purpose and Pesticide Use

The registrant Rhone-Poulenc, Inc., has applied for a permit to use Aliette, a fungicide, on hops to control Downy Mildew.

100.2 Formulation Information

Aluminum tris (O-ethyl phosphonate) 80%
Inerts 20%

100.3 Application Methods, Directions, Rates

(The following information is cited directly from the label)

Hops

When used in conjunction with good cultural management practices, Aliette is effective in controlling Downy Mildew on hops.

Aliette may be applied as a directed foliar spray using ground equipment in sufficient water to insure complete foliage and hops coverage.

| <u>Pest</u> | <u>Rate</u> | <u>Treatment</u> |
|---|--------------|--|
| Downy Mildew (<u>Pseudoperonospora humuli</u>) | 2.5 lbs/acre | 1. When shoots are 6 to 12 inches high. 2. After training when vines are 5 to 6 feet tall. 3. Approximately 3 weeks after second spray and, 4. During bloom dependent on weather conditions favorable for disease development (warm and humid). |

Do not apply within 24 days of harvest.
Do not apply a total of more than 10 lbs/acre per growing season.

100.4 Target Organism

Downy Mildew (Pseudoperonospora humuli) on hops.

100.5 Precautionary Labeling

Environmental Hazard

Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes.

101 Hazard Assessment

Aliette will be marketed for control of Downy Mildew on hops. The maximum application rate of formulated product will be 2.5 lbs per acre. The formulated product contains 80 percent active ingredient. Therefore, the maximum application rate of active ingredient will be 2.0 lbs per acre. It is expected that this product would be used in the principal hops growing areas of Oregon, Washington, and Idaho.

101.2 Likelihood of Adverse Effects to Nontarget Organisms

The active ingredient of Aliette 80% WP, aluminum tris (O-ethyl phosphonate) has a half-life of only 1.5 hours to 20 minutes in the field. It is water soluble and its octanol/water partition coefficient is 2×10^{-3} , indicating very low bioaccumulative potential. Acute toxicity values for small mammals (rat LD₅₀ = 5,400 mg/kg, rabbit LD₅₀ = 2,500 mg/kg) and birds (bobwhite quail LD₅₀ > 8,000 mg/kg) indicate practical nontoxicity. Studies on fish (rainbow trout LC₅₀ = 75.8 ppm and bluegill sunfish LC₅₀ > 150 < 200 ppm) suggest slight toxicity to practical nontoxicity. Studies on daphnids (Daphnia magna) LC₅₀ = 304 ppm) indicate practical nontoxicity.

The following maximum estimated environmental concentrations of Aliette in soil were derived using the methods of Hoerger and Kenaga (1972) and Kenaga (1973). These estimates assume the use of the maximum application rate of 2.0 lbs/acre.

| <u>Environment</u> | <u>Maximum Expected Residues</u> |
|-------------------------------|----------------------------------|
| Short grass | 480 ppm |
| Long grass | 220 ppm |
| Seeds/small insects | 24 ppm |
| Soil (1 inch) | 44.1 ppm |

Under the proposed use, Aliette 80% WP is to be applied at a maximum rate of 2.0 lb ai/acre using ground equipment. The preliminary estimated environmental concentration

for Aliette at this rate in a one-acre farm pond is 1472 ppb (see attached). This EEC is well below aquatic LC50's.

Aliette does not appear to present a hazard to small mammals and birds at this 2.0 lb/acre rate. Expected residue levels on foliage are well below acute toxicity levels.

101.3 Endangered Species Considerations

No potential adverse effect on endangered species is expected to result from the proposed use of this compound due to its low toxicity and short half-life.

101.4 Adequacy of Toxicity Data

The toxicity data are adequate for this use.

101.5 Adequacy of Labeling

The proposed label is acceptable.

102 Classification

The toxicity data indicate that the general use category of classification may be applied.

103 Conclusions

EEB has completed a full risk assessment (3(c)(5) finding) of the proposed registration of Aliette for use on hops. Based upon the available data and use information, EEB concludes that the use on hops provides for minimal hazards to nontarget organisms.

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Addendum

Calculation of Estimated Environmental Concentration (EEC)

General equation for calculation of EEC in a body of water (lake or pond).

$$EEC = \frac{A \text{ (pesticide loading to water)}}{B \text{ (weight of water)}}$$

A = Maximum application rate lbs (ai/A) x size of drainage basin (acres) x percent runoff.

B = Surface area of body of water (acres) x average depth (ft) x 43,560 ft²/acre x 62.36 lb/ft³.

Where application rate = 2.0 lb ai/acre
drainage basin = 1.0 acres
percent runoff = 100%
surface area = 1.0 acre
average depth = .5 ft

Therefore:

$$EEC = \frac{(2.0 \text{ lb ai/acre}) (1.0 \text{ acres}) (1)}{(1 \text{ acre}) (.5 \text{ ft}) (43,560 \text{ ft}^2/\text{acre}) (62.36 \text{ lb/ft}^3)}$$
$$= 1472 \text{ ppb}$$