

ECOLOGICAL EFFECTS BRANCHREVIEWDATE: IN 7/3/79 OUT 1/30/80

FILE OR REG. NO. 239-EUAI

PETITION OR (EXP. PERMIT NO.) \_\_\_\_\_

DATE DIV. RECEIVED 6/28/79

DATE OF SUBMISSION 6/8/79

DATE SUBMISSION ACCEPTED \_\_\_\_\_

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

DATA ACCESSION NO(S). 093671, 229335

PRODUCT MGR. NO. 16

PRODUCT NAME(S) Ortho Multipurpose Rose & Flower Spray

COMPANY NAME Chevron Chemical Company

SUBMISSION PURPOSE Sec 3 for use on roses and ornamentals

CHEMICAL FORMULATION Acephate 4.0%, Tri forine 3.25%, Dizofol 3.0%  
formation

100 Label Information

100.1 Pesticidal Use

Multipurpose pesticide for control of diseases, insects, and mites on roses, flowers, and ornamentals.

100.2 Formulation Information

Contain ORTHENE<sup>®</sup> (Acephate) Systemic Insecticide, FUNGINEX<sup>®</sup> (Triforine) Fungicide, and KELTHANE<sup>®</sup> (Dicofol) Miticide

100.3,4 Application Methods and Target Organisms

GENERAL DIRECTIONS

Use ORTHO Multipurpose Rose & Flower Spray at the rate of 2 Tablespoonfuls (1 fl. oz.) per gallon of water. Spray thoroughly to cover all plant surfaces (both upper and lower leaf surfaces) including new growth. May be applied with an ORTHO SPRAY-ETTE, ORTHO Lawn & Garden Spray (foliage setting), tank type of power sprayer. Do not store diluted spray. Does not require the additional of wetting agents.

For Disease Control - Black Spot on Roses, Rust on Roses, Powdery Mildew on Roses, Crape Myrtle and Lilac: To prevent diseases, begin spraying when first sign of listed diseases appears in the spray. Apply every 7 to 10 days during the spring and fall. However, if weather conditions that encourage the growth and spread of the disease-causing fungi occur during the summer months, it may be necessary to continue spraying throughout the growing season. NOTE: If infection has already occurred on the plants at the time of spraying, follow a 7 day application schedule to control the fungus. Once control is achieved, continue on a 7 to 10 day application schedule to prevent re-establishment of the disease. Leaves on which the disease has already developed will not clear up, but the unaffected leaves will be protected if a regular spray program is followed.

FOR INSECT CONTROL - See Table Below: Spray when insects are present or when feeding injury is first noted. Repeat if re-infestation occurs.

<u>Pest</u>	<u>Plants</u>
Aphids	Pyracantha, Rose, Viburnum, Zinnia
Flower Thrips	Marigold, Rose
Lacebugs	Azalea, Lilac
Leafhoppers	Zinnia
Tobacco Budworm	Calendula, Petunia, Rose

For Twospotted Mite Suppression on Roses and Control on Marigolds  
Marigolds:

When applied in the Rose Disease Control program as listed above (every 7 to 10 days), ORTHO Multipurpose Rose & Flower Spray will suppress Twospotted Mites on Roses and prevent damaging populations from building up. Control of Twospotted Mites on Marigolds will usually be achieved with 2 to 3 applications at 7 to 10 day intervals. Repeat if reinfestation occurs.

100.5 Precautionary Labeling

ENVIRONMENTAL HAZARD

Keep out of lakes, ponds and streams. Do not contaminate water by cleaning of equipment or disposal of wastes.

101 Physical and Chemical Properties

101.1 Chemical Names of Active Ingredients

O,S-dimethyl acetylphosphoramidothioate  
N,N'-[1,4 piperazinediylbis (2,2,2-trichloroethylidene)  
bisformamide  
1,1-bis (p-chlorophenyl)-2,2,2-trichloroethanol

101.2 Structural Formulae

ORTHENE: See EEEB review BY J.P. Edmundson 10/20/75  
FUNGINEX:: See EEB review by R.K. Hitch 8/23/78  
KELTHANE: SEE EEB review by T.F. O'Brien 2/7/78

101.3 Common Names of Active Ingredients

ORTHENE (Acephate), FUNGINEX (Triforine), KELTHANE (Dicofol)

101.4 Trade Name

ORTHO Multipurpose Rose and Flower Spray

101.6 Physical State

Liquid

101.7 Solubility

ORTHENE: 700 mg/ml in H<sub>2</sub>O  
340 mg/ml in ETOH  
515 mg/ml in methylene chloride  
15.7 mg/ml in benzene  
(See EEEB review by J.P. Edmundson 10/20/75)

FUNGINEX: 28 ppm in H<sub>2</sub>O  
(See EEEB review 3/20/76).

KELTHANE: Data not currently available.

#### Behavior in the Environment

ORTHENE: J.P. Edmundson (EEEB review 10/20/75) concluded that Orthene would not persist as a microchemical pollutant in the environment, nor would it accumulate in animal tissue.

FUNGINEX: H. Craven (EEB review 11/20/78) concluded that acute, subacute, and chronic hazards of Funginex to fish and wildlife were not a concern when the product is used by homeowners to protect flowers.

KELTHANE: Little information is available on the behavior of Kelthane in the environment. As of 1/29/80, the Environmental Fate Branch had no available data on Kelthane behavior.

#### Toxicological Properties

ORTHENE: See EEEB review by L.A. Windberg 9/29/77.

FUNGINEX: See EEEB review by R.K. Hitch 8/23/77.

KELTHANE: Validated core studies of the type usually required for registration are not available. Unvalidated studies found during literature searches indicate low toxicity to birds and fish.

#### Hazard Assessment

##### Discussion

All three of the active ingredients of the formulated product have been registered individually for use patterns which pose greater hazards to fish and wildlife than the use pattern proposed here. Therefore, the incremental risk which would be produced by the proposed use pattern is likely to be minimal.

##### Likelihood of Exposure to Non-Target Organisms

The non-target organisms most likely to be adversely affected by the proposed use pattern are bee species.

ORTHENE (acephate) can cause high mortality to bees exposed to direct application or to foliage treated within two hours of exposure.

KELTHANE (Dicofol) residues on foliage may also cause mortality for several hours after application. (For data on mortality of bees exposed to acephate and dicofol, see EEB reviews by J.P. Edmundson 10/20/75 and A.M. Lee 10/1/79, respectively).

Therefore, treatments made during flowering seasons should be conducted several hours before bees will be actively foraging. Conducting treatments in this manner should also minimize exposure to the pesticides of other beneficial insects such as butterflies.

104.3 Endangered Species Considerations

No hazard is expected for endangered vertebrates. However, the endangered Bahaman Swallowtail and Schaus' Swallowtail butterflies may be exposed by the proposed use pattern. Both butterflies are restricted in range and food sources, but both feed on zinnias, one of the plants listed on the label. ORTHENE (Acephate) is known to translocate throughout treated plants, and may enter the nectar on which these butterflies feed. There is no data currently available to suggest that butterflies are resistant to acephate or that acephate does not translocate to nectar.

Use of the product on zinnias within the range of these two endangered species should be prohibited by a label restriction. The limited data on the feeding habits of other endangered butterflies suggest that this product does not pose a threat to them. Should data to the contrary become available, further restrictions may be necessary. If the registrant can provide data indicating that either residue levels in nectar are negligible or that butterflies are not susceptible, such restrictions could be removed.

104.4 Adequacy of Toxicity Data

The toxicity data available is adequate to support registration of this pesticide for the proposed use pattern.

105. Classification

This product should be classified for General Use.

107 Conclusions

107.3 Environmental Hazards Labeling

The Environmental Hazard Statement regarding prevention of contact with lakes and streams adequately addresses concerns regarding toxicity to aquatic organisms. However, an additional statement regarding toxicity to bees is necessary to mitigate potential adverse effects. Also, a statement prohibiting application to zinnias within the ranges of the endangered butterflies mentioned above (Section 104.3) is necessary to eliminate risk to those species. See Section 107.7 for our specific label recommendations.

107.4 Data Adequacy Conclusions

Studies of acute and chronic toxicity of the formulated product and its residues to bee and butterfly species would be helpful in properly assessing the hazards to these species posed by the proposed use patterns. However, data currently available for the separate ingredients are adequate to support registration of the formulated product without further requirements.

107.5 Data Requests

No additional data is required by Ecological Effects Branch for this use pattern and formulations, although the registrant may wish to submit data regarding residue translocation or toxicity to bees and butterflies, as discussed above (Sections 104.3 and 107.4).

107.7 Recommendations

Ecological Effects Branch does not object to registration of the formulated product for the use pattern proposed. The Branch anticipates negligible adverse impact from the proposed use. However, two label restrictions are necessary to lower hazards to bees and to eliminate hazards to two endangered butterfly species. We recommend that the following statements be added to the Precautionary Statements label under the heading of Environmental Hazard:

- (1) Do not apply when bees are actively visiting the treatment area. Applications should be made in late afternoon, evening, or early morning, or otherwise timed to provide the maximum possible interval between treatment and the next period of bee activity.
- (2) Do not apply to zinnias on the Florida Keys between Miami Beach and Marathon.

T.B. Johnston, Biologist  
Ecological Effects Branch  
January 30, 1980

*Thomas B. Johnston* 2/7/80

Ray Matheny, Section Head  
Ecological Effects Branch

*Raymond W. Matheny* 2/7/80

Clayton Bushong, Chief  
Ecological Effects Branch  
HED

*Clayton Bushong* 2/7/80