

US EPA ARCHIVE DOCUMENT

ENVIRONMENTAL SAFETY  
REVIEW SUMMARY

107901;

107901

J.W. AKERMAN (2)  
ECOLOGICAL EFFECTS GRP  
REVIEW SUMMARY

Chemical trade Ortho Rose Disease Control

Common Funginex (Triforine)

Chemical N,N'-[1,4-piperazinediyl-bis-(2,2,2-trichloroethylidene)]-bis-...

Company Chevron

Submission TEMP PERMIT PETITION REGISTRATION 237

Date submitted Date received 4/11/75

Type of chemical Fungicide

Use roses

Data submitted for review

Environmental safety:

- Mammal LD50 \_\_\_\_\_
- Mammal chronic \_\_\_\_\_
- Fish  \_\_\_\_\_
- Bird  \_\_\_\_\_
- Shrimp, crab, oyster \_\_\_\_\_
- Other \_\_\_\_\_

Environmental chemistry (70-15)

- Fish residue \_\_\_\_\_
- Other \_\_\_\_\_

Chemical TriforineConclusions:

1. systemic fungicide - 6.5% ai
2.  $\frac{1}{2}$  oz / gal  $\rightarrow$  .002 lbs ai / gal  
 spray to cover all plant surfaces (upper + lower leaf surfaces); apply 7-10 day intervals in fall + spring, if summer weather conditions favor fungi growth  $\rightarrow$  spray the entire growing season
3. acute oral quail study referred to but not submitted (LD<sub>50</sub> > 6000 mg/kg)
4. label "W34, 38, 99"
5. no problems foreseen

Recommendations

submit acute quail study

4/11/75 JRE

Environmental Safety  
 Division

Lee Sherman  
 Compliance (facts Pr)

Chemical - Triforine  
 Citation  
 Chevron

Reg. No. \_\_\_\_\_  
 Exp permit no. \_\_\_\_\_  
 Partition no. \_\_\_\_\_  
 Submission date 3/28/5

Accession NO

ORGANISM	TEST	LD50	LC50	LC50 Aquatic			TEST MATERIAL
			Dietary	24 hr	48 hr	96 hr	
* Bluegill				>1000 ppm		>1000 ppm	tech N.E. at 1000ppm
* rainbow trout				>1000 ppm		>1000 ppm	tech N.E. at 1000ppm
guppy		50 ppm - no effect in		guppies			
* bobwhite quail	8 day dietary		1849 ppm (1142-2994)				tech.
* mallard	8 day dietary		>4640 ppm (no deaths at highest dose)				tech
* submitted originally by FMC, Niagra							

Chemical Triforine

Citation

Chevron

Req. no. \_\_\_\_\_

Exp. permit \_\_\_\_\_

Retition \_\_\_\_\_

Submission DATE

3/28/75

Accession no.

ORGANISM	DOSE	SYMPTOM/EFFECT	TEST MATERIAL
rainbow trout bio accumulation study	1 ppm	While living in treated water, fish contain .13-.26 ppm triforine and its degradation products. ① 30 days after exposure ended, the fish contained .05 ppm. ② at end of exposure (32 days), the fish contained .15 ppm which were exclusively strong polar degradation products (not triforine).	

Chemical Triforine

Citation

Chevron

Req. NO. \_\_\_\_\_

Exp permit NO. \_\_\_\_\_

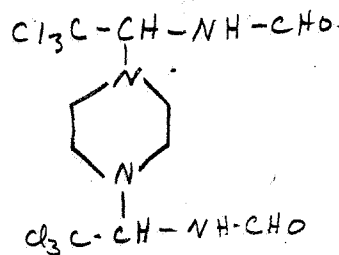
Permit no. \_\_\_\_\_

Submission date 3/28/75

Accession NO

### Chemistry

#### Structure



#### Chemical characteristics

empirical formula -  $\text{C}_{10}\text{H}_{14}\text{Cl}_6\text{N}_4\text{O}_2$

molecular wt. - 435

vapor pressure (25°C) -  $2 \times 10^{-7}$

melting pt. - 155°C

Solubility in  $\text{H}_2\text{O}$  is 28ppm at room temperature

#### Formulation (s)

liquid

#### Use

fungicide for roses

Chemical Triforine

Citation

Chevron

Reg. NO. \_\_\_\_\_

Exp permit NO. \_\_\_\_\_

Portion no. \_\_\_\_\_

Accession NO

Submission date 3/28/75

### FATE IN THE ENVIRONMENT

#### SOIL

1/2 life ~ 2 weeks (slower in dry seasons)  
degradation is probably chemical rather than biological  
triforine may not leach but its metabolites appear to be  
mobile in soil

#### WATER

rapid degradation in water (2 days - 1 week)

#### PLANT

uptake by roots + transported to aerial portions of plant  
w/ half-life of 9-10 days → study done w/ 3 week old  
barley plants after a soil drench

#### ANIMAL

96% of dose was excreted through urine + feces after  
72 hours in the rat

ENVIRONMENTAL SAFETY  
REVIEW SUMMARY

107901

J. W. AKERMAN ①  
ECOTOXICITY EFFECTS BRP  
REVIEW SUMMARY

Chemical trade Cela WS24

Common Triforine

Chemical N,N'-[1,4-piperazinediyl]bis(2,2,2-trichloroethylamine) Triforin

Company FMC

Submission TEMP PERMIT PETITION REGISTRATION 279-Ecol-29

Date submitted \_\_\_\_\_ Date received 12/10/74

Type of chemical fungicide

Use greenhouse roses

Data submitted for review

Environmental safety:

Mammal LD50 \_\_\_\_\_

Mammal chronic \_\_\_\_\_

Fish \_\_\_\_\_ ✓

Bird \_\_\_\_\_ ✓

Shrimp, crab, oyster \_\_\_\_\_

Other \_\_\_\_\_

Environmental chemistry (70-15)

Fish residue \_\_\_\_\_

Other \_\_\_\_\_



AKERMAN

Chemical # Cella 5524 (Triforine)

Conclusions:

1. for control of powdery mildew on roses in greenhouse

Recommendations

NAC 12/10/74 JRE

chemical: Triforine  
 citation: FMC

Reg. No. 279-E00N-2990

Exp permit no. \_\_\_\_\_

Petition no. \_\_\_\_\_

Accession NO \_\_\_\_\_

Submission date 12/10/74

ORGANISM	TEST	LD <sub>50</sub>	LC <sub>50</sub>	LC <sub>50</sub> Aquatic			TEST MATERIAL
			Dietary	24 hr	48 hr	96 hr	
Bobwhite quail	8-day Subacute		1849 ppm	confidence limits (1142-2994 ppm)			tech
Mallard duck	8-day subacute		>4640	(no effect)			tech
rainbow trout	96 hrs.					>1000	no effect at this level tech
bluegill sunfish	96 hrs					>1000	no effect at this level tech
Quail		36,000 mg/kg					