

US EPA ARCHIVE DOCUMENT

107901

Completed: 10/23/84 J.M.
Revised: _____

Shaughnessey Number

Ecological Effects Branch
Chemical Profile

Pesticide Name: Triforine

100 Fish and Wildlife Toxicology

100.1 Minimum Requirments

100.1.1 Avian Acute Oral LD50

<u>Species</u>	<u>Test Material</u>	<u>Results</u>	<u>Category</u>	<u>Reference (Acc. No.)</u>
Bobwhite quail	Technical	> 5000 mg/kg	Core	Unknown
Japanese quail	Technical	> 6000 mg/kg	Invalid	232695

100.1.2 Avian Dietary LC50

<u>Species</u>	<u>Test Material</u>	<u>Results</u>	<u>Category</u>	<u>Reference (Acc. No.)</u>
Bobwhite quail	Triforine	1849 ppm (1142-2994 ppm)	Core	Unknown
Mallard duck	"	> 4640 ppm	Core	Unknown

101.1.3 Fish Acute LC50

<u>Species</u>	<u>Test Material</u>	<u>Results</u>	<u>Category</u>	<u>Reference (Acc. No.)</u>
Rainbow trout	Triforine	>1000 ppm	Supplemental	Unknown
"	Triforine-18.2%	21.4 ppm	Supplemental	EEB file
Bluegill sunfish	Triforine	> 1000 ppm	Supplemental	Unknown
"	Triforine-18.2%	24.3 ppm	Supplemental	EEB file

100.1.4 Aquatic Invertebrate LC50

<u>Species</u>	<u>Test Material</u>	<u>Results</u>	<u>Category</u>	<u>(Acc. No.)</u>
<u>Daphnia magna</u>	Triforine-6.5% EC	27 ppm (21-35 ppm)	Supplemental	Unknown
"	Technical	28 mg/l	Core	Unknown
"	"	117.13 ppm	Invalid	232684

100.2 Additional Terrestrial Laboratory Tests

<u>Species</u>	<u>Test Material</u>	<u>Results</u>	<u>Category</u>	<u>Reference (Acc. No.)</u>
Bees (species unknown)	WF-57?	unknown	Invalid	Unknown

100.3 Additional Aquatic Laboratory Tests

(No-data)

100.4 Field Tests

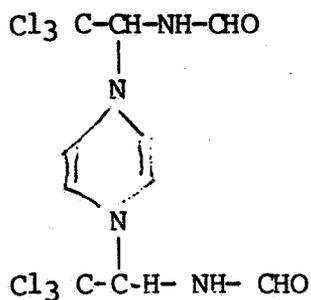
(No-date)

101 General Toxicology (Tox Br)

<u>Species</u>	<u>Test Material</u>	<u>Results</u>	<u>Category</u>	<u>Reference</u>
Rat	Unknown	Oral LC ₅₀ > 6000 mg/kg	Unknown	Unknown
"	"	Dermal LD ₅₀ > 10,000 mg/kg	"	"
Mice	Triforine (W524)	No tumorigenic or carcinogenic effects. No influence on behavior, food consumption, and body weight at doses up to 450 ppm.	"	"
Dog (2 yr feeding)	Unknown	NEL 100 ppm or 2.5 mg/kg/day	Unknown	Unknown
Rat (2 yr feeding)	"	NEL 625 ppm or 31 mg/kg bw/day negative for oncogenicity	"	"
Mouse (18 mo. feeding)	"	Negative for oncogenicity at 750 ppm or 100 ug/kg bw/day (highest level fed)	"	"
Rat 3-generation reproduction	"	NEL (reproduction) 2500 ppm, highest feeding level	"	"
Rat Metabolism	"	Satisfactory to determine major metabolites	"	"
Rat (13 wk dietary)	"	NEL > 500 ppm ≥ 2500 ppm	"	"
Dog (13 wk dietary)	"	No deaths at 300 ppm	"	"

102 Physical and Chemical Properties102.1 Chemical Name

N,N'-[1,4-piperazinediylbis(2,2,2-trichloroethylidene)bis[formamide]]

102.2 Structural Formula102.3 Common Name

Triforine

102.4 Trade Name

Funginex

102.5 Molecular Weight

435

102.6 Physical State

Colorless and odorless crystalline substance melting point 155°C

102.7 Properties102.7.1 Solubility

Water solubility is approx. 30 ppm at room temperature. Hardly soluble in most common organic and inorganic solvents.

102.7. Octanol/Water Partition Coefficient

(Unknown)

102.7.3 Soil Adsorption Coefficient Kd

(Unknown)

102.7.4 Vapor Pressure

2×10^{-7} Torr at 25°C

103 Behavior in the Environment

(No EAB review with this data taken from J. Edmundson's review of 4/11/75).

103.1 Soil

Half life approximately 2 weeks (slower in dry seasons) degradation is probably chemical rather than biological. Parent compound may not leach; but metabolites appear to be fairly mobile in soil.

103.2 Water

Rapid degradation in water

103.3 Plant

Uptake by roots and transported to aerial portions of plant with half life of 9-10 days (study done with 3 week old barley plants after a soil drench).

103.4 Animal

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

103.5 Estimated Environmental Concentrations

The following residues estimate came from Gesser's 3-29-83 review for the proposed EUP to use Funginex 1.6 EC on almonds in California:

	Residue <u>0.6 lb a.i./Acre</u>
Short rangelgrass	144
long grass	66
leaves/leafy crops	75
forage/small insects	35
Pods, seeds/large insects	7
fruits	4
6" Acre layer of water	<u>0.4</u>

104 Uses and Special Concerns

None

Funginex (Triforine) - Honey Bee Hazard

The proposed amendment to the label directs application to almonds during bloom. As honey bees are used extensively to pollinate almonds, there is a high probability of bee exposure to the pesticide.

No data are available on the toxicity of triforine to honey bees. In order to assess the hazard to honey bees from the proposed use, EEB requires a honey bee acute contact LD₅₀ study. This study should be submitted prior to registration of the product for use on almonds.

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10/2/88