

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY
DIFENZOQUAT

Last Update on September 7, 1993

[V] = Validated Study [S] = Supplemental Study [U] = USDA Data

LOGOUT	Reviewer:	Section Head:	Date:
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Common Name: DIFENZOQUAT

Smiles Code:

PC Code # :106401

CAS #:43222-48-6

Caswell #:

Chem. Name :1,2-DIMETHYL-3,5-DIPHENYL-1H-PYRAZOLIUM METHYLSULFATE

Action Type:Herbicide

Trade Names:AVENGE

(Formul'tn): LIQUID; SOLUBLE POWDER

Physical State:

Use : POSTEMERGENCE; FOR CONTROL OF WILD OATS IN BARLEY AND WHEAT
Patterns :
(% Usage) :
:

Empirical Form: C₁₇H₁₇N₂ (C₁₈H₂₀N₂O₄S)
Molecular Wgt.: 249.00 Vapor Pressure: 9.06E -8 Torr
Melting Point : 156.5-158 °C Boiling Point: °C
Log Kow : -0.32 to .64 pKa: @ °C
Henry's : E Atm. M3/Mol (Measured) 3.88E-14 (calc'd)

Solubility in ...

Water	7.65E	5	ppm	@20.0 °C
Acetone	9.75E	3	ppm	@20.0 °C
Acetonitrile	E		ppm	@ °C
Benzene	E		ppm	@ °C
Chloroform	E		ppm	@ °C
Ethanol	E		ppm	@ °C
Methanol	5.88E	5	ppm	@20.0 °C
Toluene	E		ppm	@ °C
Xylene	E		ppm	@ °C
	E		ppm	@ °C
	E		ppm	@ °C

Comments

Hydrolysis (161-1)

[V] pH 5.0:STABLE
[V] pH 7.0:STABLE
[V] pH 9.0:STABLE
[] pH :
[] pH :
[] pH :

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Photolysis (161-2, -3, -4)

[V] Water:STABLE
[] :
[] :
[] :

[V] Soil :STABLE
[] Air :

Aerobic Soil Metabolism (162-1)

[V] STABLE
[]
[]
[]
[]
[]
[]

Anaerobic Soil Metabolism (162-2)

[V] STABLE
[]
[]
[]
[]
[]
[]

Anaerobic Aquatic Metabolism (162-3)

[]
[]
[]
[]
[]
[]
[]

Aerobic Aquatic Metabolism (162-4)

[]
[]
[]
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[]
[]
[]

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Soil Partition Coefficient (Kd) (163-1)

- [V] IMMOBILE
- [V] IMMOBILE. ADSORPT.PORZION IS
- [] ACCEPTABLE;DESORPT.UNACCEPT.
- [] Kd: 124, 123, 471, 685 FOR SaLo,
- [] SaClLo, SiLo, ClLo
- [S] IN COLUMNS, 96% OF APPLIED RADIOACTIVITY REMAINED IN TOP 3.5".

Soil Rf Factors (163-1)

- []
- []
- []
- []
- []
- []

Laboratory Volatility (163-2)

- [S] PARENT COMPD IS NOT VOLATILE, BUT DEMETHYLATED DEGRADATE IS.
- []

Field Volatility (163-3)

- []
- []

Terrestrial Field Dissipation (164-1)

- [S] SaLo 7-28d (California)
- [S] SaClLo 78-110d (Oregon)
- [S] ClLo 7-14d (Montana)
- [S] SaLo 14-18d (Montana) bare ground
- [S] SiLo 14-30d (South Dakota)
- [S] SaLo 14-28d (Minnesota)
- [S] SaLo 86-180d (Minnesota)
- [] All the field dissipation studies were not sampled deep enough
- [] to define the extent of leaching.
- []

Aquatic Dissipation (164-2)

- []
- []
- []
- []
- []
- []

Forestry Dissipation (164-3)

- []
- []

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Long-Term Soil Dissipation (164-5)

[]
[]

Accumulation in Rotational Crops, Confined (165-1)

[S] LITTLE DIFENZOQUAT TAKEN UP BY BARLEY OR RED BEETS
[] AS FOLLOW CROPS AFTER FIELD WEATHERING 1 YEAR.

Accumulation in Rotational Crops, Field (165-2)

[]
[]

Accumulation in Irrigated Crops (165-3)

[]
[]

Bioaccumulation in Fish (165-4)

[]
[]

Bioaccumulation in Non-Target Organisms (165-5)

[]
[]

Ground Water Monitoring, Prospective (166-1)

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[]
[]
[]

Ground Water Monitoring, Small Scale Retrospective (166-2)

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[]
[]
[]

Ground Water Monitoring, Large Scale Retrospective (166-3)

[]
[]
[]
[]

Ground Water Monitoring, Miscellaneous Data (158.75)

[]
[]
[]

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Field Runoff (167-1)

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[]
[]
[]

Surface Water Monitoring (167-2)

[]
[]
[]
[]

Spray Drift, Droplet Spectrum (201-1)

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[]
[]
[]

Spray Drift, Field Evaluation (202-1)

[]
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[]
[]

Degradation Products

N-methyl-3,5-diphenyl pyrazole (formed by photolysis)
Azomethane
1,2-diphenyl cyclopropene

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Comments

Attempts to isolate bacteria of fungi that could use difenzoquat as a source of carbon were negative.
Conflicting data on photolysis; in pond water under artificial light for 19 days, 70% of parent compd remained but another reference cites rapid degradation in pond water under natural sunlight, less than 3 days.

References: EFGWB screen
Writer : PJH, RJM