

US EPA ARCHIVE DOCUMENT

Environmental Fate & Effects Division
PESTICIDE ENVIRONMENTAL FATE ONE LINE SUMMARY

QUINCLORAC

Last Update on September 13, 1993

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

Common Name:QUINCLORAC

Smiles Code:

PC Code # :128974

CAS #:84087-01-4

Caswell #:

Chem. Name :3,7-DICHLORO-8-QUINOLINECARBOXYLIC ACID

Action Type:Herbicide

Trade Names:FACET

(Formul'tn):50% wettable powder, suspension concentrate, granular

Physical State: SOLID

Use :FOR SELECTED GRASSES AND BROADLEAF WEEDS IN RICE AND TURF.
Patterns :RICE-PREPLANT, PREEMERGE, POST EMERGE. ESTABLISHED TURF-
(% Usage) :PRE- AND POST WEED SEED GERMINATION.

:

Empirical Form: $C_{10}H_5Cl_2NO_2$
Molecular Wgt.: 242.10 Vapor Pressure: 0.76E -7 Torr
Melting Point : 237 °C Boiling Point: N/A °C
Log Kow : pKa: 4.34 @ 20.0°C
Henry's : E Atm. M3/Mol (Measured) 3.78E-10 (calc'd)

Solubility in ...

Water	64.00E	ppm	@20.0 °C
Acetone	0.20E	ppm	@20.0 °C
Acetonitrile	0.10E	ppm	@20.0 °C
Benzene	E	ppm	@ °C
Chloroform	E	ppm	@ °C
Ethanol	E	ppm	@ °C
Methanol	E	ppm	@ °C
Toluene	0.10E	ppm	@ °C
Xylene	E	ppm	@ °C
n-OCTANOL	0.10E	ppm	@20.0 °C
	E	ppm	@ °C

Comments

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Hydrolysis (161-1)

[V] pH 5.0:STABLE FOR 737 HOURS
[V] pH 7.0:STABLE FOR 737 HOURS
[V] pH 9.0:STABLE FOR 737 HOURS
[] pH :
[] pH :
[] pH :

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

[V] Water: <10% DEGRADED AFTER 30 DAYS UNDER XENON LAMP W/O SENSITIZERS
[S] : HALF-LIVES IN RICE PADDY WATER WERE 5.3 & 15.7 DAYS
[] :
[] :

[V] Soil : HALF-LIFE OF 122-162 DAYS.
[] Air :

Aerobic Soil Metabolism (162-1)

[V] HALF-LIFE OF QUINCLORAC WAS >1
[] YEAR IN TWO SILT LOAM SOILS.
[] ONLY TRACE AMOUNTS OF BH-514-1
[] WERE FOUND AFTER 1 YEAR.
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Anaerobic Soil Metabolism (162-2)

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Anaerobic Aquatic Metabolism (162-3)

[S] THE HALF-LIFE IS >1 YEAR SINCE LITTLE DEGRADED AFTER 365 DAYS.
[V] < 19% DEGRADED DURING 180 DAYS. 82.1-87.6% WAS PARENT AFTER 180
[] DAYS.
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Aerobic Aquatic Metabolism (162-4)

[S] THE HALF-LIVES IN TWO SOILS RANGED FROM 4.7 MONTHS TO >1 YEAR.
[V] THE HALF LIVES IN TWO SOIL WERE 1-4 YEARS. <13% DEGRADED AFTER
[] 30 DAYS. ONLY RESIDUE PRESENT IN SOIL AND WATER WAS PARENT.
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Soil Partition Coefficient (Kd) (163-1)

- [V] <0.05 to 0.597 QUINCLORAC
- [V] 1.56 SAND-DEGRADATE (BAS 514-1)
- [V] 1.97 SANDY LOAM-DEGRADATE
- [V] 11.4 LOAM-DEGRADATE
- [V] 13.3 CLAY LOAM-DEGRADATE
- [V] 30.2 SILTY CL LOAM-DEGRADATE

Soil Rf Factors (163-1)

- [] QUINCLORAC AND MAIN DEGRADATE
- [] HAVE THE POTENTIAL TO LEACH
- [] TO GROUNDWATER, PARTICULARLY
- [] THROUGH SOILS OF LOW ORGANIC
- [] MATTER AND CLAY CONTENT.
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Laboratory Volatility (163-2)

- [] WAIVER GRANTED
- []

Field Volatility (163-3)

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Terrestrial Field Dissipation (164-1)

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Aquatic Dissipation (164-2)

- [S] HALF-LIVES IN RICE FLOODWATER OF 7-21 DAYS.
- [V] HALF-LIVES OF 19 AND 27 DAYS, WHEN APPLIED TO FLOOD WATER OR TO
- [] SOIL AND THEN FLOODED (IN LA).
- [V] HALF-LIVES OF 10 AND 39 DAYS, WHEN APPLIED TO FLOOD WATER OR TO
- [] SOIL AND THEN FLOODED (IN MS).
- []

Forestry Dissipation (164-3)

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Long-Term Soil Dissipation (164-5)

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Accumulation in Rotational Crops, Confined (165-1)

[S] WHEAT, TURNIPS, MUSTARD, BARLEY, BEETS AND CHARD CONTAINED AT
[] MATURITY BETWEEN <0.001 TO 0.129 PPM PARENT QUINCLORAC.

Accumulation in Rotational Crops, Field (165-2)

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Accumulation in Irrigated Crops (165-3)

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Bioaccumulation in Fish (165-4)

[V] CHANNEL CATFISH BCF:0.80X FOR WHOLE FISH AND 0.86X FOR
[] INEDIBLE TISSUES.

Bioaccumulation in Non-Target Organisms (165-5)

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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)

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Ground Water Monitoring, Miscellaneous Data (158.75)

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Field Runoff (167-1)

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Surface Water Monitoring (167-2)

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Spray Drift, Droplet Spectrum (201-1)

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Spray Drift, Field Evaluation (202-1)

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Degradation Products

3-CHLORO-8-QUINOLINECARBOXYLIC ACID IS THE ONLY DEGRADATE OF QUINCLORAC DETECTED IN ANY ACCEPTABLE STUDIES TO DATE AND THIS WAS ONLY IN A TRACE AMOUNT. ALTHOUGH QUINCLORAC DID NOT UNDERGO AQUEOUS PHOTOLYSIS UNDER STERILE CONDITIONS, THERE IS EVIDENCE, PRESENTED IN SUPPLEMENTAL STUDIES, THAT IT MAY DEGRADE WITHIN 5 TO 16 DAYS UNDER NON STERILE CONDITIONS IN THE PRESENCE OF MICROBES, SENSITIZERS AND SUNLIGHT.

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THE SOLUBILITY OF QUINCLORAC INCREASES WITH INCREASING pH. FOR EXAMPLE, THE SOLUBILITY, AT INITIAL pH VALUES OF 5, 7, AND 9 IS, RESPECTIVELY, 891, 6493, AND 19930 PPM. EFGWB NOTES THAT THE FINAL pH VALUES IN THE ABOVE SOLUTIONS WERE 4.77, 5.33, AND 5.93 AFTER 79 HOURS.

References: EFGWB SCIENCE CHAPTER AND ADDITIONAL REVIEWED STUDIES
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